P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

Index

Session 2017-18

3.1 Resource Mobilization for Research

3.1.1Researchfunds sanctioned and received from various agencies, industry and other organizations

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CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

3.1 Resource Mobilization for Research 2017-18

3.1.1 Research funds sanctioned and received from various agencies, industry and other organizations during the year of 2017-18.

Nature of the Project	Duration	Name of the funding Agency	Total grant sanctioned	Amount received during the Academic
Major projects	NIL	NIL	NIL	NIL
Minor Projects	NIL	NIL	NIL	NIL
Interdisciplinary Projects	NIL	NIL	NIL	NIL
Industry sponsored Projects	NIL	NIL	NIL	NIL
Projects sponsored by	NIL	NIL	NIL	NIL
Students Research Projects *(other than compulsory by the College)*	One Year	IEDC, DST, Govt. of India, New Delhi	05 Lakhs	05 Lakhs
International	NIL	NIL	NIL	NIL
Any other(Specify)	NIL	NIL	NIL	NIL
Total	NIL	NIL	5 lakh	5 lakh

Computer

Following innovative idea has been selected for academic year 2017-18

Sr. No.	Name of Idea	Department	Mentor	Students
1	Wi-Fi Plug	EXTC	Mr. B. R. Mankar	➢ Bhavika Bhise ➢ Renuka Ronghe ➢ Bharati Koltake ➢ Pooja Pathre ➢ Vrushali Kumbhare ➢ Vaishanavi Changole
2	Photo Voltaic (PV) fed three phase induction motor drive for rural pumping	ELPO	Mr. D. A. Shahakar	➢ Praful Dharme ➢ Sankalp Chavan ➢ Om Ingole ➢ Sanket Rokade
3	Mail Box System for physically challenged individuals	CSE	Mr. F. M. Shelke	➢ Shamali Paradakhe ➢ Mohmd Zubair ➢ Rahi Dafhane
4	Lemonade Machine	Mech.	Mr. S. P. Yeole	➢ Yogesh Wazurkar ➢ Sushrut Asare ➢ Gopal Mohalkar ➢ Shubham Ikhar ➢ Shrikant Fulpagare
5	Thirsty Concrete	Civil	Mr. Suhas Pawar	➢ Kavish Shahu ➢ Kunal Samrit ➢ Mohan Dharukar ➢ Shubham Bujade

Advisory Board here by approved above five project and directed to released sanction amount to each project (1,00,000 /- including mentor remuneration)

Herewith signed and approved by advisory Board

P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., Colleges & Schools
I.E.D.C.
AMRAVATI

Signature

for H.O.D. (Comp. Dept.)
P.R.Pote (Patil) College of Engg.& Management
Amravati.

3

A Project Report on

"Mail box system for physically challenged individual"

Submitted to

Sant Gadge Baba Amravati University, Amravati

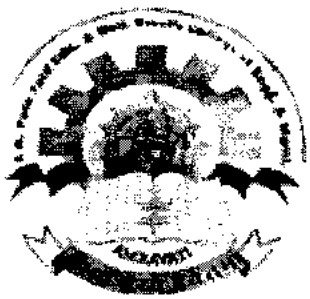
In partial fulfillment of the requirement for the award of degree of
Bachelor of Engineering in Computer Science & Engineering

Submitted by

Miss. Shamli Pharkade
Mr. Mohom Zubair
Miss. Rahi Dafhande

Under the guidance of

Prof. F. M. Shelke



Department of Computer Science & Engineering

P. R. Pote Patil College of Engineering & Management, Amravati

2017-18

CERTIFICATE

This is to certify that

Mr. F. M. Shelke

of Final year B.E. (CSE) has successfully completed his / her Project

"Mail box system for physically challenged individual"

And submitted this Project in a partial fulfillment of the Degree in Bachelor of Engineering (B.E.) in Computer Science & Engineering during the academic year **2017-18**

Prof. F. M. Shelke

Guide

Dr. V. B. Gadicha

H.O.D. (Comp. Dept.)

HOD, CSE

P.R.Pote (Patil) College of Engg. & Management Amravati.

Department of Computer Science & Engineering

P. R. Pote Patil College of Engineering & Management, Amravati

2017-18

DECLARATION

I hereby declare that the seminar entitled, **"Mail box system for physically challenged individual"** was carried out and written by me under the guidance of **Prof. F. M. Shelke** , Dept. of Computer Science and Engineering, P. R. Pote Patil College of Engineering & Management, Amravati. This work has not been previously formed the basis for the award of any degree or diploma or certificate nor has been submitted elsewhere for the award of any degree or diploma.

[Sign of student]

Place: Amravati

Miss. Shamli Pharkade

Mr. Mohom Zubair

Miss. Rahi Dafhande

Date:

Final Year [CSE]

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P. R. Pote Patil Edu. & Welf. Trust's Group of Inst. I.E.D.C. Amravati

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Project Head
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P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., College of Engg. & Mgmt. * AMRAVATI * I.E.D.C.

Project Report

Submitted to

Innovation & Entrepreneurship Development Cell (IEDC)

&

Department of Science & Technology (DST)

Presented By:

Miss. Bhavika Bhise

Miss. Pooja Pathare

Miss. Renuka Ronghe

Miss. Vrushali Kumbhare

Miss. Bharti Koltake

Miss. Vaishnavi Changole

Guided by:

Prof. Bhushan R. Mankar

Department of Electronics and Telecommunication Engineering

P. R. Pote Patil Education & Welfare Trust's Group of Institutions,

College of Engineering & Management.

Amravati – 444605 (M. S.)

2017-2018.

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Amravati.

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Advisory Board here by approved above five project and directed to released sanction amount to each project (1,00,000 /- including mentor remuneration)

Herewith signed and approved by advisory Board

H.O.D. (Civil Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

P. R. Pote Patil Edu. & Welf. Trust's Group of Inst. Colleges
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Name S. V. Pattalwar

Designation Associate Professor

Address Prof. Ram Meghe Inst. of Tech. & Research, Badnera

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Name P. R. Wadnerkar

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Name Dr. Mohammad Atique

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Designation Scientist F

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Project Head
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Trust's Group of Inst., College
of Engg. & Mgmt., Amravati.

P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., College of Engg. & Mgmt. * AMRAVATI * I.E.D.C.

II

Project Report

On

PERVIOUS CONCRETE IN RIGID PAVEMENT

Approved By:

Innovation & Entrepreneurship Development Cell (IEDC)

&

Department of Science & Technology (DST)

Present by:

Ankit Mankar

Tanay Panpaliya

Rushikesh Raut

Guided by:

Prof. S. V. Pawar

H.O.D. (Civil Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

current literature on the topic and conducting some mix designs and standard concrete testing on conventional concrete and pervious concrete to determine and compare their properties.

Objectives:

Pervious concrete has been predominantly used in non-pavements applications with only a limited use in pavements applications. The purpose of this project is to assess the suitability of pervious concrete to be used for the construction of road pavements. This assessment will include investigating current literature on the topic and also conducting some mix designs and standard concrete testing on conventional concrete and pervious concrete to determine and compare their properties.

The approach is to store and reuse the storm water with the help of porous concrete so to increase the ground water table. For the porous concrete work M_{20} grade of concrete is taken in consideration. For this project work the cement to coarse aggregate ratio for the thirsty concrete was taken as 1:6.

In order to achieve these aims, the following objectives had to be met:

- To reduce the storm water runoff.
- To eliminates the need for detention ponds and other costly storm water management practices.
- To replenish the aquifers and water table.
- To keep pavement surfaces dry even in wet situation.
- To increase ground water table.
- Research background information relating to the use of Thirsty concrete in pavement and non-pavement applications.
- Conduct some initial mix design test to evaluate some possible alternatives. This will include using different water/aggregate/cement ratios.
- Determine suitable tests to assess the strength, durability and cost of the above found mix design and normal concrete road surfaces.

contact surfaces between one another for strength. Therefore harder aggregate, such as granite or quartz, would yield higher compression strength than a softer aggregate like limestone.

Typically aggregate within the range of 3/8" and 3/4" are used because of enhanced handling and placement. Anything larger would result in larger void spaces but would provide a rougher surface.

➢ Aggregate-Cement Ratio

The amount of aggregate relative to the amount of cement is another important feature. The more cement paste available for compaction the higher the compressive strength. Again this will clog the pores and is detrimental to the function of the pervious concrete. Utilizing data obtained from prior research, a suitable range of A/C ratios will be used to create various mixtures of pervious concrete to be tested for compressive strength. The aggregate-cement ratio used is leaner, usually ranging from 6:1 to 10:1. This leaner mix ensures that the void ratio is high and prevents capillary transport of water.

➢ W-C Ratio

It is the Ratio of the weight of water to the weight of cement used in a concrete mix. A lower ratio leads to higher strength and durability, but may make the mix difficult to work with and form. If the water-cement is lower than the optimum, the cement paste will not be sufficiently adhesive to bond the aggregate. The general range for water-cement ratio is between 0.38 and 0.52. The absorption rate of the aggregate will also affect the water content and this should be taken into account for design mixes. In previous experimental studies it can be found that if more use more water contain then the strength of concrete is less. The permissible rang of w/c ratio is 0.32 to 0.58.

Material used for Pervious Concrete Pavement:

The material required for preparing pervious concrete pavement are cement, coarse aggregates, river sand, crush aggregate.

➢ Cement

Cement is one of the binding material in this project. The cement used in the concrete mix design was ordinary Portland cement (OPC) of 53 grades conforming to IS 12269 – 2013, manufactured by Birla Company.

Actual process:

- At first, the trench of size 25ft x 8ft was excavated to remove black cotton soil, as the black cotton soil may cause the cracking of pavement surface due its property of shrinkage.
- 80mm boulders layer of depth 100mm was laid in the excavated pit along with the murrum as void filler. This layer was properly compacted to provide hard base for the pavement.
- GSB layer of 300mm depth was spread on the 80mm bolder layer which was watered and well compacted.
- HDPE sheet was laid over the GSB layer. It works as the impervious membrane and do not allow percolated water through pervious concrete pavement to enter the GSB layer and maintain stability of subgrade layer.
- 100mm diameter PVC pipe was laid with certain slope over the HDPE sheet, at the centre along the length of pavement. The pipe was provided with holes at its top to collect the percolated water. The pipe was rapped with iron mesh which avoids the entry of small size aggregates into the porous pipe.
- 10mm and ¼ aggregates layer of 100mm thick were laid over the pipe for smooth movement of percolated water from concrete to porous pipe.
- 75mm thick PCC layer of pervious concrete was placed over the aggregated. 10mm dia. 150mm center to center steel cage. At top 125mm pervious concrete layer was placed.
- Curing of pavement was done for about 14days.

Merits & Demerits of Using Thirsty Concrete

a) Economical Benefits

The initial costs of pervious concrete pavements are higher than those for conventional concrete pavements. This is due to two factors, the materials used are slightly more expensive and the increased thickness of the pervious pavement compared to conventional pavements. However, in the long term, Pervious concrete pavements are more cost effective. There are lower installation costs associated with the use of Thirsty concrete because the need for underground piping and storm drains are eliminated. No major earthworks are required since the pavement does not need to slope to gutters and drains for adequate water control methods. The system does not require the upgrading of existing storm sewer systems, as there is little or no runoff.

Pervious concrete pavements effectively double as a storm-water management system and eliminate the need to purchase additional land for retention basins, as the pavement works as one. This helps developers maximize their profits and utilize the land more efficiently.

The concrete has another cost saving benefit in terms of the amount of lighting required for the Thirsty pavement. This is due to the light colour of the pavement, which reflects light, thereby reducing the installation and operating costs.

Pervious concrete is a sustainable material that has a life expectancy similar to that of conventional concrete. Correctly constructed Thirsty pavements should have a life expectancy of 20 to 40 years and thus a lower life-cycle cost, according to the Southern California Mixed Concrete Association.

b) Environmental Benefits

The benefits to the environment are many when using pervious concrete. Pervious concrete pavements are light in colour, which helps to reduce the ground level ozone by lowering the temperatures in and around major cities. This is achievable due to the open cell structure of the concrete, which does not absorb and store heat and later radiate it back into the environment the way asphalt surfaces do. The open structure also draws on the cooler earth temperatures below the pavement to keep the pavement temperatures down.

Applications

The porous concrete can be used at different places which are as follows:

- It is used as a sidewalks and pathways.
- It is used in parking area.
- It is used as a sub-base for conventional concrete pavement.
- It is used for slope stabilization and well lining.
- It is also used as tree grates in sidewalks.
- It is used in floors for greenhouses, fish hatcheries, aquatic amusement centers and zoos.

➢ Non-Pavement Applications of Pervious Concrete

Thirsty concrete has had numerous useful non-pavement applications including buildings, tennis courts, drains and drain tiles and floors in greenhouses. Thirsty concrete has been utilized by European countries in many different building situations. It has been used for cast-in-place load-bearing walls in houses, multi-storey and high-rise buildings, as prefabricated panels and steam cured blocks.

A prominent use of Thirsty concrete in Europe is in tennis court applications. The only variation from a normal mix is the slightly smaller aggregate used to provide a smoother playing surface. The permeability of the Thirsty concrete reduces the time taken for water to drain and the surface to be playable (Ghafoori et al 1995). Water and Power Resources Services in America successfully tested the use of drains and draintiles constructed from Thirsty concrete beneath hydraulic structures. This application made it possible to reduce the uplift pressure on the structures and to drain ground water from beneath infrastructure like sewer pipes (Ghafoori et al 1995). Researchers at Rutgers University used Thirsty concrete as a floor surface in a plastic greenhouse as part of a solar heating system. This application provided a suitable hard surface capable of withstanding the movement of heavy equipment, while preventing water from ponding on the surface and discouraging weed growth (Ghafoori et al 1995).

➢ Pavement Applications of Pervious Concrete

The majority of pavement applications for Thirsty concrete are low volume road surfacing, parking lots and pavement edge drains. Thirsty concrete pavements were developed after some success with open graded asphalt and their applications in parking lots and service roads. Open

CONCLUSION:

The present study was undertaken to check the working and behavior of thirsty concrete under different condition i.e by changing the proportion so to change the porosity and void ratio. The concrete specimen was prepared so that maximum amount of water can percolate through specimen and since water can be purposefully utilize.

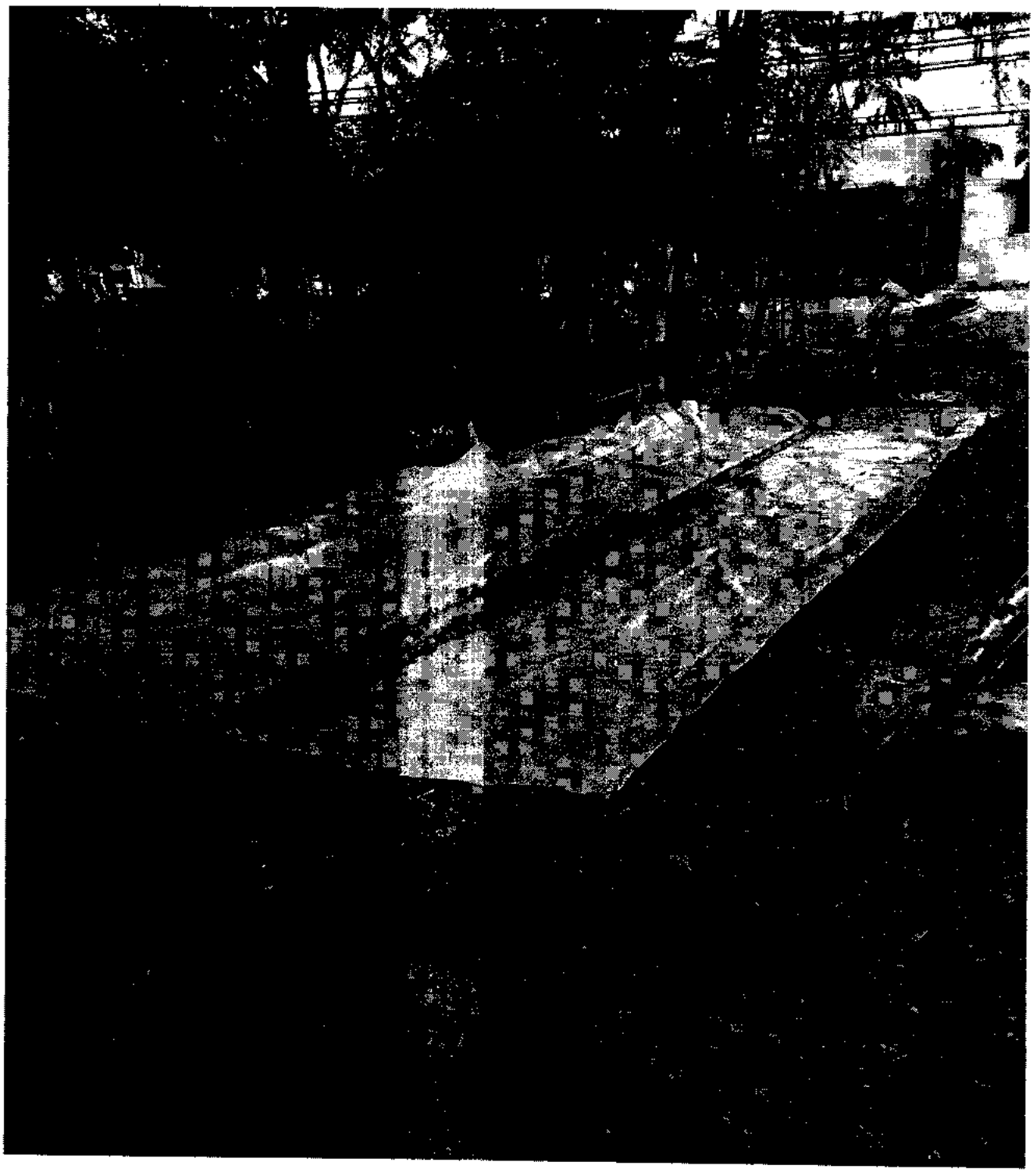
This chapter deals with conclusion obtained from the observations and results of experimental study

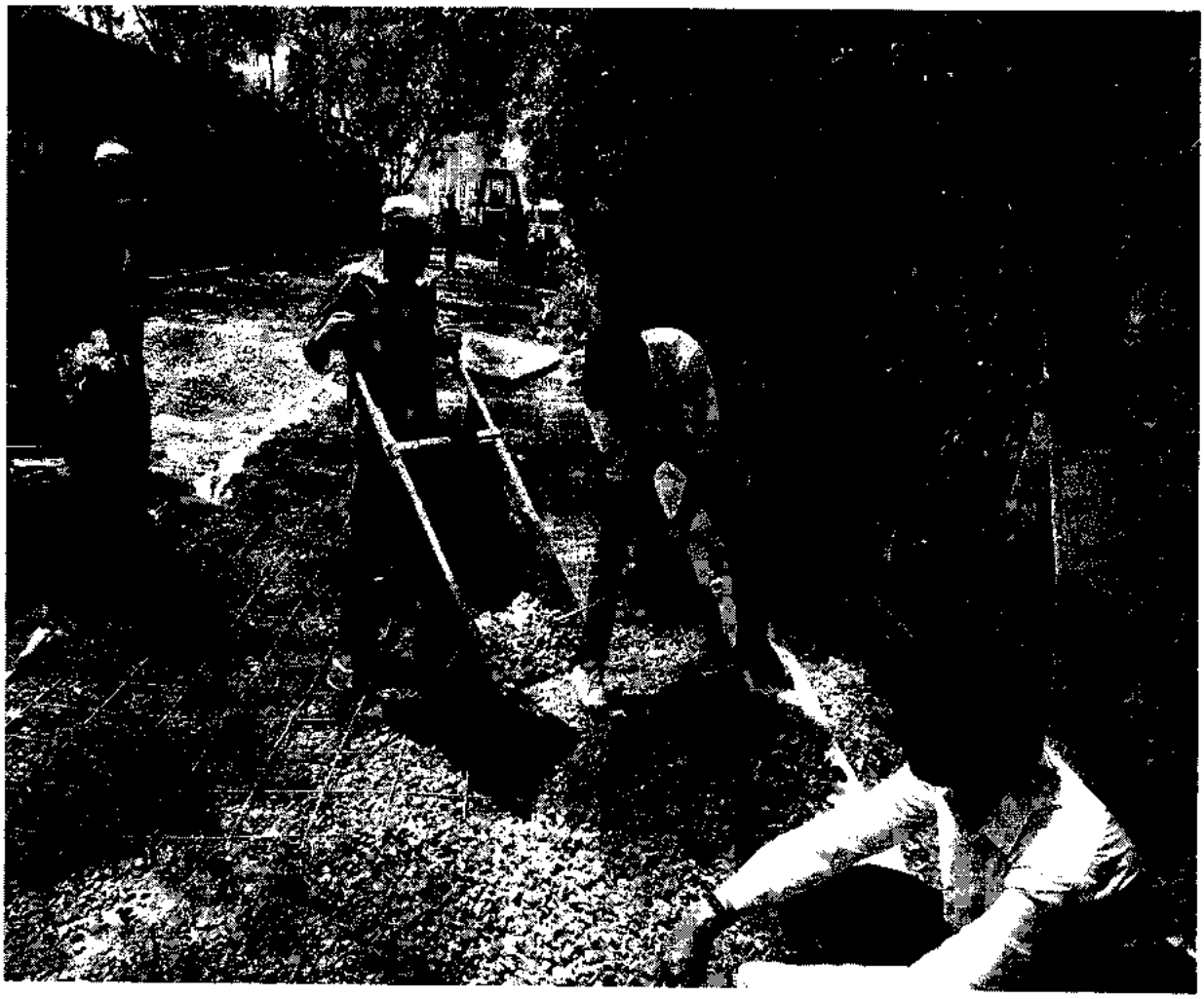
- The pervious concrete allow the storm water to percolate through it enter into natural ground which helps in improving ground water table.
- From the study it is concluded that the modified pervious concrete have more strength, porosity and void ratio than conventional M20 grade concrete with the increase in percentage of sand and crushed sand. The void ratio of concrete decrease with respect to increasing fine sand. The void ratio of thirsty concrete was found to be maximum i.e. 24.68%. But further replacement of coarse aggregate with fine sand and crushed sand as percentage of void ratio decrease but the strength get increase.
- The porosity of modified thirsty concrete is largely affected by the size of coarse aggregate used in concrete mix. Concrete mix containing 20 mm size aggregate shows higher porosity in comparison to concrete mix containing 10 mm size aggregate, but the strength of the concrete decrease since 10 mm coarse aggregate were used. The addition of fine aggregate to concrete mix lowers the porosity to 14% because this fills the void spaces between the aggregate. The compressive strength of modified thirsty concrete largely depends upon how much percent of coarse aggregate replaced by fine sand. However the inclusion of fine aggregate results in comparatively good strength.

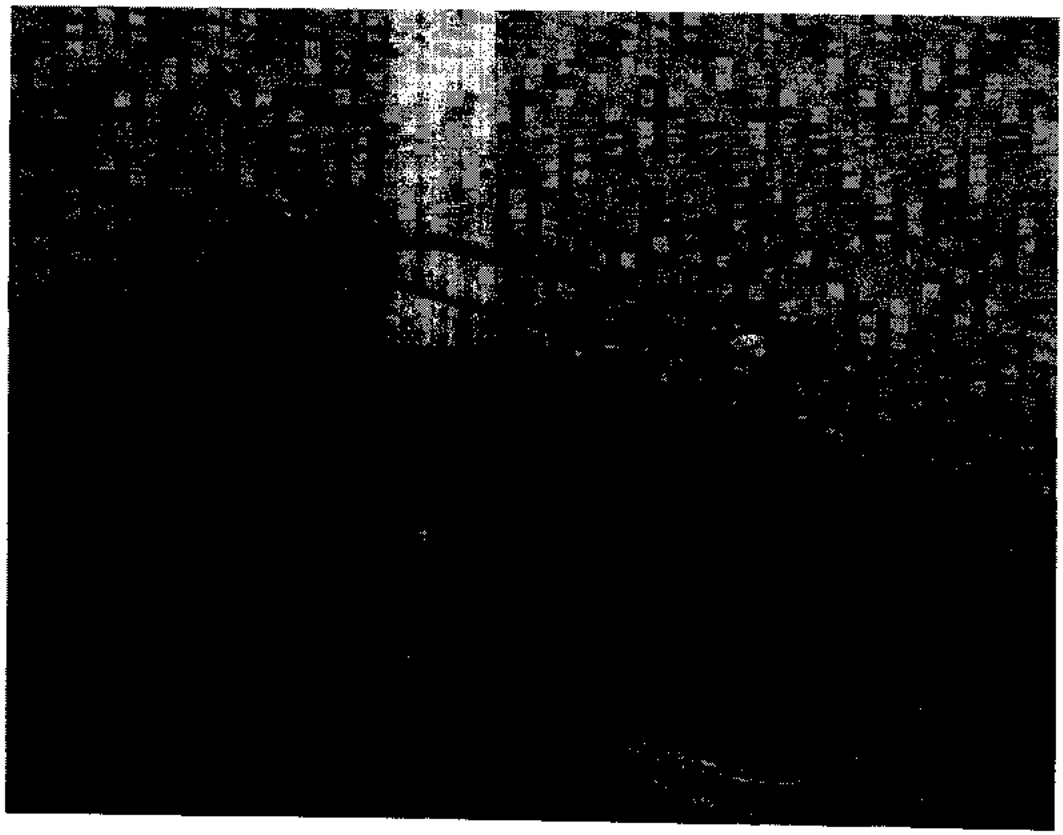
  Since by using this type of concrete specimen along sideways, pathways, parking area, and in tree grate the runoff of storm water can be directly control. It also replenishes the aquifer and water table. It helps in keeping the pavement surface dry even in wet condition.

  There are numerous advantages of pervious concrete over conventional concrete, so the used of pervious concrete can be more beneficial along sidewalks, pathway, parking area etc. rather than conventional concrete.

Photo Gallery







electrical

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P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., College of Engg. & Mgmt. AMRAVATI
I.E.D.C.

2017-18 3.1

22

"Photovoltaic Fed Three Phase Induction Motor Drive for Rural Pumping"

Project Report

Submitted in partial fulfilment of the Requirements

For the Degree of

Bachelor of Engineering

In

Electrical (Electronics & Power)

By

Praful Dharme

Om Ingole

Sankalp Chavahan

Sanket Rokade

Under the Guidance of

Prof. D.A. Shahakar

Department of Electrical (Electronics and Power) Engineering

P. R. Pote (Patil) Edu. & Welfare Trusts, Group of Institutions, College of Engineering and Management

Amravati-444605 (M.S.)

H.O.D. (Elect. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

ACKNOWLEDGEMENT

We first pray at the lotus feet of our divine source of inspiration "Shri Sant Gajanan Maharaj" whose blessings are always with us.

We express our sincere thanks for invaluable guidance extended to us by our project guide Prof. D.A. Shahakar in completion of the project.

We would also like to give our sincere thanks to Prof.D. A. Shahakar Head of the Electrical Engineering Department for extending necessary help and providing the facilities. Our sincere thanks to Principal Dr.S.D.Wakade , who is source of inspiration to everybody and always ready to extend helping hands. We also like to give sincere thanks to all the teaching staff and lab attendants of Electrical Department for extending their necessary help and providing the required facilities.

Last but not the least, we are thankful to the almighty. It was his blessings that saw us till the end.

Praful Dharme

Sankalp Chavahan

Om Ingole

Sanket Rokade

H.O.D. (Elect. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati

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2	Photo Voltaic (PV) fed three phase induction motor drive for rural pumping	ELPO	Mr. D. A. Shahakar	➢ Praful Dharme ➢ Sankalp Chavan ➢ Om Ingole ➢ Sanket Rokade
3	Mail Box System for physically challenged individuals	CSE	Mr. F. M. Shelke	➢ Shamali Paradakhe ➢ Mohmd Zubair ➢ Rahi Dafhane
4	Lemonade Machine	Mech.	Mr. S. P. Yeole	➢ Yogesh Wazurkar ➢ Sushrut Asare ➢ Gopal Mohalkar ➢ Shubham Ikhar ➢ Shrikant Fulpagare
5	Thirsty Concrete	Civil	Mr. Suhas Pawar	➢ Kavish Shahu ➢ Kunal Samrit ➢ Mohan Dharukar ➢ Shubham Bujade

Advisory Board here by approved above five project and directed to released sanction amount to each project (1,00,000 /- including mentor remuneration)

Herewith signed and approved by advisory Board

P. R. Pote Patil Edu. & Welf. Trust's Group of Insti. College of Engg. & Mgmt. * AMRAVATI * I.E.D.C.

M.G.Goe

Mech. Dept.)

P.R. Pote (Patil) College of Engg. & Management

Amravati.

Signature

Name Pravin Barkar

Designation Asstt Divisional Manager, MITCON

Address MITCON Consultancy & Engg. Services Ltd, Amravati.

Signature

Name S. V. Pattalwar

Designation Associate Professor

Address Prof. Ram Meghe Inst. of Tech. & Research, Badnera

Signature

Name P. R. Wadnerkar

Designation Asso. Prof.

Address P. R. Pote (Patil) COEM Amravati

Signature

Name B. V. Rathod

Designation A. P. in Electronics

Address G. C. O. E. Chandrapur

Signature

Name Dr. Mohammad Atique

Designation Associate Professor

Address S. G. B. Amravati University, Amravati

Signature

Name Sujeet Banerjee

Designation Scientist F

Address D.S.T., Delhi

Signature

Name Anil Kavna

Designation A. V. P. MITCON

Address Amravati

Signature

Name P. P. BEDEKAR

Designation Associate Professor (Electrical Engineering)

Address Govt. College of Engineering Amravati

Co-ordinator
I.E.D.C.
P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., College of Engg. & Mgmt., Amravati.

Project Head
I.E.D.C.
P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., College of Engg. & Mgmt., Amravati.

P. R. Pote Patil Edu. & Welf. Trust's Group of Inst., College of Engg. & Mgmt. I.E.D.C. AMRAVATI

M. G. Gore

H.O.D. (Mech. Dept.)
P. R. Pote (Patil) College of Engg. & Management
Amravati.

26

A

PROJECT REPORT

ON

"Design and Fabrication of Fully Automated Lemonade Machine"

Submitted for the fulfillment for the degree of engineering

(MECHANICAL ENGINEERING)

Submitted by

Yogesh P. Wazurkar
Gopal S. Mohalkar
Shrikant R. Fulpagar
Sushrut A. Asare
Shubham S. Ikhar
Aamir Bohra

Under the Guidance of

Prof. S. P. Yeole

DEPARTMENT OF MECHANICAL ENGINEERING

P.R. Pote (Patil) College of Engineering & Management,

Amravati.

Sant Gadge Baba Amravati University, Amravati.

2017-18

Project guide

H.O.D. (Mech. Dept.)
P.R. Pote (Patil) College of Engg. & Management
Amravati.

ACKNOWLEDGEMENT

It gives me an immense pleasure in submitting the project report on **"Design and Fabrication of Fully Automated Lemonade Machine".** I take this opportunity to express my gratitude and indebtedness to all who worked for this concept, our guide **Prof. S. P. Yeole** and **Dr. S. G. Fale** (Head of Mechanical Engineering Department) who were a constant source of guidance and inspiration through the seminar work.

Name of Student

Yogesh P. Wazurkar
Sushrut A. Asare
Gopal S. Mohalkar
Shubham S. Ikhar
Shrikant R. Fulpagar
Aamir Bohra

Project guide

H.O.D. (Mech. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.2 Innovation Ecosystem.

3.2.1 - Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia

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3	Mechanical	30
4	Civil Engg.	31-34
5	MCA	35-39

3.2 Innovation Ecosystem

3.2.1 - Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry- Academia

Sr. No.	Title of Workshop/Seminar	Name of the Dept.	Date(s)
01.	PHP Technology	Computer Science and Engineering	31st July – 1st Aug. 2017
02.	Automobile & Vehicle Dynamics	Mechanical Engineering	24th July – 30th July, 2017
03.	Advances in Geotechnical Engineering	Civil Engineering	11th Jan., 2018
04.	Practical Era in Structural Engineering	Civil Engineering	29th Jan., 2018
05	PHP Technology	Master in Computer Application	11th-16th August 2017
06	NPTEL Awareness Program for faculty	Master in Computer Application	11th November 2017
07	Android Technology	Master in Computer Application	30th Jan.-5th Feb.2018

PHP Workshop

Date: 31st July to 1st August 2017

Time: 11:00 Am to 6:00 pm

Our FOCI always try to enhance to skill of CSE student to various activity. This time the conducted two days workshop on PHP It was on held on 31st July & 1st Aug 2017 it was plan for 2nd year as well as 3rd year student of CSE the workshop was conducted by **SSIT Pvt. Lmt. Nagpur.**

PHP is an HTML-embedded, server-side scripting language designed for web development. It is also used as a general purpose programming language. It was created by Rasmus Lerdorf in 1994 and appeared in the market in 1995.





H.O.D. (Comp. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

P.R.Pote College of Engineering & Management Amravati

Training Program on Automobile & Vehicle Dynamics

III cell of the department has conducted Training Program on 'Automobile & Vehicle Dynamics (AVD)' took place **at P. R. Pote (Patil) College of Engineering & Management, Amravati** on **July 24 – 30, 2017.** Over 200 Students from various Colleges in Amravati region, This type of training program was held first time with joint venture of **AMZ Automotive & Team Optimech Racing - Dept of Mechanical Engineering, PRPCEM** in Amravati region. It will helps the students for converting their theoretical ideas into practical for upcoming Automotive Competitions like SAESUPRA, SAEBAJA, RCDC & Go- Kart. It will build the actual practical knowledge for students by providing 4 days separate practical session in training program.

The **Guest of the training program Mr. Khushal Singh, (Research Associates of AMZ Automotive),** who provide grass root training to students on vehicle dynamics.



S. S. Deshmukh
Programe Coordinator

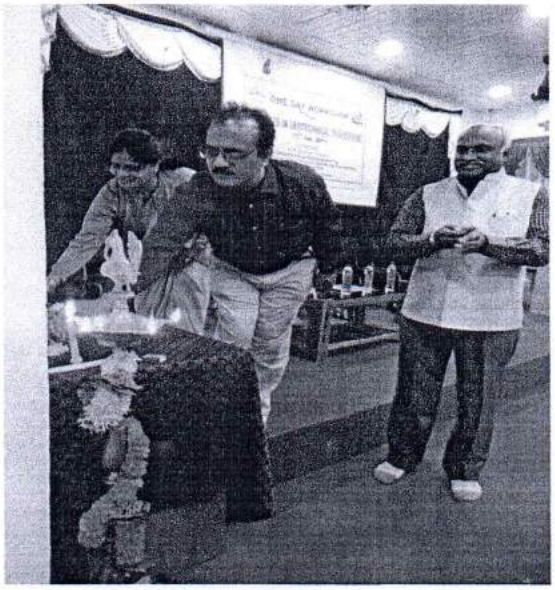
V. G. Gore
HOD
Mech Dept

H.O.D. (Mech. Dept.)
P.R. Pote (Patil) College of Engg. & Management
Amravati.

P.R. Pote (Patil) College of Engineering & Management
Department of Civil Engineering

Inaugural Ceremony of IGS Student Chapter &
One Day Workshop On Advancement In Geotechnical Engineering

The Inaugural ceremony of "Indian Geotechnical Society" Student Chapter followed by one day workshop was held on dated 11th January 2018 by the hands of eminent personalities in the area of geotechnical Engineering , Dr. Yashwant Kolekar (Assistant professor, COEP), Dr. A. I. Dhatrak (Dean Academics Govt. College of Engineering Amravati) , Dr. S. S. Pusadkar (HOD, Govt. College of Engineering Jalgaon), Dr. S.P. Bajad (Professor, Govt. Polytechnic Amravati), Dr. S. D. Wakde (Principal of PRPCEM),Prof. Mohammad Zuhair (Vice Principal of PRPCEM) and coordinator of the workshop Prof. S. S. Saraf and Prof. N. P. Bhopale. The IGS local chapter of student committee of 15 students was formed at the inaugural ceremony.





H.O.D. (Civil Dept.)
P.R. Pote (Patil) College of Engg. & Management
Amravati.

Dr. A. I. Dhatrak throws light on the thrust areas of research in which IGS is currently active. He described and explained the importance of inventory and transportation in today's world in his address.

Dr. S.P. Bajad appreciated the organizers for formation of "Indian Geotechnical Society" Student Local Chapter followed by conducting workshops "Advancements in Geotechnical Engineering". Sir emphasis on various applications of this topic in diverse fields and guide the students to become active member of IGS.





P.R. Pote (Patil) College of Engineering & Management
Department of Civil Engineering

Inaugural Ceremony of ICI Student Chapter &
One Day Workshop on "Practical Era in Structural Engineering"

The Inaugural ceremony of "Indian Concrete Institute" Student Chapter followed by one day workshop was held on dated 29th January 2018 by the hands of eminent personalities in the area of Structural Engineering , Professor Dr. P. S. Pajgade, PRMITR), Er. M. A. Kawalkar (Vice President ICI Nagpur), Er. S. S. Raipure (Structural Designer, Nagpur), Prof. Mohammad Zuhair (Vice Principal of PRPCEM) and coordinator of the workshop Prof. S. V. Dhoke and Prof. N. P. Bhopale. The ICI local chapter of student committee of 30 students was formed at the inaugural ceremony.





H.O.D. (Civil Dept.)
P.R. Pote (Patil) College of Engg. & Management
Amravati.

Dr. P. S. Pajgade throws light on the thrust areas of research in which ICI is currently active. He described and explained the importance of inventory and transportation in today's world in his address.

Er. S. S. Raipure appreciated the organizers for formation of "Indian Concrete Institute" Student Local Chapter followed by conducting workshop on "Practical Era in Structural Engineering". Sir emphasis on various applications of this topic in diverse fields and guide the students to become active member of ICI.



In the first session Dr. P. S. Pajgade introduced students with the current and future focus for construction industry and human society, in general, is on sustainable construction a concrete mix is designed to produce concrete that can be easily placed at the lowest cost. The concrete must be workable and cohesive when plastic then set and harden to give strong and durable concrete also highlighted the importance of concrete Technology and advancement in it.

P. R. Pote Patil College of Engg & Management, Amravati.

Department of MCA

Report on Faculty Development Programme

On PHP Technology

Date :11th August 2017 – 16th August 2017

Workshop was conducted by Prof Nikhil Karale. It was inaugurated by HOD, MCA Dr. C A Dhawale. FDP started at 11.30 in the Classroom no 304. All the faculties were present for the workshop. The workshop was scheduled for one week. Vote of thanks was given by Prof P. S. Thombare.



Lecturer /A.P.
P.R. Pote (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati

P. R. Pote Patil College of Engg & Management, Amravati.

Department of MCA

FDP on NPTEL Awareness Programme

By the Team from IIT, Kanpur

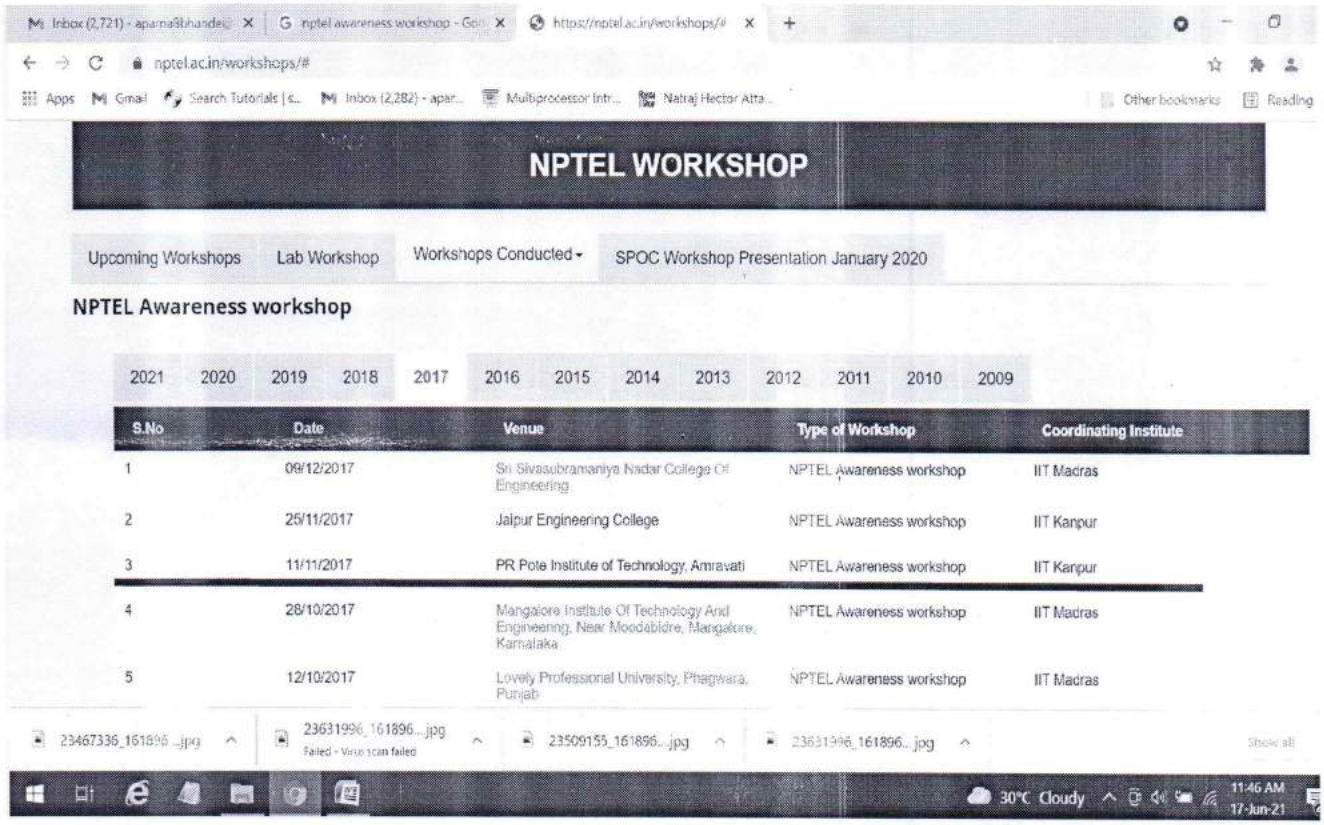
Date :11th November 2017

The FDP was scheduled on 11/11/2017. The team from IIT Kanpur was felicitated by Head MCA, Dr C. A. Dhawale. Porf P. S. Thombare anchored the FDP. All the faculties from CSE, MCA and other colleges attended the FDP. The aim of NPTEL awareness workshop is to create maximum awareness among faculty members about NPTEL and its various initiatives. The workshop included sessions on NPTEL and its features, NPTEL Online Certification courses and the concept of NPTEL Local Chapter. This workshop was jointly organized by NPTEL and MCA department of PRPCEM. The FDP duration was from 11.00 to 3.00 pm. The workshop was concluded by the vote of thanks from Prof P. S. Thombare.



Lecturer / A.P.
P.R. Pote (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati

From the link of NPTEL workshop conducted. Sr. No 3



NPTEL WORKSHOP

Upcoming Workshops | Lab Workshop | Workshops Conducted | SPOC Workshop Presentation January 2020

NPTEL Awareness workshop

2021 2020 2019 2018 2017 2016 2015 2014 2013 2012 2011 2010 2009

S.No	Date	Venue	Type of Workshop	Coordinating Institute
1	09/12/2017	Sri Sivasubramaniya Nadar College Of Engineering	NPTEL Awareness workshop	IIT Madras
2	25/11/2017	Jaipur Engineering College	NPTEL Awareness workshop	IIT Kanpur
3	11/11/2017	PR Pote Institute of Technology, Amravati	NPTEL Awareness workshop	IIT Kanpur
4	28/10/2017	Mangalore Institute Of Technology And Engineering, Near Moodabidre, Mangalore, Karnataka	NPTEL Awareness workshop	IIT Madras
5	12/10/2017	Lovely Professional University, Phagwara, Punjab	NPTEL Awareness workshop	IIT Madras

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Lecturer /A.P.
P.R. Pote (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati

P. R. Pote Patil College of Engg & Management, Amravati.

Department of MCA

Workshop on Android Technology

By Mr. Shrikant Pande

Date: 30/1/2018 to 5/2/2018

Workshop on Android technology was conducted by Mr. Shrikant Pande CEO of Citronics Pvt Ltd. He has an experience of 35 yrs in IT industry as well as teaching. The Workshop was conducted for a week from 30/1/2018 to 5/2/2018. The Guest was honoured by Head, MCA Dr. C. A. Dhawale and was compared by Prof P. S. Thombare. The workshop was attended by Faculties of MCA department and the students also.

The entire workshop was divided into three session.

Session 1 was a theory session conducted from 10:30 AM to 11:30AM. Mr. PAnde introduced the audience to the basics of Application Development using Android Studio. He also demonstrated how to install Android Studio for Windows and gave a tour of the Interface. Android Studio consists of a manifest file, java file, resources file and the Gradle. Manifest file describes essential information about the app like app's package name, id etc. Gradle is the dependency manager and complier builds your app. The participants were also familiarised with concepts of Activities and Lifecycle of Activities

Session 2 was a practical session conducted from 11:45 AM to 2:00 PM. In the Computer Laboratories the team of third years helped the participants set up Android Studio on the devices. They taught the participants how to use and manipulate the properties of the Widgets such as text view, buttons, edit text, image view, progress bar using XML code. Layouts for the user interface were discussed. A java code for creating references, setting background colour and text to buttons etc were explained. With this as the base, a basic login page was designed and the application run on android phones.

Lecturer /A.P.
P.R. Pote (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati

Session 3 was a practical session conducted from 2:45 PM to 5:00 PM. During the afternoon session more functionality was added to the basic login page by using ClickListener and Toast functions. After this a new Activity was created, and the participants were introduced to the Basics of Intent, and Passing messages from one Activity to another. The concept of log and lists were introduced. Using the concepts learned throughout the day the participants designed a simple to-do list application

The workshop was concluded by the vote of thanks from Prof A. S. Bhande at 5.15 pm



From the link of NPTEL workshop conducted. Sr. No 3

Lecturer / A.P.
D.P. Patil (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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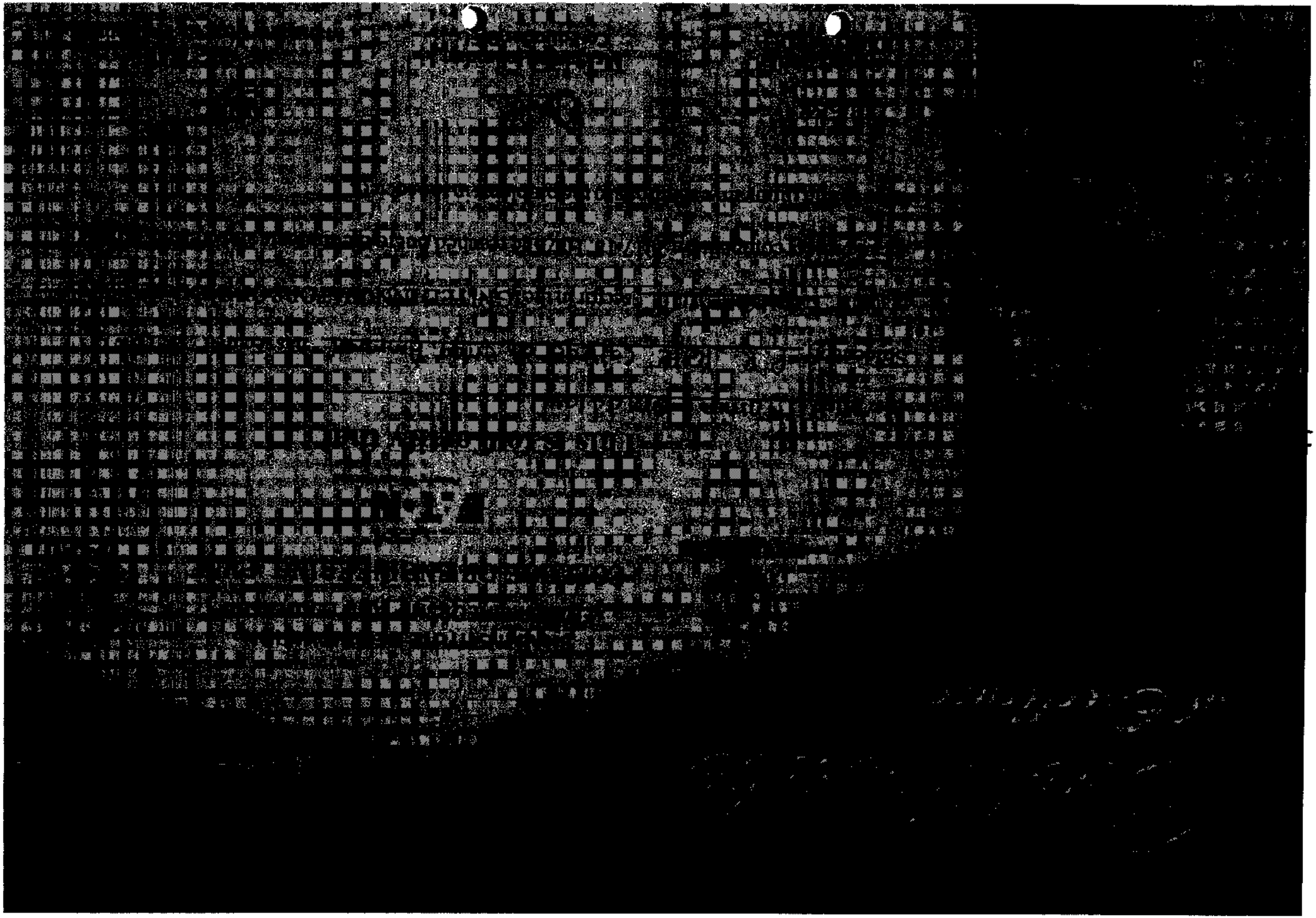
Session 2017-18

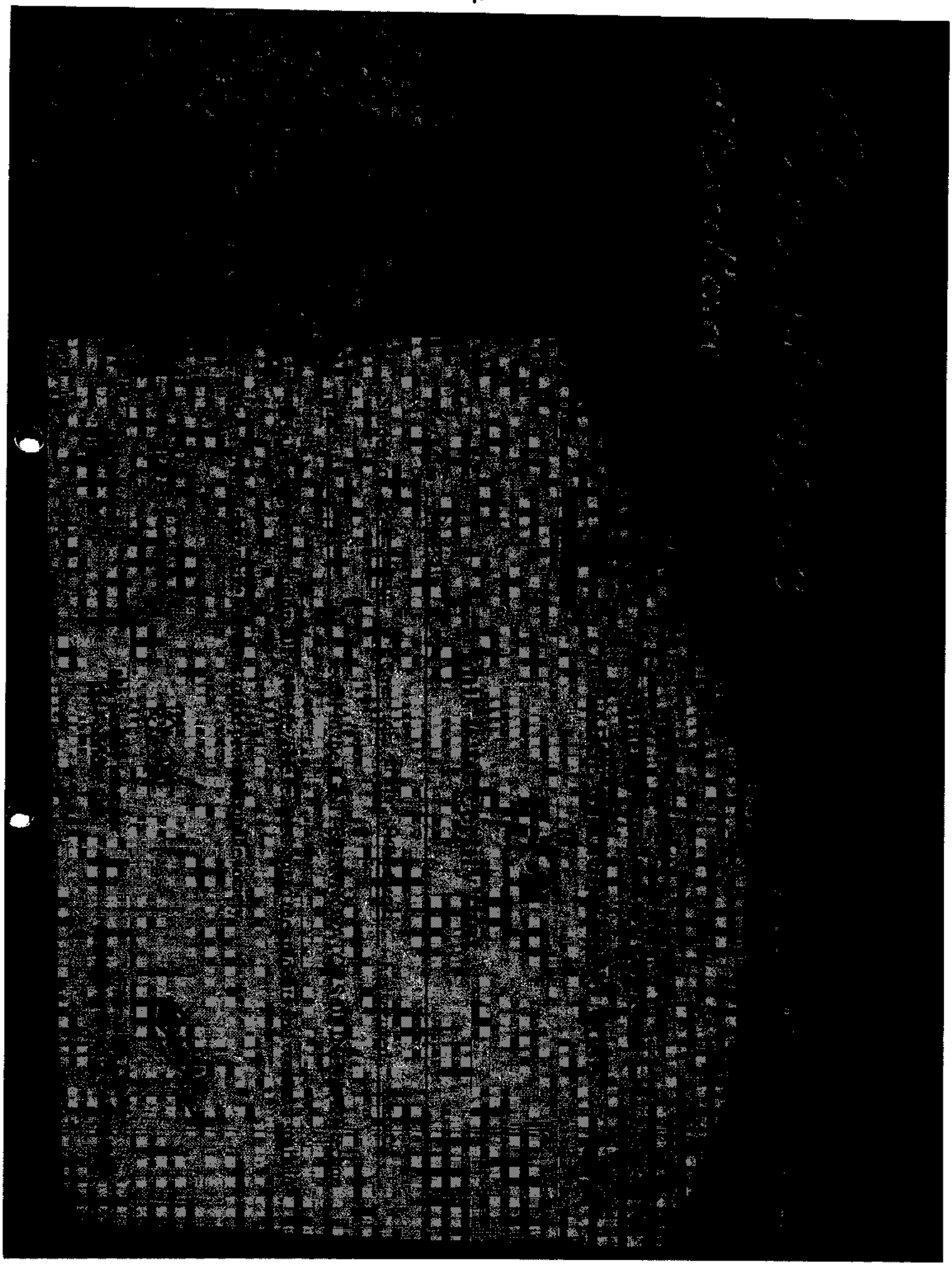
3.2.2 - Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	40
2	Mechanical Department	41-42

3.2.2 - Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Sr. No.	Title of the Innovation	Name of the Department	Awarding Agency	Date of Award	Category
01.	Eco Green Light Water Combo	Mechanical Engg.	BHAU Foundation	15th April 2018	Environment
02.	SINEWS – The Walking Aid	Mechanical Engg.	BHAU Foundation	15th April 2018	Social





P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.2.3 – No. of Incubation center created, start-ups incubated on campus during the year

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	43
2	CSE	44-52

3.2.3 – No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Centre	Name	Sponsored
IIT Bombay Nodal Center for Virtual Lab	PRPCEM- Virtual Lab,Amravati	IIT Bombay
NPTEL Local Center	P.R.P.C. E & M, Amravati	IIT Madras
IIT Spoken Tutorial	P.R.P.C. E & M, Amravati	IIT Bombay

Name of the Start-up	Nature of Start-up	Date of commencement
Nil	Nil	Nil

2017-18

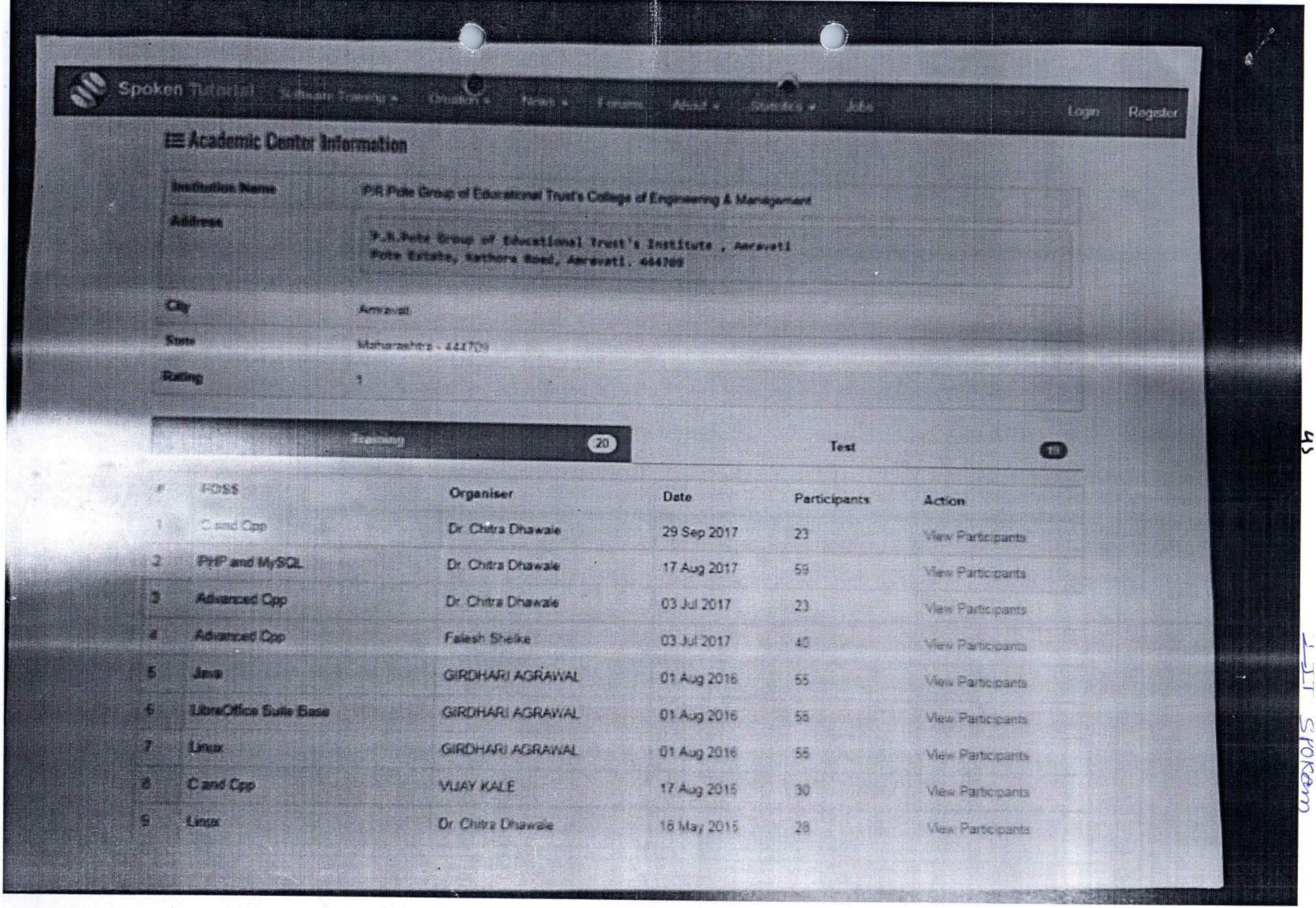
P.R.Pote College of Engineering and Management

NPTEL -LOCAL CHAPTER-1060

Result-Jan-June-2018

S.no	Course Name	Name	Role	Department	Final Score	Certificate Type
1	Database Management System	PRACHI V KALE	Faculty	Computer Science and Engineering	76	Elite+Silver
2	Database Management System	KRUTIKA KIRANCHAND CHHAJED	Faculty		75	Elite+Silver
3	**Soil Mechanics/Geotechnical Engineering I**	**HRISHIKESH RAUT**	**Student**	**Physics**	16	**No Certificate**
4	Power System Engineering	AJINKYA ANIL BHARDE	Student		48	Successfully completed

NPTL



IIT SPOKEN

Spoken Tutorial | Software Training | Creation | News | Forums | About | Statistics | Jobs | Login | Register

Academic Center Information

Institution Name	P.R.Pote Group of Educational Trust's College of Engineering & Management
Address	P.R.Pote Group of Educational Trust's Institute , Amravati Pote Estate, Kathora Road, Amravati. 444709
City	Amravati
State	Maharashtra - 444709
Rating	1

Training 20 | Test 10

#	FOSS	Organiser	Date	Participants	Action
1	C and Cpp	Dr. Chitra Dhawale	29 Sep 2017	23	View Participants
2	PHP and MySQL	Dr. Chitra Dhawale	17 Aug 2017	59	View Participants
3	Advanced Cpp	Dr. Chitra Dhawale	03 Jul 2017	23	View Participants
4	Advanced Cpp	Falesh Shelke	03 Jul 2017	40	View Participants
5	Java	GIRDHARI AGRAWAL	01 Aug 2016	55	View Participants
6	LibreOffice Suite Base	GIRDHARI AGRAWAL	01 Aug 2016	55	View Participants
7	Linux	GIRDHARI AGRAWAL	01 Aug 2016	55	View Participants
8	C and Cpp	VIJAY KALE	17 Aug 2015	30	View Participants
9	Linux	Dr. Chitra Dhawale	18 May 2015	28	View Participants

Certificate for Completion of Advanced Cpp Training

Talk To A Teacher

This is to certify that **PRIYANKA LODH** has successfully completed **Advanced Cpp** test organized at P.R.**Pote Group of Educational Trust's College of Engineering & Management** by **Falesh Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR** at **P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the **Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India.**

September 26th 2017

Prof. Kannan M Moudgalya
IIT Bombay

Certificate for Completion of Advanced Cpp Training

This is to certify that **ANUSHRI SHIRBHATE** has successfully completed **Advanced Cpp** test organized at **P.R.Pote Group of Educational Trust's College of Engineering & Management** by **Falesh Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR** at **P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the **Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt., of India.**

September 26th 2017

Prof. Kannan M Moudgalya
IIT Bombay

Certificate of Completion of Advanced Cpp Training



This is to certify that **SHAMALI PARADAKHE** has successfully completed **Advanced Cpp** test organized at **P.R.Pote Group of Educational Trust's College of Engineering & Management** by **Ealesh Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR at P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the **Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India.**

September 26th 2017

Prof. Kannan M Moudgalya
IIT Bombay

Certificate for Completion of Advanced Cpp Training

This is to certify that AVANTI DESHMUKH has successfully completed Advanced Cpp test organized at P.R.Pote Group of Educational Trust's College of Engineering & Management by Falesh Shelke with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. ATUL JAMNEKAR at P.R.Pote Group of Educational Trust's College of Engineering & Management invigilated this examination. This training is offered by the Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India.

September 26th 2017

Prof. Kannan M Moudgalya
IIT Bombay

V-Lab

P. R. Pote Patil Edu. & Welf. Trust's, Group of Institutions, College of Engineering & Management, Amravati

(Recognized by AICTE, New Delhi, DTE, Mumbai & Affiliated to SGBAU, Amravati)

Pote Estate, Pote Patil Road, Kathora, Amravati (Maharashtra)

To,
Prof. Santosh Narouba
Lab 125B,
Dept. of Chemical engineering,
IIT Bombay, Powai, Mumbai-76

Subject- Request for setting up virtual lab's nodal center

Respected Sir,

P. R. Pote Patil Group of Educational Institute, Amravati is foremost name in higher education in Vidarbha region of Maharashtra. The group offers under graduate and post graduate courses in various disciplines of engineering, management and technology. The group aims to develop a pursuit of knowledge in students, commitment to economic, social and cultural upliftment of masses

P. R. Pote Patil College of Engineering and Management has been started in the year [illegible] with vision design student's future scientifically. Within a short span of years, the institute has [illegible] strong footing amongst all the technical colleges of Amravati region.

[illegible] Engineering (UG) courses are offered by the institute:

1. Electronics & Tele Communication Engineering
2. Mechanical Engineering
3. Computer Science & Engineering
4. Electrical Engineering
5. Civil Engineering

[illegible] Engineering (PG) courses are offered by the institute:

1. [illegible] in [illegible] System
2. [illegible] in Computer Science & Engineering
3. [illegible] Electronics & Tele Communication Engineering
4. [illegible] in Thermal Engineering
5. [illegible]

[illegible] our head of departments had participated in virtual lab outreach workshop [illegible] of Engineering & Technology at Nagpur. Fascinated with this [illegible] up virtual labs nodal center in our premises. We all adequate [illegible] as mentioned in expression of interest Eligibility documents. [illegible] conditions and also ready to disseminate the use of facility in [illegible]

[illegible] you to grant us permission to establish virtual lab nodal center. [illegible] and do the needful.

An initiative of Ministry of Human Resource Development
under the National Mission on Education through ICT
www.vlabs.iitb.ac.in

Santosh Noronha
Chemical Engineering ;
Healthcare, Educational Tech... ;
Indian Institute of Technology Bombay, Powai, Mumbai, 400 076, India.

noronha@iitb.ac.in
(22)25767238 / 25764246
(22)25764227

Ref No: VL/MP2/NC50/004

Date: 2nd May 2017

To,
The Principal
P.R.Pote College of Engineering & Management,
Pote Patil Road, Pote Estate,
Kathora, Amravati
[illegible]

Dear Sir,

With reference to your Expression of Interest for Virtual Labs Nodal Centre (VLNC), it gives me immense pleasure to designate your college as a Nodal Centre for Virtual labs. As recommended by you, Prof.V.B. Gadicha has been nominated as the Nodal Coordinator from your college. This approval is valid up to 31st Dec 2017 and is subject to the Terms & Conditions attached and any subsequent directives as issued by MHRD.

Kindly acknowledge receipt of this letter and acceptance of the Terms & Conditions.

[illegible] thank you for your interest in the Virtual Labs project and appreciate your [illegible] in the service of the student community. Wishing you all the best!

P. R. Pote College of Engineering & Management, Amravati

Virtual Labs Nodal Centre (VLNC)

Activity: Students Training Session on Virtual Labs.

Date: 25/09/2017-06/10/2017 MONTH: Sept, Oct 2017

Session Time: 11.00- 3.30 pm

Venue: Virtual Lab, P.R. Pote COEM, Amravati

Department: All

Total No. of Users: 1454

Total Usage (No. of Experiments): 8095

Sr. No.	Department	No. of Users	No of Expt Usage
1	CSE	394	2126
2.	EXTC	25	370
3.	ELEC	387	1800
4.	MECH	69	392
5.	CIVIL	195	915
6.	FIRST YR	384	2492
	Total	1454	8095

Coordinating Team:

1. Prof. F. M. Shaikh
2. Prof. A. K. Jamnekar
3. Prof. A. Pawade
4. Prof. Tausif Mohammad
5. Prof. Shaikh
6. R. Ingole
7. S. Dhole

Main System Support: Prof. F. M. Shaikh

Nodal Centre Coordinator: Prof. V. B. Gadicha

Outreach Team from IITB: Mr. Pushpdeep Mishra, Project Manager, IITB-V Labs

Head of the Institute

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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3.3 Research Publications and Awards

3.3.1 - Incentive to the teachers who receive recognition/awards

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3	Electrical Engg.	57-58

3.3 Research Publications and Awards

3.3.1 - Incentive to the teachers who receive recognition/awards

Department	State	National	International
CSE	Nil	01	01
Elect. Engg.	01	Nil	Nil
Total	**01**	**01**	**01**

Gmail akshay dhande <akshaydhande126@gmail.com>

Fwd: Acceptance Letter of AJAST Journal

1 message

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Dear Puja Potdar, Roshani Bele, Pratiksha Bawankule, Priti Motghare, A.B. Gadicha,

Your paper is accepted for publication in **Asian Journal of Applied Science and Technology in April Issue to be published on 06-05-2018**

Paper ID: AJAST1299

Paper Title: Mechanism of Identifying Network Sharing System

Article Processing Fees
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P.R.Pote (Patil) College of Engg. & Management

Asian Journal of Applied Science and Technology (.
(Open Access Quarterly International Journal) Volume 2. Issue 2. Pages 852-856. April-Ju

/ Automation in Vehicle Overtaking

tdar[1], Roshani Bele[2], Pratiksha Bawankule[3], Priti Motghare[4] and A.B. Gadicha[5]

t, Final Year, CSE Department, P.R. Pote College of Engg & Tech, Amravati, India.
, CSE Department, P.R. Pote College of Engg & Tech, Amravati, India.

eived: 01 March 2018 *Article Accepted: 09 April 2018* *Article Published: 08*

ABSTRACT

esktop Protocol (RDP) allows a client to communicate with a Windows server. With RDP, you can run applications on a serv
ent. Windows series server is one kind of the most widely used servers nowadays. And there are plenty of scenarios for people to
ote locations. RDP uses authentication and encryption to prevent traffic from leak. But the methods used have vulnerabilities
attacks. In this paper, a security enhanced approach is proposed and implemented Remote desktop sharing allows for sh
n with one or more people over the Internet. The participants receive the screen-view of the shared application from the server. Th
ard events are delivered and regenerated at the server. Application and desktop sharing enables collaborative work software for

H.O.D. (Comp. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

Date: 05/05/2018

TO,

The Principal,
P.R.P.C.E.M,
Amravati.

Subject:- Request for Granting the Amount Rs. 600/- for Research paper

Respected Sir/Madam,

I Mr. A.B. Gadicha, working as Assistant Professor in CSE dept. Mam. my paper having id as AJAST1299 is accepted in Asian Journal of Applied science & technology. Vol-2 Issue-2, April-June-2018.

So, Sir/Madam, I am request you to please grant me some amount of registration fees of Rs. 600/-

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(A.B. Gadicha)

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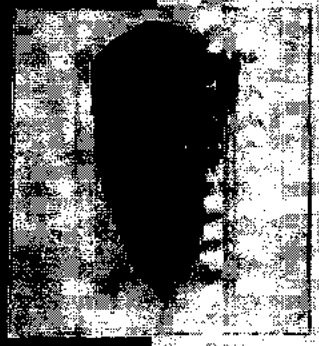

Dr. Sanjay Babarao Warkad

Best Academician Of The Year Award

Dr. Sanjay Babarao Warkad is Professor in Electrical Engineering, P.R. Pote (Patil) College of Engineering, Amravati. He has demonstrated excellence in academics, research and quality of his work. He is well known and highly regarded not only for his responsiveness, keen interest and knowledge in related field, thoroughness and accuracy, but also for his pleasant, kind, and calm demeanor. He always helps students, research scholars and faculties in related domain. His creativity in addressing research problems is useful to research fraternity and also strengthens relationship with outside organizations. His approach has improved the student experience and led to quality learning outcomes. His contribution in Academics, research, outcome based education is an exceptional teacher who deserves REAA's Award of Merit.

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Vice President-CSERD

(1D-R)
3.3.1

Research Excellence & Academic Awards

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3.3.2 - Ph. Ds awarded during the year (applicable for PG College, Research Center)

Name of the Department	No. of Ph.Ds Awarded
Mechanical Engineering	01
Electrical Engineering	01
Total	**02**

विश्वेश्वरय्या राष्ट्रीय प्रौद्योगिकी संस्थान नागपुर – [illegible]
VIVESVARAYA NATIONAL INSTITUTE OF TECHNOLOGY, NAGPUR – [illegible] (INDIA)

Ph.D. Notification

[illegible]
May [illegible], 2017

It is notified for general information that the following candidate is hereby declared eligible for the Award of Degree of Doctor of Philosophy.

Name of the Candidate	Title of Thesis	Department	Name of Supervisor/ Co-Supervisor and Address
Mr. Vipin Bhaskarana Gawande Department of Mechanical Engineering	"Effects of RIB shape on Thermo Hydraulic Performance of Roughened Solar-Air Heater"	Mechanical Engineering	1. Dr. A S Dhobhi, Mechanical Engineering, VNIT, Nagpur 2. Dr. D B Zodpe, Mechanical Engineering, VNIT, Nagpur

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विज्ञान व तंत्रज्ञान आचार्य

Doctor of Philosophy

(Faculty of Science and Technology)

This is to certify that

Mrs. Aparna Sadanand Telang

having been found to be duly qualified on examination of the thesis on

Optimal Location And Sizing Of Statcom For Improving Load Side Voltage Stability

was admitted to the degree of
Doctor of Philosophy in the subject **Electrical Engg.**
in the faculty of **Science and Technology** in this University in the year 2018.

Vice-Chancellor

Amravati:
23.02.2018

Sr. No : 41492

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.3 Research Publications and Awards

3.3.3 - Research Publications in the Journals notified on UGC website during the year.

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6	EXTC	137-151
7	MCA	152-156
7	MBA	157-159

3.3.3 - Research Publications in the Journals notified on UGC website during the year

Sr. No.	Departments	No. of Publications		Average Impact Factor, if any
		National	International	
01.	Science & Humanities	00	15	-
02.	CSE	00	15	-
03.	Mech. Engg	00	10	4.2
04.	Elect. Engg.	00	18	4.5
05.	Civil Engg.	00	01	-
06.	EXTC	00	17	-
07	M.C.A	00	05	-
08.	MBA	01	02	-
	Total	**01**	**83**	-

Review Article

SUPPLY CHAIN MANAGEMENT: A REVIEW

Parag Wadnerkar[1] and Dalu R.S[2]

GCOE Amravati

DOI: http://dx.doi.org/10.24327/ijcsr.2017.0803.0085

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Key Words:
Supply chain management (SCM), Quality, Quality management, Gap analysis, Medium scale industries, Quality Analysis.

ABSTRACT

In the present competitive world, the dynamics of market does not allow any deviation in quality of end product. Therefore, the importance of quality management is universally espoused by the researchers and practicing managers working in this area. During review of the open literature available in this area, the we observed that in present scenario there are number of related issues in supply chain management which needs immediate attention of the researchers. In this context the quality of supply chain itself can provide a path breaking solution at different levels of supply chain management. In this paper, the we have reported intensive studies based on the work carried out by various researchers in the area of supply chain management in medium scale industries in Maharashtra. Further, an attempt has also been made to identify conceptual interlinking between Supply chain management and Quality management through literature review.

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INTRODUCTION

Supply chains encompass the companies and the business activities needed to design, make, deliver, and use a product or service. Businesses depend on their supply chains to provide them with what they need to survive and thrive. Every business fits into one or more supply chains and has a role to play in each of them. A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves.

SCM assists the business organization to compete in the dynamic international market. The objective of SCM is to incorporate activities across and within organizations for providing the customer value. This should also be applicable to the academia, which represents a type of non-profit organizations. The goal is to provide the society value by producing high quality graduates and research outcomes. An industrial supply chain involves coordination and information sharing up and down the process among all stakeholders. With technology facilitating information flow, a coordinated supply chain can be designed to meet the strategic, planning, and operating objectives of the educational institutions. It also means establishing effective and feasible relationships both inside and outside the organization.

A collection of items held by an organization for future utilization is known as inventory and a set of policies known as the inventory system. The inventory can be stocked by diverse stages along the production and distribution supply chain. The inventory system aids in estimating the amount of each item to be hoarded, when the low items should be replenished and the number of items that need to be ordered or manufactured once replenishment becomes necessary. An supply manager is responsible to arrive at a decision in which offers to accept besides updating the estimated future inventory replacement costs.

The concept of SCM has received increasing attention from academicians, consultants, and business managers. Many organizations have begun to recognize that SCM is the key to building sustainable competitive edge for their products and services in an increasingly crowded marketplace. The concept of SCM has been considered from different points of view in different bodies of literature, such as purchasing and supply management, logistics and transportation, operations management, marketing, organizational theory, and management information systems. Various theories have offered insights on specific aspects or perspectives of SCM, such as industrial organization and associated transaction cost

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MANAGEMENT IN MEDIUM SCALE AGRO IMPLEMENTS MANUFACTURING INDUSTRIES

1.Prof. Parag Wadnerkar 2.Prof. Dr. R.S. Dalu

1PhD Scholar, [illegible]

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Abstract

This research paper gives an insight about the status of supply chain issues occurring in medium scale agro implements manufacturing industries enterprises (MSE). In this context the main focus has been given on study of agro manufacturing industries in vidarbh region and too many factors are taken into consideration that affect overall progress of [illegible] manufacturing industries. Study suggest that, region have a considerable scope for small scale industries.

Keywords:

Agricultural industries, Agricultural industries supply chain management, Agro food Market

1. INTRODUCTION

A supply chain is a network of facilities and distribution options that performs the functions of procurement of material, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. Supply chains exist in both service and manufacturing organizations, although the complexity of the [illegible] may vary greatly from industry to industry and firm to firm.

Supply chain management is normally seen to lie between completely vertically incorporated firms, where the [illegible] material stream is claimed by a solitary firm and those where each channel part works freely. Along these [illegible] coordination between the different players in the chain is enter in its successful management. Cooper and Ellram [illegible] contrast supply chain management with an all around adjusted and very much rehearsed transfer group. Such a group [illegible] more focused when every player knows how to be situated for the hand-off. The connections are the most groundwork between players who specifically pass the rod, however the whole group needs to try to win the race.

Some plays a vital role in organization activities and an essential element to operational efficiency which can be applied [illegible] customer satisfaction and company's success. You can say that it is just like the backbone of an organization. An

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Structural and Morphological Analysis of ZnO Nanoparticles filled Low Density Polyethylene Thin Films

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Abstract

This paper describes the studies related to ZnO nanoparticles (0, 0.5, 1, 3 and 5 wt. %) filled Low Density Polyethylene (LDPE) thin films prepared by solution casting technique. The synthesized ZnO/LDPE nanocomposite thin films were analyzed by XRD, SEM and FTIR. Peaks in X-Ray Diffraction (XRD) pattern indicate the presence of ZnO nanoparticles in LDPE matrix and absence of any extra peak in the pattern shows there is no new phase formation. The Scanning Electron Microscope (SEM) images showed that the nano inclusions are uniformly distributed in the LDPE matrix. Fourier Transform Infrared (FTIR) result indicates the presence ZnO nanoparticles in LDPE thin films.

Keywords: Nanocomposite, Thin Film, XRD, SEM, FTIR

I. Introduction

The integration of inorganic nanoparticles into a polymer matrix allows both properties from inorganic nanoparticles and polymer to be combined/ enhanced. Polymers- inorganic nanocomposites attract considerable interest due to the outstanding mechanical, optical, electrical, and thermal properties encountered with only a small quantity of nanofiller incorporated to the polymer matrix. This is caused by the large surface area to volume ratio of fillers when compared to micro- and macro-scale additives [1].

Low density polyethylene is among the most versatile polymers, but its uses are limited due to several drawbacks, namely low strength, stiffness and poor heat resistance. To overcome these drawbacks and to prepare material with improved properties, fillers are incorporated into the matrix [2]. Fillers can affect the dimensional stability, crystallinity, mechanical and other properties of polymers [3, 4]. Numerous studies have also been performed to investigate the space charge distribution and electrical conduction in polyethylene systems.

Zinc Oxide is an important electronic and photonic material which possesses semiconducting and piezoelectric properties. It is a semiconductor, with a direct band gap of 3.37 eV and a large excitation binding energy (60 meV) [5]. Nanosized inorganic semiconductor materials have attracted considerable efforts in recent years. Zinc oxide is an interesting material has been widely used in application such as UV protection, photo catalysis filed emission displays, veristors, gas sensors, function devices, thermoelectric materials, etc due to its exceptional physical & chemical properties [6].

Many research groups have focused on dispersing metal oxide nanoparticles into polymer matrix, as the hybrid nanocomposites not only inherit the functionalities of semiconductor nanoparticles but also possess advantages of polymers such as flexibility, film integrity, and conformity [7].

Polymer Inorganic Nanocomposite of LDPE and Zinc Oxide nanoparticles can exhibits some novel properties. Thus in the present work, Zinc oxide/ LDPE nanocomposites were prepared by adding the ZnO nanoparticles in different weight % (0, 0.5, 1, 3 and 5) in LDPE. The structural and morphological studies of ZnO/polymer nanocomposite films were carried out using XRD, SEM and FTIR analysis.

II. Experimental

Thin films of ZnO/LDPE nanocomposites were prepared by using solution - cast technique [8]. Commercial grade granular LDPE was dissolved in Xylene using hot plate magnetic stirrer at 100°C for 2 hrs so as to obtain clear viscous solution. The hexagonal wurtzite structured Zinc oxide nanoparticles (ZnO NPs) with average crystalline size about 80 nm, synthesized by a simple

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Research Article

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CODEN(USA) : JCPRC5

Ultrasonic Study of Substituted Quinoxaline in Ethanol Solvent at 305.85 K

N A Kalambe*

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ABSTRACT

The density (d) and ultrasonic velocity (v) values have been measured in the solvent ethanol containing 2-hydroxy substituted quinoxaline using different concentration at 305.85 K. The experimental data of density (d), ultrasonic velocity (v), adiabatic compressibility (β), intermolecular free length (L_f), specific acoustic impedance (Z) and relative association (R_A) were calculated. The results obtained in this study have been interpreted in terms of different interactions among solute-solute and solute-solvent.

Keywords: Substituted quinoxaline; Ultrasonic velocity; Density; Acoustic parameter

INTRODUCTION

Acoustic parameters were studied to solute-solute and solute-solvent interactions in different solvents. Acoustic parameters provide important and valuable information regarding internal structure, molecular association, complex formation, internal pressure, stability of complexes. In view of analytical, medicinal, agricultural industrial, pharmaceutical significance [1-10]. The variation of ultrasonic velocity and other acoustic parameters along with their excess values in binary and ternary liquid mixtures has been investigated by different authors [11-14]. Ultrasonic study of substituted azamethine drugs in binary mixture [15]. Ultrasonic studies on molecular interaction of benzaldehyde, cinnamaldehyde, 4-methoxy benzaldehyde and diethylamine in n-hexane solutions at 303 K [16]. Molecular interactions in ternary liquid mixture involving toluene at different frequencies [17]. A comparative study of excess Gibb's free energy function values in three binary liquid mixtures containing quinoline and o, m, p-xylenes at different temperatures 303.15, 308.15, 313.15 and 318.15 K [18]. Ultrasonic and volumetric study of aqueous solution of ethylene glycol, propylene glycol in iso-propanol [19]. Viscometric study of carboxymethyl phenol formaldehyde resins in 1,4-dioxane solvent [20]. Volumetric study of strong electrolyte - metal chlorides and metal sulphate in aqueous medium at different temperatures [21]. Volumetric, viscometric and derived surface tension studies on the solutions of potassium dichromate and potassium pyrophosphate in aqueous sorbitol solutions [22]. Study of some important acoustical parameters of substituted-N, N'-bis(salicylidene)-arylmethanediamines in 60% DMF-water at 300 K [23].

Study of thermodynamic properties of Choline chloride urea in aqueous media at different temperatures [24]. Excess Gibb's free energy function values at different temperatures in binary liquid mixture for the study of molecular interactions [25]. For the present work we have chosen the ultrasonic interferometric technique in order to discuss intermolecular interactions. It is of interest to investigate the acoustic parameters such as adiabatic compressibility (β), intermolecular free length (L_f), specific acoustic impedance (z) and relative association (R_A) of substituted quinoxaline in ethanol solvent at different concentrations of ligand. The different substituted quinoxaline ligand used for present work as;

1) 2-(2-Hydroxy-5-chloro)-benzyl-3-phenyl quinoxaline (L_1)
2) 2-(2-Hydroxy-5-chloro)-benzyl-3-(4-methoxy phenyl) quinoxaline (L_2)
3) 2-(2-Hydroxy-3-bromo-5-chloro)-benzyl-3-phenyl quinoxaline (L_3)
4) 2-(2-Hydroxy-3-bromo-5-chloro)-benzyl-3-(4-methoxy phenyl) quinoxaline (L_4)

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Synthesis and Study Of 2–Hydroxy Substituted Quinoxaline Effects on Different Crop Plant Growth

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Amravati-444604 (M.S.) India
E-mail: nilimakalambe09@gmail.com

Abstract

As the population of the world is increasing day by day and land holding capacity is going to decreasing. Soil is great [illegible] the nation by increasing the productivity of crop. Synthesis of 2-hydroxy substituted quinoxaline [illegible] 2-hydroxy substituted chalcone dibromide and chalcone dibromide condensed with BDA in methanol solvent. 2-Hydroxy substituted quinoxaline gives 2-(2-hydroxy-5-chloro) benzyl-3,4-methoxyphenyl quinoxaline, 2-(2-hydroxy-5-chloro) benzyl-3-phenyl quinoxaline, 2-(2-hydroxy-3-bromo-5-chloro) benzyl-3-(4-methoxy phenyl) quinoxaline and 2-(2-hydroxy-3-bromo-5-chloro) benzyl-3-phenyl quinoxaline respectively. The structure of ligands was elucidated on the basis of molecular weight, elemental analysis and spectral data. In crop growth, growth hormones may play important role such as increase in height of plant, number of leaves per plant, number of pods per plant etc., which reflects yield of crop. The synthesized substituted quinoxalines were used for seed treatment as well as foliar application to find out their effect on plant growth as well as in respect of seed yield viz. Soybean (*Glycine max* (L.) Merill), Groundnut (*Arachis hypogaea*) and Chickpea (*Cicer arientinum*). The synthesized ligands showed significant effect on crop plants growth.

Keywords:- Chalcone dibromide, Substituted quinoxaline, Growth promotion hormonal effect, Soybean, Groundnut, Chickpea

Introduction

Chalcone have been associated with diverse biological activities, e.g. cardiovascular, antiviral[1], anticancer and industrial application[2]. Utale et al[3] reported chalcone dibromide by the reaction of bromine in 25% w/v acetic acid with 3-substituted-2-hydroxy-5-chloro chalcone. Khadsan et al[4] synthesized [illegible] α,β-acrylophenone dibromide from acrylophenones by bromination using acetic acid.

Antibacterial activity of novel substituted quinoxaline were studied by Noorulla and Sreenivasulu[5]. Antimicrobial activities of some substituted quinoxaline-2-(1H)-one derivatives were studied by Ghadge and Shirote[6]. The novel quinoxaline derivatives were studied by More et al[7]. Maurya et al[8] reported the growth promoting effects of pyrazolines and isoxazoline on agriculture crop plants. Substituted isoxazolines and pyrazolines in 70% dioxane-water mixture and effect on seed germination were studied by Meshram et al[9]. Ramteke et al[10] have been studied the effect of chlorosubstituted pyrazoles and their complexes on Spinach (Spinacia oleracea L.) at different pH. Synthesis and growth promoting effects of chloro-substituted heterocycles on agricultural crop plants have been studied by Parhate et al[11]. Synthesis and study of 2-hydroxy substituted chalcone dibromide effects on different crop plant reported by Kalambe et al[12].

MATERIALS AND METHODS

All chemicals used to synthesize substituted chalcone dibromide and substituted quinoxaline were of IR grade. The structure of ligands was elucidated on the basis of molecular weight, elemental analysis and spectral data. Physical and analytical data of synthesized compounds are summarized in Table-1.

Preparation of 2-hydroxy substituted chalcone dibromide

The 2-hydroxy substituted chalcone was dissolved in boiled glacial acetic acid. A solution of bromine in acetic acid was added to this solution with constant stirring. The product of 2-hydroxy substituted chalcone dibromide was filtered and washed with alcohol followed by petroleum ether.

a. 5 Chloro-2-hydroxy chlacone dibromide (1)
b. 5-Chloro-2-hydroxy-4-methoxy chlacone dibromide (2)
c. 3-Bromo-5-chloro-2-hydroxy chlacone dibromide (3)
d. 3-Bromo-5-chloro-2-hydroxy-4-methoxy chlacone dibromide (4)

Preparation of 2-hydroxy substituted quinoxaline

The 2-hydroxy substituted chalcone dibromide and BDA were condensed in methanol. A few drops of concentrated H_2SO_4 were added and heated on water bath. It was diluted with water and crude mass was extracted with solvent ether. Ether was removed and solid residue was crystallized from dilute

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Journal of Chemical and Pharmaceutical Research, 2017, 9(12):148-154



Research Article

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CODEN(USA) : JCPRC5

Ultrasonic Behaviour and Study of Molecular Interaction of Hydroxy Substituted Quinoxaline in Dioxane Medium

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Department of Chemistry, P.R. Pote (Patil) College of Engineering & Management, Amravati, Maharashtra, India

ABSTRACT

Density (d) and ultrasonic velocity (v) of 2-hydroxy substituted quinoxaline in dioxane were measured at 305.85 K temperature by using ultrasonic interferometer at a frequency of 1 MHz. The study was carried out with change in concentrations. Various thermodynamic parameters such as adiabatic compressibility (β) intermolecular free length (L_f), specific acoustic impedance (Z) and relative association (R_A) were calculated. The results were used to discuss the interaction between solute and solvent. The results are interpreted in terms of molecular interactions like solvent-solvent, solvent-solute and solute-solute.

Keywords: Ultrasonic velocity; Density substituted quinoxaline

INTRODUCTION

The molecular interaction technique plays a great role for the detection of molecular association, complex formation, internal pressure etc. Ultrasonic is the technique used for the study of molecular interaction in liquids. The structural arrangements are influenced by the shape of the molecules as well as by their mutual interactions. Studies of some ultrasonic parameters of substituted Schiff base in dimethyl formide and ethanol at different temperature [1]. Ultrasonic studies on molecular interactions of $ZnSO_4$ in aqueous solutions of glucose at various concentrations [2]. Molecular interactions in non-electrolyte binary liquid mixtures of cyclohexanol with 2-nitrotoluene and 3-nitrotoluene at four different temperatures [3] and Ultrasonic study of molecular dynamics in some binary mixtures [4]. Ultrasonic studies of molecular interactions of certain zinc electrolytes in poly (ethyleneglycol) [5]. The study of thermophysical properties of binary liquid mixtures of 2-(2-methoxy ethoxy) ethanol (methyl carbitol) with n-butyl amine, sec-butyl amine, tert-butyl amine, n-hexyl amine, n-octyl amine and cyclo hexyl amine at 308.15 K [6] and molecular interaction studies on pharmaceutical drug of 2-[1-(aminomethyl) cyclohexyl] acetic acid in water of various concentrations at 303 K [7]. In view of the analytical, medicinal, agricultural, industrial, pharmaceutical significance [8-12]. It is of interest to investigate the acoustic parameters such as adiabatic compressibility (β) intermolecular free length (L_f), specific acoustic impedance (z) and relative association (R_A) in dioxane solvent respectively. For the present work we have chosen the ultrasonic interferometric technique in order to discuss intermolecular interactions. From the literature survey it was seen that much work has been done on water and organic solvent mixtures [13-18]. But scanty work is found in pure dioxane solvent. Also the review does not reveal any attempt made on ultrasonic interferometric study of 2-hydroxy substituted quinoxaline.

EXPERIMENTAL SECTION

All the chemicals used were of A.R. grade. 1,4-Dioxane were purified by described method [19]. Densities were measured with the help of bicapillary Pyknometer with different concentration solution of ligand in dioxane solvent were prepared separately, that weighed on Mechaniki Zaktady Precynynei Gdansk balance made in Poland (± 0.001

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Article

Bianchi Type-I Cosmological Model in the Presence of Wet Dark Fluid with Magnetic Flux

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Abstract

The object of this paper is to investigate the nature of Bianchi type-I cosmological model in presence of wet dark fluid and magnetic flux. To obtain deterministic solution of said model a few plausible assumptions regarding to it are introduced such as scalar expansion θ is proportional to eigen value σ_1^1 of shear tensor σ_j^i. A new equation of state for the dark energy component of the universe has been used. It is modelled on the equation of state $p = \gamma(\rho - \rho_*)$ which can describe a liquid, for example water. The exact solutions to the corresponding field equations are obtained in quadrature form. The solution for constant deceleration parameter have been studied in detailed for both power-law and exponential form. In addition to this we have discuss the geometrical and physical properties of said model.

Keywords: Bianchi type-I space-time, Wet dark fluid (WDF), Magnetic flux, Cosmological parameters.

1. Introduction

The occurrence of magnetic field on a galactic scale is well established fact today and their importance for a variety of astrophysical phenomenon is generally acknowledged by several au hors. The renowned authors, Reiss et al. [1], Perlmutter et al. [2], Sahni [3] have studied the nature of the dark energy component of the universe as the one of the deepest mysteries of universe. We are motivated to use the wet dark fluid (WDF) as a model for a dark energy which stems from an empirical equation of state proposed by Hayward [4] and Tait [5] to treat water and aqueous solutions. Modification of the Friedmann equation such as Cardassion expansion referred by Freese et al.[6], Freese [7], Gondolo et al.[8] as well as what might be derived from brane cosmology given by Deffayet et al.[9], Dvali et al.[10], Dvali et al.[11] have also been used to explain the acceleration of the universe.

Harrison [12], Asseo and Sol [13] and Kim et al.[14] have pointed out the importance of magnetic field in the different context. Saha [15] has investigated Bianchi type-I string

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Magnetized Anisotropic Bianchi Type-V Cosmological Model for Two Fluids in General Relativity

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Abstract: In this paper we have investigated Bianchi type-V two fluid cosmological model i.e. with the matter and radiation content in presence of magnetic field. In this model one of the fluid represents the matter dominated era and other fluid represents the cosmic microwave background (CMB) radiation. The magnetic field is due to electric current along x-axis i.e. F_{23} is the only non-vanishing component of electromagnetic field tensor F_{ij}. Here we discuss the physical properties of model and behavior of kinematical parameters in both the cases.

Keywords: Bianchi type-V cosmological model, Cosmic microwave background (CMB) radiation, Electromagnetic field

Date of acceptance: 24-11-2017

I. Introduction

Cosmology is the study of the origin, present state and the future of the Universe. The Bianchi cosmologies which are spatially homogeneous and anisotropic play an important role in the theoretical cosmology and have been studied since 1960's. The simplest models which are spatially homogeneous and anisotropic and which describe the expanding universe are those which are spatially homogeneous but not isotropic. Such models are known as Bianchi models. Bianchi type-V cosmological models have been studied by Taub [1], Stewart et al. [2], Heinzle et al. [3], Collins [4], Coley et al. [5].

The astrophysical significance of magnetic field on the cosmic scale is well established fact today and it's important for a variety of cosmological models in the early stages of their evolution is acknowledged by several authors, Harrison [6], Asseo [7] and Kim et al. [8] have discussed that the presence of magnetic field in the different context. As natural consequences we should include magnetic field in the early energy-momentum tensor of early universe. Kandalkar et al. [9] have investigated Bianchi type-V two fluid cosmological model.

The cosmic background radiation (CMB) is one of the strongest pieces of the homogeneous, isotropic model. Anisotropies in the CMB are the small perturbations superimposed on the perfectly smooth background, which are believed to be responsible for the galaxies and large scale structure in the universe. Coley et al. [10] have studied Bianchi type-I cosmological two fluid models. Patil et al. [11] has been investigated two fluid cosmological models using Bianchi type-I spacetime. Ali [12] has presented anisotropic, homogeneous two fluid cosmological models in a Bianchi type-I space time with a variable gravitational constant and cosmological constant. Recently, Adhav et al. [13] examined two fluid cosmological models in Bianchi type-V spacetime. Also, Pawar et al. [14] has obtained Bianchi type-IX two fluid cosmological models. Katore et al. [15] has investigated magnetized Bianchi type-I cosmological model in scalar tensor theory of gravitation proposed by Saez and Ballester in which they used the magnetic field produced due to electric current along x-axis. Recently, Patil et al. [16, 17] has studied non shearing LRS Bianchi type-III and IX string cosmological model in presence of magnetic flux with bulk viscosity. Patil et al. [18, 19] has studied LRS Bianchi type-V cosmological model in presence of perfect fluid and magnetic flux with variable magnetic permeability and Bianchi type-IX cosmological model with two fluids in presence of magnetic flux.

In this paper, we have investigated Bianchi type-V cosmological model in presence of two fluid distributions with electro-magnetic field. By assuming F_{23} is the only non-vanishing component of electromagnetic field tensor F_{ij}. The physical and geometrical aspects of the models are also discussed.

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Tilted Kantowski–Sachs cosmological model in Brans–Dicke theory of gravitation

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Tilted Kantowski–Sachs cosmological model in Brans–Dicke theory for perfect fluid has been investigated. The general [illegible] of field equations in Brans–Dicke theory for the combined scalar and tensor [illegible] obtained by using power law relation. Also, some physical and geometrical [illegible] discussed.

Keywords: Tilted model; Kantowski–Sachs; Brans–Dicke theory; perfect fluid.

PACS No.: [illegible]

1. Introduction

At present, it is very interesting [illegible] the geometry and behavior of the model. Here we worked in anisotropic Kantowski–Sachs[1] cosmological model which plays a vital role in modern astrophysics and cosmology as it helps in discovering the early stages of evolution of the universe. In the Kantowski–Sachs spacetime, the spherical and translational symmetries are combined together in radial direction. It is one of the popular anisotropic models. Dynamics of Kantowski–Sachs model have been formulated by some researchers [illegible] Weber,[4] Gron,[4] Mattavers,[5] Dabrowski,[6] Tiwari and Dwivedi[7,8] have investigated Kantowski–Sachs cosmological models in

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Structural and Morphological Analysis of ZnO Nanoparticles filled Low Density Polyethylene Thin Films

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Abstract

This paper describes the studies related to ZnO nanoparticles (0, 0.5, 1, 3 and 5 wt %) filled Low Density Polyethylene (LDPE) thin films prepared by solution casting technique. The synthesized ZnO/LDPE nanocomposite thin films were analyzed by XRD, SEM and FTIR. Peaks in X-Ray Diffraction (XRD) pattern indicate the presence of ZnO nanoparticles in LDPE matrix and absence of any extra peak in the pattern shows there is no new phase formation. The Scanning Electron Microscope (SEM) images showed that the nano inclusions are uniformly distributed in the LDPE matrix. Fourier Transform Infrared (FTIR) result indicates the presence ZnO nanoparticles in LDPE thin films.

Keywords: Nanocomposite, Thin Film, XRD, SEM, FTIR

I. INTRODUCTION

The integration of inorganic nanoparticles into a polymer matrix allows both properties from inorganic nanoparticles and polymer to be combined/ enhanced. Polymers- inorganic nanocomposites attract considerable interest due to the outstanding mechanical, optical, electrical, and thermal properties encountered with only a small quantity of nanofiller incorporated to the polymer matrix. This is caused by the large surface area-to volume ratio of fillers when compared to micro- and macro-scale additives [1].

Low density polyethylene is among the most versatile polymers, but its uses are limited due to several drawbacks, namely low strength, stiffness and poor heat resistance. To overcome these drawbacks and to prepare material with improved properties, fillers are incorporated into the matrix [2]. Fillers can affect the dimensional stability, crystallinity, mechanical and other properties of polymers [3, 4]. Numerous studies have also been performed to investigate the space charge distribution and electrical conduction in polyethylene systems.

Zinc Oxide is an important electronic and photonic material which possesses semiconducting and piezoelectric properties. It is a semiconductor, with a direct band gap of 3.37 eV and a large excitation binding energy (60 meV) [5]. Nanosized inorganic semiconductor materials have attracted considerable efforts in recent years. Zinc oxide is an interesting material has been widely used in application such as UV protection, photo catalysis, filed emission displays, varistors, gas sensors, function devices, thermoelectric materials, etc due to its exceptional physical & chemical properties [6].

Many research groups have focused on dispersing metal oxide nanoparticles into polymer matrix, as the hybrid nanocomposites not o y inherit the functionalities of semiconductor nanoparticles but also possess advantages of polymers such as flexibility, film integrity, and conformity [7].

Polymer Inorganic Nanocomposite of LDPE and Zinc Oxide nanoparticles can exhibits some novel properties. Thus in the present work, Zinc oxide/ LDPE nanocomposites were prepared by adding the ZnO nanoparticles in different weight % (0, 0.5, 1, 3 and 5) in LDPE. The structural and morphological studies of ZnO/polymer nanocomposite films were carried out using XRD, SEM and FTIR analysis.

II. EXPERIMENTAL

Thin films of ZnO/LDPE nanocomposites were prepared by using solution - cast technique [8]. Commercial grade granular LDPE was dissolved in Xylene using hot plate magnetic stirrer at 100°C for 2 hrs so as to obtain clear viscous solution. The hexagonal wurtzite structured Zinc oxide nanoparticles (ZnO NPs) with average crystalline size about 80 nm, synthesized by a simple

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Research Article

A SURVEY ON OPINION MINING ON TOURIST DOMAIN

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Abstract

Currently, most tourists use the internet for selecting their tourist place. To confirm their decision they take a review of experienced tourist. The web contains many websites which provide a review on tourist domain. This paper provides a survey of different methods used for classifying the review and proposed a method for suggesting the polarity of review and classifying the review according to the category suggested by the user.

Introduction

Today's world is the scientific world. In daily life, human can use all the things made from science and one of the most important thing is the Internet. Many social networking sites like Twitter, Face book, etc. are available on Internet. Internet provides the useful information to people. Many things are available on the Internet. Internet provides us huge volume of data. Peoples are using these sites in their day to day life. They are giving their opinion regarding the news that are posted on different websites available on Internet, also providing their feedback regarding different products, their opinion related to politicians etc. This opinionated data is used by the product manufactures to check the popularity of their product or to compare their product to the competitor and decide whether any changes have to be done in their product or not. Also, they checked their competitor's progress.

If anyone wants to buy some products they can check the review regarding that product on Internet. Then they can decide which product is good and which they have to purchase. This is the example of the product only, in this way the opinion not restricted to product only it may be for movies, restaurant, travel, TV serial, about any articles, post ,tourist places etc. and we get opinionated data by Internet and process that opinionated data for different purposes. Like opinion spam detection, emotion recognition, opinion classification, opinion summarization etc.

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A REVIEW ON DEVICE FORENSICS

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Abstract

Ontologies are widely used in different disciplines as a technique for representing and reasoning about domain knowledge. However, despite the widespread ontology-related research activities and applications in different disciplines, the development of ontologies and ontology research activities is still wanting in digital forensics. This paper therefore presents the case for establishing an ontology for digital forensic disciplines. Such an ontology would enable better categorization of the digital forensic disciplines, as well as assist in the development of methodologies and specifications that can offer direction in different areas of digital forensics. This includes such areas as professional specialization, certifications, development of digital forensic tools, curricula, and educational materials. In addition, the ontology presented in this paper can be used, for example, to better organize the digital forensic domain knowledge and explicitly describe the discipline's semantics in a common way. Finally, this paper is meant to spark discussions and further research on an internationally agreed ontological distinction of the digital forensic disciplines. Digital forensic disciplines ontology is a novel approach toward organizing the digital forensic domain knowledge and constitutes the main contribution of this paper.

KEYWORDS: ***digital forensics, ontology, ontological distinction, digital forensics disciplines, digital forensics subdisciplines.***

1. INTRODUCTION

Device forensics is a branch of digital forensics that deals with the collecting of digital evidence from different types of devices. Devices may range from small-scale devices such as mobile phones, personal digital assistants (PDAs), printers, scanners, cameras, fax machines etc. to large-scale devices such as the storage area network (SAN) and network attached storage (NAS) systems. The number of devices in this discipline of digital forensics is increasing daily and hence, it is the motivation why device forensics can be considered a separate and vast discipline of the digital forensic domain. For the purpose of this ontology, device forensics is divided into peripheral devices, network-enabled devices, storage devices, large-scale devices, small-scale devices, and obscure devices as shown in Fig. 1. This list should not be considered as exhaustive as most new digital devices could well be categorized within this discipline of the digital forensic ontology.

Device forensics is a branch of digital forensics that deals with the collecting of digital evidence from different types of devices. Devices may range from small-scale devices such as mobile phones, personal digital assistants (PDAs), printers, scanners, cameras, fax machines etc. to large-scale devices such as the storage area network (SAN) and network attached storage (NAS) systems. The number of devices in this discipline of digital forensics is increasing daily and hence, it is the motivation why device forensics can be considered a separate and vast discipline of the digital forensic domain. For the purpose of this ontology, device forensics is divided into peripheral devices, network-enabled devices, storage devices, large-scale devices, small-scale devices, and obscure devices as shown in Fig. 1. This list should not be considered as exhaustive as most new digital devices could well be categorized within this discipline of the digital forensic ontology.

2. LITERATURE REVIEW

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Survey on Route Optimization mechanism in Network Mobility

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Abstract- **The success of mobile communication, shows that the interest in users to access the Internet or their official networks on the move. This mobility support may be needed for a single user or group of nodes called as movable sub networks. Network Mobility (NEMO) protocol developed by IETF enables the mobile nodes and networks to maintain connectivity to their network or Internet by change their point of attachment to from one access network to another. NEMO is developed by extending host mobility support protocol, Mobile IPv6, but without providing route optimization. Next generation networks require an efficient route optimization scheme, optimized specially to support network mobility. This paper studies the existing modes of working in the NEMO. Meanwhile, summarize and analyze the Route optimization protocol to reduce the overhead and enhance the performance of a mobile network and give the overview of this area.**

I.INTRODUCTION

Mobile IPv6 is a very important part in the mobile computing for global Internet. An extension to Mobile IPv6 called Network Mobility (NEMO) has been specified in RFC 3963[1].The processes and messages are basically the same as in Mobile IPv6, except that in this case, the mobile node is a Mobile router (MR). It is assumed that a NEMO has a home network where it resides when it is not in motion. Since the NEMO is a component of the home network, it configures addresses belonging to the address block assigned to the home network (i.e., the home prefix). These addresses remain assigned to the NEMO network whenever it is away from home, i.e., a Mobile Network Prefix (MNP). Naturally, these addresses only have topological meaning when the NEMO is at home. When the NEMO is away from its home, i.e., when it is connected to aforeign network; the MR acquires an address from a visited network, called the Care of Address (CoA).In the current NEMO specification, communication between nodes in the mobile network and correspondent nodes goes through the home agent. Route Optimization has not been completely defined yet. Thus, NEMO has the problem of triangular routing and pinball routing [2] (when nesting occurs), resulting in increased latency and packet size. As next generation networks are expected to support real time multimedia applications that are highly time sensitive, the end-to-end delay should be kept under certain values. Therefore, one of the major issues in network mobility is route optimization. Route optimization techniques are required to handle the end-to-end delay. Many Researcher have been tried to make evolution in current NEMO and used route optimization techniques [3], [4], [5], [6], [7], [8], [9] for increasing performance of NEMO. Moreover, these approaches provide only partial solutions by optimizing only some sectors of the route between Correspondent Nodes(CNs) and Mobile Network Nodes (MNNs). More Research required to provide best solution. In this paper we studied various existing Route optimization techniques for Network Mobility with their features and drawbacks.

II. WORKING MODES IN NEMO

A .Network Mobility Basic Support (NEMO BS)

- **Triangular Routing**

In NEMO Node that are attached to a MR, Mobile Network Nodes (MNNs), are not aware of the network's mobility and do not perform any mobility functions. MRs also sends binding updates to their HAs. However, binding updates from MRs also contain the mobile network's network prefix. HAs will bind an entire network prefix to the MR's CoA and forward all packets for that network to the MR. IP packets from a correspondent node (CN) that are destined for a node on a mobile network (MN) are delivered via standard routing on the Internet to the HA of that MN. The HA tunnels the packets to the MR for delivery to the MNN. Reverse packets take the same path in the opposite direction; the MNN sends packets to the MR to be tunneled to the home agent and then sent out to the CN via standard routing on the Internet.The main drawback of triangular routing, i.e., packets are always forwarded through the HA, following suboptimal paths resulting in increased latency and packet size

B. NEMO Extended Support (NEMO ES)



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Analysis of Modified Rule Extraction Algorithm and Internal Representation of Neural Network

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Abstract: Classification and Rule extraction is an important application of Artificial Neural Network. To extract fewer rules from multilayer feed forward neural network has been a research area. The internal representation of the network is augmented by a distance term to extract fewer rules from the feed forward neural network and experimented on five datasets. Understanding affect of different factors of the dataset and network on extraction of a number of rules from the network can reveal important pieces of information which may help researchers to enhance the rule extraction process. This work investigates the internal behavior of neural network in rule extraction process on five different dataset.

Keywords: Rule extraction, Feed Forward Neural Network, Hidden units, Activation value, Hidden neurons.

1. Introduction

Classification and pattern recognition is one of the important application of Artificail Neural Network [Kamruzzan et al. 2011][Sheng and Qi 2011]. Classification rules, extracted by efficient rule extraction algorithm helps in decision process but concepts learned by neural networks are difficult to understand because they are represented using large assemblages of real valued parameters [Srivastava et al.,2015]. A neural network is trained on a training input sample. A multilayered network has more than two layers. The layer between input layer and output layer is called as hidden layer and hence neurons in hidden layer are known as hidden neurons. Each layer is connected to each other and each connection has a weight associated with it. Weights and biases are initialized with random values [Mia et al.,2015]. The training sample of input is given to the input layer, which gives an output of the layer by applying transfer function and weight to the input value. The output is then presented as input to hidden layer having its own transfer function, weights and biases. In this way the output of the hidden layer,

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Implementation of Protection Against Unauthorized Access using Sub-Space Outliers Ranking

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Abstract: ***The two knowledge-based approaches are not sufficient to tackle the anomaly detection problem, and that a holistic solution should also include knowledge-independent analysis techniques. There are some algorithms, and it becomes critical in the case of unsupervised detection, because there is no additional information to select the most relevant set some approaches can be easily extended to detect other types of attacks, considering different sets of traffic features. In fact, more features can be added to any standard list to improve detection and characterization results. The Knowledge of Independent Detection of Network Attack is simply to detect the attacks which are completely unknown to us. There is no previous knowledge about that data. There are some algorithms in existence which are used for network security but they are inefficient as they are knowledge based (Signature Based and Anomaly Based) whenever there is a vast amount of continuous incoming data then it is a big risk regarding the network attacks which are knowledge based. Our particular goal is to identify those attacks with the help of Robust Clustering Algorithm and make whole data secure.***

Keywords: Data Mining, Density Based, Partition Based clustering, UNADA

1. Introduction

The unsupervised detection of network attacks represents an extremely challenging goal. The detection of network attacks is a paramount task for network operators in today's Internet. Denial of Service attacks (DoS), Distributed DoS (DDoS), network/host scans, and spreading worms or viruses are examples of the different attacks that daily threaten the integrity and normal operation of the network. The principal challenge in automatically detecting and analysing network attacks is that these are a moving and ever-growing target. Two different approaches are by far dominant in the literature and commercial security devices: signature-based detection and anomaly detection. Signature-based detection systems are highly effective to detect those attacks which they are programmed to alert on. However, they cannot defend the network against unknown attacks. Even more, building new signatures is expensive and time-consuming, as it involves manual inspection by human experts. Anomaly detection uses labelled data to build normal-operation-traffic profiles, detecting anomalies as activities that deviate from this baseline. Such methods can detect new kinds of network attacks not seen before. Signature engines also have their disadvantages. Because they only detect known attacks, a signature must be created for every attack, and novel attacks cannot be detected. Signature engines are also prone to false positives since they are commonly based on regular expressions and string matching. Both of these mechanisms merely look for strings within packets transmitting over the wire. A disadvantage of anomaly-detection engines is the difficultly of defining rules. Each protocol being analyzed must be defined, implemented and tested for accuracy. The rule development process is also compounded by differences in vendor implementations of the various protocols. Custom protocols traversing the network cannot be analyzed without great effort. Moreover detailed knowledge of normal network behaviour must be constructed and transferred into the engine memory for detection to occur correctly. On the other hand, once a protocol has been built and a behaviour defined, the engine can scale more quickly and easily than the signature based model because a new signature does not have to be created for every attack and potential variant.[1]

Our approach relies on robust clustering algorithms to detect both well-known as well as completely unknown attacks, and to automatically produce easy-to-interpret signatures to characterize them, both in an on-line basis. The analysis is performed on packet-level traffic, captured in consecutive time slots of fixed length $6T$ and aggregated in IP flows (standard *5-tuples*). IP flows are additionally aggregated at 9 different *flow* levels *li*. These include: *source IPs*, destination IPs, source Network Prefixes, destination Network Prefixes, and traffic per Time Slot. The complete detection and characterization algorithm runs in three successive stages. The first step consists in detecting an anomalous time slot where an attack might be hidden. The unsupervised detection and characterization algorithm begins in the second stage, using as input the set of IP flows captured in the flagged time slot. The method uses robust clustering techniques based on Sub-Space Clustering (SSC), Density-based Clustering, and Evidence Accumulation (EA) to blindly extract the suspicious flows that compose the attack. In the third stage, the evidence of traffic structure provided by the clustering algorithms is used to produce filtering rules that characterize the detected attack and simplify its analysis. The characterization of an attack can be a hard and Time-consuming task, particularly when dealing with unknown attacks. Even expert operators can be quickly overwhelmed if simple and easy-to-interpret information is not provided to prioritize the time spent in the analysis. To alleviate this issue, the most relevant filtering rules are combined into a new traffic signature that characterizes the attack in simple terms. This signature can ultimately be integrated to any standard security device to detect the attack in the future,

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A Cooperative approach for Malicious Node Detection in impromptu Wireless Networks

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***Abstract*—Security is at stake once communication takes place between mobile nodes in very hostile surroundings. Contrary to the wired networks, the exclusive individuality of mobile impromptu networks produce variety of major challenges to security style, like mutual wireless medium, open peer-to-peer specification, stern resource constraints and extremely dynamic topology. These unfavorable conditions clearly need a case for making dimensional security remedies that get not solely wide selection protection however additionally acceptable network performance. Popularly used existing routing protocols designed to include the wants of such endemic networks don't address doable threats aiming at the disruption of the protocol itself. The most important challenge in impromptu wireless networks is energy inefficiency; beneath bound circumstances, it's virtually not possible to interchange or recharge the batteries. Thence it's fascinating to stay dissipation of energy at lower purpose, a number of the issues area unit restricted energy reserve and lack of centralized coordination. During this paper, we tend to establish the safety problems, discuss the challenges and propose the cooperative approach for malicious node detection**

***Index Terms*—Malicious Node, Attack, Collaborative approach, Cluster Head.**

I. INTRODUCTION

Mobile ad hoc network is structured by the nodes in the absence of a rigid infrastructure where all nodes move randomly and all the nodes process themselves. In MANET, every node acts not only as a node but also as a router. In an infrastructure mobile network, nodes have base stations within their transmission range [2]. In contrary to this, mobile ad hoc networks are indigenous and devoid of infrastructure support. Low cost and powerful wireless transceivers are popularly used in mobile applications due to the progress of wireless communication technology. Due to the absence of fixed infrastructure, network topology in MANET changes when nodes move in or out of the network [1]. As a result, the routing protocols need to adaptively adjust routing based on available nodes. The resources owned and controlled by a node are said to be local to it, while the resources owned and controlled by other nodes and those that can only be accessed through the network are said to be remote. The external attackers can inject false routing information or advertise incorrect routing table information to break down the network [4]. The compromised node attacker are able to generate valid signatures using their private keys [5], they are difficult to detect and can create several damages in the networks. Because of their own private keys, the intrusion preventive measures such as authentication and encryption cannot reduce the effect of compromised node attacker. Moreover, the wireless channel is accessible to malicious attacker and legitimate user; hence it is more vulnerable to all kinds of network attacks. One conspicuous characteristic of MANETs, from the security point of view, is the lack of protection. MANET is a capable technology but it has certain features that are considered inclined, which leads to security weakness in the technology such as, weakened centralized management, less resource availability, scalability, dynamic topology, limited power supply etc. In MANET, all networking operations such as routing the message and forwarding the packets are performed by nodes themselves in a centralized manner. For these reasons, providing security to mobile ad hoc network is very difficult task [10]. To prevent and detect attacks like black hole, wormhole, rushing attack etc and to secure the communication among the nodes of wireless ad hoc network, many intrusion detection techniques have been introduced. They can be classified into mainly three categories, signature based, anomaly based and specification based intrusion detection [3].

The practical side of attacks can be broadly grouped as application level attacks and network level attacks. Application level attacker tries to steal into, bring about change or resist access to information of a particular application, whereas Network level attacker attempts to restrict the capabilities of network, reduces speed or

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Digital Image Security Using Digital Watermarking

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Abstract - *Digital image watermarking process is definite as to insert information of digital into digital signal. In watermarking is defined as a technique which embeds data into digital contents such as text, still images, video and audio data without degrading the overall quality of the digital media. This is an efficient solution to avoid illegal copying of information from multimedia networks. Digital image safety and integrity the top prioritized issue in today's information explosion. Watermarking is a popular technique that is used for copyright protection and authentication. Watermark should be robust and imperceptible. Robustness of watermark can be explained in terms of successful recovery of watermark from recovered content which may contain different types of noises and compression effects. This paper presents an overview of the various concepts and research works in the field of image watermark authentication.*

Key Words **Watermarking, Spatial domain, Image Transforms, Discrete Wavelet Transform, Discrete Cosine Transform, Discrete Fourier Transform.**

1.INTRODUCTION

A digital watermark is a kind of marker covertly embedded in a noise-tolerant signal such as an audio, video or image data. It is typically used to identify ownership of the copyright of such signal. "Watermarking" is the process of hiding digital information in a carrier signal the hidden information should, but does not need to, contain a relation to the carrier signal. Digital watermarks may be used to verify the authenticity or integrity of the carrier signal or to show the identity of its owners.

The information to be embedded in a signal is called a digital watermark, although in some contexts the phrase digital watermark means the difference between the watermarked signal and the cover signal. The signal where the watermark is to be embedded is called the host signal. A watermarking system is usually divided into three distinct steps, embedding, attack, and detection. In embedding, an algorithm accepts the host and the data to be embedded, and produces a watermarked signal.

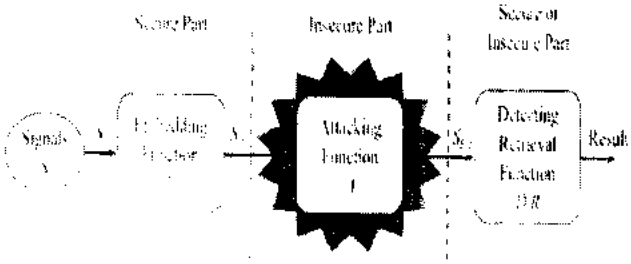

Fig-1 General digital watermark life-cycle phases with embedding-, attacking-, and detection and retrieval functions

Digital watermarking is the process of embedding information, call digital signature or watermarking, into a digital signal in a way that is difficult to remove. Digital watermarks may be used to verify the authenticity or integrity of the carrier signal or to show the identity of its owners. Like traditional watermarks, digital watermarks are only perceptible under certain conditions. A watermark attack is an attack on digital data where the presence of a specially crafted piece of data can be detected by an attacker without knowing the encryption key. Special attention has to be paid to the kind of attacks as they can help to develop better watermarking techniques and defined better benchmarks [1].

Several types of watermarking schemes have been proposed for handling different applications. Examples include

1. Copyright-related applications where the embedded watermark are robust
2. Medical, forensic, and intelligence or military applications where the watermark are usually fragile or semi-fragile
3. Content authentication applications where any tiny change to the content are not acceptable, the embedding distortion has to be compensated for perfectly.

The watermarking algorithms are mainly classified into spatial watermarking algorithms and spectral watermarking algorithms. Spatial domain watermarking is a low level encoding which includes only simple operations such as edge detection, color separation, etc. Spectral domain watermarking algorithm has high complexity but is very

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Review Paper On Weather Forecast Using cloud Computing Technique

(Pradiction of weather)

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Abstract *Weather forecasting is the application of science and technology to predict the state of the atmosphere for a given location. Ancient weather forecasting methods usually relied on observed patterns of events, also termed pattern recognition. For example, it might be observed that if the sunset was particularly red, the following day often brought fair weather. However, not all of these predictions prove reliable. Here this system will predict weather based on parameters such as temperature, humidity and wind. This system is a web application with effective graphical user interface. User will login to the system using his user ID and password. User will enter current temperature, humidity and wind. System will take this parameter and will predict weather from previous data in database.*

The role of the admin is to add previous weather data in database, so that system will calculate weather based on these data. Weather forecasting system takes parameters such as temperature, humidity, and wind and will forecast weather based on previous record therefore this prediction will prove reliable. This system can be used in Air Traffic, Marine, Agriculture, Forestry, Military, and Navy etc. Weather forecasting is mainly concerned with the prediction of weather condition in the given future time. Weather forecasts provide critical information about future weather.

Keywords- Ill City weather, Data mining, weather forecasting, clustering, AXVs, JSON, Soil Fertility, Crop Yield, Agriculture

I. INTRODUCTION

Weather prediction is an important application to predict the state of the atmosphere of a given location. Weather prediction has a wide usage in many fields like disaster management, military, agriculture, construction etc. As farming depends on various factors like type of soil, water and climate, farmers can be helped to choose their crops based on the seasons by monitoring the seasonal changes in weather [13]. Since weather condition in a day changes continuously, predicting the weather accurately is a cumbersome task for meteorologists. Climate is the long term effect but weather is a short term effect. Weather can be simply defined as a day-by-day variations, whereas climate is the long term mixture of those variations. Instruments like thermometers, barometers can be used to measure weather but the study of climate depends on statistics[6].

Weather prediction describes the present state of the atmosphere that changes. Atmospheric conditions are obtained by Satellite, Observation from Ships, Aircrafts and Ground. This information are collected and sent to meteorological centers for further process. Analyzing the meteorological data is essential for applications like rainfall, temperature, energy application studies and cloud conditions. Several weather prediction methods are used for analyzing the weather data [12]

This technique used to find the hidden information from large amount of structured and unstructured data clustering. Cloud computing is also defined as the process of extracting useful information from databases. Cloud computing is seen as an important tool for searching interesting patterns and transforms data into business intelligence. Because users may not have any idea regarding their patterns in data and they search for several kinds of patterns. Cloud Computing techniques are used to specify the useful patterns from data and also it focuses the search for interesting patterns. Cloud computing techniques are also very popular because they are more flexible and efficient for analysis than the traditional methods. Cloud Computing tasks can be categorized into types namely descriptive, exploratory, inferential and predictive. First, describes about the general properties of the existing data and the last, describes based on inference on available data. Cloud Computing is considered as a step by step process of "Knowledge Discovery from Databases". There are several steps like Data collection, Preprocessing known as Data cleaning, Data Selection, Data Transformation [14].

1.1 CLUSTERING

Clustering can be simply defined as similar items are grouped together into a single unit. Clustering comes under the unsupervised classification of data. The items or attributes that has same characteristics are belong to one cluster and items with different characteristics belong to another cluster. Clustering is useful for analyzing a large dataset if we do not have any prior knowledge about the partition ofdata [14].

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Implementation of Efficient Data Tranconfiguration Technique for Relational to Object Oriented Database

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Abstract—The object oriented database management system used for managing huge amount of data and now a days industries using relational database management software as a standard database management system. The relational database based on relational typical example whereas modern software development technologies interact with relational database management based on object oriented paradigm object-oriented database management system also refer to ODBMS for object database management system. it is a database management system (DBMS) that supports the modeling of data as objects which help in achieving reusability and managing the complexity in querying system The object-oriented data model is assumed to be the central idea of the next generation of database systems. Users want to move from old databases into applying this new technology that provides adaptability in maintenance. This paper presents an extended fictional work to transform a given conventional database into an object oriented database Such a mismatch inspires for migrating relational database to object oriented database and deals with development of single environment which relates a relational schema to an object oriented schema and providing a scenario for successfully transferring data from relational database to object oriented database using data migration algorithm. Object oriented programming has attain as much as possible acceptance in the programming community to sum up for developing typical applications that are easy to represent and promote.

Keywords—Algorithm, complexity, management, migration, object-oriented system, querying, relational.

I. Introduction

The necessity to meet the requirements of applications beyond data processing applications that were composed of relational database system led to the development of object oriented database system in mid. object oriented database system also known as fifth generation database systems are being used for advanced applications in the field of computer aided design, computer aided manufacturing, software engineering, knowledge based systems and multimedia systems [7]. OODB mainly tries to satisfy the need to perform complex manipulations and querying on existing databases. In object oriented databases, objects and classes form the basis. Object is uniquely identified using object id. The objects with same properties and behaviour are grouped as a class. [4]The object-oriented data model is supposed to be the heart of the next generation of database systems. Due to the exploding number of information stored and shared over Internet, and the introduction of new technologies to capture and transit data, managing imperfect data is an important issue in many applications. Users want to move from old legacy databases into applying this new technology that provides extensibility and flexibility in maintenance.

Approach to transform a given conventional database into an object-oriented database. It is assumed that the necessary characteristics of the conventional database to be re-engineered are known and available. The source of these characteristics might be the data dictionary and or an expert in the given conventional database. The other issues that must be addressed, apart from schema mapping, are data mapping and implementation architecture. Based on this, our approach described in this paper is not limited to just schema translation but addresses the total of a relational database to an object oriented database. It is necessary to develop a complete integrated framework to carry out any conventional relational database into an object-oriented database. Specific techniques to handle schema mapping, data mapping, and choosing appropriate implementation architecture should be developed [1]. A systematic approach for converting a given relational database to an object-oriented database by converting the traditional relational schema to object oriented schema and moving data from traditional database to object oriented database [3]. Although data mapping between the relational and the object-oriented model itself is not new, joining data mapping with an interactively generated schema mapping offers greater profit to the overall goal of migrating relational database data to object-oriented databases is a template developing such a techniques that convert data in relational database to an object-oriented suitable format. Schema mapping is conventional task that is always done for accessing relational database from object-oriented database. Data mapping from relational data to objects is done by schema mapping. Object-oriented access to the data is provided by the schema mapping to data abide in relational database [6]. It will be advantageous if this schema mapping to be involuntary but research establishes that schema mapping from the relational to the object-oriented model can't be fully inevitable. In fact, few commercial systems got a success for the provision from conventional relational database to object-oriented access, the developer must specify the entire schema mapping accurately. The author believes that mapping process can be at least partially automated and for the completion of mapping process interactive tool required but it could be made optional if the relational database could provide information about primary keys and foreign keys

This chapter concentrated on the areas affiliated to research in rendering object oriented access from conventional relational database through extensive literature review. The chapter points on the work in the area of schema mapping such as the Entity-Relationship (ER) model, the Extended Entity Relationship (EER) model and object oriented model

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Implementing Android Based Intelligent Mobile Home Automation Security System

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Abstract- **The security of one's belongings when a person leaves his/her house is always a concern with increasing number of incidents of theft, robbery etc. Many automated systems has been developed which informs the owner in a remote location about any intrusion or attempt to intrude in the house. 8051 has been extensively used in past projects. However, We are looks into the development of an ANDROID application which interprets the message a mobile device receives on possible intrusion and subsequently a reply (Short Message Service) SMS which triggers an alarm/buzzer in the remote house making others aware of the possible intrusion. Controlling home appliances remotely with mobile applications have started becoming quite popular due to the exponential rise in use of mobile devices. Mobile handsets today are essentially handheld computers with integrated mobile radio communication capabilities. With increasing usage of GSM, network services are expanded beyond speech communication to incorporate many other custom applications, machine automation and machine to machine communication.**

This application can be incorporated with mobile phones is sure to benefit every people who always have a doubt of their belongings being secure in the house in their absence. Most of the mobile devices that are manufactured nowadays in the market are ANDROID OS based. Taking this into interest the application can be developed in ANDROID and made user friendly, thereby making the applications highly robust across different mobile devices and variety of users.

Keywords: ANDROID, Short Message Service (SMS), Global Communication for mobile system (GSM).

I. Introduction

Today we have a tendency to reside in twenty first century wherever home automation is enjoying vital role in human daily-life. Currently a day's home automation system permits United States to regulate numerous manage appliances like lightweight, door, fan, AC etc. It additionally provides person home security and emergency system to be activated. Home automation not solely refers to cut back human efforts however additionally energy potency and time saving. the most objective of home automation and security is to assist disabled and previous aged folks which can change them to regulate home appliances and alert them in crucial things, we've projected easy, low cost, low power consumption and a unique methodology for implementing the house security mistreatment GSM. Mobile devices are integrated into our existence. Consequently, home automation and security have become progressively outstanding options on mobile devices. we'd develop a security system that interfaces with associate degree humanoid mobile device. The mobile device and security system communicate via Bluetooth as a result of a short-range-only communications system was desired. The mobile application may be loaded onto any compatible device, and once loaded, interface with the protection system. Commands to lock, unlock, or check the standing of the door to that the protection system is put in may be sent quickly from the mobile device via a straightforward, simple to use graphical user interface. the protection system then acts on these commands, taking the acceptable action and causation a confirmation back to the mobile device. the protection system may also tell the user if the door is open. The door additionally incorporates a standard lock and key interface just in case the user loses the mobile device.

A. Motivation

Home automation business has raw sizable attention of the researchers for quite a decade [1]. The main plan is to mechanically management and monitor electrical and electronic home appliances. As per the research firm ABI regarding four million home automation systems were oversubscribed globally in 2013 constant firm additionally calculable that regarding ninety million homes would use home automation systems by the tip of 2017. Many industrial and analysis versions of home automation system are introduced and designed [2-6]. Among these solely home security systems became the most stream of development activities [1] good home systems have captured many technologies to this

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Authentication System for IRIS Biometric Recognition Using Texture Analysis

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Abstract- A biometric system provides automatic identification of an individual based on a unique feature possessed by the individual. Iris recognition has emerged as one of the most preferred biometric modalities for automated personal identification. Iris is an internally protected organ whose texture is stable from birth to death, as its texture is unique in each individual, so it is reliable and accurate method of biometric technology. Our new approach for iris recognition has 4 stages: image preprocessing, pupil detection, hybrid feature extraction and classification. In feature extraction, texture analysis is done, which refers to the characterization of regions in an image by their texture content. It attempts to quantify intuitive qualities described by terms such as rough, smooth, silky, or bumpy as a function of the spatial variation in pixel intensities. In classification, template will be compared to a stored template in a database and then it will determine authenticated user.

Keywords- Biometric, Iris, hybrid feature extraction, classification.

I. INTRODUCTION

Biometrics is a combination of "Bio" means life and "metrics" means measure. Biometrics is defined as the science and technology of measuring and analyzing biological aspects of human being. Biometric authentication is highly reliable as physical human characteristics are more difficult to forge than security codes, passwords, and other security system. Biometric systems work by first capturing a sample of the feature, such as recording a digital sound signal for voice recognition, or taking a digital color image for face recognition, thenthis sample is transformed using some mathematical function into a biometric template. The biometric template provides a normalized, efficient and highly discriminating representation of the feature, which can then be objectively compared with other templates in order to determine identity. A biometric which uses a feature that is highly unique is a good biometric. This decreases the chances of any two people having the same characteristics. Based on fingerprints, facial features, voice, hand geometry, handwriting and iris biometric systems have been developed. Among all of the biometric identification systems Iris is taking too much attention because of its reliability and secure identification measures. Other significant qualities of the iris are uniqueness, universality, longevity, collectability, and anti tampering, which all ensure accurate identification of the individual[1]. Existence of the iris characteristics in each person refers to the Universality, whereas uniqueness refers to the ability to distinctly identify individual from his or her iris characteristics. The subtle textures shaping the iris have completely distinctive patterns that differentiate each person from another, far more than most of the other biometrics [1]. This means that no two people in the world would have the same iris eye print, even the left and right eyes of an individual and those between twins are different [2]. To make artificial copy of the iris is impossible because of its distinct properties. As the iris is closely connected to the human brain, it is the first part of the body to degenerate after death, and

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Raising Video Analysis and Search : A Review

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ABSTRACT

The point suggests the general framework for video change, question area and taking after proceed in the meantime in a forceful and supportive way .Video is a social occasion of progressive pictures with a reliable time between time .So video can give more information about the article when circumstances are changing with respect to time. In this way, physically dealing with recordings are altogether incredible. So there is need of an automated contraption to handle these recordings. Various computations and advancement have been made to robotize video change and checking the article in a video report. Video change with thing recognizable proof and taking after is a one of the testing errand in PC vision. Also taking after of an article basically incorporates two going before steps protest recognizable proof and thing representation .Question disclosure is performed to check nearness of things in video and to effectively find that article .Protest taking after is a system of partitioning a locale of excitement from a video scene and observing its development, position and obstacle. The accompanying is performed by watching articles' spatial and transient changes in the midst of a video gathering, including its proximity, position, size, shape, etc. Video change with article taking after is used as a part of a couple of uses, for instance, video observation, robot vision, development watching.

Keywords : *Video Object detection, SDC*

I. INTRODUCTION

1.1 Motivation

Video reconnaissance is a dynamic research theme in PC vision that tries to identify, perceive and track protests over a grouping of pictures and it likewise makes an endeavour to comprehend and depict question conduct by supplanting the maturing old conventional strategy for checking cameras by human administrators. Protest location and following are imperative and testing errands in numerous PC vision applications, for example, reconnaissance, vehicle route and self-governing robot route. Protest recognition includes finding objects in the casing of a video succession. Each following strategy requires a protest discovery component either in each casing or when the question first shows up in the video. Protest following is the way toward finding a question or numerous items after some time utilizing a camera. The powerful PCs, the accessibility of high calibre and economical camcorders and the expanding requirement for computerized video investigation has created a lot of enthusiasm for question following calculations. There are three key strides in video investigation,

- Detection intriguing moving articles
- Tracking of such protests from every last edge to casing examination of question tracks to perceive.

1.2 Objectives

- Enhancement of low debased video to understand the immense quality video and higher casing quality.
- The partition of Partner in Nursing sound and casings in uncompressed low vision video to strengthen mediocrity video and perform protest location.
- To enhance the speed and exactness of method utilized for police work target picture at interims less time.
- To expanded edges of pictures that functions admirably underneath picture obscure, camera movement, change of cause, light, and scale conditions.
- To propose expanded protest taking after systems upheld taking after administer utilized layout coordinating technique.
- To discover target question and match every edges in video to make a living Clamor Free Video.

II. LITERATURE SURVEY

2.1 Background History

The examination directed so far for question location and following items in video observation framework are talked about in this part. The arrangement of difficulties delineated above traverse a few spaces of research and the dominant part of significant work will be inspected in the up and coming sections. In this area, just the delegate video reconnaissance frameworks are talked about for better comprehension of the principal idea. Following is the

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To study the effect of inventory dependent consumption parameter for constant and time dependent holding cost

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Abstract. Economic production quantity models are effectively used to control inventory. In the present work EPQ model has been developed to study the effect of demand parameters on holding cost and total inventory. Demand used is inventory dependent during inventory buildup time and constant demand has been used during inventory depletion period. Rate of deterioration is considered to be constant. A numerical example has been included to validate the model. The sensitivity analysis shows that, higher inventory can attract customer to buy more. The result of models indicates that, the holding cost and total inventory is sensitive to change in inventory dependent demand parameter. Increase in demand parameter decreases the holding cost and total inventory.

1. Introduction

Every organization in many sectors of the economy has adopted some type of inventory system. Inventory is one of the most visible and tangible aspects of doing business. Unless inventories are controlled, they may be unreliable, inefficient and costly. The Economic Production quantity (EPQ model has been widely used for more than decades as an important tool to control the inventory. The EPQ is powerful to help practitioners and engineers to make a decision regarding inventory control. The complexity of a resulting EPQ model depends on assumptions one makes about various parameters of the inventory system.

The effect of an imperfect production process, by assuming different rates of deterioration during the production process, on the optimal cycle time had been studied by (Rosenblatt and Lee, 1986). The Economic order quantity (EOQ) model with power form of stock dependent demand for deteriorating items (Teng.*et.al.*, 2005), investigated that the shape parameter of the demand and selling price is highly sensitive to optimal solution. The impact of random machine failure on the EPQ model (Teng, *et.al.* 2005) reveals the demand function and purchase cost is positive and fluctuating with time. The production process can shift at random from in control to out of control state. In such situation, the items produced out of control state deteriorate at higher rate than those at the normal rate, hence get consumed by demand under Last in First out (LIFO) policy (Garry and Dahl, 2006). Beerhouse and Babar, developed (EPQ) model by considering both the depreciation cost of stored items and process quality cost. Depreciation cost and process quality cost were assumed to be a continuous function of holding time and of production run length. Yuan et.al (2011) derived the optimal manufacturing batch size and number of shipment with scrap using mathematical modeling and algebraic approach. Ata (2011) discussed EPQ model for multi products single machine with discrete delivery. Naja and Naiki focused on EPQ model with a production capacity limitation and a random defective production rate. Gede and Hui(2010) analyzed an EPQ model for deteriorating items with stochastic machine unavailability and price- dependent demand. Jinn(2007), used time varying demand and cost to analyze EPQ model and characterize the influences of both demand and cost over the length of production run time and the economic production quantity. Hezari (2008) developed EPQ model by considering imperfect and defective items. Holding cost for defective items has not been considered in his study.David et. al (2009) considered partial backordering with constant demand to study inventory model. Jiang Tao (2009) considered a multi-item inventory system, where the vendor provides delay in payment to the retailer . Yao (2007) established a model for deteriorating items under delay in payment, in which the demand is a negative exponential function of price. Jia (2009) reported a supply chain system with trade credit. Liao established an EPQ model for deteriorating items

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Effect of Constant and Time Dependent Holding Cost on Non Instantaneous deteriorating Production Inventory System.

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Abstract

Successful inventory control decisions depend on the availability of timely and accurate data related to demand, supply, cost estimates, stock status, storage capacity, number and nature of products (perishable, fashion), set up time, and lead time. Moreover, the derivation of reliable inventory control policies that dictate the timing and the size of orders can be obtained through the use of appropriate models that represent adequately the real inventory system and rely on meaningful objective functions. This article addresses the effect of holding cost on the EPQ controlled process. It is important for practitioners to know how holding cost affects the overall cost and would motivate them to reduce total cost of production. The EPQ model has been developed by assuming that deterioration of the items start after some constant time as it enters into the inventory. For that during production up time, demand rate is considered as inventory dependent and kept constant during down time. This contribution is significant because no previous study has rigorously evaluated the different demand pattern and time dependent holding cost system on choosing the correct system for a single product item. The influence of inventory dependent consumption rate on the production up time is also discussed in this model. A numerical example is provided to illustrate the theoretical results. The result of sensitivity analysis indicates that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost

Keywords:- Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand

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To study the effect of inventory dependent consumption parameter for constant and time dependent holding cost

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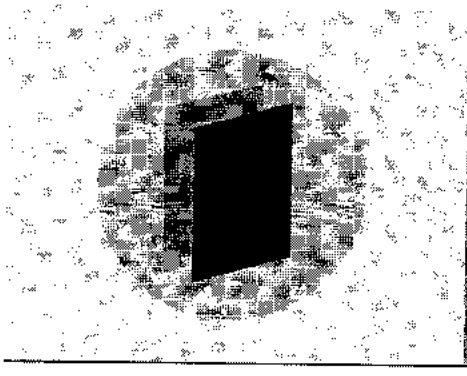

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AN EPQ MODEL WITH VARYING RATE OF DETERIORATION AND MIXED DEMAND PATTERN

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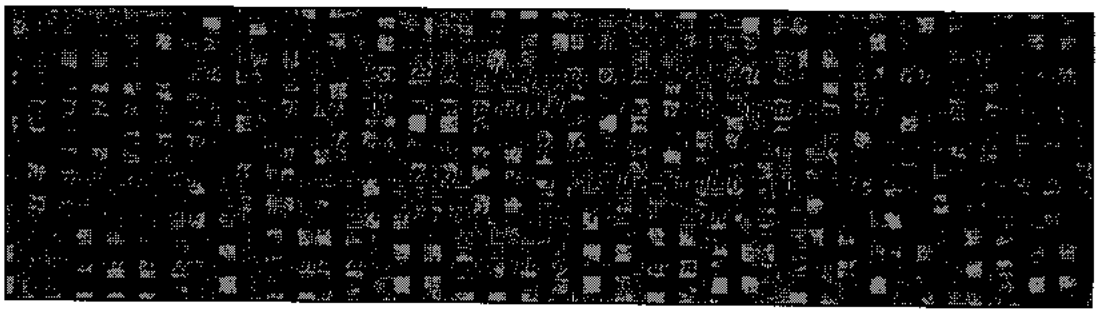

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1. INTRODUCTION

In the manufacturing sector, when items are produced internally instead of being obtained from an outside supplier, the EPQ model is often employed to determine the optimal production lot-size that minimizes overall production/inventory costs. The complexity of a resulting EPQ model depends on the assumptions one makes about various parameters of the inventory system. Among these features are demand types, actions for excess demand, production rates, treatment for imperfect quality items, minimal service level constraint, various cost parameters, and issuing policies when items are perishable. The classic EPQ model assumes that manufacturing facility functions perfectly during a production run. However, due to process deterioration or other factors, the generation of imperfect quality items is inevitable.

From product life cycle, demand rate will be constant only when the product maturity is on stage. In the competitive scenario, higher stock of items attracts the customers to purchase more (Teng *et.al* 2005). Deterioration is the common phenomenon in the real production system of products like pharmaceuticals, food, flowers, vegetables, etc. The effect of an imperfect production process, by assuming different rates of deterioration during the production process, on the optimal cycle time had been studied by (Rosenblatt and Lee, 1986). The EOQ model with power form of stock dependent demand for deteriorating items (Teng, *et.al* 2005), investigated that the shape parameter of the demand and the selling price is highly sensitive to optimal solution. The impact of the random machine failure on the EPQ model (Teng, *et.al, 2005*) was that, the demand function and purchase cost is positive and fluctuating with time. The production process can shift at random from, in control to out of control state, during the production process. In such situation, the items produced in out of control state deteriorate at a higher rate, than the normal rate; hence get consumed by demand under the LIFO policy (Garry and Dah, 2006). Behrouz and Babak, developed economic production quantity (EPQ) model, by considering both the depreciation cost of stored

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A Method to Upgrade Surface Finish of Parts Fabricated By Fused Deposition Modelling

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ABSTRACT: This paper describes Taguchi Design of Experiments for determining the optimum surface finish of a part built by the Fused Deposition Modelling (FDM) process. Surface finish of RP part is improved by performing acetone treatment. Experiments were conducted using Taguchi's design of experiments, with five levels and three parameters. From the result of the experiments, mathematical model have been developed to study the effect of parameters.

KEYWORDS: Layered manufacturing, rapid prototyping, fused deposition modelling, surface finish

I. INTRODUCTION

Rapid prototyping (RP) has emerged as an important technology as it supports design of the product and produces prototype to analyse it for customer specifications in a short span of time. Functionality of the RP parts is severely affected by poor surface finish primarily due to staircase effect resulting from layer-by-layer deposition. Surface roughness value which is a result of staircase on an RP component is also dependent on geometry of the enclosing surface.[1] . One of the most commonly used technologies is Fused Deposition Modelling (FDM). The main advantages of this technology include: a good variety of materials available, easy material change, low maintenance costs, quick production of thin parts, a tolerance equal to _0.1 mm overall, no need for supervision,
no toxic materials, very compact size, low temperature operation. The main disadvantages are that it leaves a seam line between layers, the material tends to bump up, supports are required, there is axial weakness perpendicularly, a larger area of slices requires longer building times, and temperature fluctuations during production could lead to delamination, and high surface roughness. [2] It is obvious that the surface finish is better if layer thickness is smaller and also influenced by the angle between vertical and surface tangent as shown in Fig. 1[1]

From the literature survey, it is observed that, several researches, analytical and design experiments have been carried out since a long time. These studies focused directly on the surface roughness of ABS parts of different shapes and orientations observed when using Layered Manufacturing (LM) technology in FDM. Pandey et al.[1] In this research, they have presented a semi-empirical model for evaluation of surface roughness of a layered manufacturing part by fused deposition modelling. An attempt is made to address this problem using a simple material removal method namely hot cutter machining (HCM). Pandey et al. [2]In their work, a virtual hybrid FDM system have proposed which uses the capabilities of material deposition and HCM of the staircase to enhance the surface finish of a typical FDM processed parts. L. M. Galantucci et al.[3]In this paper the roughness of FDM prototypes is analysed. Process parameters have been shown to affect the Ra. In particular the slice height and the raster width are important parameters while the tip diameter has little importance for surfaces running either parallel or perpendicular to the build direction. A chemical post-processing treatment has been analysed and yields a significant improvement of the Ra of the treated specimens. Nitish Kumar et al.[4] In this study, the effect of parameters on the part quality of SLS part graphically and visually identifying the factors, which appeared to be significant. This technique is used a statistical measure of performance called signal-to-noise (S/N) ratio. The change in the quality of a product under different levels and with different factors was the main preference of this experiment. The optimum level combination of the process parameters are: Laser power: 18.5kW (Level 1), Temperature: 171°C (Level 1), Part Orientation: 90° (Level 3) for the dimensional accuracy and micro hardness of the SLS prototype to enhance the quality of product. K. Thrimurthulu et al.[5] This paper presents an approach that determines the optimal part deposition orientation for

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Reducing Wall Superheat by Using Alcohol Ethoxylate Surfactant in Pool Boiling

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ABSTRACT

In boiling heat transfer, it is usually desirable to transfer the largest possible amount of heat with the smallest possible temperature difference between the heating surface and the boiling liquid, and to maximize the critical heat flux. Study of the enhancement of boiling heat transfer has become one of the fastest growing research areas of recent years. In our experiment we have performed the trial on alcohol ethoxylate ecofridley surfactant. A considerable reduction in wall superheat is observed in the solution of water and surfactant of 2000ppm. A wall superheat is decrease by 48 percent.

Keywords: ***alcohol ethoxylate , wall superheat, pool boiling***

1. Introduction

When the temperature of a liquid at a specified pressure rises to its saturation temperature Tsat at that pressure, boiling occurs. A precise definition of boiling is presented by Hewitt , and Collier and Thome . Boiling is the process of addition of heat to a liquid in such a way that vapor generation occurs. There are two basic types of boiling: *pool boiling* and *forced convection boiling*. Boiling on a heating surface submerged in an initially quiescent liquid is termed as pool boiling. In contrast, when the boiling occurs under forced-flow condition it is termed as flow boiling or forced convection boiling. Pool boiling and flow boiling are further classified as *subcooled boiling* and *saturated boiling*. When the temperature of the liquid is below the saturation temperature Tsat, it is said to be subcooled boiling or local boiling. If the liquid is at the saturation temperature then it is called saturated boiling or bulk boiling. The phenomenon of boiling heat transfer is much more complex than that of convection heat transfer without phase change. This is because in addition to all the variables associated with convection heat transfer, other variables associated with phase change are also relevant for boiling heat transfer. As a large number of variables are involved in boiling heat transfer neither general equation describing the boiling process nor the general Correlation of boiling heat transfer data is available. [2]

In boiling heat transfer, it is usually desirable to transfer the largest possible amount of heat with the smallest possible temperature difference between the heating surface and the boiling liquid, and to maximize the critical heat flux. Study of the enhancement of boiling heat transfer has become one of the fastest growing research areas of recent years . This growth has been driven by the need to improve boiling heat transfer in high heat-flux devices (for example, in electronic component cooling) and in reducing the size and cost of equipment in chemical, refrigeration, and other types of plants. Various enhancement techniques have been developed over the past decades to fulfill these criteria.

Addition of small amount of surfactant to liquid, as an enhancement technique, shows a significant enhancement in pool boiling heat transfer. Enhancement of nucleate pool boiling heat transfer with surfactant can lead to a significant increase in power level of boilers and boiling water nuclear reactors without increasing their size and operating temperature. One interesting field of application of surfactant enhanced heat transfer is in desalination of seawater, which is becoming essential in some arid regions. Sephton in 1974 showed that addition of

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A Re-Review of Thermoeletric Mòdule

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ABSTRACT

In 21st century there are major two problem energy shortage and environmental defects. Thermoelectric cooler is the best solution for those two problems. This review is explaining about basic concept of thermoelectric and thermoelectric generator, including the structure optimization which significantly affects the thermoelectric generator, the low temperature recovery, the heat resource and itsapplication area. Then it reports the recent application of the thermoelectric cooler including the thermoelectricmodel and its application area. It ends with the discussion of the further research direction.

Keywords: ***Cooling system, Peltier effect, Thermoelectric cooler.***

1. INTRODUCTION

Extensive fossil fuel consumption by human activities has led toserious atmospheric and environmental problems. Consequently,global warming, greenhouse gas emission, climate change, ozonelayer depletion and acid rain terminologies have started to appearfrequently in the literature. To abate the impact of the above disasters,the thermoelectric (TE) energy converters is proposed as oneof the possible technologies for this aim, which currently gains themost popularity owing to its capability in converting the heat givenoff from vehicles, electrical instruments, etc., into the electricity[1].

In 1823, a German scientist Thomas Seeback discovered that, in a closed circuit made up of two dissimilar metals an electric current is generated continuously provided that both the junctions of the metals were maintained at different temperatures. After some years in 1834, a French watchmaker,Jean Charles Athanase Peltier (1785-1845) discovered thermoelectric cooling effect which is also known as Peltier effect. Who discovered that when an electric current is passed through junction who is made up of two dissimilar metals, then one side of the junction becomes hot while the other end of the junction becomes cold. By changing the polarities of electric current supplied the hot side becomes cold while the cold side becomes hot. After four years in 1838, Emil Lenz made clear about the true nature of Peltier effect by placing a bismuth-antimony junction to freeze the water by passing of an electric current through the junction.He also observed that the ice could be melt if the current was reversed. In 1950's, Bismuth-Telluride replaced bismuth-antimony and began to be used as the primary material in the thermoelectric cooling.

Thermoelectric (TE) property was discovered earlier about two centuries but (Thermoelectric cooler) TEC was commercialized in recent years. The applications of TE ranges from small sized devices like refrigerators and electronic devices to big sized devices like Avionic instrumentation illumination control and thermal imaging cameras. Recently there is a tremendous increase in the applications of TE coolers in water chillers, medical chillers, semiconductor chillers, food and beverage chillers, etc.[16].

2. WORKING PRINCIPLE

TEC works on the principle of Peltier effect, when a DC is supplied from a 12V battery to TEC module then, heat is absorbed at one junction and dissipated at the other junction. Depending on the direction of applied DC power source and the relative Seeback coefficient of the two materials, the direction of the heat flow is regulated. TEC can be used either for heating or for cooling, while the main application is cooling. TEC module is a solid-state active heat pump which contains number of p- and n- type semi-conductor which are coupled in series and

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An EPQ model for Deteriorating Items with mixed Demand pattern and Time Dependent Holding cost.

P. S. Ardak[1], Dr.A. B.Borade[2]

Abstract:-The Economic Production Quantity (EPQ) model is commonly used by practitioners in the fields of production and inventory management to assist them in making decisions on production lot size. The classical EPQ model assumes that all the items produced are of perfect quality. Deterioration is the common phenomenon in the real production system of products like pharmaceuticals, food, flowers, vegetables etc. Here attempt has been made to discuss the different demand pattern for different time period. During inventory buildup time, demand is inventory dependent and during inventory depletion period, demand use is constant. Holding cost used here is linear function of time. The differential calculus method is used to find the optimal solution of the model. Convexity of the total cost with production up time has been proved. The influence of inventory dependent consumption factor is also discussed. Finally, numerical examples are used to illustrate the proposed model. Some managerial insights are also inferred from the sensitive analysis of model parameters.

Index Terms:- Deteriorating items; EPQ; Inventory dependent consumption rate; mix demand.

1.INTRODUCTION

Deterioration leads to damage of items such that they cannot be used for its original purposes. The effect of deterioration is very important in many inventory systems. Food item like, milk, pack food, meat, flowers and bakery products are items in which sufficient deterioration can take place during the normal storage period of the units. For longer storage periods require additional specialized equipment and facilities, resulting in higher holding costs. This may lead to loss in system. It would be more reasonable and realistic if it is assumed that the holding cost as a time dependent function. Hezari[1] developed EPQ model by considering imperfect and defective items. Holding cost for defective items has not been considered. Davidet. al [2] considered partial backordering with constant demand to study inventory model. Jiangtao[3] consider a multi-item inventory system, where the vendor provides the retailer with delay in payment. Yao [4] established a model for deteriorating items under delay in payment, in which the demand is a negative exponential function of price. Jia [5] reported a supply chain system with trade credit. Liao [6] established an EPQ model for deteriorating items with delay in payment. Shinn [7] developed a model with trade credit, and the length of credit period is a function of order size. Chung [8] studied a inventory system which purchaser acquired allowable delay in payment if order size is greater than a predetermined quantity. Liao [9] developed a model with delay in payment, in which there are two warehouses, one is own, another is rented. Tsao [10] considered an inventory model in supply-chain system for multiitem under the policy of trade credit. Mim,et.al [11] developed an inventory model for deteriorating items under stock-dependent demand and trade credit. Alfares [12] considered a multi-period model with stock dependent rate under the assumption of holding cost is a function of storage time. Yang [13] considered a model under inflation for deteriorating items with stock-dependent rate. Panda [14] developed a two warehouses model with single vendor multiple retailers when demand depends on stock and selling price.

Most of the research developed EPQ models by considering various demand patterns like stock dependent demand, power form demand, ramp type of demand, time dependent demand, selling price dependent demand and exponential demand. It is well known that, the demand rate vary with change in inventory level. From the literature review, it is observed that the different demand pattern has not been discussed by any researcher so far on different time period. The present study may be significant in filling this gap since it aims to develop EPQ model by assuming demand as inventory dependent criteria during inventory buildup time and constant during inventory depletion period. Also holding cost is considered as linear function of time. This paper has several sections. Research motivation and literature is narrated in introduction. Next section contains notations and assumption. The following sections formulate the model and

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An Economic Production Quantity model with inventory dependent demand and deterioration

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ABSTRACT: **EPQ models are used to control the inventory effectively. The present work proposes EPQ model exclusively for deteriorating items. In the present work the EPQ model has been developed by assuming that deterioration of the items start after some constant time as it enters into the inventory. For that during production up time, demand rate is considered as inventory dependent and kept constant during down time. An efficient procedure is developed to find the optimal production run length. The influence of inventory dependent consumption rate on the production up time is also discussed in this model. A numerical example is provided to illustrate the theoretical results. The result of sensitivity analysis indicates that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost.**

Keywords:- Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand

I. INTORDUCTION

The economic production quantity (EPQ) model has been widely used in practice as it plays an important role on managing the inventory effectively. Classic economic production quantity model assumes that during production run a manufacturing facility functions perfectly and continuous inventory issuing policy for satisfying customer's demand .However, there are some drawbacks in the assumption of the original EPQ model. Many researchers have tried to improve it with different viewpoints. In manufacturing companies, when items are internally produced instead of being obtained from an outside supplier, the Economic Production Quantity (EPQ) model is often employed to determine the optimal production lot size that minimizes overall production/inventory costs. Mishra and Singh developed EPQ model for perishable items by considering demand as a power form function of the inventory level. When deterioration starts, it accelerates with time in case of fast deteriorating items like meat, vegetables milk fruits etc.[1] Behrouz and Babak, developed economic production quantity (EPQ) model by considering both the depreciation cost of stored items and process quality cost. Depreciation cost and process quality cost was assumed to be continuous functions of holding time and of production run length.[2] Yuan et.al derived the optimal manufacturing batch size and number of shipment with scrap using mathematical modeling and algebraic approach[3]. Ata discussed EPQ model for multi products single machine with discrete delivery[4] . Taleizadeh, Naja and Naiki focused on EPQ model with a production capacity limitation and a random defective production rate[5]. Gede and Hui analyzed an EPQ model for deteriorating Items with stochastic machine unavailability and price- dependent demand[6]. Jinn, used time varying demand and cost to analysed EPQ model and characterize the influences of both demand and cost over the length of production run time and the economic production quantity[7] Kuo developed EPQ model by considering setup cost and process quality as a functions of capital expenditure. Disruption in production system is common phenomenon[8]. Khedlekar attempted to established exponential demand in disrupted production system and determine production time before and after disruption[9]. Kapil and Navin developed solution procedure which help, to take decision whether to rent a warehouse or not. Demand considered for this is exponential and time dependent for deteriorating items[10]. Holding cost has been treated as non linear function of time and functional form of on hand inventory by Giri and Chaudhary studied perishable inventory model[11]. Cheng solved EPQ problem by using geometric programming with demand dependent production cost[12],[13]. The imperfect production process has general deterioration distribution and system condition depends upon how long it runs. For such system inspection can check that the process is in control or not[14]. Ram developed lot size model for constant and varying rate of deterioration[15]. Lie introduced EOQ model by assuming that return items from customer were replaced by quality items[16]. Jie et.al. considered inventory dependent demand to developed EPQ model.[17].

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AN EPQ MODEL FOR DETERIORATING ITEMS WITH MIX DEMAND PATTERN

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ABSTRACT

EPQ models are effective tools of the inventory control. The present work proposes EPQ model exclusively for deteriorating items. The mix demand pattern is used as a reference. In this model, demand rate in production up time is considered as inventory dependent and kept constant during down time. A differential calculus method is employed to get the optimum solution of the model. The effect of inventory dependent consumption is also discussed in this model. The proposed EPQ model competently proves the convexity of the total cost function. Study includes numerical example and related sensitivity analysis. It has been shown here that the total cost is convex function of production up time. From sensitivity analysis it has been observed that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost.

Key words: Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand.

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1. INTRODUCTION

Traditional EPQ models are widely used owing to its ease in application. In the past several decades, numerous research efforts have been undertaken to extend the basic EPQ model by relaxing various assumptions so that the model conforms more closely to real-world situations. The Economic Production Quantity (EPQ) model is commonly used by practitioners in the fields of production and inventory management to assist them in making

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A REVIEW OF PASSIVE TECHNIQUE USED FOR HEAT TRANSFER ENHANCEMENT IN HEAT EXCHANGER

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Abstract - *Enhancement in heat transfer rate can be done by numerous method in various heat exchangers.Heat exchangers may be chemical reactor,refrigeration system or air conditioning systems.So many techniques have been already investigated to improve heat transfer rate with reduced cost and size.One of the most important technique is Passive heat transfer technique.These technique gives best result for thermal performance.This paper reviews experimental and numerical works taken by the researchers on this technique since 2004, such as twisted tape,wire coil, swirl flow generator,etc... to improve the thermal performance of heat exchanger.The author found that number of developed twisted tape inserts are popular researched and are used to strengthen the heat transfer of specific heat exchanger equipment.Twisted tape inserts are more useful laminar flow than turbulent flow.Also the other technique involving ribs,conical nozzle and conical ring are more efficient for turbulent flow than laminar flow.*

Key Words: **Heat transfer enhancement,Passive method,Inserts,Laminar & Turbulent flow**

1.INTRODUCTION

Heat exchangers are mostly used devices in many areas of the industries, such as process industries, heating and cooling in evaporators, thermal power plants, refrigeration and air-conditioning equipment's, radiators for space vehicles, automobiles, etc. Increase in Heat Exchangers performance can lead to more economical design of the heat exchanger which can help to make energy, material & cost savings related to a heat exchange process. The need to increase the thermal performance of heat exchangers, there by effecting energy, material & cost savings have led to development & use of many techniques termed as Heat transfer augmentation. These techniques are also referred to call as Heat transfer Enhancement or Intensification. Augmentation techniques increase convective heat transfer by reducing the thermal resistance in a heat exchanger.

In many literature gap shows the experimentation on perforated twisted insert like in experimental analysis of heat transfer characteristics using inserts in tubes. Heat transfer enhancement techniques refer to different methods used to increase rate of heat transfer without affecting much the overall performance of the system. Heat transfer augmentation techniques refer to different methods used to increase these techniques and broadly divided in two groups, passive and active. Active techniques involve some external power input for the enhancement of heat transfer. Passive heat transfer augmentation method does not use any external power input. One of the ways to enhance heat transfer performance in passive method is to increase the effective surface area and residence time of the heat transfer fluid.

2.DIFFERENT TECHNIQUES FOR HEAT TRANSFER ENHANCEMENT

2.1 Active method

This method involves some external power input for the enhancement of heat transfer.Some examples of active methods include induced pulsation by cams and reciprocating plungers,the use of a magnetic field to disturb the seeded light particles in a flowing stream, mechanical aids, surface vibration, fluid vibration,electro-static fields, suction or injection and jet impingement requires an external activator/power supply to bring about the enhancement[1].

2.2 Passive method

This method generally uses a surface or geometrical modifica- tions to the flow channel by incorporating inserts or additional devices. For example, insertingan extra component, swirl flow devices, treated surface, rough surfaces, extended Surfaces, displaced enhancement devices, coiled tubes, surface tension devices and additives for fluids. [2]

2.3Compound method

When any two or more techniques, i.e. passive and active may be employed simultaneously to enhance the heat transfer of any device, which is greater than that of produced by any of those techniques separately, the term known as Compound enhancement technique.

The passive heat transfer augmentation methods as stated earlier do not need any external power input. For the convective heat transfer, one of the ways to enhance the heat transfer rate is to increase the effective surface area and residence time of the heat transfer fluids. The passive methods are based on this principle, by employing several techniques to generate the swirl in the bulk of the fluids and

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"*Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line*"

Mr.Vivek Vyavhare [1], Prof.Atul Ghute[2]

[1](PG Student,P.R.Pote,College Amravati)
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Abstract— A filigree of manual curve operating at top or added top voltages is appropriate to address ability from breeding stations to load. In accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve due to which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by top ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

Keywords **– FACTS, Thyristor Control Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.**

I. INTRODUCTION

The rapid growth in electrical power networks has gradually led to the development of control devices. These devices are in series and shunt, active and passive, controlled and switched categories. Each of them is used for one or some purposes like reactive power compensation, voltage control, dynamic stability improvement and power oscillation damping [1-2]. Thyristor Controlled Series Capacitor (TCSC) consists of a series compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Flexible AC Transmission Systems (FACTS) devices which is used for all mentioned purposed. TCSC has shown good capabilities in researches [3-6]. TCSC has advantages of using thyristor (with natural commutation) and low frequency switching. Therefore its cost, complexity and power loss have reduced. The Alternating Current (AC) power transmission over long lines was primarily limited by the series reactive impedance of the line. The main purpose of series compensation in power systems is to vary the impedance of transmission line. By adding series capacitors to the line, a portion of the reactive line impedance can be cancelled, thereby increasing the transmittable power. Two major types of series compensation are Fixed Series Compensation (FSC) [5] and Thyristor Controlled Series Compensation (TC SC) [3 – 6] In FSC, a capacitor is added in series with the line. This decreases the reactive impedance of the line and thus improves the power transfer capability. The advantage of using FSC is cost. Usually FSC allows for a majority of compensation for a lower cost. The major disadvantage with FSC is its fixed compensation. With the introduction of FACTS devices, dynamic control of power flow is highly successful in both controlling power flow in the line and in improving stability [6]. TCSC as one of the most attractive FACTS technology offers fast, smooth, and flexible control of the line impedance. TCSC is expected to provide various benefits to power systems including transient stability improvement, Sub Synchronous Resonance (SSR) mitigation, power swings damping and fault reduction [2]. In this paper a short description of TCSC is given along with design of TCSC. Hardware implementation of power flow control using TCSC in a 2 bus system is done. Hardware implementation to control the firing angle of TCSC is done in open loop and by varying the firing angle, power flow control in the transmission line is ensured.

II. TCSC MODEL AND STEADY STATE MODES OF OPERATION

A. TCSC Model

Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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Abstract:. Wind energy is gaining the most interest among a variety of renewable energy resources, but the disadvantage is that wind power generation is intermittent, depending on weather conditions. Energy storage is necessary to get a smooth output from a wind turbine. This paper presents the impact of fault on the system stability by using the fixed speed induction generator (FSIG) based wind farm connected to interconnected power system. Consequently, the stable operation of wind turbine systems is very important for power system stability.

Keywords: **FSIG; WTIG; VOLTAGE STABILITY; STATCOM; FAULTS**

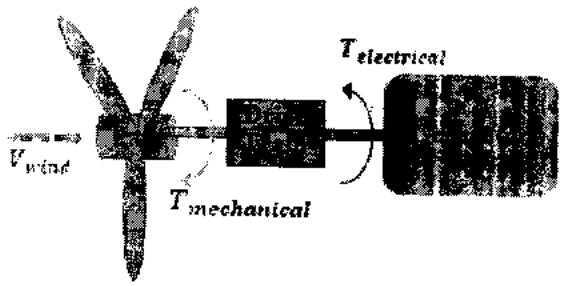
1. Introduction

The increasing number of renewable energy sources and distributed generators requires new strategies for the operation and management of the electricity grid in order to maintain or even to improve the power-supply reliability and quality[1].Wind power continuously give variable output power,when combined with induction generators like the fixed-speed squirrel-cage induction generator (SCIG). .Sometime these induction generators which are usually connected at weak end of a grid or at distribution networks inject large amount of reactive currents during disturbances such as faults[4]. Compared with the wind turbines based on synchronous generators, the squirrel cage induction generator (SCIG) based wind generation technology has several advantages such as flexible active and reactive power control capabilities[3] When a fault occurs in the external power system, the blade-angle control orders the mechanical system to reduce the wind turbine mechanical power to improve stability[6].]. It is necessary to examine the responses of SCIG wind farm during the faults and possible impacts on the system stability the part of STATCOM to support the windfarm during different fault locations and durations are studied.

2. Objective of work

1) Study under standard IEEE 9 bus system
2) Simulation of bus system with wind generation
3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

3.Model of wind turbine



Wind turbines is the system where electricity produced by using mechanical components and electrical generator. Wind passes over the blades of WT. Lift and exerting a turbine force are generating. In nacelle, the rotating blades turn a shaft that goes into a gearbox. The drive train is increasing the rotational speed that appropriate for wind turbine generator and rotational speed converted into electricity. Wind power extract from the wind by the rotor which is limited by the Betz limit (maximum 59%), Therefore, the mechanical power is expressed in Equation. (1)

$P = 0.5. Cp. (\lambda, \beta). \rho. A. v3$ (1)

Where Cp(λ, β) is the power coefficient, ρ is the air density (1.25kg/m2), Vw is wind speed(ms−1), and A swept area A is given the equation $A = \pi R2$.Where R is the radius of blade(m). Figure 1 shows the global scheme of variable speed wind turbine.

Aerodynamic model

The blades of wind turbine extract the kinetic energy from the wind and converted mechanical energy. The kinetic energy is equal to the mass of air m and the wind speed in Equation. (2)

$E = 1/2. m. v2$ (2)

The moving air power is equal to

$Pw = dE/dt = /12. m. v2$ (2) (3)

Where m is the mass flow rate per second. The

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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ABSTRACT

In recent years power electronics devices has seen many advances, due to this advancement in FACTS devices have increased. Now a days FACTs devices are more efficient and more widely used. Facts devices connected in power system offers many advantages which can solve problems of power system control. FACTs devices can help in improving problems like voltage regulation, transfer capacity enhancement and better power flow control. The main purpose of implementing FACTS devices is to increase transmission line capacity of transmission line. There are two different techniques by which FACTS devices can be made one is by using conventional thyristor, tap changing transformer, reactors and switch capacitors. Whereas second generation uses Gate Turn-Off (GTO) thyristor-switched converters as Voltage Source Converters (VSCs). By using first generation various devices are made viz. SVC, TCSC and TCPS. Second generation has developed few techniques like UPFC, IPFC and SSSC

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Review of Price Forecasting Techniques in Deregulated Electricity Market

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Abstract: *Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.*

1. Introduction

Many integrated utilities have been replaced by separate generation transmission and distribution companies. Electricity market is becoming more competitive .In many case large industrial and commercial consumer have option to select their energy supplier .Choice extend to residential level also. These change referred as electricity deregulation. With the Introduction of deregulation of power industry, new challenges have been encountered by the participants of the electricity market due to which forecasting of wind power, electric loads and energy price have become a major issue globally mainly focusing on soft computing models .Price forecasting plays a key role in the new electricity industry .In addition to helping independent generators in setting up optimal bidding patterns and also designing physical bilateral contracts, market prices strongly affect the decision on investing a new generation facilities in the long run[2]. The applications of electricity price forecasting differ depending on the forecasting period. The fundamental applications of short-term, medium-term and long-term price forecasting can be summarized as day-ahead profit maximization, bilateral contracts planning, and investment recovery confirmation [6].Electricity is also a commodity, and its price should also be forecasted along with time but if the same methods were used for forecasting electricity prices as other commodity prices, the forecasted price will exhibit lower accuracy without any surprise due to volatile nature of electricity price among all commodities. There are many soft computing models are used to forecast electricity prices are time series model such as stochastic model[3][5],game theory model [4],simulation models ,Artificial intelligence techniques such as neural network[9] are used for application where formal analysis is difficult or impossible such as pattern recognition and non linear system and gives accurate results. This paper reviews established approaches and mainly focusing on soft computing models.

2. Factor influencing price forecasting

There are many factors affect on the price forecasting due to which prices are increases or decreases .There are many factors such as demand ,seasonality that affect on prices and different factors are described below[3][4]

2.1.Price spikes -Price spikes are are electricity spot prices which are not consistent with the usual modeling via diffusion processes with normal or lognormal marginal distributions.

2.2. Price dependent volatilities. Prices are volatile in nature .All markets there is a strong correlation between price levels and levels of volatility.

2.3.Long-term non stationary- Uncertainty factors such as supply and demand or fuel costs in the long-term future, a non stationary model seems more appropriate.

2.4.Electric Power Demand - If system demand increases, spot price also increases.

2.5.Weather Conditions
Electricity demand certainly depends on environmental condition and especially daily temperature.
Weather fluctuation will affect demand and hence spot price will also be affected.

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Design of Distribution Automation System with SCADA

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ABSTRACT

The electric power distribution network, an essential section of the electric power system, supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. Presently, research and development efforts are focused in the area of communication technologies. An electrical power system consists of generators, transformers, transmission lines distribution lines etc. The aim of this project is to design real time visualization, monitoring and controlling of electrical distribution system using SCADA. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be discriminate from healthy part of power system. It increases reliability of power system. The goal of this project is to provide a better understanding of the design challenges of electric distribution line monitoring system and identify important research in this increasing important field.

I.INTRODUCTION

The fundamental role of protection is to protection the entire system to maintain continuity of supply by detecting faults and to minimize damage to equipment. A good safety system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be dependable and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergize the faulted part. Generally, circuit breakers serve as one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help protect equipment by allowing the disconnection of faulted lines before any significant damage is done. SCADA technology has been matured enough now due to advances that has taken place in semiconductor technologies & telemetric. In this Project, the discussion is limited to Distribution Automation Systems. The early SCADA systems were built on replicating the existing system remote controls, lamps, and analog indications at the functional equivalent of pushbuttons, often placed on a mimic board for easy operator interface. The SCADA masters simply replicated point-for-point, control circuits connected to the remote, or slave, unit. At the same time as SCADA systems were developing, a parallel technology on remote teleprinting was taking shape. The invention of the "modem" (Modulator / Demodulator) allowed digital information to be sent over wire pairs which had been engineered to only carry the electronic equivalent of

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AC-DC Based Optimal Spot Pricing of Electricity in Restructured Electricity Market

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ABSTRACT

In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.

***Keywords*— Electricity market, HVDC, Short run marginal costing, Spot price, optimal power flow**

I.INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules.

In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays .the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

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Design and Analysis of Microstrip Patch Antenna for Different Applications

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Abstract: ***As Microstrip Patch antenna (MPA) is low profile, less costly and low volume, it is used now a day for different applications. Microstrip Patch antenna is targeted for improving its performance based on various factors. A printed antenna can be used in wireless communication at different operating frequencies. In this speedy dynamic world of wireless communication, dual or multiband antenna has been playing a key role for wireless service applications. This paper demonstrate, the performance analysis of microstrip antenna for various parameters such as Return loss, VSWR and radiation pattern. Results are simulated on different antenna geometries. The analysis of antenna for physical parameters such as area of substrate, height of substrate, patch shape and dielectric constant of substrate been done by varying one of them and achieving improve result of performance.***

Keywords: MPA, VSWR, Return Loss, Substrate, HFSS, VNA

1. Introduction

A microstrip patch antenna (MPA) is commonly used because it is lightweight, low profile and simple structure antennas with reliability, mobility and good efficiency [1]. The design of a microstrip antenna initiates by deciding used for the antenna so the size of the patch. There are many types of shapes in patch antenna. Circular, Rectangular and Square shapes are the traditional shapes. But elliptical, triangular, dipole, ring are also uses for patch antenna.

The performance of a patch antenna depend not only on the shape of antenna but dielectric constant of the substrate, dimensions of the dielectric substrate and ground also affects the performance of the patch antenna. It may be possible that all shapes gives different performance on different frequencies.

The most commonly employed micro strip patch antenna is a rectangular patch [6]. The rectangular patch antenna is approximately a one wavelength long section of rectangular microstrip transmission line.

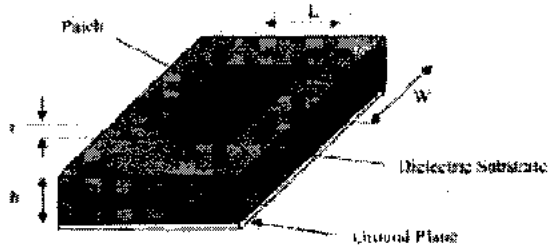

Figure 1: Structure of Microstrip patch Antenna

In above figure parameters are as follows.
Here, t= thickness of patch
h= height of dielectric substrate
L= length of patch
W= width of patch
Patch antenna consist of following:
· Patch (perfect electric conductor)
· Substrate
· Ground (perfect electric conductor)

2. System Analysis

Generally, a patch of the microstrip antenna is made from the radiating material. It is of conducting material such as copper or gold. The patch can be of any shape like circular, triangular, rectangular [4] and even alphabets like H, U, E, C, F etc.

Performance of microstrip patch antenna is based on the various parameters such as VSWR, Return loss, impedance Bandwidth and radiation pattern etc along with physical parameters such as width, height, length and design of patch, and length, height, width of substrate. So it becomes crucial to design appropriate microstrip patch antenna with improved VSWR & return for various application.

The patch of microstrip antenna for various shapes was design earlier and the result associated with it is calculated with respect to VSWR and Return loss. The table given below demonstrates the result for various shape of patch as follows.

Table 1: VSWR & Return loss for various shapes

Type of shape	VSWR	Return loss in dB
H	1.33	-16.34
I	1.37	-15.94
Star	1.43	-16.98
Mho	< 2	-15.83
V	1.08	-28
E	1.031	-34

3.1 Estimation of parameter

Step 1: Calculation of the width of Patch (W)-The width of the Micro strip patch antenna is given as
For f_0=2.4GHz, s_r=4.4

$$W = \frac{c}{2f_0\sqrt{\frac{s_r+1}{2}}} \quad (1)$$

Step 2: Calculation of effective dielectric constant: Fringing makes the micro strip line look wider electrically

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"Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line"

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Abstract— A filigree of manual curve operatingat top or added top voltages is appropriate to address ability from breeding stations to load. In accession to manial curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing or endless and atmosphere altitude are capricious factors. This may could cause overloading of curve duento which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by step ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

Keywords **– FACTS, Thyristor Control Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.**

I. INTRODUCTION

The rapid growth in electrical power networks has gradually led to the development of control devices. These devices are in series and shunt, active and passive, controlled and switched categories. Each of them is used for one or some purposes like reactive power compensation, voltage control, dynamic stability improvement and power oscillation damping [1-2]. Thyristor Controlled Series Capacitor (TCSC) consists of a series compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Flexible AC Transmission Systems (FACTS) devices which is used for all mentioned purposed. TCSC has shown good capabilities in researches [3-6]. TCSC has advantages of using thyristor (with natural commutation) and low frequency switching. Therefore its cost, complexity and power loss have reduced. The Alternating Current (AC) power transmission over long lines was primarily limited by the series reactive impedance of the line. The main purpose of series compensation in power systems is to vary the impedance of transmission line. By adding series capacitors to the line, a portion of the reactive line impedance can be cancelled, thereby increasing the transmittable power. Two major types of series compensation are Fixed Series Compensation (FSC) [5] and Thyristor Controlled Series Compensation (TC SC) [3 – 6] In FSC, a capacitor is added in series with the line. This decreases the reactive impedance of the line and thus improves the power transfer capability. The advantage of using FSC is cost. Usually FSC allows for a majority of compensation for a lower cost. The major disadvantage with FSC is its fixed compensation. With the introduction of FACTS devices, dynamic control of power flow is highly successful in both controlling power flow in the line and in improving stability [6]. TCSC as one of the most attractive FACTS technology offers fast, smooth, and flexible control of the line impedance. TCSC is expected to provide various benefits to power systems including transient stability improvement, Sub Synchronous Resonance (SSR) mitigation, power swings damping and fault reduction [2]. In this paper a short description of TCSC is given along with design of TCSC. Hardware implementation of power flow control using TCSC in a 2 bus system is done. Hardware implementation to control the firing angle of TCSC is done in open loop and by varying the firing angle, power flow control in the transmission line is ensured.

II. TCSC MODEL AND STEADY STATE MODES OF OPERATION

A. TCSC Model

Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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Abstract: **Wind energy is gaining the most interest among a variety of renewable energy resources, but the disadvantage is that wind power generation is intermittent, depending on weather conditions. Energy storage is necessary to get a smooth output from a wind turbine. This paper presents the impact of fault on the system stability by using the fixed speed induction generator (FSIG) based wind farm connected to interconnected power system. Consequently, the stable operation of wind turbine systems is very important for power system stability.**

Keywords: **FSIG; WTIG; VOLTAGE STABILITY; STATCOM; FAULTS**

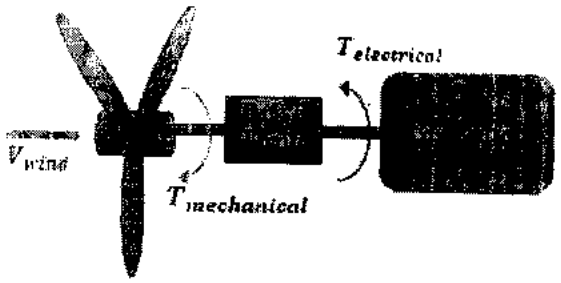
1. Introduction

The increasing number of renewable energy sources and distributed generators requires new strategies for the operation and management of the electricity grid in order to maintain or even to improve the power-supply reliability and quality[1].Wind power continuously give variable output power,when combined with induction generators like the fixed-speed squirrel-cage induction generator (SCIG). .Sometime these induction generators which are usually connected at weak end of a grid or at distribution networks inject large amount of reactive currents during disturbances such as faults[4]. Compared with the wind turbines based on synchronous generators, the squirrel cage induction generator (SCIG) based wind generation technology has several advantages such as flexible active and reactive power control capabilities[3] When a fault occurs in the external power system, the blade-angle control orders the mechanical system to reduce the wind turbine mechanical power to improve stability[6].]. It is necessary to examine the responses of SCIG wind farm during the faults and possible impacts on the system stability the part of STATCOM to support the windfarm during different fault locations and durations are studied.

2. Objective of work

1) Study under standard IEEE 9 bus system
2) Simulation of bus system with wind generation
3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

3.Model of wind turbine



Wind turbines is the system where electricity produced by using mechanical components and electrical generator. Wind passes over the blades of WT. Lift and exerting a turbine force are generating. In nacelle, the rotating blades turn a shaft that goes into a gearbox. The drive train is increasing the rotational speed that appropriate for wind turbine generator and rotational speed converted into electricity. Wind power extract from the wind by the rotor which is limited by the Betz limit (maximum 59%), Therefore, the mechanical power is expressed in Equation. (1)

$P = 0.5. Cp. (\lambda, \beta). \rho. A. v3$ (1)

Where Cp(λ, β) is the power coefficient, ρ is the air density (1.25kg/m2), Vw is wind speed(ms−1), and A swept area A is given the equation $A = \pi R2$.Where R is the radius of blade(m). Figure 1 shows the global scheme of variable speed wind turbine.

Aerodynamic model

The blades of wind turbine extract the kinetic energy from the wind and converted mechanical energy. The kinetic energy is equal to the mass of air m and the wind speed in Equation. (2)

$E = 1/2. m. v2$ (2)

The moving air power is equal to

$Pw = dE/dt = /12. m. v2$ (2) (3)

Where m is the mass flow rate per second. The

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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ABSTRACT
In recent years power electronics devices has seen many advances, due to this advancement in FACTS devices have increased. Now a days FACTs devices are more efficient and more widely used. Facts devices connected in power system offers many advantages which can solve problems of power system control. FACTs devices can help in improving problems like voltage regulation, transfer capacity enhancement and better power flow control. The main purpose of implementing FACTS devices is to increase transmission line capacity of transmission line. There are two different techniques by which FACTS devices can be made one is by using conventional thyristor, tap changing transformer, reactors and switch capacitors. Whereas second generation uses Gate Turn-Off (GTO) thyristor-switched converters as Voltage Source Converters (VSCs). By using first generation various devices are made viz. SVC, TCSC and TCPS. Second generation has developed few techniques like UPFC, IPFC and SSSC

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Review of Price Forecasting Techniques in Deregulated Electricity Market

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Abstract: Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.

1. Introduction

Many integrated utilities have been replaced by separate generation transmission and distribution companies. Electricity market is becoming more competitive .In many case large industrial and commercial consumer have option to select their energy supplier .Choice extend to residential level also. These change referred as electricity deregulation. With the Introduction of deregulation of power industry, new challenges have been encountered by the participants of the electricity market due to which forecasting of wind power, electric loads and energy price have become a major issue globally mainly focusing on soft computing models .Price forecasting plays a key role in the new electricity industry .In addition to helping independent generators in setting up optimal bidding patterns and also designing physical bilateral contracts, market prices strongly affect the decision on investing a new generation facilities in the long run[2]. The applications of electricity price forecasting differ depending on the forecasting period. The fundamental applications of short-term, medium-term and long-term price forecasting can be summarized as day-ahead profit maximization, bilateral contracts planning, and investment recovery confirmation [6].Electricity is also a commodity, and its price should also be forecasted along with time but if the same methods were used for forecasting electricity prices as other commodity prices, the forecasted price will exhibit lower accuracy without any surprise due to volatile nature of electricity price among all commodities. There are many soft computing models are used to forecast electricity prices are time series model such as stochastic model[3][5],game theory model [4],simulation models ,Artificial intelligence techniques such as neural network[9] are used for application where formal analysis is difficult or impossible such as pattern recognition and non linear system and gives accurate results. This paper reviews established approaches and mainly focusing on soft computing models.

2. Factor influencing price forecasting

There are many factors affect on the price forecasting due to which prices are increases or decreases .There are many factors such as demand ,seasonality that affect on prices and different factors are described below[3][4]

2.1.Price spikes -Price spikes are are electricity spot prices which are not consistent with the usual modeling via diffusion processes with normal or lognormal marginal distributions.

2.2. Price dependent volatilities. Prices are volatile in nature .All markets there is a strong correlation between price levels and levels of volatility.

2.3.Long-term non stationary- Uncertainty factors such as supply and demand or fuel costs in the long-term future, a non stationary model seems more appropriate.

2.4.Electric Power Demand - If system demand increases, spot price also increases.

2.5.Weather Conditions
Electricity demand certainly depends on environmental condition and especially daily temperature.
Weather fluctuation will affect demand and hence spot price will also be affected.

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Design of Distribution Automation System with SCADA

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ABSTRACT

The electric power distribution network, an essential section of the electric power system, supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. Presently, research and development efforts are focused in the area of communication technologies. An electrical power system consists of generators, transformers, transmission lines distribution lines etc. The aim of this project is to design real time visualization, monitoring and controlling of electrical distribution system using SCADA. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be discriminate from healthy part of power system. It increases reliability of power system. The goal of this project is to provide a better understanding of the design challenges of electric distribution line monitoring system and identify important research in this increasing important field.

I.INTRODUCTION

The fundamental role of protection is to protection the entire system to maintain continuity of supply by detecting faults and to minimize damage to equipment. A good safety system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be dependable and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergize the faulted part. Generally, circuit breakers serve as one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help protect equipment by allowing the disconnection of faulted lines before any significant damage is done. SCADA technology has been matured enough now due to advances that has taken place in semiconductor technologies & telemetric. In this Project, the discussion is limited to Distribution Automation Systems. The early SCADA systems were built on replicating the existing system remote controls, lamps, and analog indications at the functional equivalent of pushbuttons, often placed on a mimic board for easy operator interface. The SCADA masters simply replicated point-for-point, control circuits connected to the remote, or slave, unit. At the same time as SCADA systems were developing, a parallel technology on remote teleprinting was taking shape. The invention of the "modem" (Modulator / Demodulator) allowed digital information to be sent over wire pairs which had been engineered to only carry the electronic equivalent of

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AC-DC Based Optimal Spot Pricing of Electricity in Restructured Electricity Market

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ABSTRACT

In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.

Keywords— Electricity market, HVDC, Short run marginal costing, Spot price, optimal power flow

I.INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules.

In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Head Of Department ,Department of Electrical Engineering,P.R.P.C E&M ,Amravati University, Amravati, India.

Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays .the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

INTERNATIONAL ORGANIZATION OF ENGINEERING RESEARCH & DEVELOPMENT (IOERD) Vol 2 ISSUE 1

"Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line"

Mr Vivek Vyavhare [1], Prof.Atul Ghute[2]

[1](PG Student,P.R.Pote,College Amravati)
[2](Prof.,P.R.Pote,College Amravati)

Abstract— A filigree of manual curve operating at top or added top voltages is appropriate to address ability from breeding stations to load. For accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve due to which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by top ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

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Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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2. Objective of work

1) Study under standard IEEE 9 bus system
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3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

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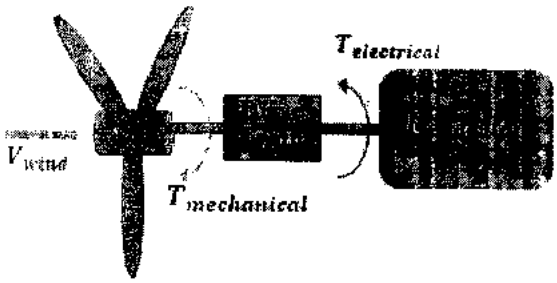

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Abstract: Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.

1. Introduction

Many integrated utilities have been replaced by separate generation transmission and distribution companies. Electricity market is becoming more competitive .In many case large industrial and commercial consumer have option to select their energy supplier .Choice extend to residential level also. These change referred as electricity deregulation. With the Introduction of deregulation of power industry, new challenges have been encountered by the participants of the electricity market due to which forecasting of wind power, electric loads and energy price have become a major issue globally mainly focusing on soft computing models .Price forecasting plays a key role in the new electricity industry .In addition to helping independent generators in setting up optimal bidding patterns and also designing physical bilateral contracts, market prices strongly affect the decision on investing a new generation facilities in the long run[2]. The applications of electricity price forecasting differ depending on the forecasting period. The fundamental applications of short-term, medium-term and long-term price forecasting can be summarized as day-ahead profit maximization, bilateral contracts planning, and investment recovery confirmation [6].Electricity is also a commodity, and its price should also be forecasted along with time but if the same methods were used for forecasting electricity prices as other commodity prices, the forecasted price will exhibit lower accuracy without any surprise due to volatile nature of electricity price among all commodities. There are many soft computing models are used to forecast electricity prices are time series model such as stochastic model[3][5],game theory model [4],simulation models ,Artificial intelligence techniques such as neural network[9] are used for application where formal analysis is difficult or impossible such as pattern recognition and non linear system and gives accurate results. This paper reviews established approaches and mainly focusing on soft computing models.

2. Factor influencing price forecasting

There are many factors affect on the price forecasting due to which prices are increases or decreases .There are many factors such as demand ,seasonality that affect on prices and different factors are described below[3][4]

2.1.Price spikes -Price spikes are are electricity spot prices which are not consistent with the usual modeling via diffusion processes with normal or lognormal marginal distributions.

2.2. Price dependent volatilities. Prices are volatile in nature .All markets there is a strong correlation between price levels and levels of volatility.

2.3.Long-term non stationary- Uncertainty factors such as supply and demand or fuel costs in the long-term future, a non stationary model seems more appropriate.

2.4.Electric Power Demand - If system demand increases, spot price also increases.

2.5.Weather Conditions
Electricity demand certainly depends on environmental condition and especially daily temperature.
Weather fluctuation will affect demand and hence spot price will also be affected.

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Design of Distribution Automation System with SCADA

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ABSTRACT

The electric power distribution network, an essential section of the electric power system, supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. Presently, research and development efforts are focused in the area of communication technologies. An electrical power system consists of generators, transformers, transmission lines distribution lines etc. The aim of this project is to design real time visualization, monitoring and controlling of electrical distribution system using SCADA. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be discriminate from healthy part of power system. It increases reliability of power system. The goal of this project is to provide a better understanding of the design challenges of electric distribution line monitoring system and identify important research in this increasing important field.

I.INTRODUCTION

The fundamental role of protection is to protection the entire system to maintain continuity of supply by detecting faults and to minimize damage to equipment. A good safety system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be dependable and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergize the faulted part. Generally, circuit breakers serve as one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help protect equipment by allowing the disconnection of faulted lines before any significant damage is done. SCADA technology has been matured enough now due to advances that has taken place in semiconductor technologies & telemetric. In this Project, the discussion is limited to Distribution Automation Systems. The early SCADA systems were built on replicating the existing system remote controls, lamps, and analog indications at the functional equivalent of pushbuttons, often placed on a mimic board for easy operator interface. The SCADA masters simply replicated point-for-point, control circuits connected to the remote, or slave, unit. At the same time as SCADA systems were developing, a parallel technology on remote teleprinting was taking shape. The invention of the "modem" (Modulator / Demodulator) allowed digital information to be sent over wire pairs which had been engineered to only carry the electronic equivalent of

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AC-DC Based Optimal Spot Pricing of Electricity in Restructured Electricity Market

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ABSTRACT

In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.

Keywords— Electricity market, HVDC, Short run marginal costing, Spot price, optimal power flow

I.INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules.

In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays ,the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

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"Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line"

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Abstract— A filigree of manual curve operating at top or added top voltages is appreprtate to address ability from breeding stations to load. In accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to fault due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve due to which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by top ability cyberbanking controller. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

Keywords **– FACTS, Thyristor Control Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.**

I. INTRODUCTION

The rapid growth in electrical power networks has gradually led to the development of control devices. These devices are in series and shunt, active and passive, controlled and switched categories. Each of them is used for one or some purposes like reactive power compensation, voltage control, dynamic stability improvement and power oscillation damping [1-2]. Thyristor Controlled Series Capacitor (TCSC) consists of a series compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Flexible AC Transmission Systems (FACTS) devices which is used for all mentioned purposed. TCSC has shown good capabilities in researches [3-6]. TCSC has advantages of using thyristor (with natural commutation) and low frequency switching. Therefore its cost, complexity and power loss have reduced. The Alternating Current (AC) power transmission over long lines was primarily limited by the series reactive impedance of the line. The main purpose of series compensation in power systems is to vary the impedance of transmission line. By adding series capacitors to the line, a portion of the reactive line impedance can be cancelled, thereby increasing the transmittable power. Two major types of series compensation are Fixed Series Compensation (FSC) [5] and Thyristor Controlled Series Compensation (TC SC) [3 – 6] In FSC, a capacitor is added in series with the line. This decreases the reactive impedance of the line and thus improves the power transfer capability. The advantage of using FSC is cost. Usually FSC allows for a majority of compensation for a lower cost. The major disadvantage with FSC is its fixed compensation. With the introduction of FACTS devices, dynamic control of power flow is highly successful in both controlling power flow in the line and in improving stability [6]. TCSC as one of the most attractive FACTS technology offers fast, smooth, and flexible control of the line impedance. TCSC is expected to provide various benefits to power systems including transient stability improvement, Sub Synchronous Resonance (SSR) mitigation, power swings damping and fault reduction [2]. In this paper a short description of TCSC is given along with design of TCSC. Hardware implementation of power flow control using TCSC in a 2 bus system is done. Hardware implementation to control the firing angle of TCSC is done in open loop and by varying the firing angle, power flow control in the transmission line is ensured.

II. TCSC MODEL AND STEADY STATE MODES OF OPERATION

A. TCSC Model

Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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Abstract:. Wind energy is gaining the most interest among a variety of renewable energy resources, but the disadvantage is that wind power generation is intermittent, depending on weather conditions. Energy storage is necessary to get a smooth output from a wind turbine. This paper presents the impact of fault on the system stability by using the fixed speed induction generator (FSIG) based wind farm connected to interconnected power system. Consequently, the stable operation of wind turbine systems is very important for power system stability.

Keywords: FSIG; WTIG; VOLTAGE STABILITY; STATCOM; FAULTS

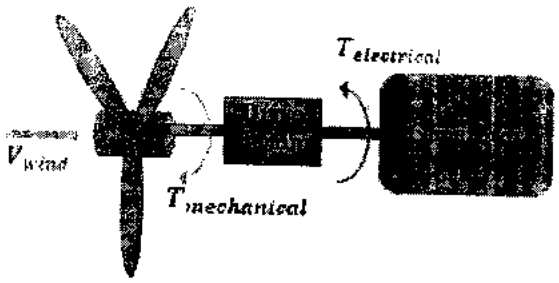
1. Introduction

The increasing number of renewable energy sources and distributed generators requires new strategies for the operation and management of the electricity grid in order to maintain or even to improve the power-supply reliability and quality[1].Wind power continuously give variable output power,when combined with induction generators like the fixed-speed squirrel-cage induction generator (SCIG). .Sometime these induction generators which are usually connected at weak end of a grid or at distribution networks inject large amount of reactive currents during disturbances such as faults[4]. Compared with the wind turbines based on synchronous generators, the squirrel cage induction generator (SCIG) based wind generation technology has several advantages such as flexible active and reactive power control capabilities[3] When a fault occurs in the external power system, the blade-angle control orders the mechanical system to reduce the wind turbine mechanical power to improve stability[6].]. It is necessary to examine the responses of SCIG wind farm during the faults and possible impacts on the system stability the part of STATCOM to support the windfarm during different fault locations and durations are studied.

2. Objective of work

1) Study under standard IEEE 9 bus system
2) Simulation of bus system with wind generation
3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

3.Model of wind turbine



Wind turbines is the system where electricity produced by using mechanical components and electrical generator. Wind passes over the blades of WT. Lift and exerting a turbine force are generating. In nacelle, the rotating blades turn a shaft that goes into a gearbox. The drive train is increasing the rotational speed that appropriate for wind turbine generator and rotational speed converted into electricity. Wind power extract from the wind by the rotor which is limited by the Betz limit (maximum 59%), Therefore, the mechanical power is expressed in Equation. (1)

$P = 0.5. Cp. (\lambda, \beta). \rho. A. v3$ (1)

Where Cp(λ, β) is the power coefficient, ρ is the air density (1.25kg/m2), Vw is wind speed(ms−1), and A swept area A is given the equation $A = \pi R2$.Where R is the radius of blade(m). Figure 1 shows the global scheme of variable speed wind turbine.

Aerodynamic model

The blades of wind turbine extract the kinetic energy from the wind and converted mechanical energy. The kinetic energy is equal to the mass of air m and the wind speed in Equation. (2)

$E = 1/2. m. v2$ (2)

The moving air power is equal to

$Pw = dE/dt = /12. m. v2$ (2) (3)

Where m is the mass flow rate per second. The

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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ABSTRACT
In recent years power electronics devices has seen many advances, due to this advancement in FACTS devices have increased. Now a days FACTs devices are more efficient and more widely used. Facts devices connected in power system offers many advantages which can solve problems of power system control. FACTs devices can help in improving problems like voltage regulation, transfer capacity enhancement and better power flow control. The main purpose of implementing FACTS devices is to increase transmission line capacity of transmission line. There are two different techniques by which FACTS devices can be made one is by using conventional thyristor, tap changing transformer, reactors and switch capacitors. Whereas second generation uses Gate Turn-Off (GTO) thyristor-switched converters as Voltage Source Converters (VSCs). By using first generation various devices are made viz. SVC, TCSC and TCPS. Second generation has developed few techniques like UPFC, IPFC and SSSC

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Review of Price Forecasting Techniques in Deregulated Electricity Market

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Abstract: Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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PERFORMANCE OF THREE FOOTINGS ON REINFORCED SAND

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ABSTRACT

Bearing capacity of soil plays an important role in design of foundations. Considering the amount of bearing capacity more than the actual can cause severe damage to the structures. On the other hand, underestimating the bearing capacity makes the foundation uneconomical. The general scenario is to design the footings as an isolated footing. The interfering as well as spacing effect is not considered while designing the footings. Interference occurs when a number of closely spaced footings are constructed. This occurrence has a significant effect on the ultimate bearing capacity, settlement, tilt and the failure mechanism of the footings. In the present study, the influence of three adjoining square surface footings in series on bearing capacity and settlement resting on reinforced and unreinforced sand were investigated. The parameters include effect of reinforcement configurations (Depth of first layer geogrid reinforcement (u) and Vertical distance between geogrid reinforcement layers (h)) and center to center distance between three footings. In order to evaluate this effects laboratory model tests were conducted at 55% relative density of sand for simulating the various conditions of footing. For reinforced sand three geogrid layers of equal length was used. The bearing capacity and settlement of adjacent footings has been observed to be improved by providing continuous geogrid reinforcement layer in the foundation soil under the closely spaced footings. It was observed that the layout of reinforcement play a vital role in bearing capacity improvement. The optimum depth of first layer geogrid reinforcement is 0.3 times the width of the footing (u/B=0.3) and the optimum vertical distance between geogrid reinforcing layers is also 0.3 times the width of the footing (h/B=0.3).

Key words: Three Footings, Bearing Capacity, Footing Interferences, Reinforced Sand

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Reduction of Evaporation Losses of Water using High Density Polyethylene Shade Balls

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Abstract : Water is one of the nature's precious gifts, which sustains life on earth.About 71% of earth surface is covered with water and the ocean holds about 97% of all earths' water. Remaining 3% is freshwater. This 3% freshwater is categorized as 68.7% is covered with icecaps and glaciers,30.1% is groundwater and remains only 0.3% surfacewater.

This 0.3% surface water is categorized as 87% water covered by lakes,11% swamps & river2% consume by living organism. The water covered by lakes and reservoirs is useful for drinking and many other purposes and may subjected to losses also.Global warming and the increasing concentration of greenhouse gases in theAtmosphere will affect temperature which results in faster rate of evaporation of potable water. This change has direct effect on reservoirs storage and availability of water resources.Many methods were proposed to reduce evaporation from open Reservoirs. These Shade Balls methods can be named as physical method. Research was done to evaluate the effectiveness of these methods in evaporation reduction from Reservoirs. Published research revealed that the physical methods can reduce Evaporation losses effectively, it also effect the pH value, Total Dissolved Solid ,Dissolved oxygen of water & algae growth of water including survival of fish .

Index Terms - **Global warming ,Rate of evaporation, Reservoirs**

1. INTRODUCTION

Water is one of the nature's precious gifts, which sustains life on earth. Civilizations over the world have perished depending upon the availability of this vital resource. Water has been worshiped for life nourishing properties in all the scriptures.

About 71% of earth surface is covered with water and the ocean holds about 97% of all earths' water. Remaining 3% is freshwater. This 3% freshwater is categorized as 79% is covered with icecaps and glaciers, 20% is groundwater and remains only 1% surface water. This 1% surface water is categorized as 52% water covered by lakes, river1% , 1% consume by living organism , 38% is soil moisture and 6% atmospheric water vapor. The water covered by lakes and reservoirs is useful for drinking and many other purposes and may subjected to various losses also.

In the earlier days availability of water was taken for granted. It is now being realized that water is not an unlimited resource and cannot be produced or added as and when required, by any known technological means. The other important limitation is that the availability of water over the years depends upon the variation of precipitation. Thus water may be abundant during monsoon season and scarce in non-monsoon season, when most needed. The life of man, therefore, lies in his ability to modify the pattern of availability of water to suit needs. One of the commonest forms of such modification is storage of water during monsoon season for eventual use in lean season. The traditional methods are big storage in natural or artificial tanks. The large numbers of storages have been constructed. Due to high temperature, about one third of the the evaporation losses have been found to be substantial. Therefore, it is necessary tc minimize evaporation losses in the storages/water bodies.

The need for prevention of enormous evaporation losses assumes greater significance, in view of the predictable scarcity of water; the country will be facing in future. It has been assessed that against the utilizable water resources of the order of 1093 billion cubic meter, the requirement by 2025 AD to be met from surface water resources will be around 1123 billion cubic meter, thereby surplus by just 30 billion cubic meter.

Due to intense agricultural practices, rapid increase in population, industrialization and urbanization etc., scarcity of water is being increasingly felt. The situation becomes grave in the arid and semiarid regions specially during droughts, when general scarcity of

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A Review on Reversible Secure Audio Data Hiding Technique over an Encrypted Domain

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ABSTRACT

Stenography is the art of covered or hidden writing. The purpose of *stenography* is covert communication to hide the existence of a message from a third party. It is very important to hide the secret data efficiently, as many attacks made on the data communication. The host signal can be a still image, speech or video and the message signal that is hidden in the host signal can be a text, image or an audio signal. The cryptography concept is used for locking the secret message in the cover file. The cryptography makes the secret message not understood unless the decryption key is available. It is related with constructing and analyzing various methods that overcome the influence of third parties. Modern cryptography works on the disciplines like mathematics, computer science and electrical engineering. Here a novel reversible audio data hiding scheme over encrypted domain is proposed. In this project, we will develop the encryption process on secret speech signal data bits-level to achieve greater strength of encryption which is hidden inside the cover image. The encryption algorithm applied with embedding method is the robust secure method for data hiding. Compared with the other approaches it provides the higher embedding capacity and is able to reconstruct the original audio perfectly.

Keywords: Cryptography, Encryption, Secret Signal, Cover Signal.

I. INTRODUCTION

In recent years, signal processing in the encrypted domain has attracted considerable research interest. As an effective and popular means for privacy protection, encryption converts the ordinary signal into unintelligible data, so that the traditional signal processing usually takes place before encryption or after decryption. However, in some scenarios that a content owner does not trust the processing service provider, the ability to manipulate the encrypted data when keeping the plain content unrevealed is desired.

Stenography is data security tool which stores the secret information in cover media file in such a way that no one else except the sender of the information and the intended receiver can only suspect the existence of any sort of information. Cryptography is also an information security tool, which provides encryption techniques to conceal the secret information.This Work Proposes a Novel Reversible Audio DataHiding (RIDH) Scheme Over Encrypted Domain. In this project we have to transmit the audio file which is hidden inside a cover image. So that Unauthorized Party cannot be able to Hack it. Reversible data hiding a novel technique which is used to embed additional information in the encrypted images, applies in military and medical images, which can be recoverable with original media and the hided data without loss. A number of reversible data hiding techniques were proposed in the recent years, but on analysis, all lacks in providing the security and authentication.

II. METHODS AND MATERIAL

Literature Review

Jiantao Zhou, Weiwei Sun, Li Dong, Xianming Liu, Oscar C. Au, Yuan Yan Tang [1].They proposed an encrypted-domain RIDH scheme by specifically taking the above-mentioned design preferences into consideration. The proposed technique embeds message

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Detection of Salient Region by Local Spatial Support & High Dimensional Color Transform

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Abstract*—Automatic salient region detection crosswise over pictures, with no earlier data or information of the contentsof the relating pictures, upgrades numerous PC vision and PC illustrations applications. Our approach proposesautomatic salient region detection in a picture which incorporates both the global and local features. The primary inspiration driving this approach is to develop a saliency map using linear combination of colors in a high dimensional color space. By and large, the human recognition is exceptionally confounded and non-straight and in light of that, the salient region comprises of particular color contrasted with the background. The estimation of an ideal development of a saliency map done by gathering the low-dimensional colors to the high-dimensional feature vectors. Moreover, a relative location and color contrast between super pixels are used as a features and resolve the saliency estimation from a trimap by means of learning-based technique to enhance the performance.The extra local features and learning-based calculation supplement the global estimation from the high-dimensional color transformed based calculation.

Keywords- Salient Region Detection, Super Pixel, Trimap, Color Channel, High-dimensional color space, Random Forest

I. INTRODUCTION

The people are specialists at rapidly and precisely recognizing the most outwardly discernible foreground object in the scene, known as salient object, and adaptively concentrate on such apparent critical areas. Salient region detection is essential in picture comprehension and examination. It will probably recognize salient region in a picture in terms of a saliency map, the distinguished areas would draw people's consideration. Numerous past investigations have demonstrated that salient region detection is helpful, and it has been connected to numerous applications including segmentation, object recognition, area based picture recovery, photograph adjustment, picture quality appraisal, versatile compression, and video compression. The advancement of salient region detection has regularly been propelled by the ideas of human visual perception. As color is an imperative visual signal to human, numerous salient region detection procedures are based upon unmistakable color discovery from a picture. The diagram of our strategy is exhibited in fig 1.

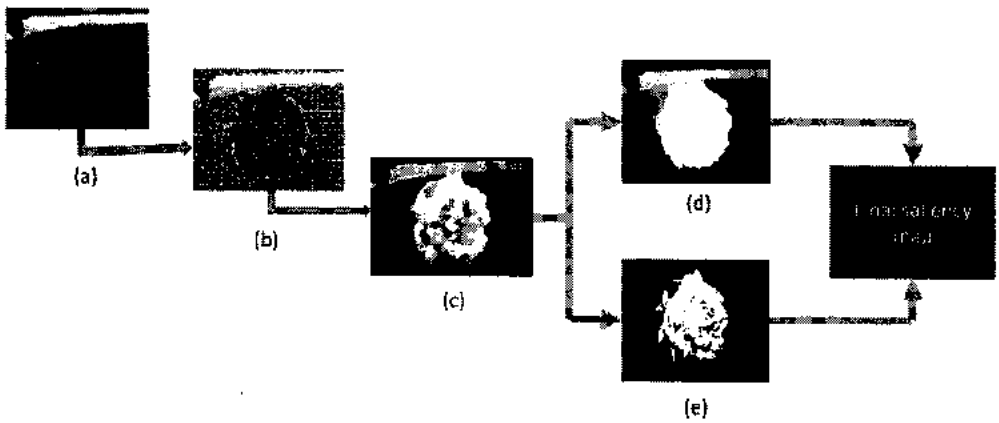

Fig.1. Overview of our method: (a) Input image, (b) Over-segmentation to super pixels, (c) Initial saliency trimap, (d) Global salient region detection via HDCT, (e) Local saliency map via local learning based method

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Content Based Image Retrieval System Based on Classifier Ensemble Approach

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Abstract: We formulate the problem of using an individual classifier for searching the images in the huge database by providing image or its rough sketch as a query. In order to used single classifier for image classification it produce numerous drawbacks, so to avoid this problem a systems comprising of a pool of classifier has to be designed which generates the output which is complement of each other. Though this field has acquired much wide popularity, CBIR has not yet reached its mellowness and is not yet being used on a large scale. In this study, various concepts regarding CBIR like objectives while designing a CBIR system, problems associated while designing an efficient CBIR system, analysis of KNN classifier for this system and a new system overcoming the drawback of using existing methods in terms of computational time and correctness have been discussed.

Key words: CBIR, classifier, ensemble, complement, objectives, terms

INTRODUCTION

Providing textual annotations for the images in large data bases posses difficulty to the user which gives idea that why CBIR is of high interest nowadays. CBIR is a system which gives output depends upon the content of a image to be search (Huurnink *et al*., 2012; Swain and Ballard, 1991). While designing any CBIR System the most common objectives for efficient output (correct image) are

Finding the images (output) that shares precise characteristics the user has in mind. Providing the output images which closely match to the query image sketch. The search engine must permit for fairly unclear outputs and it should not produce the output that contains all the related images and it should not discard all the irrelevant images because we have to pick one of the images as a output from itself. Relevant images provided as output by the search engine should must contain few images out of entire database (Chen *et al*., 2005). Retrieval of images (Query) from the huge database can be divided into following categories:

- Labeling the images by using texts
- Based on visual characteristics of the image content
- Based on the image semantic features

Retrieval of images by labeling using texts includes some drawbacks that it changes the retrieval system into conventional keywords and it also offers too heavy load and the output remains unclear. In second method, accuracy of the output depends solely on the quality of extracted features. In third method, the image retrieval that uses rough sketch of required image as a keyword is more superior than that of conventional text based. But the challenge is difference exists in mathematical feature extraction model on human beings point of view.

Problems associated while designing an efficient CBIR System: On the basis of various techniques related to the designing of CBIR System following problems have been revealed:

- Problem of difference in color visual scence that every human possessed which creates problem while analyzing color images
- If texture chosen of each method is not defining the complete information about image it will creates problem in text based search
- Automatic selection of shape edge creates difficulty in retrieval using shape features

Composition of a CBIR System: CBIR involves the following four parts in system realization:

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Web Searches for Visual Content: A Multiple Classifier Approach

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Abstract: **Though CBIR field has acquired much wide popularity, CBIR has not yet reached its mellowness and is not yet being used on a large scale. In this paper problem of using single classifier for searching the images in the huge database by providing image or its rough sketch as a query is removed up to certain extent. In order to used single classifier for image classification it produce numerous drawbacks so to avoid this problem a systems comprising of a pool of classifier has to be designed which generates the output which is complement of each other. In This Paper Various concepts regarding CBIR like objectives while designing a CBIR system, Problems associated while designing an efficient CBIR system, Analysis of KNN classifier for this system and a new system is proposed which overcomes the drawback of using existing methods in terms of computational time and correctness.**

Key words- CBIR, Classifiers, KNN

I. INTRODUCTION

While searching on the web finding the exact match of the required image from the huge database is one of the key problem in retrieval of images, mainly two types of retrieval is used that is text based (data such as keywords, tags, or descriptions associated with the image) and content based (using the features of image like shape, texture and color). Figure 1.1 shows the basic need of CBIR and core techniques available. While searching on the web finding the exact match of the required image from the huge database is one of the key problem in retrieval of images, mainly two types of retrieval is used that is text based (data such as keywords, tags, or descriptions associated with the image) and content based (using the features of image like shape, texture and color). Figure 1.1 shows the basic need of CBIR and core techniques available.

Multimedia applications now a day's requires the management of complex data that can be defined as hierarchical objects consisting of several component elements. In such scenarios, the Concept of similarity between complex objects clearly recursively depends on the similarity between component data, making difficult the resolution of several common tasks,

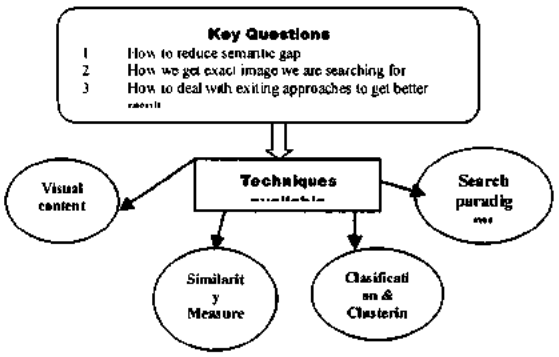

Figure 1.1 CBIR basic needs and available methods for it.

like processing of queries and understanding the impact of different alternatives available for the definition of similarity between objects. Queries regarding CBIR can generally of following types.

I. Keywords,
II. Semantic icons, and
III. User-drawn sketches.

Retrieval of images by labeling using Keywords includes some drawbacks that it changes the retrieval system into conventional keywords and it also offers too heavy load and the output remains unclear. In second method accuracy of the output depends solely on the quality of extracted features. bin third method the image retrieval that uses rough sketch of required image as a keyword is more superior than that of conventional text based. But the challenge is difference exists in mathematical feature extraction model on human beings point of view. However, images frequently lack descriptive text, which eliminates the possibility of text-based searching. In this situation, only content-based method those that directly use an image's pictorial information are feasible.

Major Problems while designing an efficient CBIR system:

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Review Paper on Design and Analysis of Microstrip Patch Antenna for Different Applications

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Abstract – As per Micro strip Patch antenna (MPA) provides low profile and low volume, now a day so it is use in the communication devices. It is premeditated that MPA is focused on planning compact sized micro strip antenna. A printed monopole antenna can be used in wireless communication devices in various operating frequency ranges. In this speedy dynamic world in wireless communication dual or multiband antenna has been playing a vital role for wireless service needs applications. In this paper, we will briefly study the various performance parameter of micro strip Antenna such as Return loss, VSWR, radiation pattern are simulated by using MATLAB on different geometries.

Index Terms – MPA, VSWR, MATLAB, Monopole antenna.

1. INTRODUCTION

A micro strip patch antenna (MPA) is commonly used because it is lightweight, low profile and simple structure antennas with reliability, mobility and good efficiency. They are most appropriate for aerospace and mobile applications. It contain conducting patch on a grounded dielectric substrate [7]. The design of a micro strip antenna initiates by deciding used for the antenna so the size of the patch. Due to the fringing fields on the radiating edges of the antenna there is a line extension related to the patch.

The conducting patch can be of any shape but in fact the rectangular, circular and triangular are commonly used shapes because these shapes are less complex and effective [3]. In this design and analysis has been done for rectangular, circular and triangular shaped patches to find out the best one on the basis of various antenna parameters. The performance of a patch antenna depend not only the shape of antenna but dielectric constant of the substrate, dimensions of the dielectric substrate and ground are also affects the performance of the patch antenna. It may be possible that all shapes gives different performance on different frequencies. Therefore, all the antennas are designed for 2.4 GHz.

The most commonly employed micro strip patch antenna is a rectangular patch [1]. The rectangular patch antenna is approximately a one wavelength long section of rectangular micro strip transmission line. The antenna is loaded with a dielectric as its substrate, the length of the antenna decreases as the relative dielectric constant of the substrate increases. When the air is the antenna substrate the length of the rectangular micro strip antenna is approximately one half of a free space wavelength. The design of Double E- shape patch antenna is as shown in figure below.

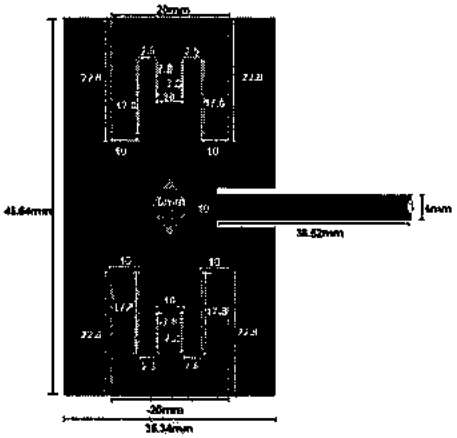

Figure 1 Double E-shape patch antenna

2. STEPWISE PROCEDURE

Step 1: Calculation of the width of Patch (W)-The width of the Micro strip patch antenna is given as

For f o=2.4GHz, ε r=4.4

$$W = \frac{c}{2f_0\sqrt{\frac{\varepsilon_r+1}{2}}} \qquad (1)$$

Step 2: Calculation of effective dielectric constant: Fringing makes the micro strip line look wider electrically compared to its physical dimensions. Since some of the waves travel in the substrate and some in air, an effective dielectric constant is introduced, given as:

$$\varepsilon_{reff} = \frac{\varepsilon_r+1}{2} + \frac{\varepsilon_r-1}{2}\left[1 + 12\frac{h}{W}\right]^{-\frac{1}{2}} \qquad (2)$$

Step 3: Calculation of Length of Patch (L)-The effective length due to fringing is given as:

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Low Light Video Enhancement Using Effective Framework Approach

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Abstract: Over the several decades, there have been improvements in Digital cameras including resolution and sensitivity. Other than these improvements, digital cameras are still limited in capturing images in low-light conditions. Video in low light is targeted. Many approaches are developed to improve the quality of low light video; however most of them consider video from moderately dark conditions. In this project, we propose an effective framework approach to enhance video from low light condition using noise removal filter technique and Weber's law used to detect the background in video in poor lighting. Finally, the performance of the proposed technique is illustrated through the processing of videos with different backgrounds, the majority of them with poor lighting conditions. The proposed method not only enhances the contrast but also measuring image quality by using MSE, PSNR and Correlation factor. Experimental results show that the proposed method has good performance on enhancing contrast and visibility for a majority of images. The software tool used is a MATLAB.

Keywords: Video, Enhancement, Low Light, Weber's Law, MATLAB.

I. INTRODUCTION

Video has become an integral part of everyday's life. As video surveillance equipment and mobile devices such as digital cameras, smart phones are increasingly used; cameras are expected to capture video content in all lighting and weather conditions. The majority of cameras, however, are not designed to be all-purpose and weather-proof, making the video unusable.

It is well-known that video enhancement as an active topic which received much attention in recent years. The aim is to improve the visuality of the video. Moreover, it helps to analyses background information which is essential to understand the object behaviour without human visual inspection.

There are various applications where digital video is acquired, processed and used, such as surveillance, general identity verification, criminal justice systems, civilian or military video processing. Carrying out video enhancement under low quality video is a challenging problem because of the following reasons.

(i)Due to low light, we cannot clearly extract moving objects from the dark background. Most colour-based methods will fail to identify colour of the moving objects and that of the background are similar.
(ii) The signal to noise ratio is usually very low due to high ISO (ISO is the number indicating camera sensors sensitivity to light). Using a high ISO number can produce visible noise in image.
(iii)Environmental information acts in many types on information. So, dealing with moving tree, fog, rain, behaviour of people in night time video are the difficult
because they face background due to poor illumination.
(iv)The moving objects region as weight since successive images should change smoothly.
(v) One pixel from a low quality image is important even if it is small, such as the area between the head lights and the tail lights of a moving car.

A general methodology for noise reduction and contrast enhancement is presented. Videos from dark background is targeted. Many approaches are developed for enhancing low light video; however most of them consider video from moderately dark conditions. In this project, we propose an effective framework approach to enhance video from low light environment using appropriate noise removal filter technique and Weber's law used to detect the background in video affected by poor lighting.

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Design and Analysis of Microstrip Patch Antenna for Different Applications

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Abstract: ***As Microstrip Patch antenna (MPA) is low profile, less costly and low volume, it is used now a day for different applications. Microstrip Patch antenna is targeted for improving its performance based on various factors. A printed antenna can be used in wireless communication at different operating frequencies. In this speedy dynamic world of wireless communication, dual or multiband antenna has been playing a key role for wireless service applications. This paper demonstrate, the performance analysis of microstrip antenna for various parameters such as Return loss, VSWR and radiation pattern. Results are simulated on different antenna geometries. The analysis of antenna for physical parameters such as area of substrate, height of substrate, patch shape and dielectric constant of substrate been done by varying one of them and achieving improve result of performance.***

Keywords: MPA, VSWR, Return Loss, Substrate, HFSS, VNA

1. Introduction

A microstrip patch antenna (MPA) is commonly used because it is lightweight, low profile and simple structure antennas with reliability, mobility and good efficiency [1]. The design of a microstrip antenna initiates by deciding used for the antenna so the size of the patch. There are many types of shapes in patch antenna. Circular, Rectangular and Square shapes are the traditional shapes. But elliptical, triangular, dipole, ring are also uses for patch antenna.

The performance of a patch antenna depend not only on the shape of antenna but dielectric constant of the substrate, dimensions of the dielectric substrate and ground also affects the performance of the patch antenna. It may be possible that all shapes gives different performance on different frequencies.

The most commonly employed micro strip patch antenna is a rectangular patch [6]. The rectangular patch antenna is approximately a one wavelength long section of rectangular microstrip transmission line.

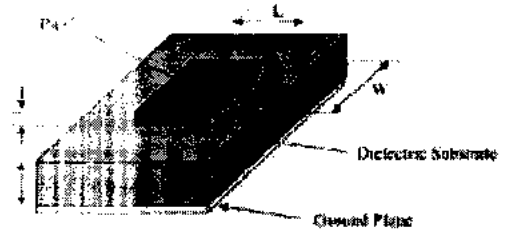

Figure 1: Structure of Microstrip patch Antenna

In above figure parameters are as follows.
Here, t= thickness of patch
h= height of dielectric substrate
L= length of patch
W= width of patch
Patch antenna consist of following:
· Patch (perfect electric conductor)
· Substrate
· Ground (perfect electric conductor)

2. System Analysis

Generally, a patch of the microstrip antenna is made from the radiating material. It is of conducting material such as copper or gold. The patch can be of any shape like circular, triangular, rectangular [4] and even alphabets like H, U, E, C, F etc.

Performance of microstrip patch antenna is based on the various parameters such as VSWR, Return loss, impedance Bandwidth and radiation pattern etc along with physical parameters such as width, height, length and design of patch, and length, height, width of substrate. So it becomes crucial to design appropriate microstrip patch antenna with improved VSWR & return for various application.

The patch of microstrip antenna for various shapes was design earlier and the result associated with it is calculated with respect to VSWR and Return loss. The table given below demonstrates the result for various shape of patch as follows.

Table 1: VSWR & Return loss for various shapes

Type of shape	VSWR	Return loss in dB
H	1.33	-16.34
I	1.37	-15.94
Star	1.43	-16.98
Mho	< 2	-15.83
V	1.08	-28
E	1.031	-34

3.1 Estimation of parameter

Step 1: Calculation of the width of Patch (W)-The width of the Micro strip patch antenna is given as
For f_0=2.4GHz, s_r=4.4

$$W = \frac{c}{2f_0\sqrt{\frac{s_r+1}{2}}} \quad (1)$$

Step 2: Calculation of effective dielectric constant: Fringing makes the micro strip line look wider electrically

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Portable Gadget Based Assistive Text and Label Reading For Blind Person

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ABSTRACT: The project describes framework, a camera-based helpful device which can facilitate the blind people to read text labels from handheld object .This system which is interfaced using raspberry pi, captures the image placed in front of the camera and text in the image is read and can be heard using earphones. The raspberry pi processes, image captured by the camera which is given as input to it and send voice message using earphone or speaker to the blind person. The systems main motive is to style a system that is useful for the physically challenged person like blind persons or visually challenge person to acknowledge the text from captured image and read out with the help of headphone or speakers connected to the raspberry pi processor.

KEYWORDS: TTS Engine, TESSERACT-OCR, PI Camera, Raspberry Pi, IOT

I. INTRODUCTION

In the smart word, blind and visually impaired person face a lot of difficulty in their day to day life. Although all the seven senses have their own importance in our day to day life, Vision is the most important part of human life as 83% of human gets information from the environment via sight because vision is the maximum source of data reception to the brain. The visual impairment is most common disability in the world .As per the 2012,WHO report there are 285 million people visually challenge in the word ,out of them 39 million people are blind and 246 are having low power of vision. The traditional systems for visually impaired people are walking stick and walking stick guide dogs and they are only useful for about five years. To assistance blind or visually impaired people dogs are used and they are trained to lead visually. The main drawbacks of these aids are requirement of necessary skills, training phase. Visually impaired people generally use either the typical white cane but it provides some restriction as long length, recognizing obstacle, difficulty in public places. The Advance technologies are introduced some software and hardware technologies for blind and visually impaired people. Embedded product are integrated part of human life making it smarter & comfortable. The visual impairment is most common disability in the word The existing electronic product available for them have some drawback like complexity in operation ,higher cost ,expensive methodology & installation & tough maintenance. People who are visually impaired still struggle every day in performing actions that can be as simple as moving from one point to another without falling down, So its our chance to do something visually impaired people or blind people .

Shopping is one of the most interesting thing and also one the most essential part of life for every human. But this simple task cannot be easily achieved by the blind. They need others help for satisfying their own requirements .At present in the case of shopping there is no such embedded product which can help them in this regard. Supermarket is the perfect option for them as almost all essential items are available under one roof. But inside the super market it is not possible for them to know what products is in front of them. They need to seek other's help for it. Hence we are

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Portable Gadget Based Assistive and Label Reading For Blind Person: A Review

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Abstract:This project describes a camera-based assistive device which will help the blind people to read text labels and product packaging from handheld object .The portable system which captures the image and text written which are placed in front of the camera can be read out or announced out using earphone or speaker interfaced to the raspberry pi processer. The raspberry pi processor takes the responsibility for authentication of image which is fed as input to it and also alerts the blind person through voice message using earphone or speaker. The proposed system aims at designing an innovative system which is very helpful for the physically challenged like blind persons to recognize the text from captured image and read out using earphone or speakers connected to the raspberry pi processor.

Keywords: TTS Engine, TESSERACT-OCR, PI Camera, Raspberry Pi, IOT

I. INTRODUCTION

Blind people and visually impaired people face a lot of unfavourable challenges in their routine . Vision is most important part of human Physiology as 83% of human gets information from the environment via sight. The visual impairment is most common disability in the world .As per the 2012,WHO report there are 285 million people visually challenge in the word ,out of them 39 million people are blind &246 are having low power of vision. The Oldest and Traditional mobility aids for visually impaired people are walking stick and guide dogs. The guide dogs are assistance dogs and they are trained to lead visually. The main Drawback of this aids are necessary skills, training phase, impaired around obstacles motion and very little information conveyed. Also this White cane has several restrictions such as long length if cane, limitations in recognizing obstacle and difficulty to keep in public places. The Advance modern technologies are introduced some software and hardware technologies for visually impaired people. For visually impaired people Recently there has been lots of Electronic Travel aids (ETA) designed and devised to help visually impaired people navigate independently and safely. Embedded system are integrated part of human life making it smarter and comfortable .the visual impairment is most common disability in the word The existing electronic product available for them have some drawback like complexity in operation ,higher cost ,expensive methodology & installation& tough maintenance. So embedded system for visually impaired & blind people will be our chance to do something for the these people .

Shopping is one of the most interesting thing and also one the most essential part of life for every human. But this simple task cannot be easily achieved by the blind. They need others help for satisfying their own requirements .At present in the case of shopping there is no such embedded product which can help them in this regard. Supermarket is the perfect option for them as almost all essential items are available under one roof. But inside the super market it is not possible for them to know what products is in front of them. They need to seek other's help for it. Hence we are proposing a system by which these people will be able to read the name of the product. This way our aim is to provide the shopping assistant for the blind and the visually impaired.

II. LITERATURE REVIEW

Literature review is carried out to gain knowledge and skill to complete this project. The main sources for this project are the previous publications related to this project. And the other sources are journals and articles. Therefore the analysis of the project did by other researches, these is the possibility to know are lacking in their projects. It is very important to improve and to develop a successful project.

Information about few research papers or previously implemented projects that we have used as a reference for making our project is mentioned below:A number of portable reading assistants are designed specifically for the visually impaired. "K-Reader Mobile" is a mobile application which allows the user to read mail, receipts, fliers, and many other documents[1]. But these systems/device fail to give an economic solution of the problem and are available on specific platforms. No smart phones have designed for blind person until now. Thus accessibility of the Mobile application is a different question However, the document to be read must be nearly flat, placed on a clear, dark surface and contain mostly black text printed on white background and it does not reads from complex backgrounds.

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An Improved Multi-secret Sharing Visual Cryptography Technique for Color Images Using Sterilization Algorithm

G. D. Dalvi and D. G. Wakde

Abstract Security in the recent technology world is an important issue to be taken care of and to be encountered with preventive measure on various aspects. Secret sharing is a technique used in visual cryptography (VC) which divides the image into many shares and by overlapping those shares original image is revealed, but it creates a threat when an intruder get shares with which the image is going to be decrypted easily. However, in the present project work, an extremely useful bitwise operation is performed on every pixel with the help of key. The key is provided by new concept of sterilization algorithm. Initially, Red, Green, and Blue channels get separated from image and are going to be encrypted on multiple levels using multiple shares; it converts an image into unreadable format and by combining all the shares in proper sequence the original secret image is revealed.

Keywords Bitwise operation · Multi shares · Pixel sharing
Sterilization · Algorithm · Keys · XOR · Encryption

1 Introduction

With the ascending of blended media application, there is a tremendous enthusiasm for transmission and secured securing of information. So, security is fundamental to discover good of fashioned certification. If the information is secured, the gate-crashers may not reshape the data. The best way to deal with oversees true blue and secure transmission of the data changes into a testing issue. Cryptographic frameworks bear the cost of the social occasion and security by reducing the likelihood of enemies [1]. It deals with the framework which is used to refresh the data among real and unlimited structures by using encryption and unscrambling

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Computer-aided Diagnosis System for Breast Cancer Using RF Classifier

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***Abstract*—Breast tumor is the most widely detected tumor and one of the major causes for malignancy demise in ladies around the world. The solution for this is early detection and diagnosis. Artificial Neural Network is used as emerging diagnostic tool for breast cancer. The objective of this research is to diagnose breast cancer with a machine learning method based on random forest classifier. MIAS database is used for the digital mammogram images. Preprocessing is generally needed to improve the low quality of image. ROI is determined according to size of suspicious area. After the suspicious region is segmented, features are extracted by texture analysis. Feature selection technique is used for the detection of High-dimensional features.**

A statistical method, gray-level co-occurrence matrix (GLCM) is used as a texture attribute to extract the suspicious area. From all extracted features best features are selected with the help of FCBF which is fast correlation-based feature selection technique. Selected features to improve the accuracy of classification are mean, standard deviation, smoothness, angular second moment (ASM), entropy, and correlation. Random Forest (RF) is used as a classifier. The results of present work show that the CAD system using RF classifier is very effective and achieves the best result in the diagnosis of breast cancer.

***Index Terms*—Breast, cancer, CAD, enhancement, feature selection, mammogram, mammography, random forest.**

I. Introduction

Breast cancer is widely analyzed disease in ladies around the world. It is the most common reason for malignancy demise in ladies in less developed regions and second cause in more developed regions after lung cancer. It has been estimated that nearby 1.6 million cases of breast cancer registered worldwide in 2010 [1], [2].

The survey of 2013 indicates that 230,815 ladies and 2109 gents in the US were determined to have breast cancer.

Estimated New Breast Cancer Cases and Deaths by Sex, United States, 2017 are as shown in Table I [3].

As per the study at NCI's Division of Cancer Epidemiology and Genetics, the cases of breast cancer will raise from 283,000 in 2011 to 441,000 in 2030 [4]. Early diagnosis is very important for survival, particularly in developing countries where the diseases are diagnosed very late. Mammography is the preeminent screening tool that uses X-ray to produce an image of the breast to determine tumor in breast. Mammography has been more effective in screening a symptomatic woman to lessen mortality. In some cases, results might be confused when a mammogram discovers a tumor that looks like malignant but turns out to be benign. On mammogram, dense breast tissue looks white and tumor also looks white. Hence sometimes, even qualified and experienced radiologists may miss breast cancers due to the density of breast [5]. The capable markers of malignancy regularly utilized as a part of assessing mammograms are masses and micro-calcifications. Mass recognition is a troublesome and testing issue than that of micro-calcifications, this is because of variation in size, shape and sometimes masses often exhibit poor image contrast in mammogram [6].

TABLE I
Statistics of Breast Cancer Cases in US, 2017.

Estimated new cases			Estimated deaths		
Male	Female	Total	Male	Female	Total
2470	252 710	255 180	41 070	460	40 610

The CAD system developed here will identify the abnormality in digital mammograms and help radiologists to spot the areas of concern. Hence CAD system for breast cancer has been turned out to be a capable supplementary tool in the battle against breast cancer. It improves the detection rate especially in younger women, where cancer masses are hidden because of dense breast tissue [7], [8].

This paper proposes a novel approach for the location and classification of tumor in breast from digital mammogram. The approach has been done with the support of morphological operations and Random forest classifier algorithm.

The paper is organized as follows. Section II summarizes related works on this topic. In Section III, details of CAD system are given those used for diagnosis of breast cancer such as image enhancement, feature extraction, feature selection, and classification. In Section IV, results and discussion are given and the paper concludes in Section V.

II. Literature Review and Previous Work

A literature review showed the recent developments in computer-aided diagnosis system for breast cancer using statistical approaches and artificial neural networks.

Nugroho *et al.* [9] used multilayer perceptron (MLP) as a classifier and CFS for the feature selection towards breast cancer diagnosis on Mammograms. Texture features are extracted based on histogram and GLCM.

Karahaliou *et al.* [10] proposed a method where they used gray-level and wavelet coefficient texture features of the tissue surrounding MC clusters on mammograms. Probabilistic neural network is used for differentiating malignant from benign with AUC of 0.989.

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Detection and Classification of Breast Cancer from Digital Mammograms using RF and RF-ELM Algorithm

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Abstract- Neural Network is utilized as a developing analytic tool for the diagnosis of breast cancer. The goal of this research is to determine breast tumor from digital mammograms with a machine learning technique in view of RF and combination of RF-ELM classifier. For digital mammogram images, MIAS database is used. Preprocessing is usually needed to enhance the low quality of the image. The region of interest (ROI) is determined in line with the scale of suspicious region. After the suspicious area is sectioned, features are extracted by texture analysis. GLCM is used as a texture attribute to extract the suspicious area. From all extracted features best features are selected with the help of CBF method. To enhance the exactness of classification, only six features are selected. These features are mean, standard deviation, kurtosis, variance, entropy and correlation coefficient. RF and RF-ELM are used as a classifier. The outcomes of present work show that the CAD system with the usage of RF-ELM classifier may be very powerful and achieves the exceptional results in the prognosis of breast cancer.

Keywords: Breast cancer, CAD, ELM, Feature selection, Digital Mammogram, MIAS, RF-ELM.

I. INTRODUCTION

Breast cancer is extensively analyzed disease in ladies around the world. It is the most common reason for malignancy demise in ladies in less developed regions and second cause in more developed regions after lung cancer. It has been estimated that near 1.6 million cases of breast cancer registered worldwide in 2010 [1][2]. The survey of 2013 indicates that 230,815 women and 2,109 men in the United States were diagnosed with breast cancer. Estimated New Breast Cancer Cases and Deaths by Sex, United States, 2017 are as shown in Table I. [3] As per the study at NCI's Division of Cancer Epidemiology and Genetics, Breast cancer will grow from 283,000 cases in 2011 to 441,000 in 2030. [4]
Early diagnosis is essential for survival, in particular in developing countries where the diseases are recognized very late. Mammography is the preeminent screening tool that makes use of X-ray to supply an image of the breast to diagnosis breast tumors. Mammography shows the

Table I
Statistics of Breast Cancer Cases in U.S., 2017

Estimated New Cases			Estimated Deaths		
Male	*Female*	*Total*	*Male*	*Female*	*Total*
2470	252710	255180	460	40610	41070

morphological aspects of the breast, such as the anatomical structures and all the breast tissues, namely glandular, fibrous and adipose tissues. In a few instances, the result is probably stressed whilst a mammogram discovers something that looks like cancers but turns out to be benign. On mammograms, dense breast tissue looks white. Breast masses or tumors also look white; hence sometimes dense tissue hides tumors. Indeed, even qualified and experienced radiologists may miss bosom tumors because of the density of bosom [5]. The successful markers of malignancy often applied as part of assessing mammograms are masses and micro-calcifications. Mass detection is a tough and difficult problem than detection of micro-calcifications, that is because of the variant in size and form found in a mammogram and also masses often show poor image contrast [6].

The CAD system developed here will perceive the abnormality in mammograms and help radiologists to identify the regions of the problem. Hence CAD system for breast cancer has been become out to be a successful supplementary tool in the combat against breast cancers. It improves the detection rate especially in younger women, in which tumors are hidden because of dense breast tissue. [7][8]

This paper proposes a novel technique for breast cancer segmentation and detection from a digital mammogram. The method has been completed with the help of morphological operations and Artificial Neural Networks.

II. LITERATURE REVIEW

A literature evaluates confirmed the current trends in computer-aided diagnosis system for breast cancers with the help of statistical techniques and artificial neural networks. In-Sung Jung *et al.* [9] summarizes the diverse near investigation of neural network algorithms to get the best

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Author Proof

Breast Cancer Diagnosis from Digital Mammograms Using RF and RF-ELM

R. D. Ghongade and D. G. Wakde

Abstract Artificial neural network is used as emerging diagnostic tool for breast cancer. The objective of this research is to diagnose breast cancer with a machine learning method based on random forest (RF) and RF-ELM classifier. MIAS database is used for digital mammogram images. Preprocessing is generally needed to improve the low quality of image. The region of interest (ROI) is determined according to the size of suspicious area. After the suspicious region is segmented, features are extracted by texture analysis. Gray-level co-occurrence matrix (GLCM) is used as a texture attribute to extract the suspicious area. From all extracted features, best features are selected with the help of correlation-based feature (CBF) selection. Selected features to improve the accuracy of classification are mean, standard deviation, kurtosis, variance, entropy, and correlation coefficient. RF and RF-ELM are used as classifiers. The results of present work show that the CAD system using RF-ELM classifier is very effective and achieves the best result in the diagnosis of breast cancer.

Keywords Breast cancer · CAD · ELM · Feature selection · Mammogram RF-ELM

1 Introduction

Breast cancer is extensively identified in women worldwide and is one of the primary causes of cancer demise among them. It is the most successive reason for malignancy demise in ladies in less developed regions and second reason for malignancy demise in developed regions after lung tumor. It has been anticipated

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Random Forest and Extreme Learning Machine Based CAD System for Breast Cancer

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Abstract: Neural network is utilized as rising diagnosis tool for cancer disease. The goal of this exploration is to determine tumor growth in breast with a machine learning method based on RF, ELM and RF-ELM classifier. MIAS database is utilized for the advanced mammogram images. Pre-processing is for the most part expected to enhance the low nature of image. The ROI is resolved by the measure of suspicious region. After the suspicious area is portioned, features are extracted by texture analysis. GLCM is utilized as a surface credit to extricate the suspicious region. From all extracted features best features are chosen with the assistance of CBF and PCA. RF, ELM and RF-ELM are utilized as classifier. The consequences of present research demonstrate that the CAD framework utilizing RF-ELM classifier is exceptionally compelling and accomplishes the best outcome in the finding of breast malignancy.

Key words: Breast cancer, CAD, CBF, ELM, feature selection, mammogram, PCA, RF-ELM

INTRODUCTION

Breast cancer is generally analysed malignancy in ladies worldwide and the one of the main sources of tumour demise among them. It is the most common reason for malignancy demise in ladies in developing areas and second reason in developed areas after lung tumour. It has been assessed that more than 1.6 million instances of bosom tumour enlisted worldwide in 2010 (Jemal *et al*., 2011; Forouzanfar *et al*., 2011). The review of 2013 demonstrates that 230,815 ladies and 2,109 men in the United States were determined to have bosom malignancy.

Estimated new breast cancer cases and deaths by sex in United States in 2017 are 255180 and 41070, respectively (Siegel *et al*., 2017). As per the study at NCI's division of cancer epidemiology and genetics, breast cancer will grow from 283,000 cases in 2011 to 441,000 in 2030, a more than 50% increase (Anonymous, 2015).

Early conclusion is essential for survival, especially in developing nations where the diseases are analyzed late. Mammography is the transcendent screening apparatus that utilizations X-beam to deliver a image of the breast to analysis bosom disease. Mammography has been more successful in screening a symptomatic lady to decrease mortality. At times result may be befuddled when a mammogram finds something that looks like growth, yet, ends up being generous (not tumour). On mammograms, thick bosom tissue looks white. Bosom masses or tumours additionally look white subsequently some of the time thick tissue conceals tumours. Indeed, even qualified and experienced radiologists may miss bosom growths because of the thickness of bosom (Kolb *et al*., 2002). The capable markers of malignancy routinely used as a piece of evaluating mammograms are masses and micro-calcifications. Mass detection is a troublesome and testing issue than that of micro-calcifications, this is because of variation in size and shape observed in a mammogram and furthermore masses regularly display poor image contrast (Cheng *et al*., 2003).

The CAD framework created here will identify the abnormality in digital mammograms and help radiologists to detect the ranges of concern. Subsequently, CAD framework for breast malignancy has been ended up being a competent supplementary apparatus in the battle against breast tumour. It enhances the identification rate particularly in more youthful ladies where disease masses are shrouded on account of thick bosom tissue (Cheng *et al*., 2006; Motakis *et al*., 2009).

This study proposes a novel approch for breast cancer segmentation and detection from digital mammogram images. The approach has been carried out with the assistance of morphological operations and Artificial Neural Networks (ANNs).

Literature review: A literature review showed the current improvements in CAD systems for breast cancer utilizing factual methodologies and artificial neural networks.

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Assistant Navigation System for Visually Impaired People

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ABSTRACT: There are about 285 billion visually impaired people in the world; 39 billion people in that are blind and 285 billion are low vision. They are not able to experience the world the way we do. This System aims to provide this missing experience for them. The system uses state of the art deep learning methods from Microsoft Cognitive Services for image classification and tagging. The Experience is powered by Ear Phone or Speaker. This System aims bring the beautiful world as a narrative to the visually impaired. The narrative is generated by converting the scenes in the front of them to text which describes the objects in the scene. Examples of text includes 'A group of people playing a game of football', 'yellow trunk parked next to the car' ,'a bowl of salad kept on table'. For the first prototype of the system, one line along with some keyword are played as an audio to the users but in the later versions a detailed description would be added as the feature.

KEYWORDS: Raspberry Pi 3, Assistant Navigation System, Webcam, Visually Impaired, Amazon Web Services, Microsoft APIs.

I. INTRODUCTION

Vision is most important part of human Physiology as 83% of human gets information from the environment via sight. The 2011 statistics by the World Health Organisation (WHO) estimates that there are 285 billion people in the world are visually impaired; 39 billion people in that are blind and 246 billion with low vision. The Oldest and Traditional mobility aids for visually impaired people are walking stick and guide dogs. The guide dogs are assistance dogs and they are trained to lead visuallyimpaired around obstacles. The main drawback of these techniques is necessary skills, training phase, range of motion and very little information conveyed. Also this White cane has several restrictions such as long length if cane, limitations in recognizing obstacle and difficulty to keep in public places. The Advance modern technologies are introduced for the visually impaired people for navigation includes both hardware and software. Recently there has been lots of Electronic Travel aids (ETA) [1] designed and devised to help visually impaired people navigate independently and safely. Also recently, high end technological solutions have been introduced to help blind people navigate independently. The Blind people use the Global Positioning System (GPS) [2] technology for outdoor navigation to identify position and orientation and location due to need for the line of sight contact to satellite, they still need addedmechanisms to improve on the resolution and proximity detection to prevent accident of the blind persons with other objects and hence person life in danger. However in comparison to other technologies many blind guidance systems uses an array of ultrasonic sensors[3],[4] which is basically works on the principle of the ultrasonic sound generation and alert mechanism. Also, the ultrasonic is popular because the technology is relatively inexpensive, and also ultrasound emitters and detectors are small enough to be carried without the need for complex circuitry.
For both blind and visually impaired people, our proposed work offers a simple, efficient, configurable electronic intelligent system to help them in their mobility regardless of where they are, outdoor or indoor. Also, the user of the system does not need to carry a stick or any other self-explanatory tool. The Blind person can just wear a cap just like

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A Cooperative approach for Malicious Node Detection in impromptu Wireless Networks

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***Abstract*—Security is at stake once communication takes place between mobile nodes in very hostile surroundings. Contrary to the wired networks, the exclusive individuality of mobile impromptu networks produce variety of major challenges to security style, like mutual wireless medium, open peer-to-peer specification, stern resource constraints and extremely dynamic topology. These unfavorable conditions clearly need a case for making dimensional security remedies that get not solely wide selection protection however additionally acceptable network performance. Popularly used existing routing protocols designed to include the wants of such endemic networks don't address doable threats aiming at the disruption of the protocol itself. The most important challenge in impromptu wireless networks is energy inefficiency; beneath bound circumstances, it's virtually not possible to interchange or recharge the batteries. Thence it's fascinating to stay dissipation of energy at lower purpose, a number of the issues area unit restricted energy reserve and lack of centralized coordination. During this paper, we tend to establish the safety problems, discuss the challenges and propose the cooperative approach for malicious node detection**

***Index Terms*—Malicious Node, Attack, Collaborative approach, Cluster Head.**

I. INTRODUCTION

Mobile ad hoc network is structured by the nodes in the absence of a rigid infrastructure where all nodes move randomly and all the nodes process themselves. In MANET, every node acts not only as a node but also as a router. In an infrastructure mobile network, nodes have base stations within their transmission range [2]. In contrary to this, mobile ad hoc networks are indigenous and devoid of infrastructure support. Low cost and powerful wireless transceivers are popularly used in mobile applications due to the progress of wireless communication technology. Due to the absence of fixed infrastructure, network topology in MANET changes when nodes move in or out of the network [1]. As a result, the routing protocols need to adaptively adjust routing based on available nodes. The resources owned and controlled by a node are said to be local to it, while the resources owned and controlled by other nodes and those that can only be accessed through the network are said to be remote. The external attackers can inject false routing information or advertise incorrect routing table information to break down the network [4]. The compromised node attacker are able to generate valid signatures using their private keys [5], they are difficult to detect and can create several damages in the networks. Because of their own private keys, the intrusion preventive measures such as authentication and encryption cannot reduce the effect of compromised node attacker. Moreover, the wireless channel is accessible to malicious attacker and legitimate user; hence it is more vulnerable to all kinds of network attacks. One conspicuous characteristic of MANETs, from the security point of view, is the lack of protection. MANET is a capable technology but it has certain features that are considered inclined, which leads to security weakness in the technology such as, weakened centralized management, less resource availability, scalability, dynamic topology, limited power supply etc. In MANET, all networking operations such as routing the message and forwarding the packets are performed by nodes themselves in a centralized manner. For these reasons, providing security to mobile ad hoc network is very difficult task [10]. To prevent and detect attacks like black hole, wormhole, rushing attack etc and to secure the communication among the nodes of wireless ad hoc network, many intrusion detection techniques have been introduced. They can be classified into mainly three categories: signature based, anomaly based and specification based intrusion detection [3].

The practical side of attacks can be broadly grouped as application level attacks and network level attacks. Application level attacker tries to steal into, bring about change or resist access to information of a particular application, whereas Network level attacker attempts to restrict the capabilities of network, reduces speed or

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Analysis of Modified Rule Extraction Algorithm and Internal Representation of Neural Network

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Abstract: Classification and Rule extraction is an important application of Artificial Neural Network. To extract fewer rules from multilayer feed forward neural network has been a research area. The internal representation of the network is augmented by a distance term to extract fewer rules from the feed forward neural network and experimented on five datasets. Understanding affect of different factors of the dataset and network on extraction of a number of rules from the network can reveal important pieces of information which may help researchers to enhance the rule extraction process. This work investigates the internal behavior of neural network in rule extraction process on five different dataset.

Keywords: Rule extraction, Feed Forward Neural Network, Hidden units, Activation value, Hidden neurons.

1. Introduction

Classification and pattern recognition is one of the important application of Artificail Neural Network [Kamruzzan et al. 2011][Sheng and Qi 2011]. Classification rules, extracted by efficient rule extraction algorithm helps in decision process but concepts learned by neural networks are difficult to understand because they are represented using large assemblages of real valued parameters [Srivastava et al.,2015]. A neural network is trained on a training input sample. A multilayered network has more than two layers. The layer between input layer and output layer is called as hidden layer and hence neurons in hidden layer are known as hidden neurons. Each layer is connected to each other and each connection has a weight associated with it. Weights and biases are initialized with random values [Mia et al.,2015]. The training sample of input is given to the input layer, which gives an output of the layer by applying transfer function and weight to the input value. The output is then presented as input to hidden layer having its own transfer function, weights and biases. In this way the output of the hidden layer,

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Survey on Route Optimization mechanism in Network Mobility

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Abstract- **The success of mobile communication, shows that the interest in users to access the Internet or their official networks on the move. This mobility support may be needed for a single user or group of nodes called as movable sub networks. Network Mobility (NEMO) protocol developed by IETF enables the mobile nodes and networks to maintain connectivity to their network or Internet by change their point of attachment to from one access network to another. NEMO is developed by extending host mobility support protocol, Mobile IPv6, but without providing route optimization. Next generation networks require an efficient route optimization scheme, optimized specially to support network mobility. This paper studies the existing modes of working in the NEMO. Meanwhile, summarize and analyze the Route optimization protocol to reduce the overhead and enhance the performance of a mobile network and give the overview of this area.**

I.INTRODUCTION

Mobile IPv6 is a very important part in the mobile computing for global Internet. An extension to Mobile IPv6 called Network Mobility (NEMO) has been specified in RFC 3963[1].The processes and messages are basically the same as in Mobile IPv6, except that in this case, the mobile node is a Mobile router (MR). It is assumed that a NEMO has a home network where it resides when it is not in motion. Since the NEMO is a component of the home network, it configures addresses belonging to the address block assigned to the home network (i.e., the home prefix). These addresses remain assigned to the NEMO network whenever it is away from home, i.e., a Mobile Network Prefix (MNP). Naturally, these addresses only have topological meaning when the NEMO is at home. When the NEMO is away from its home, i.e., when it is connected to aforeign network; the MR acquires an address from a visited network, called the Care of Address (CoA).In the current NEMO specification, communication between nodes in the mobile network and correspondent nodes goes through the home agent. Route Optimization has not been completely defined yet. Thus, NEMO has the problem of triangular routing and pinball routing [2] (when nesting occurs), resulting in increased latency and packet size. As next generation networks are expected to support real time multimedia applications that are highly time sensitive, the end-to-end delay should be kept under certain values. Therefore, one of the major issues in network mobility is route optimization. Route optimization techniques are required to handle the end-to-end delay. Many Researcher have been tried to make evolution in current NEMO and used route optimization techniques [3], [4], [5], [6], [7], [8], [9] for increasing performance of NEMO. Moreover, these approaches provide only partial solutions by optimizing only some sectors of the route between Correspondent Nodes(CNs) and Mobile Network Nodes (MNNs). More Research required to provide best solution. In this paper we studied various existing Route optimization techniques for Network Mobility with their features and drawbacks.

II. WORKING MODES IN NEMO

A .Network Mobility Basic Support (NEMO BS)

- **Triangular Routing**

In NEMO Node that are attached to a MR, Mobile Network Nodes (MNNs), are not aware of the network's mobility and do not perform any mobility functions. MRs also sends binding updates to their HAs. However, binding updates from MRs also contain the mobile network's network prefix. HAs will bind an entire network prefix to the MR's CoA and forward all packets for that network to the MR. IP packets from a correspondent node (CN) that are destined for a node on a mobile network (MN) are delivered via standard routing on the Internet to the HA of that MN. The HA tunnels the packets to the MR for delivery to the MNN. Reverse packets take the same path in the opposite direction; the MNN sends packets to the MR to be tunneled to the home agent and then sent out to the CN via standard routing on the Internet.The main drawback of triangular routing, i.e., packets are always forwarded through the HA, following suboptimal paths resulting in increased latency and packet size

B. NEMO Extended Support (NEMO ES)

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Abstract

At present, digital image processing is elevated vicinity. Image possession, a broadcast may corrupt an image with impulse noise. Several realistic appliances necessitate a superior, squat complex de-noising practice as a pre-processing maneuver. While impulse noise filtering, the

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A SURVEY ON OPINION MINING ON TOURIST DOMAIN

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Received on: 02-03-2017 *Accepted on: 28-03-2017*

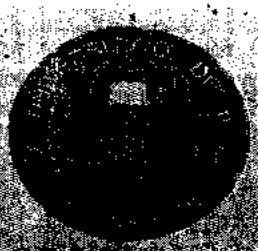
Abstract

Currently, most tourists use the internet for selecting their tourist place. To confirm their decision they take a review of experienced tourist. The web contains many websites which provide a review on tourist domain. This paper provides a survey of different methods used for classifying the review and proposed a method for suggesting the polarity of review and classifying the review according to the category suggested by the user.

Introduction

Today's world is the scientific world. In daily life, human can use all the things made from science and one of the most important thing is the Internet. Many social networking sites like Twitter, Face book, etc. are available on Internet. Internet provides the useful information to people. Many things are available on the Internet. Internet provides us huge volume of data. Peoples are using these sites in their day to day life. They are giving their opinion regarding the news that are posted on different websites available on Internet, also providing their feedback regarding different products, their opinion related to politicians etc. This opinionated data is used by the product manufactures to check the popularity of their product or to compare their product to the competitor and decide whether any changes have to be done in their product or not. Also, they checked their competitor's progress.

If anyone wants to buy some products they can check the review regarding that product on Internet. Then they can decide which product is good and which they have to purchase. This is the example of the product only, in this way the opinion not restricted to product only it may be for movies, restaurant, travel, TV serial, about any articles, post ,tourist places etc. and we get opinionated data by Internet and process that opinionated data for different purposes. Like opinion spam detection, emotion recognition, opinion classification, opinion summarization etc.



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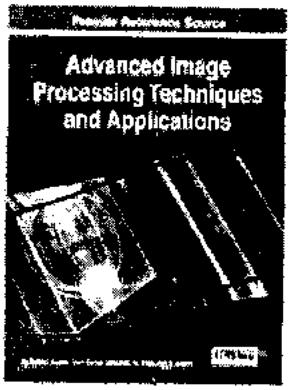

Digital Image Steganography: Survey, Analysis, and Application

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Abstract

Digital data transmitted over the insecure communication can be prone to attacks. Intruders try various attacks to unauthorized access of the confidential information. The Steganography is such as security system that provide the protection to the images, text and other type of data digitally transferred through the data communication network. This chapter elaborates the basics of Digital Image Steganographic techniques from ancient era to digital edge, types of images used for the steganography, payload used for the steganography, various attacks and different algorithms that can provide the information security. The performance analysis of the various Digital Image Steganographic algorithms are discussed. The current applications and their necessities are discussed in this chapter.

Chapter Preview

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Introduction

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Digital data in the form of text, images, audio and video are transmitted over the internet by means of communication links. The confidentiality of secret data should be preserved from intruders. Steganography contains a group of methods with which different algorithms are available to embed the secret data under the cover medium such as image, without any detectable indications on the cover image. Many algorithms are designed to provide the security for the communication of data over the Internet. The good steganographic algorithm is identified by the performance of the algorithm measured with the help of the parameters such as PSNR, MSE robustness and capacity to hide the information in the cover image. This chapter explores the steganographic methods used from many years, the methods used currently and the capabilities of steganography in future. The crucial part of the steganographic algorithms are the carrier and its payload. There are various types of carriers available for the steganographic applications.

Steganography is the technique that covers the confidential data under the cover medium such as image, without reflecting any clue on the cover image (Chan & Cheng, 2004). Secrete Message transmission is possible by the technique steganography with the help of entities such as a secret message, message carrier and the embedding algorithm who embed the secret message in the cover message i.e. image. The Message is the secret data which is being hidden and carrier is the entity that covers the secret message (Valandar, Ayubi & Barani, 2015). Using the image steganographic method, the secret message is covered by an image in such way that the secret message can be easily extracted as well as the cover image does not lose its visibility (Bender, Morimoto & Lu, 2010). The variations are done slightly, that do not reflect the visual changes in the image.

The mathematical techniques, available in the cryptography have some limitations and can prone to crack mathematically. The image steganography is more secure, but the processing and extraction of the secret message from the cover image need some more processing time. The good steganographic algorithms are able to hide the sensitive data under the cover medium such as image, without remaining any noticeable clue to the intruders (Sun & Liu, 2010). The strength of the steganographic algorithms is to keep the confidential information under an image such a way that, no any steganalysis method, or tool extracts the original message from the cover image without the proper stego key (Mishra, Tiwari & Yadav, 2014).

In the spatial domain, the spatial based methods carried out by the image pixel base using the techniques such as Least Significant Bit (LSB) insertion, SVD and spread spectrum methods. In the frequency based methods, the Discrete Cosine Transformation (DCT), Discrete Wavelet Transformation (DWT), Discrete Fourier Transformation (DFT) and Integer Wavelet Transformation (IWT) steganographic transformation based methods hide secret image i.e. the payload to another cover image (Verma, 2011).

The efficiency of the above steganographic algorithms can be analyzed by comparing the cover image with the stego image. This comparison is carried out by calculating the parameters viz. Peak Signal to Noise Ratio (PSNR), Mean Squared Error (MSE) with the help of programming the code in MATLAB (Gonzalez, Woods & Eddins, 2010). Figure 1 shows the digital image steganographic algorithms.

Figure 1. Digital image steganographic algorithms

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"*Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line*"

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Abstract— A filigree of manual curve operating at top or added top voltages is appropriate to address ability from breeding stations to load. In accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve due to which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by top ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

Keywords **– FACTS, Thyristor Control Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.**

I. INTRODUCTION

The rapid growth in electrical power networks has gradually led to the development of control devices. These devices are in series and shunt, active and passive, controlled and switched categories. Each of them is used for one or some purposes like reactive power compensation, voltage control, dynamic stability improvement and power oscillation damping [1-2]. Thyristor Controlled Series Capacitor (TCSC) consists of a series compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Flexible AC Transmission Systems (FACTS) devices which is used for all mentioned purposed. TCSC has shown good capabilities in researches [3-6]. TCSC has advantages of using thyristor (with natural commutation) and low frequency switching. Therefore its cost, complexity and power loss have reduced. The Alternating Current (AC) power transmission over long lines was primarily limited by the series reactive impedance of the line. The main purpose of series compensation in power systems is to vary the impedance of transmission line. By adding series capacitors to the line, a portion of the reactive line impedance can be cancelled, thereby increasing the transmittable power. Two major types of series compensation are Fixed Series Compensation (FSC) [5] and Thyristor Controlled Series Compensation (TC SC) [3 – 6] In FSC, a capacitor is added in series with the line. This decreases the reactive impedance of the line and thus improves the power transfer capability. The advantage of using FSC is cost. Usually FSC allows for a majority of compensation for a lower cost. The major disadvantage with FSC is its fixed compensation. With the introduction of FACTS devices, dynamic control of power flow is highly successful in both controlling power flow in the line and in improving stability [6]. TCSC as one of the most attractive FACTS technology offers fast, smooth, and flexible control of the line impedance. TCSC is expected to provide various benefits to power systems including transient stability improvement, Sub Synchronous Resonance (SSR) mitigation, power swings damping and fault reduction [2]. In this paper a short description of TCSC is given along with design of TCSC. Hardware implementation of power flow control using TCSC in a 2 bus system is done. Hardware implementation to control the firing angle of TCSC is done in open loop and by varying the firing angle, power flow control in the transmission line is ensured.

II. TCSC MODEL AND STEADY STATE MODES OF OPERATION

A. TCSC Model

Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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Abstract:. Wind energy is gaining the most interest among a variety of renewable energy resources, but the disadvantage is that wind power generation is intermittent, depending on weather conditions. Energy storage is necessary to get a smooth output from a wind turbine. This paper presents the impact of fault on the system stability by using the fixed speed induction generator (FSIG) based wind farm connected to interconnected power system. Consequently, the stable operation of wind turbine systems is very important for power system stability.

Keywords: **FSIG; WTIG; VOLTAGE STABILITY; STATCOM; FAULTS**

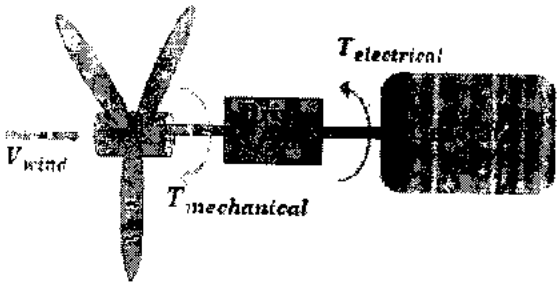
1. Introduction

The increasing number of renewable energy sources and distributed generators requires new strategies for the operation and management of the electricity grid in order to maintain or even to improve the power-supply reliability and quality[1].Wind power continuously give variable output power,when combined with induction generators like the fixed-speed squirrel-cage induction generator (SCIG). .Sometime these induction generators which are usually connected at weak end of a grid or at distribution networks inject large amount of reactive currents during disturbances such as faults[4]. Compared with the wind turbines based on synchronous generators, the squirrel cage induction generator (SCIG) based wind generation technology has several advantages such as flexible active and reactive power control capabilities[3] When a fault occurs in the external power system, the blade-angle control orders the mechanical system to reduce the wind turbine mechanical power to improve stability[6].]. It is necessary to examine the responses of SCIG wind farm during the faults and possible impacts on the system stability the part of STATCOM to support the windfarm during different fault locations and durations are studied.

2. Objective of work

1) Study under standard IEEE 9 bus system
2) Simulation of bus system with wind generation
3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

3.Model of wind turbine



Wind turbines is the system where electricity produced by using mechanical components and electrical generator. Wind passes over the blades of WT. Lift and exerting a turbine force are generating. In nacelle, the rotating blades turn a shaft that goes into a gearbox. The drive train is increasing the rotational speed that appropriate for wind turbine generator and rotational speed converted into electricity. Wind power extract from the wind by the rotor which is limited by the Betz limit (maximum 59%), Therefore, the mechanical power is expressed in Equation. (1)

$P = 0.5. Cp. (\lambda, \beta). \rho. A. v3$ (1)

Where Cp(λ, β) is the power coefficient, ρ is the air density (1.25kg/m2), Vw is wind speed(ms−1), and A swept area A is given the equation $A = \pi R2$.Where R is the radius of blade(m). Figure 1 shows the global scheme of variable speed wind turbine.

Aerodynamic model

The blades of wind turbine extract the kinetic energy from the wind and converted mechanical energy. The kinetic energy is equal to the mass of air m and the wind speed in Equation. (2)

$E = 1/2. m. v2$ (2)

The moving air power is equal to

$Pw = dE/dt = /12. m. v2$ (2) (3)

Where m is the mass flow rate per second. The

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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ABSTRACT

In recent years power electronics devices has seen many advances, due to this advancement in FACTS devices have increased. Now a days FACTs devices are more efficient and more widely used. Facts devices connected in power system offers many advantages which can solve problems of power system control. FACTs devices can help in improving problems like voltage regulation, transfer capacity enhancement and better power flow control. The main purpose of implementing FACTS devices is to increase transmission line capacity of transmission line. There are two different techniques by which FACTS devices can be made one is by using conventional thyristor, tap changing transformer, reactors and switch capacitors. Whereas second generation uses Gate Turn-Off (GTO) thyristor-switched converters as Voltage Source Converters (VSCs). By using first generation various devices are made viz. SVC, TCSC and TCPS. Second generation has developed few techniques like UPFC, IPFC and SSSC

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Review of Price Forecasting Techniques in Deregulated Electricity Market

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Abstract: *Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.*

1. Introduction

Many integrated utilities have been replaced by separate generation transmission and distribution companies. Electricity market is becoming more competitive .In many case large industrial and commercial consumer have option to select their energy supplier .Choice extend to residential level also. These change referred as electricity deregulation. With the Introduction of deregulation of power industry, new challenges have been encountered by the participants of the electricity market due to which forecasting of wind power, electric loads and energy price have become a major issue globally mainly focusing on soft computing models .Price forecasting plays a key role in the new electricity industry .In addition to helping independent generators in setting up optimal bidding patterns and also designing physical bilateral contracts, market prices strongly affect the decision on investing a new generation facilities in the long run[2]. The applications of electricity price forecasting differ depending on the forecasting period. The fundamental applications of short-term, medium-term and long-term price forecasting can be summarized as day-ahead profit maximization, bilateral contracts planning, and investment recovery confirmation [6].Electricity is also a commodity, and its price should also be forecasted along with time but if the same methods were used for forecasting electricity prices as other commodity prices, the forecasted price will exhibit lower accuracy without any surprise due to volatile nature of electricity price among all commodities. There are many soft computing models are used to forecast electricity prices are time series model such as stochastic model[3][5],game theory model [4],simulation models ,Artificial intelligence techniques such as neural network[9] are used for application where formal analysis is difficult or impossible such as pattern recognition and non linear system and gives accurate results. This paper reviews established approaches and mainly focusing on soft computing models.

2. Factor influencing price forecasting

There are many factors affect on the price forecasting due to which prices are increases or decreases .There are many factors such as demand ,seasonality that affect on prices and different factors are described below[3][4]

2.1.Price spikes -Price spikes are are electricity spot prices which are not consistent with the usual modeling via diffusion processes with normal or lognormal marginal distributions.

2.2. Price dependent volatilities. Prices are volatile in nature .All markets there is a strong correlation between price levels and levels of volatility.

2.3.Long-term non stationary- Uncertainty factors such as supply and demand or fuel costs in the long-term future, a non stationary model seems more appropriate.

2.4.Electric Power Demand - If system demand increases, spot price also increases.

2.5.Weather Conditions
Electricity demand certainly depends on environmental condition and especially daily temperature.
Weather fluctuation will affect demand and hence spot price will also be affected.

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Design of Distribution Automation System with SCADA

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ABSTRACT

The electric power distribution network, an essential section of the electric power system, supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. Presently, research and development efforts are focused in the area of communication technologies. An electrical power system consists of generators, transformers, transmission lines distribution lines etc. The aim of this project is to design real time visualization, monitoring and controlling of electrical distribution system using SCADA. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be discriminate from healthy part of power system. It increases reliability of power system. The goal of this project is to provide a better understanding of the design challenges of electric distribution line monitoring system and identify important research in this increasing important field.

I.INTRODUCTION

The fundamental role of protection is to protection the entire system to maintain continuity of supply by detecting faults and to minimize damage to equipment. A good safety system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be dependable and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergize the faulted part. Generally, circuit breakers serve as one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help protect equipment by allowing the disconnection of faulted lines before any significant damage is done. SCADA technology has been matured enough now due to advances that has taken place in semiconductor technologies & telemetric. In this Project, the discussion is limited to Distribution Automation Systems. The early SCADA systems were built on replicating the existing system remote controls, lamps, and analog indications at the functional equivalent of pushbuttons, often placed on a mimic board for easy operator interface. The SCADA masters simply replicated point-for-point, control circuits connected to the remote, or slave, unit. At the same time as SCADA systems were developing, a parallel technology on remote teleprinting was taking shape. The invention of the "modem" (Modulator / Demodulator) allowed digital information to be sent over wire pairs which had been engineered to only carry the electronic equivalent of

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AC-DC Based Optimal Spot Pricing of Electricity in Restructured Electricity Market

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ABSTRACT

In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.

***Keywords*— Electricity market, HVDC, Short run marginal costing, Spot price, optimal power flow**

I.INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules.

In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays .the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

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Design and Analysis of Microstrip Patch Antenna for Different Applications

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Abstract: ***As Microstrip Patch antenna (MPA) is low profile, less costly and low volume, it is used now a day for different applications. Microstrip Patch antenna is targeted for improving its performance based on various factors. A printed antenna can be used in wireless communication at different operating frequencies. In this speedy dynamic world of wireless communication, dual or multiband antenna has been playing a key role for wireless service applications. This paper demonstrate, the performance analysis of microstrip antenna for various parameters such as Return loss, VSWR and radiation pattern. Results are simulated on different antenna geometries. The analysis of antenna for physical parameters such as area of substrate, height of substrate, patch shape and dielectric constant of substrate been done by varying one of them and achieving improve result of performance.***

Keywords: MPA, VSWR, Return Loss, Substrate, HFSS, VNA

1. Introduction

A microstrip patch antenna (MPA) is commonly used because it is lightweight, low profile and simple structure antennas with reliability, mobility and good efficiency [1]. The design of a microstrip antenna initiates by deciding used for the antenna so the size of the patch. There are many types of shapes in patch antenna. Circular, Rectangular and Square shapes are the traditional shapes. But elliptical, triangular, dipole, ring are also uses for patch antenna.

The performance of a patch antenna depend not only on the shape of antenna but dielectric constant of the substrate, dimensions of the dielectric substrate and ground also affects the performance of the patch antenna. It may be possible that all shapes gives different performance on different frequencies.

The most commonly employed micro strip patch antenna is a rectangular patch [6]. The rectangular patch antenna is approximately a one wavelength long section of rectangular microstrip transmission line.

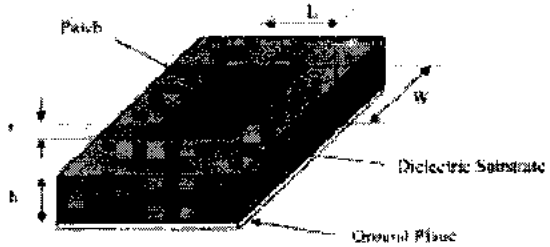

Figure 1: Structure of Microstrip patch Antenna

In above figure parameters are as follows.
Here, t= thickness of patch
h= height of dielectric substrate
L= length of patch
W= width of patch
Patch antenna consist of following:
· Patch (perfect electric conductor)
· Substrate
· Ground (perfect electric conductor)

2. System Analysis

Generally, a patch of the microstrip antenna is made from the radiating material. It is of conducting material such as copper or gold. The patch can be of any shape like circular, triangular, rectangular [4] and even alphabets like H, U, E, C, F etc.

Performance of microstrip patch antenna is based on the various parameters such as VSWR, Return loss, impedance Bandwidth and radiation pattern etc along with physical parameters such as width, height, length and design of patch, and length, height, width of substrate. So it becomes crucial to design appropriate microstrip patch antenna with improved VSWR & return for various application.

The patch of microstrip antenna for various shapes was design earlier and the result associated with it is calculated with respect to VSWR and Return loss. The table given below demonstrates the result for various shape of patch as follows.

Table 1: VSWR & Return loss for various shapes

Type of shape	VSWR	Return loss in dB
H	1.33	-16.34
I	1.37	-15.94
Star	1.43	-16.98
Mho	< 2	-15.83
V	1.08	-28
E	1.031	-34

3.1 Estimation of parameter

Step 1: Calculation of the width of Patch (W)-The width of the Micro strip patch antenna is given as
For f_0=2.4GHz, s_r=4.4

$$W = \frac{c}{2f_0\sqrt{\frac{s_r+1}{2}}} \quad (1)$$

Step 2: Calculation of effective dielectric constant: Fringing makes the micro strip line look wider electrically

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"Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line"

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Abstract— A filigree of arrival curve operating at top or added top voltages is appropriate to address ability from breeding stations to load. In accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve ducts which, voltage collapse takes place. These problems can be eased by acquirement acceptable allowance of alive amitif and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by top ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

Keywords **– FACTS, Thyristor Control Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.**

I. INTRODUCTION

The rapid growth in electrical power networks has gradually led to the development of control devices. These devices are in series and shunt, active and passive, controlled and switched categories. Each of them is used for one or some purposes like reactive power compensation, voltage control, dynamic stability improvement and power oscillation damping [1-2]. Thyristor Controlled Series Capacitor (TCSC) consists of a series compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Flexible AC Transmission Systems (FACTS) devices which is used for all mentioned purposed. TCSC has shown good capabilities in researches [3-6]. TCSC has advantages of using thyristor (with natural commutation) and low frequency switching. Therefore its cost, complexity and power loss have reduced. The Alternating Current (AC) power transmission over long lines was primarily limited by the series reactive impedance of the line. The main purpose of series compensation in power systems is to vary the impedance of transmission line. By adding series capacitors to the line, a portion of the reactive line impedance can be cancelled, thereby increasing the transmittable power. Two major types of series compensation are Fixed Series Compensation (FSC) [5] and Thyristor Controlled Series Compensation (TC SC) [3 – 6] In FSC, a capacitor is added in series with the line. This decreases the reactive impedance of the line and thus improves the power transfer capability. The advantage of using FSC is cost. Usually FSC allows for a majority of compensation for a lower cost. The major disadvantage with FSC is its fixed compensation. With the introduction of FACTS devices, dynamic control of power flow is highly successful in both controlling power flow in the line and in improving stability [6]. TCSC as one of the most attractive FACTS technology offers fast, smooth, and flexible control of the line impedance. TCSC is expected to provide various benefits to power systems including transient stability improvement, Sub Synchronous Resonance (SSR) mitigation, power swings damping and fault reduction [2]. In this paper a short description of TCSC is given along with design of TCSC. Hardware implementation of power flow control using TCSC in a 2 bus system is done. Hardware implementation to control the firing angle of TCSC is done in open loop and by varying the firing angle, power flow control in the transmission line is ensured.

II. TCSC MODEL AND STEADY STATE MODES OF OPERATION

A. TCSC Model

Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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Abstract: Wind energy is gaining the most interest among a variety of renewable energy resources, but the disadvantage is that wind power generation is intermittent, depending on weather conditions. Energy storage is necessary to get a smooth output from a wind turbine. This paper presents the impact of fault on the system stability by using the fixed speed induction generator (FSIG) based wind farm connected to interconnected power system. Consequently, the stable operation of wind turbine systems is very important for power system stability.

Keywords: FSIG; WTIG; VOLTAGE STABILITY; STATCOM; FAULTS

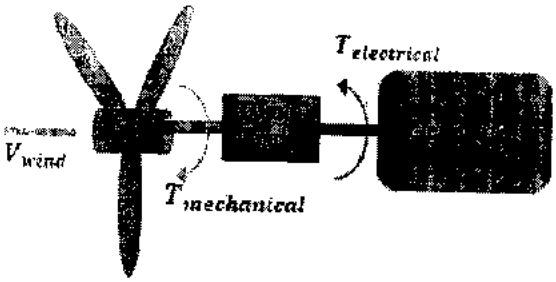
1. Introduction

The increasing number of renewable energy sources and distributed generators requires new strategies for the operation and management of the electricity grid in order to maintain or even to improve the power-supply reliability and quality[1].Wind power continuously give variable output power,when combined with induction generators like the fixed-speed squirrel-cage induction generator (SCIG). .Sometime these induction generators which are usually connected at weak end of a grid or at distribution networks inject large amount of reactive currents during disturbances such as faults[4]. Compared with the wind turbines based on synchronous generators, the squirrel cage induction generator (SCIG) based wind generation technology has several advantages such as flexible active and reactive power control capabilities[3] When a fault occurs in the external power system, the blade-angle control orders the mechanical system to reduce the wind turbine mechanical power to improve stability[6].]. It is necessary to examine the responses of SCIG wind farm during the faults and possible impacts on the system stability the part of STATCOM to support the windfarm during different fault locations and durations are studied.

2. Objective of work

1) Study under standard IEEE 9 bus system
2) Simulation of bus system with wind generation
3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

3.Model of wind turbine



Wind turbines is the system where electricity produced by using mechanical components and electrical generator. Wind passes over the blades of WT. Lift and exerting a turbine force are generating. In nacelle, the rotating blades turn a shaft that goes into a gearbox. The drive train is increasing the rotational speed that appropriate for wind turbine generator and rotational speed converted into electricity. Wind power extract from the wind by the rotor which is limited by the Betz limit (maximum 59%), Therefore, the mechanical power is expressed in Equation. (1)

$P = 0.5. Cp. (\lambda, \beta). \rho. A. v3$ (1)

Where Cp(λ, β) is the power coefficient, ρ is the air density (1.25kg/m2), Vw is wind speed(ms−1), and A swept area A is given the equation $A = \pi R2$.Where R is the radius of blade(m). Figure 1 shows the global scheme of variable speed wind turbine.

Aerodynamic model

The blades of wind turbine extract the kinetic energy from the wind and converted mechanical energy. The kinetic energy is equal to the mass of air m and the wind speed in Equation. (2)

$E = 1/2. m. v2$ (2)

The moving air power is equal to

$Pw = dE/dt = /12. m. v2$ (2) (3)

Where m is the mass flow rate per second. The

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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ABSTRACT
In recent years power electronics devices has seen many advances, due to this advancement in FACTS devices have increased. Now a days FACTs devices are more efficient and more widely used. Facts devices connected in power system offers many advantages which can solve problems of power system control. FACTs devices can help in improving problems like voltage regulation, transfer capacity enhancement and better power flow control. The main purpose of implementing FACTS devices is to increase transmission line capacity of transmission line. There are two different techniques by which FACTS devices can be made one is by using conventional thyristor, tap changing transformer, reactors and switch capacitors. Whereas second generation uses Gate Turn-Off (GTO) thyristor-switched converters as Voltage Source Converters (VSCs). By using first generation various devices are made viz. SVC, TCSC and TCPS. Second generation has developed few techniques like UPFC, IPFC and SSSC

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Review of Price Forecasting Techniques in Deregulated Electricity Market

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Abstract: Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.

1. Introduction

Many integrated utilities have been replaced by separate generation transmission and distribution companies. Electricity market is becoming more competitive .In many case large industrial and commercial consumer have option to select their energy supplier .Choice extend to residential level also. These change referred as electricity deregulation. With the Introduction of deregulation of power industry, new challenges have been encountered by the participants of the electricity market due to which forecasting of wind power, electric loads and energy price have become a major issue globally mainly focusing on soft computing models .Price forecasting plays a key role in the new electricity industry .In addition to helping independent generators in setting up optimal bidding patterns and also designing physical bilateral contracts, market prices strongly affect the decision on investing a new generation facilities in the long run[2]. The applications of electricity price forecasting differ depending on the forecasting period. The fundamental applications of short-term, medium-term and long-term price forecasting can be summarized as day-ahead profit maximization, bilateral contracts planning, and investment recovery confirmation [6].Electricity is also a commodity, and its price should also be forecasted along with time but if the same methods were used for forecasting electricity prices as other commodity prices, the forecasted price will exhibit lower accuracy without any surprise due to volatile nature of electricity price among all commodities. There are many soft computing models are used to forecast electricity prices are time series model such as stochastic model[3][5],game theory model [4],simulation models ,Artificial intelligence techniques such as neural network[9] are used for application where formal analysis is difficult or impossible such as pattern recognition and non linear system and gives accurate results. This paper reviews established approaches and mainly focusing on soft computing models.

2. Factor influencing price forecasting

There are many factors affect on the price forecasting due to which prices are increases or decreases .There are many factors such as demand ,seasonality that affect on prices and different factors are described below[3][4]

2.1.Price spikes -Price spikes are are electricity spot prices which are not consistent with the usual modeling via diffusion processes with normal or lognormal marginal distributions.

2.2. Price dependent volatilities. Prices are volatile in nature .All markets there is a strong correlation between price levels and levels of volatility.

2.3.Long-term non stationary- Uncertainty factors such as supply and demand or fuel costs in the long-term future, a non stationary model seems more appropriate.

2.4.Electric Power Demand - If system demand increases, spot price also increases.

2.5.Weather Conditions
Electricity demand certainly depends on environmental condition and especially daily temperature.
Weather fluctuation will affect demand and hence spot price will also be affected.

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Design of Distribution Automation System with SCADA

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ABSTRACT

The electric power distribution network, an essential section of the electric power system, supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. Presently, research and development efforts are focused in the area of communication technologies. An electrical power system consists of generators, transformers, transmission lines distribution lines etc. The aim of this project is to design real time visualization, monitoring and controlling of electrical distribution system using SCADA. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be discriminate from healthy part of power system. It increases reliability of power system. The goal of this project is to provide a better understanding of the design challenges of electric distribution line monitoring system and identify important research in this increasing important field.

I.INTRODUCTION

The fundamental role of protection is to protection the entire system to maintain continuity of supply by detecting faults and to minimize damage to equipment. A good safety system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be dependable and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergize the faulted part. Generally, circuit breakers serve as one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help protect equipment by allowing the disconnection of faulted lines before any significant damage is done. SCADA technology has been matured enough now due to advances that has taken place in semiconductor technologies & telemetric. In this Project, the discussion is limited to Distribution Automation Systems. The early SCADA systems were built on replicating the existing system remote controls, lamps, and analog indications at the functional equivalent of pushbuttons, often placed on a mimic board for easy operator interface. The SCADA masters simply replicated point-for-point, control circuits connected to the remote, or slave, unit. At the same time as SCADA systems were developing, a parallel technology on remote teleprinting was taking shape. The invention of the "modem" (Modulator / Demodulator) allowed digital information to be sent over wire pairs which had been engineered to only carry the electronic equivalent of

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AC-DC Based Optimal Spot Pricing of Electricity in Restructured Electricity Market

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ABSTRACT

In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.

Keywords— Electricity market, HVDC, Short run marginal costing, Spot price, optimal power flow

I.INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules.

In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays .the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

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"Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line"

Mr.Vivek Vyavhare [1], Prof.Atul Ghute[2]

[1](PG Student,P.R.Pote,College Amravati)
[2](Prof.,P.R.Pote,College Amravati)

Abstract— A filigree of mantal curve operating at top or added top voltages is appropriate to address ability from breeding stations to load. In accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful-commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve due to which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by top ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2]. Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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Stability improvement of wind generation using FACTS device

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4) Simulation of bus system with wind generation with fault and compensated by FACTS device

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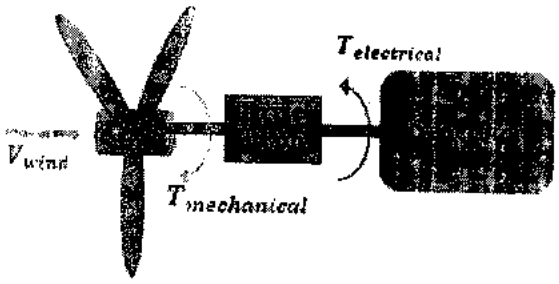

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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Review of Price Forecasting Techniques in Deregulated Electricity Market

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Abstract: Price forecasting has become integral part of power system. In deregulated electricity market price forecasting is gaining importance between various market players in order to adjust their bids in day ahead electricity market and maximize their profit .An accurate price forecasting method is important factor for market player as it enable them to decide their bidding strategies to maximize profit. Various models have been developed they are mainly used for price forecasting time series ,simulation model ,stochastic model ,econometric model , artificial intelligence model ,game theory model. Application of various model as applied different electricity market is presented.

1. Introduction

Many integrated utilities have been replaced by separate generation transmission and distribution companies. Electricity market is becoming more competitive .In many case large industrial and commercial consumer have option to select their energy supplier .Choice extend to residential level also. These change referred as electricity deregulation. With the Introduction of deregulation of power industry, new challenges have been encountered by the participants of the electricity market due to which forecasting of wind power, electric loads and energy price have become a major issue globally mainly focusing on soft computing models .Price forecasting plays a key role in the new electricity industry .In addition to helping independent generators in setting up optimal bidding patterns and also designing physical bilateral contracts, market prices strongly affect the decision on investing a new generation facilities in the long run[2]. The applications of electricity price forecasting differ depending on the forecasting period. The fundamental applications of short-term, medium-term and long-term price forecasting can be summarized as day-ahead profit maximization, bilateral contracts planning, and investment recovery confirmation [6].Electricity is also a commodity, and its price should also be forecasted along with time but if the same methods were used for forecasting electricity prices as other commodity prices, the forecasted price will exhibit lower accuracy without any surprise due to volatile nature of electricity price among all commodities. There are many soft computing models are used to forecast electricity prices are time series model such as stochastic model[3][5],game theory model [4],simulation models ,Artificial intelligence techniques such as neural network[9] are used for application where formal analysis is difficult or impossible such as pattern recognition and non linear system and gives accurate results. This paper reviews established approaches and mainly focusing on soft computing models.

2. Factor influencing price forecasting

There are many factors affect on the price forecasting due to which prices are increases or decreases .There are many factors such as demand ,seasonality that affect on prices and different factors are described below[3][4]

2.1.Price spikes -Price spikes are are electricity spot prices which are not consistent with the usual modeling via diffusion processes with normal or lognormal marginal distributions.

2.2. Price dependent volatilities. Prices are volatile in nature .All markets there is a strong correlation between price levels and levels of volatility.

2.3.Long-term non stationary- Uncertainty factors such as supply and demand or fuel costs in the long-term future, a non stationary model seems more appropriate.

2.4.Electric Power Demand - If system demand increases, spot price also increases.

2.5.Weather Conditions
Electricity demand certainly depends on environmental condition and especially daily temperature.
Weather fluctuation will affect demand and hence spot price will also be affected.

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Design of Distribution Automation System with SCADA

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ABSTRACT

The electric power distribution network, an essential section of the electric power system, supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. Presently, research and development efforts are focused in the area of communication technologies. An electrical power system consists of generators, transformers, transmission lines distribution lines etc. The aim of this project is to design real time visualization, monitoring and controlling of electrical distribution system using SCADA. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be discriminate from healthy part of power system. It increases reliability of power system. The goal of this project is to provide a better understanding of the design challenges of electric distribution line monitoring system and identify important research in this increasing important field.

I.INTRODUCTION

The fundamental role of protection is to protection the entire system to maintain continuity of supply by detecting faults and to minimize damage to equipment. A good safety system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be dependable and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergize the faulted part. Generally, circuit breakers serve as one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help protect equipment by allowing the disconnection of faulted lines before any significant damage is done. SCADA technology has been matured enough now due to advances that has taken place in semiconductor technologies & telemetric. In this Project, the discussion is limited to Distribution Automation Systems. The early SCADA systems were built on replicating the existing system remote controls, lamps, and analog indications at the functional equivalent of pushbuttons, often placed on a mimic board for easy operator interface. The SCADA masters simply replicated point-for-point, control circuits connected to the remote, or slave, unit. At the same time as SCADA systems were developing, a parallel technology on remote teleprinting was taking shape. The invention of the "modem" (Modulator / Demodulator) allowed digital information to be sent over wire pairs which had been engineered to only carry the electronic equivalent of

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AC-DC Based Optimal Spot Pricing of Electricity in Restructured Electricity Market

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ABSTRACT

In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.

Keywords— Electricity market, HVDC, Short run marginal costing, Spot price, optimal power flow

I.INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules.

In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays .the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

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"Application Of Thyristor Controlled Series Capacitor On Overhead Trasmission Line"

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Abstract— A filigree of manual curve operating at top or added top voltages is appropriate to address ability from breeding stations to load. In accession to manual curve that backpack ability from antecedent to load, avant-garde ability systems are awful commutual for bread-and-butter reasons. The ample commutual manual networks are decumbent to faults due to the lightning discharges and abate insulation strength. Changing of endless and atmosphere altitude are capricious factors. This may could cause overloading of curve due to which voltage collapse takes place. These problems can be eased by accouterment acceptable allowance of alive ambit and ability transfer, but it is not accessible due to amplification of manual network. Still the appropriate allowance is bargain by addition of fast activating ascendancy over acknowledging and alive ability by atop ability cyberbanking controllers. This cardboard describes about accomplishing of Thyristor Controlled Alternation Capacitor (TCSC) in manual band archetypal in adjustment to enhance ability breeze at the accepting end. The triggering pulses to the thyristor are accustomed application Arduino.

Keywords – FACTS, Thyristor Ascendancy Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.

I. INTRODUCTION

The accelerated advance in electrical ability networks has gradually led to the development of ascendancy devices. These accessories are in alternation and shunt, alive and passive, controlled and switched categories. Each of them is acclimated for one or some purposes like acknowledging ability compensation, voltage control, activating adherence advance and ability cadence damping [1-2] Thyristor Controlled Alternation Capacitor (TCSC) consists of a alternation compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Adjustable AC Manual Systems (FACTS) accessories which is acclimated for all mentioned purposed. TCSC has apparent acceptable capabilities in researches [3-6]. TCSC has advantages of application thyristor (with accustomed commutation) and low abundance switching. Therefore its cost, complication and ability accident accept reduced. The Alternating Current (AC) power manual over continued curve was primarily bound by the alternation acknowledging impedance of the line. The capital purpose of alternation advantage in ability systems is to alter the impedance of manual line. By abacus alternation capacitors to the line, a allocation of the acknowledging band impedance can be cancelled, thereby accretion the communicable power. Two above types of alternation advantage are Anchored Alternation Advantage (FSC) [5] and Thyristor Controlled Alternation Advantage (TC SC) [3 – 6] In FSC, a capacitor is added in alternation with the line. This decreases the acknowledging impedance of the band and appropriately improves the ability alteration capability. The advantage of application FSC is cost. Usually FSC allows for a majority of advantage for a lower cost. The above disadvantage with FSC is its anchored compensation. With the addition of FACTS devices, activating

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"Application Of Thyristor Controlled Series Capacitor"

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***Abstract*—Modern energy transmission systems suffer from great voltage drop and power transfer capability reduces due to the line reactance and thermal limits. Therefore, Thyristor Controlled Series Capacitor (TCSC) has been proposed to enhance the power transfer capability by changing the reactive power distribution in the power system. The large interconnected transmission networks are prone to faults due to the lightning discharges and reduce insulation strength. Changing of loads and atmosphere conditions are unpredictable factors. This may cause overloading of lines due to which voltage collapse takes place. These problems can be eased by providing sufficient margin of working parameters and power transfer, but it is not possible due to expansion of transmission network. Still the required margin is reduced by introduction of fast dynamic control over reactive and active power by high power electronic controllers. This paper describes about implementation of Thyristor Controlled Series Capacitor (TCSC) in transmission line model in order to enhance power flow at the receiving end. The triggering pulses to the thyristor are given using Arduino.**

Keywords **– FACTS, Thyristor Control Series Capacitor (TCSC), Inductor, Capacitor, Thyristor, Firing Angle.**

I. INTRODUCTION

The rapid growth in electrical power networks has gradually led to the development of control devices. These devices are in series and shunt, active and passive, controlled and switched categories. Each of them is used for one or some purposes like reactive power compensation, voltage control, dynamic stability improvement and power oscillation damping [1-2]. Thyristor Controlled Series Capacitor (TCSC) consists of a series compensating capacitor shunted by a thyristor controlled reactor (TCR). TCSC is one of the Flexible AC Transmission Systems (FACTS) devices which is used for all mentioned purposed. TCSC has shown good capabilities in researches [3-6]. TCSC has advantages of using thyristor (with natural commutation) and low frequency switching. Therefore its cost, complexity and power loss have reduced. The Alternating Current (AC) power transmission over long lines was primarily limited by the series reactive impedance of the line. The main purpose of series compensation in power systems is to vary the impedance of transmission line. By adding series capacitors to the line, a portion of the reactive line impedance can be cancelled, thereby increasing the transmittable power. Two major types of series compensation are Fixed Series Compensation (FSC) [5] and Thyristor Controlled Series Compensation (TC SC) [3 – 6] In FSC, a capacitor is added in series with the line. This decreases the reactive impedance of the line and thus improves the power transfer capability. The advantage of using FSC is cost. Usually FSC allows for a majority of compensation for a lower cost. The major disadvantage with FSC is its fixed compensation. With the introduction of FACTS devices, dynamic control of power flow is highly successful in both controlling power flow in the line and in improving stability [6]. TCSC as one of the most attractive FACTS technology offers fast, smooth, and flexible control of the line impedance. TCSC is expected to provide various benefits to power systems including transient stability improvement, Sub Synchronous Resonance (SSR) mitigation, power swings damping and fault reduction [2]. In this paper a short description of TCSC is given along with design of TCSC. Hardware implementation of power flow control using TCSC in a 2 bus system is done. Hardware implementation to control the firing angle of TCSC is done in open loop and by varying the firing angle, power flow control in the transmission line is ensured.

II. TCSC MODEL AND STEADY STATE MODES OF OPERATION

A. TCSC Model

Fig. (1) shows a TCSC module with different protective elements. Basically, it comprises a series capacitor (C), in parallel with a Thyristor Controlled Reactor (TCR) (Ls). A metal oxide varistor (MOV), essentially a nonlinear resistor, is connected across the series capacitor to prevent the occurrence of high capacitor over voltages. The amount of series compensation in the capacitive operating region is increased (or decreased) by varying the thyristor firing angle α. The overall impedance of TCSC is given in equation (1).

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Stability improvement of wind generation using FACTS device

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Abstract: Wind energy is gaining the most interest among a variety of renewable energy resources, but the disadvantage is that wind power generation is intermittent, depending on weather conditions. Energy storage is necessary to get a smooth output from a wind turbine. This paper presents the impact of fault on the system stability by using the fixed speed induction generator (FSIG) based wind farm connected to interconnected power system. Consequently, the stable operation of wind turbine systems is very important for power system stability.

Keywords: FSIG; WTIG; VOLTAGE STABILITY; STATCOM; FAULTS

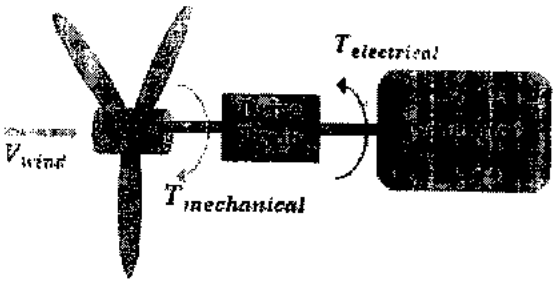
1. Introduction

The increasing number of renewable energy sources and distributed generators requires new strategies for the operation and management of the electricity grid in order to maintain or even to improve the power-supply reliability and quality[1].Wind power continuously give variable output power,when combined with induction generators like the fixed-speed squirrel-cage induction generator (SCIG). .Sometime these induction generators which are usually connected at weak end of a grid or at distribution networks inject large amount of reactive currents during disturbances such as faults[4]. Compared with the wind turbines based on synchronous generators, the squirrel cage induction generator (SCIG) based wind generation technology has several advantages such as flexible active and reactive power control capabilities[3] When a fault occurs in the external power system, the blade-angle control orders the mechanical system to reduce the wind turbine mechanical power to improve stability[6].]. It is necessary to examine the responses of SCIG wind farm during the faults and possible impacts on the system stability the part of STATCOM to support the windfarm during different fault locations and durations are studied.

2. Objective of work

1) Study under standard IEEE 9 bus system
2) Simulation of bus system with wind generation
3) Simulation of bus system with wind generation with fault
4) Simulation of bus system with wind generation with fault and compensated by FACTS device

3.Model of wind turbine



Wind turbines is the system where electricity produced by using mechanical components and electrical generator. Wind passes over the blades of WT. Lift and exerting a turbine force are generating. In nacelle, the rotating blades turn a shaft that goes into a gearbox. The drive train is increasing the rotational speed that appropriate for wind turbine generator and rotational speed converted into electricity. Wind power extract from the wind by the rotor which is limited by the Betz limit (maximum 59%), Therefore, the mechanical power is expressed in Equation. (1)

$P = 0.5.\ Cp.\ (\lambda, \beta).\ \rho.\ A.\ v3$ (1)

Where Cp(λ, β) is the power coefficient, ρ is the air density (1.25kg/m2), Vw is wind speed(ms−1), and A swept area A is given the equation $A = \pi R2$.Where R is the radius of blade(m). Figure 1 shows the global scheme of variable speed wind turbine.

Aerodynamic model

The blades of wind turbine extract the kinetic energy from the wind and converted mechanical energy. The kinetic energy is equal to the mass of air m and the wind speed in Equation. (2)

$E = 1/2.\ m.\ v2$ (2)

The moving air power is equal to

$Pw = dE/dt = /12.\ m.\ v2$ (2) (3)

Where m is the mass flow rate per second. The

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MULTIMACHINE POWER SYSTEM STABILITY ENHANCEMENT BY USING STATIC SYNCHRONOUS SERIES COMPENSATOR (SSSC) WITH PI CONTROLLER

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ABSTRACT
In recent years power electronics devices has seen many advances, due to this advancement in FACTS devices have increased. Now a days FACTs devices are more efficient and more widely used. Facts devices connected in power system offers many advantages which can solve problems of power system control. FACTs devices can help in improving problems like voltage regulation, transfer capacity enhancement and better power flow control. The main purpose of implementing FACTS devices is to increase transmission line capacity of transmission line. There are two different techniques by which FACTS devices can be made one is by using conventional thyristor, tap changing transformer, reactors and switch capacitors. Whereas second generation uses Gate Turn-Off (GTO) thyristor-switched converters as Voltage Source Converters (VSCs). By using first generation various devices are made viz. SVC, TCSC and TCPS. Second generation has developed few techniques like UPFC, IPFC and SSSC

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Review of Modeling and Simulation of Numerical Mho Relay for Distance Protection

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Abstract – With the development in science and engineering the power system protection field also get advanced which includes the development of relays .the relays journey started by electromechanical then solid state and now digital and numerical relays .An economical and feasible solution to investigate the performance of relays and protection system offered by modeling of protective relays . Distance relay is one of the effective protective relays that are used for the protection of extra high voltage transmission lines. Distance relays are considered of the high speed class and can provide protection. To detect the fault on transmission lines many distance relays are used but for long transmission line mho relay is most suited. This paper overview the methods proposed for modeling the numerical mho relay for distance protection of transmission line and different solution for enhancing the performance of power system.

new model of numerical mho relay to overcome such limitations. With the help of such methods modeling of power system in different fault conditions are made and tested. Such methods of modeling numerical mho relay makes it more feasible and flexible as it can be tested with different fault conditions so that its performance can be checked. This paper work gives the overview of various topologies, methods used for modeling the numerical mho relay.

Research Objective:-

[1] To study several distance protection schemes in power system protection.

[2] To compare conventional and modern distance protection

Chapter 4
Cryptography in Big Data Security

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ABSTRACT

Information security is a prime goal for every individual and organization. The travelling from client to cloud server can be prone to security issues. The big data storages are available through cloud computing system to facilitate mobile client. The information security can be provided to mobile client and cloud technology with the help of integrated parallel and distributed encryption and decryption mechanism. The traditional technologies include the plaintext stored across cloud and can be prone to security issues. The solution provided by applying the encrypted data upload and encrypted search. The clouds can work in collaboration; therefore, the encryption can also be done in collaboration. Some part of encryption handle by client and other part handled by cloud system. This chapter presents the security scenario of different security algorithms and the concept of mobile and cloud computing. This chapter precisely defines the security features of existing cloud and big data system and provides the new framework that helps to improve the data security over cloud computing and big data security system.

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Probe into Constituent Determinants of Impulse Buying Behaviour

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Abstract

Effective increases in personal disposable incomes and availability of credit facility have made impulse buying in retail environments more prevalent consumer behaviour. Tech-savvy consumers have jumped on bandwagon of e-commerce websites for most of their needs of product and services. The importance of impulse buying behaviour is recognized by marketers and researchers all around the world and the phenomenon has been extensively studied by researchers. The purpose of this study is to investigate the effects of situational factors, individual characteristics and product characteristics as 'stimulators' of impulse buying behaviour and present a model based on factors of correlation. Moreover, this study will provide a guideline for future researches in the field of marketing. Also, the results of this research will have a practical purpose, providing the managers with useful insights that will allow them to create some elements of marketing strategy, e.g., adaptation or alteration of some sales promotion techniques.

Keywords:

Impulse Buying Behaviour, Lifestyle, Cognitive and Affective Component



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Research Article

...GEMENT: A REVIEW

...ad and Dalu R.S²

...Wadi

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...n the dynamics of market does not allow any deviation in quality of ... quality management is universally espoused by the ... this area. During review of the open literature ... present scenario there are number of related issue in ... immediate attention of the researchers. In this context the ... breaking solution at different levels of supply chain ... extensive studies based on the work carried out by ... chain management in medium scale industries in ... made to identify conceptual interlinking between ... management through literature review.

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INTRODUCTION

Supply chains encompass the companies and the b... activities needed to design, make, deliver, and use a pro... service. Businesses depend on their supply chains to ... them with what they need to survive and thrive. Every ... fits into one or more supply chains and has a role to ... each of them. A supply chain consists of all stages in... directly or indirectly, in fulfilling a customer ... The supply chain not only includes the manufactu... suppliers, but also transporters, warehouses, retaile... customers themselves.

SCM assists the business organization to compete ... dynamic international market. The objective of SCM ... incorporate activities across and within organization... providing the customer value. This should also be applie... the academia, which represents a type of ... organizations. The goal is to provide the society with ... producing high quality graduates and research out... An industrial supply chain involves coordinate... information sharing up and down the process and ... stakeholders. With technology facilitating information ... coordinated supply chain can be designed to meet the so... planning and operating objectives of the edu... institutions. It also means establishing effective and feasible relationships both inside and outside the organization.

A collection of items held by an organization for future utilization is known as inventory and a set of policies known as the inventory system. The inventory can be stocked by diverse stages along the production and distribution supply chain. The inventory system aids in estimating the amount of each item to be awarded, when the low items should be replenished, and the number of items that need to be ordered or manufactured once replenishment becomes necessary. An supply manager is responsible to arrive at a decision on which offers to accept besides updating the estimated future inventory replacement costs.

The concept of SCM has received increasing attention from academicians, consultants, and business managers. Many organizations have begun to recognize that SCM is the key to building sustainable competitive edge for their products and/or services in an increasingly crowded marketplace. The concept of SCM has been considered from different points of view in different bodies of literature, such as purchasing and supply management, logistics and transportation, operations management, marketing, organizational theory, and management information systems. Various theories have offered insights on specific aspects or perspectives of SCM, such as industrial organization and associated transaction cost

*Corresponding author: Parag Wadnerkar

[illegible]

[illegible]PhD Scholar, [illegible]

Abstract:
This research paper gives an insight about the status of supply chain management in Indian food, agro implements manufacturing enterprises (AGSE). In this context the main focus has been given to agro manufacturing industries in Vidarbha region and various factors taken into consideration that affect overall progress of agro manufacturing industries. Study suggests that, regional base study for small scale industries.

Key words: *Agricultural industries, Agro industrial [illegible] management, Agro food Market*

I. INTRODUCTION

A supply chain is a network of facilities and distribution [illegible] performs the functions of procurement of materials, transformation of these materials into intermediates and finished products, and the distribution of these finished products to customers. Supply chains exist in service and manufacturing organizations, although the complexity of the supply chain may vary greatly from industry to industry and firm to firm.

Supply chain management is normally seen to lie between fully integrated, vertically incorporated firms, where the whole material stream is controlled by a solitary firm and those where each channel part works freely with little coordination between the different players in the channel. Successful management. Cooper and Ellram [1993] contrast supply chain management with an all around adjusted and very much refined [illegible] group. Such a group is more focused when every player knows its job and spotlights for the hand-off. The connections are the most grounded when players who proficiently pass the rod, however the whole group dynamic is key to win the race.

SCM plays a vital role in organization activities and an essential source of operational efficiency which can be applied to customer satisfaction and competitive success. You can say that it is just like the basic [illegible] organization which manages the critical issues of the business. Due to the rapid growth of multinational corporations, global competition and developmental concerns which significantly or dramatically affect the corporate strategy.

SCM offers various analytical techniques that help businesses to diagnose the problems and also provide solutions of the problems around the business environment. It plays an important role in [illegible] and profitability to their customers. The most important [illegible] today's business is effective cooperation among partners and [illegible] with this perspective SCM helps business organization to [illegible] Importance, Applications and Implications of SCM, makes [illegible] and [illegible] of emerging issues in organization SCM becomes [illegible] critical business functions in the world today.

Agro industry also historically been given high priority in [illegible] development programmes. The focus on agro-industry as an [illegible] development and employment generation was present in Maharashtra [illegible] emphasis on "appropriate" agro-industry during India's [illegible] activities and is today a central component of the national [illegible] plan. Textbooks optimistic concerning its continuing development [illegible] FAIDA report of the confederation of Indian Industry (CII) [illegible] & company (1992) both show that there is great potential for [illegible] food processing and other agro-industries in India. However [illegible] agro-industry, development is today faces tough challenges [illegible]

[illegible] supply chain inefficiencies and market demand [illegible] Should shepherds abandon tractor and market multinational [illegible] small farmers will help or hurt small farmers and rural [illegible] and firms? This debate is generalized in the "going [illegible] question whether the corporate movement can [illegible] agro-industrial development for small farms?

The [illegible] of governments in at many levels in the choice of [illegible] agro-industrial development. The crucial questions [illegible] organizational and organizational Arrangements models which [illegible] encountering critical constraints and maximizing their [illegible] rural development and safeguarding the small farmer [illegible]

II. PROPOSED RESEARCH MODEL

A [illegible] model developed for performance evaluation of SCM by [illegible] is referred. Also the opinion from the expert from the field has [illegible] based on the literature review & expert opinion from the field, [illegible] performance parameters have been identified and presented [illegible] their meaning(Annexure)

In this research work, it is proposed to take the feedback from the AIMI to [illegible] applicability of the performance parameters and also importance of [illegible] of the SCM (to identify the status of the same).

III. RESEARCH METHODOLOGY

A [illegible] questionnaire has been designed and developed for the [illegible] research. It includes two section : first section cover the basic [illegible] regarding the AIMI . Second Section include the information [illegible] the concept of seven performance parameters of the SCM, importance [illegible] the various sub parameters of the performance parameters of the SCM. A [illegible] structured questionnaires has been send to 50 medium scale AIMI of [illegible] region of the Maharashtra. Out of 50 AIMI, 36 respondent and 21 [illegible] have been collected by personally visiting to the plant. It is decided to send [illegible] structured questionnaire to 50 medium scale AIMI variable region of [illegible] Maharashtra. As the Objectives of the research paper 1) To know the [illegible] awareness about SCM in AIMI 2) To study present status of SCM in AIMI [illegible] Initial or commissioned research is expected to be more explorative in [illegible] nature for two reasons supply chain dimensions are studied more and with a greater focus on the context of SMEs and lack information about the effort of SMEs and business characteristics and the development of an SMEs as [illegible] differed to LEK For the purpose of this framework, we advocate case [illegible] study research for two reasons. The case study methodology is recognized as being particularly appropriate for answering "how and why" questions [illegible] In addition because of the framework and methodology, case studies have [illegible] the potential to identify additional variables and relationships not collected [illegible] or identified adequately in theory. Understanding exhibited phenomena [illegible] in its most natural setting, we [illegible] to adopt a case study research [illegible] infusing it with the principles of interpretive management research to [illegible] compare this approach to positivist research which mainly focuses on [illegible] identifying "causes and effects" [illegible] variables.

At this stage, we define the research problem as "Issues in supply chain [illegible] management of small and medium agro industries (SMEs). The research [illegible] addresses some of the objectives which include:

1) To understand the [illegible] at the implementation of SCM; se[illegible]

TO STUDY THE PR[illegible] [illegible]TATUS OF SUPPLY CHAIN MANAGEMENT IN M[illegible] SCALE AGRO IMPLEMENTS MANUF[illegible]NG INDUSTRIES

1.Prof. Parn[illegible] [illegible]ar 2.Prof. Dr. R.S. Dala

1Ph.D. [illegible]

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Abstract

This research paper gives an insight about the s[illegible] [illegible] issues occurring in medium scale agro implemen[illegible] manufacturing industries enterprises (MSE). In th[illegible] [illegible] has been given on study of agro manufacturin[illegible] industries in Vidarbh region and too many fac[illegible] [illegible] consideration that affect overall progress of an a[illegible] manufacturing industries. Study suggest that, [illegible] considerable scope for small scale industries.

Keywords:

Agricultural industries, Agricultural industries su[illegible] [illegible]agement, Agro food Market

[illegible]RODUCTION

A supply chain is a network of facilities and distr[illegible] [illegible] that performs the functions of procurement of materials, transformation of these materials into intermediat[illegible] [illegible] products, and the distribution of these finished products to customers. Supply chains exist in both service [illegible] manufacturing organizations, although the complexity of the chain may vary greatly from industry to industry and fir[illegible]

Supply chain management is normally seen to [illegible] [illegible]mpletely vertically incorporated firms, where the whol[illegible] material stream is claimed by a solitary firm a[illegible] [illegible] where each channel part works freely. Along these line[illegible] coordination between the different players in the [illegible] [illegible] its successful management. Cooper and Eltram [1993] contrast supply chain management with an all ar[illegible] [illegible] and very much rehearsed transfer group. Such a group [illegible] more focused when every player knows how [illegible] [illegible] for the hand-off. The connections are the most grounde[illegible] between players who specifically pass the rod, how[illegible] [illegible] whole group needs to try to win the race.

[illegible] in organization activities and [illegible] [illegible] element to operational efficiency which can be applied [illegible] [illegible] and company's success. You [illegible] that it is just like the backbone of an organization whic[illegible] [illegible] the critical issues of the business orga[illegible] [illegible] such as rapid growth of multinational corporations, globa[illegible]

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Structural and Morphological Analysis of ZnO Nanoparticles filled Low Density Polyethylene Thin Films

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Abstract

This paper describes the studies related to ZnO nanoparticles (0, 0.5, 1, 3 and 5 wt. %) filled Low Density Polyethylene (LDPE) thin films prepared by solution casting technique. The synthesized ZnO/LDPE nanocomposite thin films were analyzed by XRD, SEM and FTIR. Peaks in X-Ray Diffraction (XRD) pattern indicate the presence of ZnO nanoparticles in LDPE matrix and absence of any extra peak in the pattern shows there is no new phase formation. The Scanning Electron Microscope (SEM) images showed that the nano inclusions are uniformly distributed in the LDPE matrix. Fourier Transform Infrared (FTIR) result indicates the presence ZnO nanoparticles in LDPE thin films.

Keywords: Nanocomposite, Thin Film, XRD, SEM, FTIR

I. Introduction

The integration of inorganic nanoparticles into a polymer matrix allows both properties from inorganic nanoparticles and polymer to be combined/ enhanced. Polymers- inorganic nanocomposites attract considerable interest due to the outstanding mechanical, optical, electrical, and thermal properties encountered with only a small quantity of nanofiller incorporated to the polymer matrix. This is caused by the large surface area to volume ratio of fillers when compared to micro- and macro-scale additives [1].

Low density polyethylene is among the most versatile polymers, but its uses are limited due to several drawbacks, namely low strength, stiffness and poor heat resistance. To overcome these drawbacks and to prepare material with improved properties, fillers are incorporated into the matrix [2]. Fillers can affect the dimensional stability, crystallinity, mechanical and other properties of polymers [3, 4]. Numerous studies have also been performed to investigate the space charge distribution and electrical conduction in polyethylene systems.

Zinc Oxide is an important electronic and photonic material which possesses semiconducting and piezoelectric properties. It is a semiconductor, with a direct band gap of 3.37 eV and a large excitation binding energy (60 meV) [5]. Nanosized inorganic semiconductor materials have attracted considerable efforts in recent years. Zinc oxide is an interesting material has been widely used in application such as UV protection, photo catalysis, filed emission displays, veristors, gas sensors, function devices, thermoelectric materials, etc due to its exceptional physical & chemical properties [6].

Many research groups have focused on dispersing metal oxide nanoparticles into polymer matrix, as the hybrid nanocomposites not only inherit the functionalities of semiconductor nanoparticles but also possess advantages of polymers such as flexibility, film integrity, and conformity [7].

Polymer Inorganic Nanocomposite of LDPE and Zinc Oxide nanoparticles can exhibits some novel properties. Thus in the present work, Zinc oxide/ LDPE nanocomposites were prepared by adding the ZnO nanoparticles in different weight % (0, 0.5, 1, 3 and 5) in LDPE. The structural and morphological studies of ZnO/polymer nanocomposite films were carried out using XRD, SEM and FTIR analysis.

II. Experimental

Thin films of ZnO/LDPE nanocomposites were prepared by using solution- cast technique [8]. Commercial grade granular LDPE was dissolved in Xylene using hot plate magnetic stirrer at 100 °C for 2 hrs so as to obtain clear viscous solution. The hexagonal wurtzite structured Zinc oxide nanoparticles (ZnO NPs) with average crystalline size about 80 nm, synthesized by a simple

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Research Article

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Ultrasonic Study of Substituted Quinoxaline in Ethanol Solvent at 305.85 K

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ABSTRACT

The density (d) and ultrasonic velocity (v) values have been measured in the solvent ethanol containing 2-hydroxy substituted quinoxaline using different concentration at 305.85 K. The experimental data of density (d), ultrasonic velocity (v), adiabatic compressibility (β), intermolecular free length (L_f), specific acoustic impedance (Z) and relative association (R_A) were calculated. The results obtained in this study have been interpreted in terms of different interactions among solute-solute and solute-solvent.

Keywords: Substituted quinoxaline; Ultrasonic velocity; Density; Acoustic parameter

INTRODUCTION

Acoustic parameters were studied to solute-solute and solute-solvent interactions in different solvents. Acoustic parameters provide important and valuable information regarding internal structure, molecular association, complex formation, internal pressure, stability of complexes. In view of analytical, medicinal, agricultural industrial, pharmaceutical significance [1-10]. The variation of ultrasonic velocity and other acoustic parameters along with their excess values in binary and ternary liquid mixtures has been investigated by different authors [11-14]. Ultrasonic study of substituted azomethine drugs in binary mixture [15]. Ultrasonic studies on molecular interaction of benzaldehyde, cinnamaldehyde, 4-methoxy benzaldehyde and diethylamine in n-hexane solutions at 303 K [16]. Molecular interactions in ternary liquid mixture involving toluene at different frequencies [17]. A comparative study of excess Gibb's free energy function values in three binary liquid mixtures containing quinoline and o, m, p-xylene at different temperatures 303.15, 308.15, 313.15 and 318.15 K [18]. Ultrasonic and volumetric study of solution of ethylene glycol, propylene glycol in iso-propanol [19]. Viscometric study of carboxymethyl cellulose formaldehyde resins in 1,4-dioxane solvent [20]. Volumetric study of strong electrolyte - metal chloride and metal sulphate in aqueous medium at different temperatures [21]. Volumetric, viscometric and derived surface tension studies on the solutions of potassium dichromate and potassium pyrophosphate in aqueous sorbitol solutions [22]. Study of some important acoustical parameters of substituted-N, N'-bis(salicylidien)-arylmethylamines in 60% DMF-water at 300 K [23].
Study of thermodynamic properties of chloride urea in aqueous media at different temperatures [24].
Excess Gibb's free energy function values different temperatures in binary liquid mixture for the study of molecular interactions [25]. For the present we have chosen the ultrasonic interferometric technique in order to discuss intermolecular interaction of interest to investigate the acoustic parameters such as adiabatic compressibility (β), intermolecular free length (L_f), specific acoustic impedance (z) and relative association (R_A) of substituted quinoxaline in ethanol solvent at different concentrations of ligand. The different substituted quinoxaline ligand used for present work as:

1) 2-(2-Hydroxy-5-chloro)-benzyl-3-phenyl quinoxaline (L_1)
2) 2-(2-Hydroxy-5-chloro)-benzyl-3-(4-methyl) quinoxaline (L_2)
3) 2-(2-Hydroxy-3-bromo-5-chloro)-benzyl-3-phenyl quinoxaline (L_3)
4) 2-(2-Hydroxy-3-bromo-5-chloro)-benzyl-3-(4-methoxy phenyl) quinoxaline (L_4)

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Synthesis and Study Of 2-Hydroxy Substituted Quinoxaline Effects on Different Crop Plant Growth

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Abstract

As the population of the world is increasing day by day and land holding capacity is going to decreasing. So it is great challenge to feed the nation by increasing the productivity of crop. Synthesis of 2-hydroxy substituted quinoxaline prepared by using 2-hydroxy substituted chalcone dibromide and chalcone dibromide condensed with BDA in methanol solvent. 2-hydroxy substituted quinoxaline gives 2-(2-hydroxy-5-chloro) benzyl-3,4-methoxyphenyl quinoxaline, 2-(2-hydroxy-5-chloro) benzyl-3-phenyl quinoxaline, 2-(2-hydroxy-3-bromo-5-chloro) benzyl-3-(4-methoxy phenyl) quinoxaline and 2-(2-hydroxy-3-bromo-5-chloro) benzyl-3-phenyl quinoxaline respectively. The structure of ligands was elucidated on the basis of molecular weight, elemental analysis and spectral data. In crop growth growth hormones may play important role such as increase in height of plant, number of leaves per plant, number of pods per plant etc., which reflects yield of crop. The synthesized substituted quinoxalines were used for seed treatment as well as foliar application to find out their effect on plant growth as well as in respect of seed yield viz. Soybean (*Glycine max* (L.) Merill), Groundnut (*Arachis hypogaea*) and Chickpea (*Cicer arientinum*). The synthesized ligands showed significant effect on crop plants growth.

Keywords:- Chalcone dibromide, substituted quinoxaline, Growth promotion hormonal effect, Soybean, Groundnut, Chickpea

Introduction

Chalcone have been associated with diverse biological activities, e.g. antiovascular, antiviral[1], anticancer and industrial application[2]. Utale et al[3] reported chalcone dibromide by the reaction of bromine in 25% [illegible] acid with 3-substituted-2-hydroxy-5-chloro chalcone. Khadsan et al[4] synthesized the α,β-acrylophenone dibromide from acrylophenones by bromination using acetic acid.

Antibacterial activities of novel substituted quinoxaline were studied by Noorulla and Sreenivasulu[5]. Antimicrobial activities of some substituted quinoxaline-2-(1H)-one derivatives were studied by Kadge and Shirote[6]. The novel [illegible] derivatives were studied by More et al[7]. Maurya et al[8] reported the growth promotion effects of pyrazolines and isoxazoline on [illegible] crop plants. Substituted isoxazoline [illegible] in 70% dioxane-water [illegible] on seed germination were studied by [illegible] et al[9]. Ramteke et al[10] [illegible] the effect of chlorosubstituted [illegible] complexes on Spinach (Spinach [illegible] different pH. Synthesis and growth promotion effects of chloro-substituted heterocycles on agricultural crop plants have been studied by Parhate et al[11]. Synthesis and study of 2-hydroxy substituted chalcone [illegible] effects on different crop plants reported by [illegible] et al[12].

MATERIALS AND METHODS

All chemicals used to synthesize substituted chalcone dibromide and substituted quinoxaline were of IR grade. The structure of ligands was elucidated on the basis of molecular weight, elemental analysis and spectral data. Physical and analytical data of synthesized compounds are summarized in Table-1.

Preparation of 2-hydroxy substituted chalcone dibromide

The 2-hydroxy substituted chalcone was dissolved in boiled glacial acetic acid. A solution of bromine in acetic acid was added to this solution with constant stirring. The product of 2-hydroxy substituted chalcone dibromide was filtered and washed with alcohol followed by petroleum ether.

a. 5-Chloro-2-hydroxy chlacone dibromide (1)
b. 5-Chloro-2-hydroxy-4-methoxy chlacone dibromide (2)
c. 3-Bromo-5-chloro-2-hydroxy chlacone dibromide (3)
d. 3-Bromo-5-chloro-2-hydroxy-4-methoxy chlacone dibromide (4)

Preparation of 2-hydroxy substituted quinoxaline

The 2-hydroxy substituted chalcone dibromide and BDA were condensed in methanol. A few drops of concentrated H_2SO_4 were added and heated on water bath. It was diluted with water and crude mass was extracted with solvent ether. Ether was removed and solid residue was crystallized from dilute

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Research Article

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Ultrasonic Behaviour and Study of Molecular Interaction of Hydroxy Substituted Quinoxaline in Dioxane Medium

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ABSTRACT

Density (d) and ultrasonic velocity (v) of 2-[illegible] substituted quinoxaline in dioxane were measured at 305.85 K temperature by using ultrasonic interferometer at a frequency of 1 MHz. The study was carried out with change in concentrations. Various thermodynamic parameters such as adiabatic compressibility ([illegible]) intermolecular free length (L_f), specific acoustic impedance ([illegible]) [illegible] ive association (R_A) were calculated. The results were used to discuss the interaction between solute and [illegible] results are interpreted in terms of molecular interactions like solvent-solvent, solvent-solute and solute-solute.

Keywords: Ultrasonic velocity; Density substituted quinoxaline

[illegible]RODUCTION

The molecular interaction technique plays [illegible] for the detection of molecular association, complex formation, internal pressure etc. Ultrasonic is the [illegible] for the study of molecular interaction in liquids. The structural arrangements are influenced by the shape of [illegible] molecules as well as by their mutual interactions. Studies of some ultrasonic parameters of substituted Schiff [illegible] in dimethyl formide and ethanol at different temperature [1]. Ultrasonic studies on molecular interactions [illegible] in aqueous solutions of glucose at various concentrations [2]. Molecular interactions in non-electrolyte [illegible] liquid mixtures of cyclohexanol with 2-nitrotoluene and 3-nitrotoluene at four different temperatures [illegible] Ultrasonic study of molecular dynamics in some binary mixtures [4]. Ultrasonic studies of molecular interaction [illegible] electrolytes in poly (ethyleneglycol) [5]. The study of thermophysical properties of binary liquid [illegible] of 2-(2-methoxy ethoxy) ethanol (methyl carbitol) with n-butyl amine, sec-butyl amine, tert-butyl amine, [illegible] n-octyl amine and cyclo hexyl amine at 308.15 K [6] and molecular interaction studies on pharmaceutical [illegible] of 2-[illegible] (aminomethyl) cyclohexyl] acetic acid in water of various concentrations at [illegible] [7]. In [illegible] medicinal, agricultural, industrial, pharmaceutical significance [8-12], It is of [illegible] parameters such as adiabatic compressibility ([illegible]) intermolecular free length (L_f), specific [illegible] impedance ([illegible]) and relative association (R_A) in dioxane solvent respectively. For the present [illegible] the [illegible] interferometric technique in order to discuss intermolecular interactions [illegible] that much work has been done on water and organic solvent mixtures [illegible] dioxane solvent. Also the review does not reveal any attempt made on ultrasonic interferometer [illegible] of 2-hydroxy substituted quinoxaline.

[illegible]

All the chemicals used [illegible] by described method [19]. Densities were measured with the help of [illegible] solution of ligand in dioxane solvent were prepared separately [illegible] Gdansk balance made in Poland (± 0.001

Article

Bianchi Type-I Cosmological Model in the Presence of Wet Dark Fluid with Magnetic Flux

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Abstract

The object of this paper is to investigate the nature of Bianchi type-I cosmological model in presence of wet dark fluid and magnetic flux. To obtain deterministic solution of said model a few plausible assumptions regarding to it are introduced such as scalar expansion θ is proportional to eigen value σ_1^1 of shear tensor σ_j^i. A new equation of state for the dark energy component of the universe has been used. It is modelled on the equation of state $p = \gamma(\rho - \rho_*)$ which can describe a liquid, for example water. The exact solutions to the corresponding field equations are obtained in quadrature form. The solution for constant deceleration parameter have been studied in detailed for both power-law and exponential form. In addition to this we have discuss the geometrical and physical properties of said model.

Keywords: Bianchi type-I space-time, Wet dark fluid (WDF), Magnetic flux, Cosmological parameters.

1. Introduction

The occurrence of magnetic field on a galactic scale is well established fact today and their importance for a variety of astrophysical phenomenon is generally acknowledged by several authors. The renowned authors, Reiss et al. [1], Perlmutter et al. [2], Sahni [3] have studied the nature of the dark energy component of the universe as the one of the deepest mysteries of universe. We are motivated to use the wet dark fluid (WDF) as a model for a dark energy which stems from an empirical equation of state proposed by Hayward [4] and Tait [5] to treat water and aqueous solutions. Modification of the Friedmann equation such as Cardassion expansion referred by Freese et al.[6], Freese [7], Gondolo et al.[8] as well as what might be derived from brane cosmology given by Deffayet et al.[9], Dvali et al.[10], Dvali et al.[11] have also been used to explain the acceleration of the universe.

Harrison [12], Asseo and Sol [13] and Kim et al.[14] have pointed out the importance of magnetic field in the different context. Saha [15] has investigated Bianchi type-I string

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Magnetized Anisotropic Bianchi Type-V Cosmological Model for Two Fluids in General Relativity

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[3]*Dept. of Mathematics, Jagdamb Mahavidhyalaya, Achalpur, India*

Abstract: *In this paper, we have studied Anisotropic Bianchi type-V two fluid cosmological model i.e. with the matter and radiating source in presence of magnetic flux. In this model one of the fluid represents the matter contents of the universe and another fluid is the cosmic microwave background (CMB) radiation. The magnetic field is due to an electric current produced along x-axis, F_{23} is the only non-vanishing component of electromagnetic field tensor F_{ij}. Here we discuss the physical properties of model and behavior of kinematical parameters like expansion, shear are discussed in details with some special cases.*

Keywords: *Bianchi Type-V space-time, Cosmic microwave background (CMB) radiation, Electromagnetic field.*

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I. Introduction

Cosmology is the study of origin, current state and the future of the Universe. The Bianchi cosmologies which are spatially homogeneous and anisotropic play an important role in the theoretical cosmology and have been studied since 1960s. The simplest models of the expanding universe are those which are spatially homogeneous and isotropic at each instant of time. Bianchi type-V cosmological models have been studied by Farnsworth [1], Maartens et al. [2], Wainwright et al. [3], Collins [4], Coley et al. [5].

The occurrence of magnetic fields on galactic scale is well established fact today and it's important for a variety of astrophysical phenomenon is generally acknowledged by several authors, Harrison [6], Asseo [7] and Kim et al. [8] have pointed out the importance of magnetic field in the different context. As natural consequences, we should include magnetic fields in the energy momentum tensor of early universe. Kandalkar et al. [9] have investigated Bianchi type-V magnetized bulk viscous string cosmological model.

The cosmic microwave background (CMB) is one of the cornerstones of the homogeneous, isotropic model. Anisotropies in the CMB are related to small perturbation, superimposed on the perfectly smooth background, which are believed to seed formation of galaxies and large scale structure in the universe. Coley et al. [10] have studied Bianchi type-VI_0 model with two fluid sources. Pant et al. [11] has been investigated two fluid cosmological models using Bianchi type-II space-time. Oli [12] has presented anisotropic, homogeneous two fluid cosmological models in a Bianchi type-I space time with a variable gravitational constant and cosmological constant. Recently, Adhav et al. [13] examined two fluid cosmological models in Bianchi type-V space-time. Also, Pawar et al. [14] has obtained Bianchi type-IX with two fluid cosmological models. Katore et al. [15] has investigated magnetized Bianchi type-I cosmological model in scalar tensor theory of gravitation proposed by Saez and Ballestar in which they used the magnetic field produced due to electric current along x-axis. Recently, Patil et al. [16, 17] has studied non shearing LRS Bianchi type-III and IX string cosmological model in presence of magnetic flux with bulk viscosity. Patil et al. [18, 19] has studied LRS Bianchi type-V cosmological model in presence of perfect fluid and magnetic flux with variable magnetic permeability and Bianchi type-IX cosmological model with two fluids in presence of magnetic flux.

In this paper, we have investigated Bianchi type-V cosmological model in presence of two fluid distributions with electro-magnetic field. By assuming F_{23} is the only non-vanishing component of electromagnetic field tensor F_{ij}. The physical and geometrical aspects of the models are also discussed.

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Tilted Kantowski–Sachs cosmological model in Brans–Dicke theory of gravitation

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Tilted Kantowski Sachs cosmological model in Brans Dicke theory for perfect fluid has been investigated. The general solution of field equations in Brans Dicke theory for the combined scalar and tensor field are obtained by using power law relation. Also, some physical and geometrical parameters are obtained and discussed.

Keywords: Tilted model; Kantowski Sachs; Brans Dicke theory; perfect fluid.

PACS Nos.: 04.50.Kd; 98.80.Es; 95.30.Jk

1. Introduction

At present, it is very interesting to know the geometry and behavior of the model. Here, we worked on anisotropic Kantowski–Sachs[1] cosmological model which plays a vital role in modern astrophysics and cosmology as it helps in discovering the early stages of evolution of the universe. In the Kantowski–Sachs spacetime, the spherical and translational symmetries are combined together in radial direction. It is one of the popular anisotropic models. Dynamics of Kantowski–Sachs model have been formulated by some researchers. Lorenz,[2] Weber,[3] Grøn,[4] Matravers,[5] Dabrowski,[6] Tiwari and Dwivedi[7,8] have investigated Kantowski–Sachs cosmological models in

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Structural and Morphological Analysis of ZnO Nanoparticles filled Low Density Polyethylene Thin Films

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Abstract

This paper describes the studies related to ZnO nanoparticles (0, 0.5, 1, 3 and 5 wt. %) filled Low Density Polyethylene (LDPE) thin fil...s prepared by solution casting technique. The synthesized ZnO/LDPE nanocomposite thin films were analyzed by XRD, SEM and FTIR. Peaks in X-Ray Diffraction (XRD) pattern indicate the presence of ZnO nanoparticles in LDPE matrix and absence of any extra peak in the pattern shows there is no new phase formation. The Scanning Electron Microscope (SEM) images showed that the nano inclusions are uniformly distributed in the LDPE matrix. Fourier Transform Infrared (FTIR) result indicates the presence ZnO nanoparticles in LDPE thin films.

Keywords: Nanocomposite, Thin Film, XRD, SEM, FTIR

I. INTRODUCTION

The integration of inorganic nanoparticles into a polymer matrix allows both properties from inorganic nanoparticles and polymer to be combined/ enhanced. Polymers- inorganic nanocomposites attract considerable interest due to the outstanding mechanical, optical, electrical, and thermal properties encountered with only a small quantity of nanofiller incorporated to the polymer matrix. This is caused by the large surface area to volume ratio of fillers when compared to micro- and macro-scale additives [1].

Low density polyethylene is among the most versatile polymers, but its uses are limited due to several drawbacks, namely low strength, stiffness and poor heat resistance. To overcome these drawbacks and to prepare material with improved properties, fillers are incorporated into the matrix [2]. Fillers can affect the dimensional stability, crystallinity, mechanical and other properties of polymers [3, 4]. Numerous studies have also been performed to investigate the space charge distribution and electrical conduction in polyethylene systems.

Zinc Oxide is an important electronic and photonic material which possesses semiconducting and piezoelectric properties. It is a semiconductor, with a direct band gap of 3.37 eV and a large excitation binding energy (60 meV) [5]. Nanosized inorganic semiconductor materials have attracted considerable efforts in recent years. Zinc oxide is an interesting material has been widely used in application such as UV protection, photo catalysis, filed emission displays, veristors, gas sensors, function devices, thermoelectric materials, etc due to its exceptional physical & chemical properties [6].

Many research groups have focused on dispersing metal oxide nanoparticles into polymer matrix, as the hybrid nanocomposites not only inherit the functionalities of semiconductor nanoparticles but also possess advantages of polymers such as flexibility, film integrity, and conformity [7].

Polymer Inorganic Nanocomposite of LDPE and Zinc Oxide nanoparticles can exhibits some novel properties. Thus in the present work, Zinc oxide/ LDPE nanocomposites were prepared by adding the ZnO nanoparticles in different weight % (0, 0.5, 1, 3 and 5) in LDPE. The structural and morphological studies of ZnO/polymer nanocomposite films were carried out using XRD, SEM and FTIR analysis.

II. EXPERIMENTAL

Thin films of ZnO/LDPE nanocomposites were prepared by using solution- cast technique [8]. Commercial grade granular LDPE was dissolved in Xylene using hot plate magnetic stirrer at 100°C for 2 hrs so as to obtain clear viscous solution. The hexagonal wurtzite structured Zinc oxide nanoparticles (ZnO NPs) with average crystalline size about 80 nm, synthesized by a simple

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A Survey on Implementation of Homomorphic Encryption Scheme in Cloud based Medical Analytical System

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***Abstract*— The privacy of sensitive personal information is more and more important topic as a result of the increased availability of cloud services. These privacy issues arise due to the legitimate concern of a) having a security breach on these cloud servers or b) the leakage of this sensitive information due to an honest but curious individual at the cloud service provider. Standard encryption schemes try to address the first concern by devising encryption schemes that are harder to break, yet they don't solve the possible misuse of this sensitive data by the cloud service providers. Homomorphic encryption presents a tool that can solve both types of privacy concerns. The clients are given the possibility of encrypting their sensitive information before sending it to the cloud. The cloud will then compute over their encrypted data without the need for the decryption key. By using homomorphic encryption, servers guarantee to the clients that their valuable information to have no problems after being in a difficult situation..**

Keywords- *Cloud Services, Homomorphic Encryption,cloud computing,Access control,security.*

*****

I. INTRODUCTION

The term "cloud" originates from the world of telecommunications when providers began using virtual private network (VPN) services for data communications. The definition of cloud computing provided by National Institute of Standards and Technology (NIST) says that: "Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. In cloud computing there is no need to store the data on desktops, portables etc. You can store the data on servers and you can access the data through internet. Cloud computing provides better utilization of distributed resources over a large data and they can access remotely through the internet.

Homomorphic encryption presents a tool that can solve problem of privacy concerns. The clients are given the possibility of encrypting their sensitive information before sending it to the cloud. The cloud will then compute over their encrypted data without the need for the decryption key. Homomorphic encryption can be used to encrypt the data measured by wearable and portable medical devices to uploading them on cloud and make available to use by authorized user for the various applications.

II. EXISTING SYSTEM AND THEIR LIMITATIONS

In [1] Aderonke Ikuomola, O. O. uses Homomorphic Encryption to secure patients medical records and Bilayer Access Control to gives access right to the records and developed a Secured e-Health System called SECHA. SECHA comprises of five basic components namely; patient, PHR/object, Access Control Module, User/Subject and Cloud. A cloud based patient privacy system has been presented. PHR is stored in the cloud, and can be accessed through a web portal by multiple owners and users.

The security and privacy of health-data break in variety of ways. For example, health data may be susceptible to access by unauthorized external entities when stored or is in transit from a general practitioner to a remote medical specialist.

In [2] Ciara Moore, M. O. proposed the use of graphics processing units (GPUs) and field programmable gate arrays (FPGAs) for implementations of homomorphic encryption schemes. This review presents the current state of the art in this promising new area of research and highlights the interesting remaining open problems. Practical FHE implementations, further research into suitable hardware designs and optimizations of existing schemes could provide a large speed up. One major bottleneck in the implementation of these schemes is memory storage Large parameter sizes and very large cipher text sizes consume large amounts of memory, which requires memory management. Lastly, optimizations to target specific devices, such as using the embedded multipliers on an FPGA, are required.

A Survey on Implementation of Homomorphic Encryption S based Medical Analytical System

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Abstract— The privacy of [illegible] information is more and more important topic as a result of the services. These privacy issues arise due to the legitimate concern of a hacking a security breach on these cloud sensitive information due to an honest but curious individual at the cloud service provider. Standard encryption concern by devising encryption schemes that are harder to break, yet they don't solve the possible misuse of service providers. Homomorphic encryption presents a tool that can solve both types of privacy concerns. The cl encrypting their sensitive information before sending it to the cloud. The cloud will then compute over their enc the decryption key. By using homomorphic encryption, servers guarantee to the clients that their valuable inform being in a difficult situation.

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I. INTRODUCTION

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II. EXISTING SY LIMIT.

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A Review on Preventing Professional Network by Using Human Behavioral Activity Log

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Abstract—Huge number of undesirable exercises happens on proficient system and postures awesome risk to the clients. It is troublesome for conventional framework to distinguish such sort of exercises. It is along these lines essential to address the security ramifications of how the distributed data inside informal organizations is taken care of. Data that is distributed by clients inside a restricted gathering or maybe imparted to a solitary client is regularly of a nature that can cause noteworthy burden or even mischief to concerned clients. A Human conduct examination technique in light of conduct order is proposed to distinguish the malevolent conduct of the obscure Users. Human exercises will be signed in the database for keeping up their profile. At whatever points an obscure client tries to sign into honest to goodness client's account in light of this log the client will get advised. Additionally the log of obscure client will be keep up with the goal that the honest to goodness client can watch the progressions and as needs be he can return the conceivable changes which was finished by obscure client.

Keywords- Security, Attacks, Social network, network

*****

I. INTRODUCTION

In the start of 2012 Facebook had around 800 million clients and the organization was esteemed to more than 100 billion dollars which to vast degree begin from commercial and client profiling potential outcomes in light of client collaboration. Other than Facebook there are various distinctive Online Social Networks (OSNs) that has achieved an impressive client base, e.g. Google+, Twitter and LinkedIn. . As OSNs develop in estimate the strategies and learning among its clients about how to design security settings is urgent. Rundown diverse security dangers inside OSNs together with potential insurance components are examine. Notwithstanding this another security danger that starts from scratching freely accessible data which is distributed in open gatherings inside the OSN [1].

With the fast advancement of versatile web, numerous assaults driven by financial intrigue have showed up and made awesome harm the portable clients and administrators. Those assaults misusing versatile malware on portable web are more unsafe and confused since portable terminals contain bunches of private data and have differentiated and effective correspondence capacity. [2] Mobile malware can spread through different techniques among versatile terminals and the tainted terminal might be utilized to dispatch different assaults to the portable web and terminal. For instance, "Lanpackage.A" Trojan malware can send bewildering message with malevolent site data to other versatile endorsers and entice the client to download the malware. The malware can likewise associate the remote server to refresh or get assaulting target data. Its transformation "Lanpackage.C" with epithet "short message privateer" can even transfer short message of the tainted terminal to the remote server.

Becher et al. [3] explore the assault channel utilized by versatile malware which can spread by means of MMS, Bluetooth and any portable web record transmission convention. Milligan et al. investigated the security danger of cell phone that incorporates information spillage, information robbery, malware spreading, and system ridiculing and arrange blockage by spamming [2]. The current versatile malware location innovation incorporates signature-based portable malware output and system screen, static example investigation and dynamic conduct examination, and so forth. The conventional mark based match system [3] can identify the known malware with high precision however isn't

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Detection of Salient Region by Local Spatial Support & High Dimensional Color Transform

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ABSTRACT

Automatic salient object regions detection across images, without any prior information or knowledge of the contents of the corresponding images, enhances many computer vision and computer graphics applications. Our approach consists of global and local features, which complement each other to compute a saliency map. The proposed approach automatically detects salient regions in an image dataset. The first key idea of our work is to create a saliency map of an image by using a linear combination of colors in a high dimensional color space. This is based on an observation that salient regions often have distinctive colors compared with backgrounds in human perception, however human perception is complicated and highly nonlinear. By mapping the low dimensional red, green and blue color to a feature vector in a high dimensional color space, we will show that we can composite an accurate saliency map by finding the optimal linear combination of color coefficients in the high dimensional color space. To further improve the performance of our saliency estimation, our second key idea is to utilize relative location and color contrast between super pixels as features and to resolve the saliency estimation from a trimap via a learning based algorithm. The additional local features and learning based algorithm complement the global estimation from the high dimensional color transform based algorithm.

Keywords : Salient Region Detection, Super Pixel, Trimap, Color Channel, Histogram of Gradients, Random Forest

I. INTRODUCTION

The humans are experts at quickly and accurately identifying the most visually noticeable foreground object in the scene, known as salient objects, and adaptively focus our attention on such perceived important regions. Salient region detection is important in image understanding and analysis. Its goal is to detect salient regions in an image in terms of a saliency map, where the detected regions would draw humans' attention. Many previous studies have shown that salient region detection is useful, and it has been applied to many applications including segmentation, object recognition, image retargeting, photo rearrangement, image quality assessment, image thumb nailing, and video compression. The development of salient region detection has often been inspired by the concepts of human visual perception. One important concept is how "distinct to a certain extent" the salient region is compared to the other parts of an image. As color is a very important visual cue to human, many salient region detection techniques are built upon distinctive color detection from an image.

This approach uses the tree based classifier to estimate the location of salient region. This classifier classifies each super pixel as background, foreground and unknown region. These regions form the initial trimap. HDCT method separates the background and foreground region for saliency map. HDCT and local learning methods are proposed from the trimap. Global based HDCT method is to find color feature. This method joins many representative color spaces. Map the low dimensional color space into high dimensional color

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Detection of Salient Region by Local Spatial Support & High Dimensional Color Transform

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*Abstract—**Automatic salient region detection crosswise over pictures, with no earlier data or information of the contentsof the relating pictures, upgrades numerous PC vision and PC illustrations applications. Our approach proposesautomatic salient region detection in a picture which incorporates both the global and local features. The primary inspiration driving this approach is to develop a saliency map using linear combination of colors in a high dimensional color space. By and large, the human recognition is exceptionally confounded and non-straight and in light of that, the salient region comprises of particular color contrasted with the background. The estimation of an ideal development of a saliency map done by gathering the low-dimensional colors to the high-dimensional feature vectors. Moreover, a relative location and color contrast between super pixels are used as a features and resolve the saliency estimation from a trimap by means of learning-based technique to enhance the performance.The extra local features and learning-based calculation supplement the global estimation from the high-dimensional color transformed based calculation.*

Keywords- Salient Region Detection, Super Pixel, Trimap, Color Channel, High-dimensional color space, Random Forest

I. INTRODUCTION

The people are specialists at rapidly and precisely recognizing the most outwardly discernible foreground object in the scene, known as salient object, and adaptively concentrate on such apparent critical areas. Salient region detection is essential in picture comprehension and examination. It will probably recognize salient region in a picture in terms of a saliency map, the distinguished areas would draw people's consideration. Numerous past investigations have demonstrated that salient region detection is helpful, and it has been connected to numerous applications including segmentation, object recognition, area based picture recovery, photograph adjustment, picture quality appraisal, versatile compression, and video compression. The advancement of salient region detection has regularly been propelled by the ideas of human visual perception. As color is an imperative visual signal to human, numerous salient region detection procedures are based upon unmistakable color discovery from a picture. The diagram of our strategy is exhibited in fig 1.

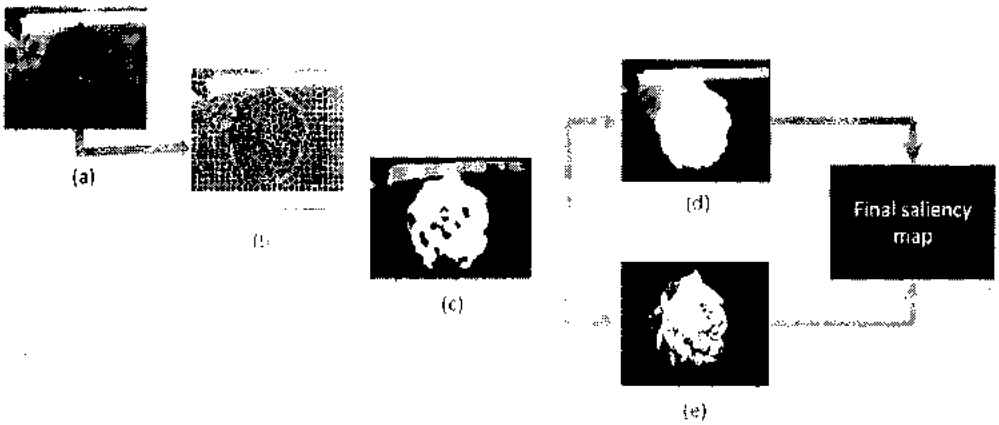

Fig.1. Overview of our method: (a) Input image. (b) Over-segmentation to super pixels. (c) Initial saliency trimap, (d) Global salient region detection via HDCT, (e) Local saliency map via local learning based method

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A new Authentication Strategy for Multiservice Authorization over Cloud

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Abstract— **Cloud computing is an emerging paradigm shifting the shape of computing models from being a technology to a utility. However, security, privacy and trust are amongst the issues that can subvert the benefits and hence wide deployment of cloud computing. With the introduction of omnipresent mobile-based clients, the ubiquity of the model increases, suggesting a still higher integration in life. Nonetheless, the security issues rise to a higher degree as well. The constrained input methods for credentials and the vulnerable wireless communication links are among factors giving rise to serious security issues. To strengthen the access control of cloud resources, organizations now commonly acquire Identity Management Systems (IdM). This report presents that the most popular IdM, namely OAuth, working in scope of Mobile Cloud Computing has many weaknesses in authorization architecture. In particular, authors find two major issues in current IdM. First, if the IdM System is compromised through malicious code, it allows a hacker to get authorization of all the protected resources hosted on a cloud. Second, all the communication links among client, cloud and IdM carries complete authorization token, that can allow hacker, through traffic interception at any communication link, an illegitimate access of protected resources. We also suggest a solution to the reported problems.**

Keywords: Cloud Computing Security, Mobile Cloud Computing, Identity Management System.

I. INTRODUCTION

Over the past decade, enterprise computing has been shifting to a new paradigm, namely the cloud computing. The cloud-computing paradigm provides several service models fitting the needs of an individual or organization. The ease of deployment, reduced costs, availability, scalability, accessibility, flexibility and location independence are some of the very strengths of this paradigm, giving rise to its popularity. On the contrary, security and privacy issues are limiting its wide spread deployment. Organizations are hesitant to storing and communicating valuable enterprise information to a third party outside their premises. In particular, the threat of unauthorized access to cloud data is of great concern, prompting researchers to propose novel authentication mechanisms. One such method is the deployment of a centralized Identity Management System. Another emerging trend in enterprise computing is the use of Smartphone devices. International Data Corporation reports on 33% increment trend on the sale of smart phones during past few years, with a prediction of 32.7% increase in 2013 [1].

Smart phone devices has been advanced greatly, in recent years, so has malicious code [2]. Although, smart phones are advancing in terms of computational power, rapidly replacing Personal Computers (PCs) as first choice of a computing device [2], Nonetheless, their major problem still is that of resource poverty. To cater with this problem, organizations have started providing access to cloud services for their users with smart phone-based clients [3][4]. The location independence and computing power of a cloud joined with the mobility of a smartphone gives the freedom of computing anything anywhere, resulting in a powerful ubiquitous computing model. This power and flexibility is bringing high popularity to what researchers call Mobile Cloud Computing (MCC) [5][6]. ABI Research estimates that MCC will gain a user-base of 240 million by the end of 2015 [7].

Being very convenient and accessible, smart phones are at a higher security risk than competing devices. This risk is mainly because of inherent nature of their application software and communication mechanism [2], as we explain further. First, tiny applications are easy to build by anyone, thus freely available, and hence contain malicious code in several

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A Survey on Privacy Preserving Techniques in Cloud Environments

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***Abstract*— Cloud computing methodology is a conceptual based technology which is used widely now a day. Cloud Computing is an emerging technology which offers an innovative business model for the organizations with massive data without upfront investment, but most of the organizations still hesitate to explore their business over cloud due to security issues. Data privacy protection and data retrieval control is one of the most challenging research works in cloud computing due to confidentiality of user data. Security is one of the major issues which hamper the growth of cloud. This Paper focuses on specific analysis of privacy preservation techniques, comparative analysis and challenges.**

***Keywords*— Cloud computing; Security; privacy preservation;**

I. INTRODUCTION

Cloud computing is a platform which provides storage, computation and retrieval service to the user. It also allows to access the information 24 by 7 by 365 days of time but Internet is obligatory to take advantage of the Cloud. e.g. Any Email client or the facebook user, it will take care of all the hardware and software which are essential to provide individual accounts of clients. Cloud works "pay-as-you-go" principle it means that if there is need of change in the contents at any instance then it permit you to buy more storage space from Cloud service provider.

It is the long-term idea of computing as a utility and storage that include the economical benefits to transmute the IT industry which will assist for making software products even more service oriented. It is nothing but the grouping of networks, hardware, services, storage that can be coupled with each other to provide computing as a service.

A. Public Clouds

The cloud service provider generally own and manage the required physical infrastructure [4]., storage and applications, are the resource which made on hand to various customers by a service provider, via a web application or service. Hence the resources are situated at an off-site position which is organized and supervised by the cloud service provider. These type clouds offers less expensive or pay-on-demand and has high scalable services.

B. Private Clouds

The designated service provider may have possession of and managed the physical infrastructure with an expansion of management and security power plans, which is to be controlled by the organization [4]. It could be controlled by the third party user and might subsist at an on-site or off-site position. The service offers to the provider and the client greater control over the cloud paradigm, developing security and compliance.

C. Hybrid Clouds

It is a combination of more than one clouds such as public, private, or community clouds, which remains sole entities but is leap with each other by standardized technology. This allows data and application portable. Applications with less cruel might be outsourced to the public cloud while maintaining business-crucial services and data in a secured and controlled private cloud.

D. Community Clouds

In this, the physical infrastructure is restricted and provided by various organizations and support a definite community which has exposed their interests. Community cloud users therefore seem for increase economies of scale while cutting the price incorporates with private clouds and the risks related with public clouds.

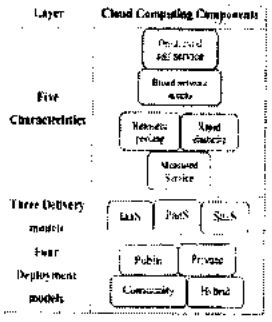

Fig. 1: Cloud Computing Paradigm

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A Review on Malicious URL Detection using Machine Learning Systems

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Abstract – Malicious web sites pretendsignificant danger to desktop security and privacy.These links become instrumental in giving partial or full system control to the attackers. This results in victim systems, which get easily infected and, attackers can utilize systems for various cyber-crimes such as stealing credentials, spamming, phishing, denial-of-service and many more such attack. Detection of such website is difficult because of thephishing campaigns and the efforts to avoid blacklists.To look for malicious URLs, the first step is usually to gather URLs that are livevon the Internet. There are various stages to detect this URLs such as collection of dataset, extracting feature using different feature extraction techniques and Classification of extracted feature. This paper focus on comparative analysis of malicious URL detection techniques.

Keywords – Malicious web sites, credentials, phishing.

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A Review of Authentication Protocols

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Abstract: Authentication is a process that ensures and confirms a users identity. Authorization is the process of giving someone permissions to do or have something. There are different types of authentication methods such as local password authentication, server-based-password authentication, certificate-based authentication, two-factor authentication etc. Authentication protocol developed for Password Authentication Protocol (PAP), Challenge-Handshake Authentication Protocol (CHAP), and Extensible Authentication Protocol (EAP). There are different types of application for authentications are as follows: 1 protocols developed for PPP Point-to-Point Protocol 2. Authentication, Authorization and Accounting 3.Kerberos.

Keywords: *Authentication, Authorization, Protocol, Kerberos, CHAP,EAPetc.*

*****

I. Introduction

Authentication can be accomplished in many ways. Importance of selecting an environment appropriate authentication protocol for the secure password. Authentication is the technique by which process verify that its communication partner is who it is supposed to be and not and imposter. Authorization is a process by which a server determines if the client has permission to use a resource are access a file. Authorization is the function of specifying access rights or privileges to resources related to information security and computer security in general and to access control in particular. Authentication is use by a server when the server when the server needs to know exactly who is accessing their information or site. For authentication we use a different protocol. The protocol is use for sending secure message from sender to receiver i.e. sender send message with encrypt format and receiver received this message using their public key in decrypt format.

II. Methods For authentication are

1.Local password authentication

The simplest authentication is based on user accounts stores locally on the FortiGate unit, for each account, a username and password is stored. The account also has a disable option so that you can suspend the account without deleting it.Local user accounts work well for a single FortiGate installation. If your network has multiple FortiGate units that will use the same accounts the use of an external authentication server can simplify account configuration and maintenance.

You can create local user accounts in the web-based manager under User &Device>User>User Definition. This page is also used to create accounts where an external authentication server stores and verifies the password.

2.Server-based-password authentication

Using external authentication servers is desirable when multiple FortiGate units need to authenticate the same users, or where the FortiGate unit is added to a network that already contains an authentication server. FortiOS supports the use of LDAP, RADIUS, TACACS+, AD or POP3 servers for authentication. When you use an external authentication server to authenticate users, the FortiGate unit sends the user's entered credentials to the external server. The password is encrypted. The server's response indicates whether the supplied credentials are valid or not.

You must configure the FortiGate unit to access the external authentication servers that you want to use. The configuration includes the parameters that authenticate the FortiGate unit to the authentication server.

You can use external authentication servers in two ways:

- Create user accounts on the FortiGate unit, but instead of storing each user's password, specify the server used to authenticate that user. As with accounts that store the password locally, you add these users to appropriate user groups.
- Add the authentication server to user groups. Any user who has an account on the server can be authenticated and have the access privileges of the FortiGate user group. Optionally, when an LDAP server is a FortiGate user group member, you can limit access to users who belong to specific groups defined on the LDAP server.

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A Survey on Privacy Preserving Techniques in Cloud Environments

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Abstract— **Cloud computing methodology is a conceptual based technology which is used widely now a day. Cloud Computing is an emerging technology which offers an innovative business model for the organizations with massive data without upfront investment, but most of the organizations still hesitate to explore their business over cloud due to security issues. Data privacy protection and data retrieval control is one of the most challenging research works in cloud computing due to confidentiality of user data. Security is one of the major issues which hamper the growth of cloud. This Paper focuses on specific analysis of privacy preservation techniques, comparative analysis and challenges.**

Keywords— **Cloud computing; Security; privacy preservation;**

I. INTRODUCTION

Cloud computing is a platform which provides storage, computation and retrieval service to the user. It also allows to access the information 24 by 7 by 365 days of time but Internet is obligatory to take advantage of the Cloud. e.g. Any Email client or the facebook user, it will take care of all the hardware and software which are essential to provide individual accounts of clients. Cloud works "pay-as-you-go" principle it means that if there is need of change in the contents at any instance then it permit you to buy more storage space from Cloud service provider.

It is the long-term idea of computing as a utility and storage that include the economical benefits to transmute the IT industry which will assist for making software products even more service oriented. It is nothing but the grouping of networks, hardware, services, storage that can be coupled with each other to provide computing as a service.

A. Public Clouds

The cloud service provider generally own and manage the required physical infrastructure [4].. storage and applications, are the resource which made on hand to various customers by a service provider, via a web application or service. Hence the resources are situated at an off-site position which is organized and supervised by the cloud service provider. These type clouds offers less expensive or pay-on-demand and has high scalable services.

B. Private Clouds

The designated service provider may have possession of and managed the physical infrastructure with an expansion of management and security power plans, which is to be controlled by the organization [4]. It could be controlled by the third party user and might subsist at an on-site or off-site position. The service offers to the provider and the client greater control over the cloud paradigm, developing security and compliance.

C. Hybrid Clouds

It is a combination of more than one clouds such as public, private, or community clouds, which remains sole entities but is leap with each other by standardized technology. This allows data and application portable. Applications with less cruel might be outsourced to the public cloud while maintaining business-crucial services and data in a secured and controlled private cloud.

D. Community Clouds

In this, the physical infrastructure is restricted and provided by various organizations and support a definite community which has exposed their interests. Community cloud users therefore seem for increase economies of scale while cutting the price incorporates with private clouds and the risks related with public clouds.

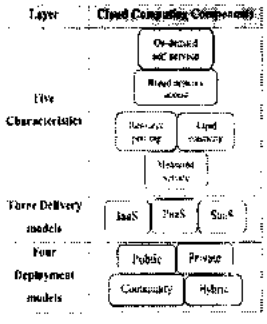

Fig. 1: Cloud Computing Paradigm

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A Review on Preventing Insider Threats and Stealthy Attacks from Sonet Site

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***Abstract*— Online social networks (OSNs) give another measurement to individuals' lives by bringing forth online social orders. OSNs have upset the human experience, however they have likewise made a stage for gatecrashers to disperse diseases and direct cybercrime. An OSN gives an entrepreneurial assault stage to cybercriminals through which they can spread contaminations at a huge scale. Assailants perform unapproved and malevolent exercises on OSN. Assaults can be an executable document, an expansion, an adventure code, and so on., that behaviors malignant tasks in OSNs with genuine effect on clients. Moreover, Intruders influence OSNs with different intensions, for example, to take basic information and adapt it for monetary profits. Insider dangers have turned into a genuine worry for some associations today. A model for OSN is to introduced to avoid insider danger misuses and to protect the classification. Multilevel security instrument is connected amid the enlistment and login level. At enlistment organize one time randomized alphanumeric watchword will be created and send to the clients by means of email though at login arrange randomized graphical secret word will be connected to counteract non malignant movement.**

Keywords- Social Networking,SONET,OSN, Attacks

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I. INTRODUCTION

ONLINE social networks (OSNs) such as Facebook and Twitter provide a platform to attackers for spreading malware on a large scale. A particular attraction of OSNs is that users trust "friends" more than strangers, and the bad guys have figured out ways to exploit that trust. For example, increased trust increases the chance of a user clicking on a link that leads to malware. There are additional reasons why OSNs are attractive to attackers. First, OSNs have millions of users (Facebook with over 500 million and Twitter with over 106 million [3]) who regularly interact. Second, OSN users are highly interconnected; thus, information gets widely shared. Third, OSNs connect globally, with few restrictions among users across different geographical locations. Finally, information sharing is extremely fast. All these factors have attracted attackers to use OSNs as launch pads for broadly spreading malware across the Internet. In OSNs, users are the most valuable entity. OSNs are designed based on the concept of several sub networks (or islands) that are interconnected to form a single large network. OSN vendors have deployed some design constraints that need to be addressed before a user becomes a part of any specific network.

For example, permissions are required by users to become friends and build networks. Overall, it can be easily deduced that interconnected networks provide a large attack surface to attackers, which is why attackers treat OSNs as a lucrative platform to trigger attacks. The eventual goal of most OSN attacks is to exploit the trust of users and to perform nefarious activities such as:

1) The distribution of malicious messages with embedded links through tweets, rogue wall posts, online chats, videos, etc., that redirect users to malicious websites to infect end-user systems via drive-by download attacks [1]

2) Sending OSN-themed phishing emails for credential stealing and spreading malware through attachments;

3) Injecting unauthorized content in web pages for monetary benefits by increasing reputation through views and likes of posts and tweets;

Review on An Approach of Attribute Based Encryption Method With Verifying Outsourced Decryption In Mobile Cloud Computing

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Abstract- *With the increasing number of mobile applications and the popularity of cloud computing, the combination of these two techniques that named mobile cloud computing (MCC) to bring rich computational resources to mobile users, network operators.*

There is focus on combining the MCC and ABE method. In existing method which is Ciphertext Policy Attribute Based(CP-ABE) method is based on attributes which is used to describe a user's credentials for generate a combine public key from that attributes, then providing public key to clusters and party encrypting data determine a policy for who can decrypt. For all that process, the computational overhead of encryption decryption grows with complexity of the access policy. To lower that computational overhead in this method generate the public key from that attributes of that user only who is requesting the data, with applying verifiable outsourced decryption in this scheme can verify the correctness of the transformed message.

Keywords- CP- ABE, Mobile Cloud Computing Outsourced Decryption, Verifiable.

I. INTRODUCTION

In this modern life increasing the development of mobile cloud computing, growing data is being centralized into the cloud for sharing. To keep the data secure for data owners, the sharing data needs to be encrypted before being uploaded and fine-grained access control is required. So introduced attribute based encryption, this is a promising technique for fine-grained access control of encrypted data in a cloud storage, however, decryption involved in the ABEs is usually too expensive for resource-constrained front-end users, which greatly hinders its practical popularity. However, one of the drawbacks of ABE is that the computational overhead of encryption and decryption grows with the complexity of the access policy. To reduce the decryption computational overhead on data, some researchers consider that decrypt the ciphertexts by outsourced decryption cloud servers. What's more, these semi-trusted servers learn nothing about the messages and DRs can verify the correctness of the transformed ciphertexts. But the encryption overhead is not taken into account. To solve the problem, we propose an efficient encryption scheme based on CP-ABE, which can dramatically enhance data encryption efficiency without loss of data security and data privacy, which can lower the overhead on data owners. To further reduce the decryption overhead on data receivers, so here additionally propose a verifiable outsourced decryption scheme. By security analysis and performance evaluation, the proposed scheme will prove to be secure as well as efficient.

II. LITERATURE REVIEW

A Sahai, B Waters in 2005 has proposed that Fuzzy identity-based encryption technique allows for a sender to encrypt a message to an identity without access to a public key certificate [1].

Sahai and Waters, V Goyal, O Pandey in 2006 introduced attribute-based encryption (ABE) as a new means for encrypted access control. In an attribute-based encryption system ciphertexts are not necessarily encrypted to one particular user as in traditional public key cryptography. Instead both users' private keys and ciphertexts will be associated with a set of attributes or a policy over attributes [2].

J. Bethencourt in 2007 introduced Ciphertext- Policy Attribute Based Encryption (CP-ABE), and used the attributes to describe a user's credentials. The data owners specified the access policy. The decryption keys consisted of a set of attributes without any tree structure [3].

M. Green in 2011 proposed scheme that allow users to outsource their ciphertexts to cloud, and the cloud servers could translate them into a (constant-size) El Gamal-style ciphertext, without disclosing any information about the user's

"A Review on Enhancing Small Medium Enterprises Opportunity through Online Food Portal System"

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ABSTRACT

In this project a system called FOODIN has been discussed as an effort to help entrepreneurs create commercial networks quickly and easily via online system. The target users are mainly entrepreneurs including startup and SME. By collecting Hotel Menu in a system several food suppliers can connect under one stop center, this system is linked to every users. From the research, FOODIN highlight the important aspects require by the entrepreneurs to build networking and assess the progress of the business as a resource for Food Supplying. The profile store data of their business advance consequently empowers community organizing between every client. Keeping in mind the end goal to help the startup, Hotels connected to FOODIN can expanded their Customers with help of one stop community for nourishment requesting.

Keywords: *Small Medium Enterprises(SME), Food Portal, FOODIN, Hotel.*

Random Sequence on Color Image using k-n Secret Sharing Visual Cryptography Scheme

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Abstract— Visual Cryptography technique is used to protect image based secret information. In this scheme we have proposed a technique called as random sequence to divide an image into n number of shares. Visual cryptography is a special type of encryption technique where visual information (Image, Text etc) gets encrypted in such a way that decryption can be performed by Human Visual System with a computation free decryption process. The beauty of the visual secret sharing scheme is in its decryption process where without any complex cryptographic computation encrypted data is decrypted using Human Visual System (HVS). But the encryption technique needs cryptographic computation to divide the image into a number of parts let n such that at least a group of k shares out of n shares reveals the secret information, less of it will reveal no information. In this paper we have discussed a technique called random sequence which needs very less computation for k-n secret sharing.

Index Terms— Visual Cryptography, Secret Sharing, Random Sequence

I. INTRODUCTION

Visual cryptography is a cryptographic technique where visual information (Image, text, etc) gets encrypted in such a way that the decryption can be performed by the human visual system without aid of computers [1].

Image is a multimedia component sensed by human perception. Pixel is the smallest unit constructing a digital image. Each pixel of a 32 bit digital color image are divided into four parts namely Alpha, Red, Green and Blue; each with 8 bits. Alpha part represents degree of transparency. If all bits of Alpha part are „0", then the image is fully transparent.

Human visual system acts as an OR function. If two transparent objects are stacked together, the final stack of objects will be transparent. Changing any of them to non-transparent, the final stack of objects will be non-transparent.

In this paper we have proposed a secret sharing algorithm [illegible] into n number of shares where [illegible] of shares are sufficient to reconstruct the [illegible] following condition must be fulfilled. [illegible] position of a pixel, there must be „1" [illegible] position of that particular pixel in (n-k)+1 number of shares generated from the original image. In the remaining shares in that position of the particular pixel there is 0. In an earlier attempt [4][5][6] we proposed a scheme of generating (n-k) +1 discrete random numbers within 1 to n to divide an image into n number of shares. But that needs to perform a number of looping operations for each position of each pixel of each n number of shares if a „1" is found in that position. In this current work we have proposed a scheme called random sequence which is more generalized and gives relief from too many looping operation. The example of visual cryptography is shown in Fig.1 [5]. The first two parts represent the shares and third part of fig shows decoded password.

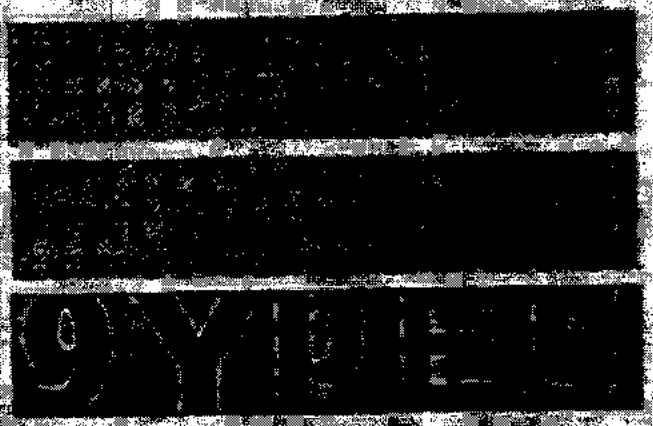

Fig. 1 An example of visual cryptography

The organization of the paper is as follows. The already existing secret sharing schemes are described in section 2. Visual cryptography model, previous scheme descriptions are explained in section 3. Proposed Random Sequence based secret sharing is given in section 4. The visual cryptography process using random sequence is described in section 5. Experimental results are shown in section 6. Future scopes are given in section 7. Finally, conclusions are made in section 8.

II. VISUAL CRYPTOGRAPHY MODEL

The original clear text is revealed by placing the transparency with the key over the page with the cipher, even though each one of them is indistinguishable from random image. The model for visual secret sharing is as follows. In

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AN EPQ MODEL WITH VARYING RATE OF DETERIORATION AND MIXED DEMAND PATTERN

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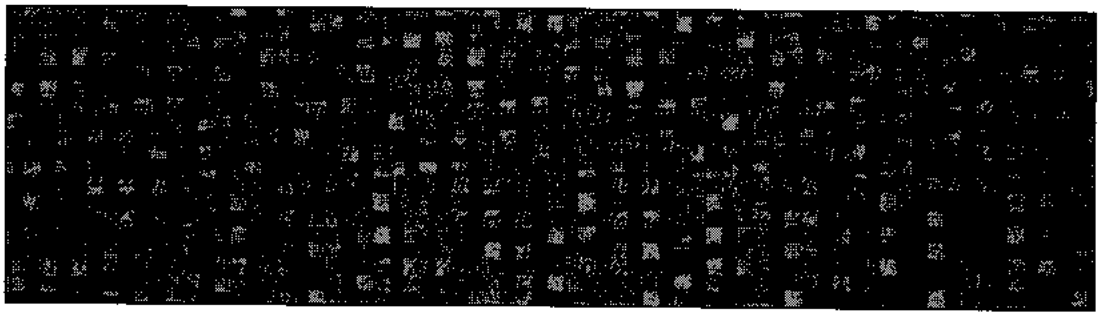

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1. INTRODUCTION

In the manufacturing sector, when items are produced internally instead of being obtained from an outside supplier, the EPQ model is often employed to determine the optimal production lot-size that minimizes overall production/inventory costs. The complexity of a resulting EPQ model depends on the assumptions one makes about various parameters of the inventory system. Among these features are demand types, actions for excess demand, production rates, treatment for imperfect quality items, minimal service level constraint, various cost parameters, and issuing policies when items are perishable. The classic EPQ model assumes that manufacturing facility functions perfectly during a production run. However, due to process deterioration or other factors, the generation of imperfect quality items is inevitable.

From product life cycle, demand rate will be constant only when the product maturity is on stage. In the competitive scenario, higher stock of items attracts the customers to purchase more (Teng *et.al* 2005). Deterioration is the common phenomenon in the real production system of products like pharmaceuticals, food, flowers, vegetables, etc. The effect of an imperfect production process, by assuming different rates of deterioration during the production process, on the optimal cycle time had been studied by (Rosenblatt and Lee, 1986). The EOQ model with power form of stock dependent demand for deteriorating items (Teng, *et.al* 2005), investigated that the shape parameter of the demand and the selling price is highly sensitive to optimal solution. The impact of the random machine failure on the EPQ model (Teng, *et.al, 2005*) was that, the demand function and purchase cost is positive and fluctuating with time. The production process can shift at random from, in control to out of control state, during the production process. In such situation, the items produced in out of control state deteriorate at a higher rate, than the normal rate; hence get consumed by demand under the LIFO policy (Garry and Dah, 2006). Behrouz and Babak, developed economic production quantity (EPQ) model, by considering both the depreciation cost of stored

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An EPQ model for Deteriorating Items with mixed Demand pattern and Time Dependent Holding cost.

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Abstract:-The Economic Production Quantity (EPQ) model is commonly used by practitioners in the fields of production and inventory management to assist them in making decisions on production lot size. The classical EPQ model assumes that all the items produced are of perfect quality. Deterioration is the common phenomenon in the real production system of products like pharmaceuticals, food, flowers, vegetables etc. Here attempt has been made to discuss the different demand pattern for different time period. During inventory buildup time, demand is inventory dependent and during inventory depletion period, demand use is constant. Holding cost used here is linear function of time. The differential calculus method is used to find the optimal solution of the model. Convexity of the total cost with production up time has been proved. The influence of inventory dependent consumption factor is also discussed. Finally, numerical examples are used to illustrate the proposed model. Some managerial insights are also inferred from the sensitive analysis of model parameters.

Index Terms:- Deteriorating items; EPQ; Inventory dependent consumption rate; mix demand.

1.INTRODUCTION

Deterioration leads to damage of items such that they cannot be used for its original purposes. The effect of deterioration is very important in many inventory systems. Food item like, milk, pack food, meat, flowers and bakery products are items in which sufficient deterioration can take place during the normal storage period of the units. For longer storage periods require additional specialized equipment and facilities resulting in higher holding costs. This may lead to loss in system. It would be more reasonable and realistic if it is assumed that the holding cost as a time dependent function. Hezari[1] developed EPQ model by considering imperfect and defective items. Holding cost for defective items has not been considered. Davidet. al [2] considered partial backordering with constant demand to study inventory model. Jiangtao[3] consider a multi-item inventory system, where the vendor provides the retailer with delay in payment. Yao [4] established a model for deteriorating items under delay in payment, in which the demand is a negative exponential function of price. Jia [5] reported a supply chain system with trade credit. Liao [6] established an EPQ model for deteriorating items with delay in payment. Shinn [7] developed a model with trade credit, and the length of credit period is a function of order size. Chung [8] studied a inventory system which purchaser acquired allowable delay in payment if order size is greater than a predetermined quantity. Liao [9] developed a model with delay in payment, in which there are two warehouses, one is own, another is rented. Tsao [10] considered an inventory model in supply-chain system for multiitem under the policy of trade credit. Min,et.al [11] developed an inventory model for deteriorating items under stock-dependent demand and trade credit. Alfares [12] considered a multi-period model with stock dependent
rate under the assumption of holding cost is a function
of storage time. Yang [13] considered a model under inflation for deteriorating items with stock-dependent rate. Panda [14] developed a two warehouses model with single vendor multiple retailers when demand depends on stock and selling price.

Most of the research developed EPQ models by considering various demand patterns like stock dependent demand, power form demand, ramp type of demand, time dependent demand, selling price dependent demand and exponential demand. It is well known that, the demand rate vary with change in inventory level. From the literature review, it is observed that the different demand pattern has not been discussed by any researcher so far on different time period. The present study may be significant in filling this gap since it aims to develop EPQ model by assuming demand as inventory dependent criteria during inventory buildup time and constant during inventory depletion period. Also holding cost is considered as linear function of time. This paper has several sections. Research motivation and literature is narrated in introduction. Next section contains notations and assumption. The following sections formulate the model and

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An Economic Production Quantity model with inventory dependent demand and deterioration

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ABSTRACT: **EPQ models are used to control the inventory effectively. The present work proposes EPQ model exclusively for deteriorating items. In the present work the EPQ model has been developed by assuming that deterioration of the items start after some constant time as it enters into the inventory. For that during production up time, demand rate is considered as inventory dependent and kept constant during down time. An efficient procedure is developed to find the optimal production run length. The influence of inventory dependent consumption rate on the production up time is also discussed in this model. A numerical example is provided to illustrate the theoretical results. The result of sensitivity analysis indicates that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost.**

Keywords:- Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand

I. INTORDUCTION

The economic production quantity (EPQ) model has been widely used in practice as it plays an important role on managing the inventory effectively. Classic economic production quantity model assumes that during production run a manufacturing facility functions perfectly and continuous inventory issuing policy for satisfying customer's demand .However, there are some drawbacks in the assumption of the original EPQ model. Many researchers have tried to improve it with different viewpoints. In manufacturing companies, when items are internally produced instead of being obtained from an outside supplier, the Economic Production Quantity (EPQ) model is often employed to determine the optimal production lot size that minimizes overall production/inventory costs. Mishra and Singh developed EPQ model for perishable items by considering demand as a power form function of the inventory level. When deterioration starts, it accelerates with time in case of fast deteriorating items like meat, vegetables milk fruits etc.[1] Behrouz and Babak, developed economic production quantity (EPQ) model by considering both the depreciation cost of stored items and process quality cost. Depreciation cost and process quality cost was assumed to be continuous functions of holding time and of production run length.[2] Yuan et.al derived the optimal manufacturing batch size and number of shipment with scrap using mathematical modeling and algebraic approach[3]. Ata discussed EPQ model for multi products single machine with discrete delivery[4] . Taleizadeh, Naja and Naiki focused on EPQ model with a production capacity limitation and a random defective production rate[5]. Gede and Hui analyzed an EPQ model for deteriorating Items with stochastic machine unavailability and price- dependent demand[6]. Jinn, used time varying demand and cost to analysed EPQ model and characterize the influences of both demand and cost over the length of production run time and the economic production quantity[7] Kuo developed EPQ model by considering setup cost and process quality as a functions of capital expenditure. Disruption in production system is common phenomenon[8]. Khedlekar attempted to established exponential demand in disrupted production system and determine production time before and after disruption[9]. Kapil and Navin developed solution procedure which help, to take decision whether to rent a warehouse or not. Demand considered for this is exponential and time dependent for deteriorating items[10]. Holding cost has been treated as non linear function of time and functional form of on hand inventory by Giri and Chaudhary studied perishable inventory model[11]. Cheng solved EPQ problem by using geometric programming with demand dependent production cost[12],[13]. The imperfect production process has general deterioration distribution and system condition depends upon how long it runs. For such system inspection can check that the process is in control or not[14]. Ram developed lot size model for constant and varying rate of deterioration[15]. Lie introduced EOQ model by assuming that return items from customer were replaced by quality items[16]. Jie et.al. considered inventory dependent demand to developed EPQ model.[17].

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A Method to Upgrade Surface Finish of Parts Fabricated By Fused Deposition Modelling

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ABSTRACT: This paper describes Taguchi Design of Experiments for determining the optimum surface finish of a part built by the Fused Deposition Modelling (FDM) process. Surface finish of RP part is improved by performing acetone treatment. Experiments were conducted using Taguchi's design of experiments, with five levels and three parameters. From the result of the experiments, mathematical model have been developed to study the effect of parameters.

KEYWORDS: Layered manufacturing, rapid prototyping, fused deposition modelling, surface finish

I. INTRODUCTION

Rapid prototyping (RP) has emerged as an important technology as it supports design of the product and produces prototype to analyse it for customer specifications in a short span of time. Functionality of the RP parts is severely affected by poor surface finish primarily due to staircase effect resulting from layer-by-layer deposition. Surface roughness value which is a result of staircase on an RP component is also dependent on geometry of the enclosing surface.[1] . One of the most commonly used technologies is Fused Deposition Modelling (FDM). The main advantages of this technology include: a good variety of materials available, easy material change, low maintenance costs, quick production of thin parts, a tolerance equal to _0.1 mm overall, no need for supervision,
no toxic materials, very compact size, low temperature operation. The main disadvantages are that it leaves a seam line between layers, the material tends to bump up, supports are required, there is axial weakness perpendicularly, a larger area of slices requires longer building times, and temperature fluctuations during production could lead to delamination, and high surface roughness. [2] It is obvious that the surface finish is better if layer thickness is smaller and also influenced by the angle between vertical and surface tangent as shown in Fig. 1[1]

From the literature survey, it is observed that, several researches, analytical and design experiments have been carried out since a long time. These studies focused directly on the surface roughness of ABS parts of different shapes and orientations observed when using Layered Manufacturing (LM) technology in FDM. Pandey et al.[1] In this research, they have presented a semi-empirical model for evaluation of surface roughness of a layered manufacturing part by fused deposition modelling. An attempt is made to address this problem using a simple material removal method namely hot cutter machining (HCM). Pandey et al. [2]In their work, a virtual hybrid FDM system have proposed which uses the capabilities of material deposition and HCM of the staircase to enhance the surface finish of a typical FDM processed parts. L. M. Galantucci et al.[3]In this paper the roughness of FDM prototypes is analysed. Process parameters have been shown to affect the Ra. In particular the slice height and the raster width are important parameters while the tip diameter has little importance for surfaces running either parallel or perpendicular to the build direction. A chemical post-processing treatment has been analysed and yields a significant improvement of the Ra of the treated specimens. Nitish Kumar et al.[4] In this study, the effect of parameters on the part quality of SLS part graphically and visually identifying the factors, which appeared to be significant. This technique is used a statistical measure of performance called signal-to-noise (S/N) ratio. The change in the quality of a product under different levels and with different factors was the main preference of this experiment. The optimum level combination of the process parameters are: Laser power: 18.5kW (Level 1), Temperature: 171°C (Level 1), Part Orientation: 90° (Level 3) for the dimensional accuracy and micro hardness of the SLS prototype to enhance the quality of product. K. Thrimurthulu et al.[5] This paper presents an approach that determines the optimal part deposition orientation for

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AN EPQ MODEL FOR DETERIORATING ITEMS WITH MIX DEMAND PATTERN

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ABSTRACT

EPQ models are effective tools of the inventory control. The present work proposes EPQ model exclusively for deteriorating items. The mix demand pattern is used as a reference. In this model, demand rate in production up time is considered as inventory dependent and kept constant during down time. A differential calculus method is employed to get the optimum solution of the model. The effect of inventory dependent consumption is also discussed in this model. The proposed EPQ model competently proves the convexity of the total cost function. Study includes numerical example and related sensitivity analysis. It has been shown here that the total cost is convex function of production up time. From sensitivity analysis it has been observed that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost.

Key words: Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand.

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1. INTRODUCTION

Traditional EPQ models are widely used owing to its ease in application. In the past several decades, numerous research efforts have been undertaken to extend the basic EPQ model by relaxing various assumptions so that the model conforms more closely to real-world situations. The Economic Production Quantity (EPQ) model is commonly used by practitioners in the fields of production and inventory management to assist them in making

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A Re-Review of Thermoeletric Module

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ABSTRACT

In 21st century there are major two problem energy shortage and environmental defects. Thermoelectric cooler is the best solution for those two problems. This review is explaining about basic concept of thermoelectric and thermoelectric generator, including the structure optimization which significantly affects the thermoelectric generator, the low temperature recovery, the heat resource and itsapplication area. Then it reports the recent application of the thermoelectric cooler including the thermoelectricmodel and its application area. It ends with the discussion of the further research direction.

Keywords: ***Cooling system, Peltier effect, Thermoelectric cooler.***

1. INTRODUCTION

Extensive fossil fuel consumption by human activities has led toserious atmospheric and environmental problems. Consequently,global warming, greenhouse gas emission, climate change, ozonelayer depletion and acid rain terminologies have started to appearfrequently in the literature. To abate the impact of the above disasters,the thermoelectric (TE) energy converters is proposed as oneof the possible technologies for this aim, which currently gains themost popularity owing to its capability in converting the heat givenoff from vehicles, electrical instruments, etc., into the electricity[1].

In 1823, a German scientist Thomas Seeback discovered that, in a closed circuit made up of two dissimilar metals an electric current is generated continuously provided that both the junctions of the metals were maintained at different temperatures. After some years in 1834, a French watchmaker,Jean Charles Athanase Peltier (1785-1845) discovered thermoelectric cooling effect which is also known as Peltier effect. Who discovered that when an electric current is passed through junction who is made up of two dissimilar metals, then one side of the junction becomes hot while the other end of the junction becomes cold. By changing the polarities of electric current supplied the hot side becomes cold while the cold side becomes hot. After four years in 1838, Emil Lenz made clear about the true nature of Peltier effect by placing a bismuth-antimony junction to freeze the water by passing of an electric current through the junction.He also observed that the ice could be melt if the current was reversed. In 1950's, Bismuth-Telluride replaced bismuth-antimony and began to be used as the primary material in the thermoelectric cooling.

Thermoelectric (TE) property was discovered earlier about two centuries but (Thermoelectric cooler) TEC was commercialized in recent years. The applications of TE ranges from small sized devices like refrigerators and electronic devices to big sized devices like Avionic instrumentation illumination control and thermal imaging cameras. Recently there is a tremendous increase in the applications of TE coolers in water chillers, medical chillers, semiconductor chillers, food and beverage chillers, etc.[16].

2. WORKING PRINCIPLE

TEC works on the principle of Peltier effect, when a DC is supplied from a 12V battery to TEC module then, heat is absorbed at one junction and dissipated at the other junction. Depending on the direction of applied DC power source and the relative Seeback coefficient of the two materials, the direction of the heat flow is regulated. TEC can be used either for heating or for cooling, while the main application is cooling. TEC module is a solid-state active heat pump which contains number of p- and n- type semi-conductor which are coupled in series and

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A REVIEW OF PASSIVE TECHNIQUE USED FOR HEAT TRANSFER ENHANCEMENT IN HEAT EXCHANGER

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Abstract - *Enhancement in heat transfer rate can be done by numerous method in various heat exchangers.Heat exchangers may be chemical reactor,refrigeration system or air conditioning systems.So many techniques have been already investigated to improve heat transfer rate with reduced cost and size.One of the most important technique is Passive heat transfer technique.These technique gives best result for thermal performance.This paper reviews experimental and numerical works taken by the researchers on this technique since 2004, such as twisted tape,wire coil, swirl flow generator,etc... to improve the thermal performance of heat exchanger.The author found that number of developed twisted tape inserts are popular researched and are used to strengthen the heat transfer of specific heat exchanger equipment.Twisted tape inserts are more useful laminar flow than turbulent flow.Also the other technique involving ribs,conical nozzle and conical ring are more efficient for turbulent flow than laminar flow.*

Key Words: **Heat transfer enhancement,Passive method,Inserts,Laminar & Turbulent flow**

1.INTRODUCTION

Heat exchangers are mostly used devices in many areas of the industries, such as process industries, heating and cooling in evaporators, thermal power plants, refrigeration and air-conditioning equipment's, radiators for space vehicles, automobiles, etc. Increase in Heat Exchangers performance can lead to more economical design of the heat exchanger which can help to make energy, material & cost savings related to a heat exchange process. The need to increase the thermal performance of heat exchangers, there by effecting energy, material & cost savings have led to development & use of many techniques termed as Heat transfer augmentation. These techniques are also referred to call as Heat transfer Enhancement or Intensification. Augmentation techniques increase convective heat transfer by reducing the thermal resistance in a heat exchanger.

In many literature gap shows the experimentation on perforated twisted insert like in experimental analysis of heat transfer characteristics using inserts in tubes. Heat transfer enhancement techniques refer to different methods used to increase rate of heat transfer without affecting much the overall performance of the system. Heat transfer augmentation techniques refer to different methods used to increase these techniques and broadly divided in two groups, passive and active. Active techniques involve some external power input for the enhancement of heat transfer. Passive heat transfer augmentation method does not use any external power input. One of the ways to enhance heat transfer performance in passive method is to increase the effective surface area and residence time of the heat transfer fluid.

2.DIFFERENT TECHNIQUES FOR HEAT TRANSFER ENHANCEMENT

2.1 Active method

This method involves some external power input for the enhancement of heat transfer.Some examples of active methods include induced pulsation by cams and reciprocating plungers,the use of a magnetic field to disturb the seeded light particles in a flowing stream, mechanical aids, surface vibration, fluid vibration,electro-static fields, suction or injection and jet impingement requires an external activator/power supply to bring about the enhancement[1].

2.2 Passive method

This method generally uses a surface or geometrical modifica- tions to the flow channel by incorporating inserts or additional devices. For example, insertingan extra component, swirl flow devices, treated surface, rough surfaces, extended Surfaces, displaced enhancement devices, coiled tubes, surface tension devices and additives for fluids. [2]

2.3Compound method

When any two or more techniques, i.e. passive and active may be employed simultaneously to enhance the heat transfer of any device, which is greater than that of produced by any of those techniques separately, the term known as Compound enhancement technique.

The passive heat transfer augmentation methods as stated earlier do not need any external power input. For the convective heat transfer, one of the ways to enhance the heat transfer rate is to increase the effective surface area and residence time of the heat transfer fluids. The passive methods are based on this principle, by employing several techniques to generate the swirl in the bulk of the fluids and

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HEAT ENHANCEMENT THROUGH CIRCULAR PIPE USING TWISTED TAPES

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Abstract:

The heat generated within the system must be dissipated to the surrounding in order to maintain the system at recommended working temperature and functioning effectively and reliably. The used of twisted tapes, ribs are generally employed in order to improve the heat transfer rate. In this research work, the different types of twisted tapes was used in order to improve the heat transfer within the concentric circular pipes. In this study, attempt is made to reduce the problem by using the twisted tapes. This inclination provides high degree of turbulence and reduces the pressure loss to a large extent. Twisted tapes are not directly attached to the surfaces, but the space is provided between the surfaces and tapes. Through this space, air is flowing which avoids the formation of eddies at the back side of the twist tapes.

Keywords: Twisted Tapes, Heat Transfer, Double pipe heat exchanger

[illegible]

[illegible] in different processes ranging from conversion, utilisation & recovery of [illegible] in various industrial, commercial & domestic applications. Some common examples [illegible] & condensation in power & cogeneration plants; sensible heating & cooling [illegible] of chemical, pharmaceutical & agricultural products; fluid heating in [illegible] waste heat recovery etc. Increase in Heat exchanger's performance can lead to more [illegible] exchanger which can help to make energy, material & cost savings related [illegible]. Use of Heat transfer enhancement techniques lead to increase in heat [illegible] the cost of increase in pressure drop. So, while designing a heat exchanger [illegible] analysis of heat transfer rate & pressure drop has to be done. Apart [illegible] performance & detailed economic analysis of heat exchanger has to be [illegible] rate in an existing or new heat exchanger while taking care of [illegible] techniques have been proposed in recent years and are [illegible]. Lokanath and Misal [1] studied twisted tapes in shell and tube [illegible]. Their study revealed that twisted tapes of tighter twists are [illegible] heat transfer coefficients. K. Shivakumar [2] investigated heat

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An Economic Production Quantity model with inventory dependent demand and deterioration

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ABSTRACT: **EPQ models are used to control the inventory effectively. The present work proposes EPQ model exclusively for deteriorating items. In the present work the EPQ model has been developed by assuming that deterioration of the items start after some constant time as it enters into the inventory. For that during production up time, demand rate is considered as inventory dependent and kept constant during down time. An efficient procedure is developed to find the optimal production run length. The influence of inventory dependent consumption rate on the production up time is also discussed in this model. A numerical example is provided to illustrate the theoretical results. The result of sensitivity analysis indicates that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost.**

Keywords:- Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand

I. INTORDUCTION

The economic production quantity (EPQ) model has been widely used in practice as it plays an important role on managing the inventory effectively. Classic economic production quantity model assumes that during production run a manufacturing facility functions perfectly and continuous inventory issuing policy for satisfying customer's demand .However, there are some drawbacks in the assumption of the original EPQ model. Many researchers have tried to improve it with different viewpoints. In manufacturing companies, when items are internally produced instead of being obtained from an outside supplier, the Economic Production Quantity (EPQ) model is often employed to determine the optimal production lot size that minimizes overall production/inventory costs. Mishra and Singh developed EPQ model for perishable items by considering demand as a power form function of the inventory level. When deterioration starts, it accelerates with time in case of fast deteriorating items like meat, vegetables milk fruits etc.[1] Behrouz and Babak, developed economic production quantity (EPQ) model by considering both the depreciation cost of stored items and process quality cost. Depreciation cost and process quality cost was assumed to be continuous functions of holding time and of production run length.[2] Yuan et.al derived the optimal manufacturing batch size and number of shipment with scrap using mathematical modeling and algebraic approach[3]. Ata discussed EPQ model for multi products single machine with discrete delivery[4] . Taleizadeh, Naja and Naiki focused on EPQ model with a production capacity limitation and a random defective production rate[5]. Gede and Hui analyzed an EPQ model for deteriorating Items with stochastic machine unavailability and price- dependent demand[6]. Jinn, used time varying demand and cost to analysed EPQ model and characterize the influences of both demand and cost over the length of production run time and the economic production quantity[7] Kuo developed EPQ model by considering setup cost and process quality as a functions of capital expenditure. Disruption in production system is common phenomenon[8]. Khedlekar attempted to established exponential demand in disrupted production system and determine production time before and after disruption[9]. Kapil and Navin developed solution procedure which help, to take decision whether to rent a warehouse or not. Demand considered for this is exponential and time dependent for deteriorating items[10]. Holding cost has been treated as non linear function of time and functional form of on hand inventory by Giri and Chaudhary studied perishable inventory model[11]. Cheng solved EPQ problem by using geometric programming with demand dependent production cost[12],[13]. The imperfect production process has general deterioration distribution and system condition depends upon how long it runs. For such system inspection can check that the process is in control or not[14]. Ram developed lot size model for constant and varying rate of deterioration[15]. Lie introduced EOQ model by assuming that return items from customer were replaced by quality items[16]. Jie et.al. considered inventory dependent demand to developed EPQ model.[17].

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Voltage Security Assessment by Using PFDT and CBR Methods in Emerging Power System

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Abstract

This paper exhibits varied methods for voltage security assessment in a restructured power system. This paper primarily lays emphasis on two methods that are Probabilistic Fuzzy Decision Tree (PFDT) and Case Based Reasoning (CBR). In PFDT, Decision Tree plays an integral role for classification of system. For further classification of power system security, an algorithm is developed to categorise the buses which trouble the security most. After classification of system, by using minimum amount of load curtailment of voltages on buses which made insecure to secure load. Optimization of load is done by curtailing reactive power from insecure buses. In CBR, old cases from database are used for solving the problems of new case. Hence, PFDT is re-trained in system during real operation for solving the new operating states which are found insecure in CBR approach. In case of emergency or a critical situation, structure of the power system networks changes but in such a condition CBR also gives better results by using re-training process. After re-training in real-time, CBR revises its database by accepting new conditions and stored for their further uses. These two methods are analysed on the standard test system i.e. IEEE-30 Bus along with desired accuracy.

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Keywords: Case based reasoning; optimal load shedding; probabilistic fuzzy decision tree; loadability margin

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Research Paper



Power quality based optimal nodal pricing in tradable electricity market

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Abstract

Optimal Power Flow method described the nodal transmission pricing into different related factors, such as congestion, generation, power and electric load limitations. These details of each bus transmission prices can be used for to improve the proper usage of transmission congestion and power grid and to get reasonable transmission pricing for power structure. The proposed methodology is demonstrated on IEEE57 bus system and Maharashtra utility electric 400/765kv network.

Keywords: *Locational marginal pricing, power quality.*

1. Introduction

Many developed and developing countries have spent substantial resources and efforts on implementing market-oriented reforms in their electric power sectors since 1990. Today most of the electricity reform processes are based on the market-orientation approaches to meet variety of objectives i.e. efficiency (techno-economic), competition, privatization, and new regulatory structure [4]. In general, reforms involve the introduction of competition into electricity generation; establishment of regulation; organization of markets for Generation (G), Transmission (T) and Distribution (D); network regulation; privatization of existing assets; promotion of new investments, and allowing for cost-reflective electricity tariffs. The drivers of reforms in developed countries differ from those of developing countries. Enhanced competition and consumer choice have dominated the reform rationale in the former while improved financial and operational performance and increased investment capital for improving electricity service levels are the main driving forces in developing countries. Also the reform programmes adopted by these countries include the elements like introduction of competition into electricity Generation, Transmission, Distribution and supply providers, restructuring the industry in order to enable the introduction of competition, privatization of the unbundled generators and suppliers, development of a new regulatory framework etc. It discover new solution to require load demand at low cost, which satisfied conditions, by adjustment of power system control variables or to find the problem deals with an optimal operating point of a power system that minimizes cost function like generation and transmission loss. This paper design with implementation of electricity pricing in regulated electricity market.

2. Electricity Spot Pricing

In regulated markets, pricing required for to solve the bidding issues and get current market values to buyers and sellers. Pricing depends on generator, loads , congestion, private sectors, fuels. Constraints variation gives energy prices from electricity network. The given work is depends on AC-DC power flow transmission pricing. The following modelling for spot pricing is derived for accurate and minimize form for the buyers and sellers. From this pricing sellers and buyers concentrates on actual generation and transmission costing.

3. Modelling of Spot Pricing

A. Electricity Nodal Price Equations

$$L = \sum_{i=1}^{NG} (a_i P_{gi}^2 - b_i P_{Gi} - c_i) - \sum_{i=1}^{NB} \lambda_{pi} (P_{di} - P_{gi} - P_{dci} - P_L)$$

$$- \sum_{i=NT+1}^{NB} \lambda_{qi} (Q_{di} - Q_{gi} - Q_{dci} - Q_L)$$

$$+ \sum_{i=1}^{NG} \rho_{Pli} (P_{gi}^{min} - P_{gi}) - \sum_{i=1}^{NG} \rho_{pui} (P_{gi} - P_{gi}^{max})$$

$$+ \sum_{i=1}^{NG} \rho_{Qli} (Q_{gi}^{min} - Q_{gi}) - \sum_{i=1}^{NG} \rho_{qui} (Q_{gi} - Q_{gi}^{max})$$

$$+ \sum_{i=1}^{NB} \rho_{Vli} (|V_i^{min}| - |V_i|) - \sum_{i=1}^{NB} \rho_{Vui} (|V_i| - |V_i^{max}|)$$

$$+ \sum_{i=1}^{NB} \rho_{\delta li} (\delta_i^{min} - \delta_i) - \sum_{i=1}^{NB} \rho_{\delta ui} (\delta_i - \delta_i^{max})$$

$$+ \sum_{i=1}^{Ngele} \rho_{Pfli} (P_{fi}^{min} - P_{fi}) - \sum_{i=1}^{Ngele} \rho_{Pfui} (P_{fi} - P_{fi}^{max})$$

4. Problem identify and numerical Results

A. OPF based Electricity Spot Price: Problem Simulation and Results

This research methodology has been simulated in Matlab software and results are obtained

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A Review on Prototype design of Distribution Automation for 11kV/0.415kV Substation

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Abstract –The electric power distribution network it is an essential section of the electric power system. It supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. In this paper we design real time visualization, monitoring and controlling of electrical distribution system using MATLAB. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be categorize from healthy part of power system. It increases reliability of power system. Presently, research and development efforts are focused in the area of communication technologies. An electric energy is an essential ingredient for the industrial and all around development of any country

Index terms –Distribution Substation, Circuit breaker, Relay, MATLAB.

1. INTRODUCTION

The distribution of electric power and its protection is a dare for engineers, due to the complex environment of the networks. The major role of protection is to safeguard the whole system to maintain continuity of source by identifying faults and to reduce destruction to equipment. A good protection system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be steady and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergizes the faulted part. Generally, circuit breakers work for one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help to protect equipment by allowing the disconnection of faulted lines before any significant damage is done. Fault location in electric power distribution systems still presents many challenges due to its varied topological and operational characteristics. The traditional methods used for tracing faults in a distribution network consist of visual inspection by power line circuit. In relation to underground cable system, fault is also located by a special cable test van. However, these traditional fault location methods are unable to locate faults quickly. The increasing necessity on electricity calls for high demand of reliability in power supply. Nowadays, utilities companies are now under obligation, demanded by regulatory bodies to system performance benchmarks. This demand among others is driving the need for making the power distribution system intelligent and smart A circuit breaker is one of the critical components of the power system that automatically detect faults and protect the power system by isolating the faulty point of the circuit. Circuit breakers provided have inherent fault detection and isolation capabilities. These protection interventions are not adequate due to protection integrity on the distribution transformer at distribution substation which is damaged by undifferentiating use of copper links to replace blown High Rapturing Capacity (HRC) fuses and high ground resistance and on the transmission line; the power system uses voltage and current signals to learn the hidden relationship existing in the input patterns. It was observed that the radial basis function neural ability to identify the precise fault direction and more rapidly. This makes it suitable for the real-time purpose. In this, a data collecting device would be suitable for fault detection and isolation. Fault detection indicates the occurrence of a fault in a monitored system; fault isolation establishes the type and/or location of the fault identification determines the magnitude of the fault. After a fault has been detected and diagnosed, in some applications it is required that the fault be self-corrected, usually through controller reconfiguration.

2. LITRATURE SURVEY

Xuesong Zhou, Pengda Xiang, et. al.[1] has describe as With the rapid development of distribution grid, the construction of distribution automation system has become an inevitable trend in the development of electric power industry. It reflects the application of intelligent power distribution and management in power distribution. The fundamental objective of applying the distribution automation system is to improve the reliability

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Optimal Spot Pricing of Electricity in Restructured Electricity Market

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Abstract: ***In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.***

Keywords: Optimal power flow, Spot pricing, Electricity market, HVDC, Short run marginal costing.

I. INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules. In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely agreed that transmission is a natural monopoly and should remain centrally controlled. Today transmission and distribution lines provide the critical physical link that makes competition feasible. Thus open access to the network and adequate pricing are essential for the development of competition.

Several electricity transmission pricing methods have been developed in order to meet the various pricing objectives. One of approach of electricity pricing is Spot pricing based on Short Run Marginal Costing (SRMC) principle. It is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid.

Electricity Spot prices have several applications in the competitive electricity market. The two most important applications i.e. first forecasting of electricity prices and secondly to design Financial Transmission Rights (FTRs) to hedge the price risk under transmission congestion.

Optimal Power flow (OPF) is one of the most significant problems for power system planners and operators. The main aim of OPF is to discover new techniques for the optimal settings of a given power system network that improve a selected objective function such as total generation cost, system loss, bus voltage deviation while fulfilling its load flow equations, system protection, and equipment operating limits. The basic objective of OPF problem is to meet the required load demand at minimum production cost, satisfying units' and system's operating constraints, by adjustment of power system control variables. In other words, optimal power flow (OPF) problem deals with finding an optimal operating point of a power system that minimizes an appropriate cost function such as generation cost or transmission loss subject to certain constraints on power and voltage variables.

This study deals with modeling and implementation of AC-DC OPF based electricity spot pricing in restructured electricity market.

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Comparison of Locational Marginal Transmission Pricing

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ABSTRACT

Locational marginal price is required in restructured power system.It is require creating an effective pricing scheme that to provide the useful information to generation, transmission section and customers. These transmission pricing depends on generator, load levels and transmission line constraints. Transmission line constraints result is variations in energy prices throughout the network. The proposed approach is based on AC optimal power flow model with considering of losses. Resulting optimization problem is solved by linear programming approach. Locational Marginal Pricing methodology is used to determine the energy price for transacted power and to manage the network congestion and marginal losses. Variation of LMP values with transmission constraint conditions also studied. Simulation is carried out on 220kV, 400Kv & 765kV MSETCL system of Maharashtra transmission line for real data bus system and the results are presented.

Keywords: Locational Marginal Pricing, Optimal Power Flow, transmission pricing

I. INTRODUCTION

By Tradition, power industry is vertically integrated, in which the generation, Transmission and distribution are arranged collectively as a single utility to serve its customers. Due to central operation of transmission and distribution system it will remain in a monopoly mode. Under the deregulated electricity `market environment, transmission networks play a vital role in supporting the transaction between producers and consumers. Due to Transmission Open Access (TOA) the power flow in the lines reach the power transfer limit and so it will leads to a condition known as congestion [1-2]. The congestion may be caused due to a mixture of reasons, such as transmission line outages, generator outages and change in energy demand. Transmission congestion has impact on the entire system as well as on the individual market participants i.e. sellers and buyers. Without congestion low cost GENCOs are used to meet the load demand but if congestion is present in the transmission network then it prevents the demand to be met by the lowest-priced resources due to mentioned transmission constraints and this leads to the allocation of higher price.

There are two types of pricing methods are available in practice for congestion management [10]. They are uniform and non-uniform pricing structure. In this paper congestion is managed by means of Locational Marginal Pricing (LMP) i.e. non-uniform pricing structure. The LMP at a location is defined as the marginal cost to supply an additional MW increment of power at the location without violating any system security limits [1]. This price reflects not only the marginal cost of energy production, but also its delivery.

Because of the effects of both transmission losses and transmission system congestions, LMP can vary significantly from one location to another. If the lowest priced electricity is allocated for all Location LMP values at all nodes will be same. If congestion present in the system lowest cost energy cannot reach all location, more expensive generators will allocated to reach out the demand. In this situation LMP values will be differ from one location to another. ISO determines the generation and demand schedule as well as LMPs based on increased social welfare maximization, subject to system operational.

LMP = generation marginal cost + congestion cost +marginal loss cost

LMP is obtained from the result of Optimal Power Flow (OPF). Either AC-OPF or DC-OPF is used to determine

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AC-DC OPF based Day-Ahead Electricity Nodal Price Prediction using an ANN

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ABSTRACT

Electricity industries around the world have significantly restructured in order to improve their economic efficiency, reliability of power systems and accountability. Accurate prediction of day-ahead electricity nodal price has now become an important activity to address the system operations and price volatility in the restructured electricity market. This will facilitate the market participants to estimate the risk and have better market oriented decision making.

In order to meet the electricity demand and other benefits, many developing countries including India are adopting HVDC transmissions in their existing system. Developing countries need to address this practice while adopting suitable electricity nodal pricing scheme and its accurate prediction. This study aims at (1) motivations and relevance of present study, (2) presenting AC-DC OPF based nodal pricing and formulation of day-ahead nodal price prediction using Artificial Neural Networks. (3) presenting and comparing numerical results for a real system of developing country like India to demonstrate the rationality and feasibility of the proposed methodology.

General Terms

Nodal Price Prediction

Keywords

AC_DC Optimal Power Flow (OPF), Nodal Price Prediction, Artificial Neural Networks

1. INTRODUCTION

The electricity supply industries around the world have experienced extensive restructuring process from the vertically regulated monopoly to the competitive market to improve their economic efficiency, reliability of power systems and accountability [1-2]. Under it, the nodal or locational marginal pricing (LMP) is emerged as an important mode of energy pricing [3]. LMPs reveal vital information to the market participants about their bidding strategies and risk management and to the system operators to perform market dispatch and clearing decisions in network congested electricity markets.

In developing countries, the electricity demand have expected to more that double in coming years as compared to about 30 to 40% increase in developing countries is due to insufficient transmission and distribution capacity. Also in order to meet the electricity demand and to gain techno-economic benefits of investment, many developing countries now adopting HVDC transmissions in the existing AC transmission system [2]. Developing countries in this regard address these issues while adopting suitable electricity nodal pricing scheme and its accurate prediction.

The application of nodal pricing in this environment is to accurately predict the electricity prices. Market participants need price prediction information to maximize their profits in spot markets, to negotiate bilateral contracts so that they can hedge against risks of price volatility in spot market, to ensure investments recovery in the facility planning and measures to predict possible exercises of market power and detect gaming behaviors which leads to unreasonable prices [2, 3]. Also, forecasted prices provide system operators with measures to predict possible exercises of market power and detect gaming behaviors leading to unreasonable prices [2].

Several hard computational techniques like time series models, auto regressive and auto regressive integrated moving average (ARIMA) models [5], [6] and combination of wavelet transform (WT) and ARIMA techniques have been tried to predict electricity prices [7]. A generalized autoregressive conditional heteroskedastic (GARCH) methodology is used to predict next-day electricity prices [8]. Though these techniques are found accurate, but are limited to a large amount of historical information and the computational cost.

Besides, several soft computational techniques based on Artificial Intelligence approach are also been proposed. [3] suggested Neural Network (NNs) and fuzzy-c-means approach to forecast LMPs. [4] presented a WT based NN model to forecast price to improve the forecasting accuracy. [5] proposed a feedforward NNs for forecasting next-week electricity prices. [9] proposed self-organized map and support-vector machine for forecasting short-term electricity price. [10] employed fuzzy inference system and least-squares estimation for short-term price forecasting in wholesale electricity markets. [11] proposed the use of two ANNs: the first to predict the day-ahead load and second to forecast the day ahead market clearing price (MCP). [12] suggested NNs and fuzzy logic modeling for forecasting energy prices. [13] developed Bayesian framework to analyze the uncertainties involved in a MCP prediction. [14] used NNs extended Kalman filter to predict MCP and confidence interval in a deregulated power market. A sensitivity analysis of similar day parameters is used to increase the accuracy of NNs and to forecast hourly electricity prices [15]. As these techniques do not require modeling the system; instead, they find an appropriate mapping between the several inputs and the output, usually learned from historical examples, thus being computationally more efficient. The advantages of ANNs of being able to approximate any nonlinear function and being able to solve problems where the input–output relationship is neither well defined nor easily computable, as ANNs are data-driven.

Since, relation between nodal prices and its influencing variables i.e. real and reactive demands, bus voltages and angles are non-linear, therefore; NNs are well suited for the problem under study due to their ability to model the complex and non-linear relationship involved in price prediction. This paper demonstrated AC-DC OPF based nodal price methodology and used neural networks to predict peak day-ahead electricity nodal price in a restructured electricity markets. Several NNs like Feedforward Neural Network (FFN) with Back-propogation (BP) algorithm, Cascade Feedforward Neural Network (CFN) networks are used to predict day-ahead nodal prices.

This paper is organized as follows: Section II discusses the need of modeling electricity nodal price and applications of price prediction; Section III demonstrate the AC_DC OPF based nodal pricing methodology and day-ahead electricity price prediction by ANNs; Section IV evaluates the numerical results for real

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Voltage Security Assessment by Using PFDT and CBR Methods in Emerging Power System

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Abstract

This paper exhibits varied methods for voltage security assessment in a restructured power system. This paper primarily lays emphasis on two methods that are Probabilistic Fuzzy Decision Tree (PFDT) and Case Based Reasoning (CBR). In PFDT, Decision Tree plays an integral role for classification of system. For further classification of power system security, an algorithm is developed to categorise the buses which trouble the security most. After classification of system, by using minimum amount of load curtailment of voltages on buses which made insecure to secure load. Optimization of load is done by curtailing reactive power from insecure buses. In CBR, old cases from database are used for solving the problems of new case. Hence, PFDT is re-trained in system during real operation for solving the new operating states which are found insecure in CBR approach. In case of emergency or a critical situation, structure of the power system networks changes but in such a condition CBR also gives better results by using re-training process. After re-training in real-time, CBR revises its database by accepting new conditions and stored for their further uses. These two methods are analysed on the standard test system i.e. IEEE-30 Bus along with desired accuracy.

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Keywords: Case based reasoning; optimal load shedding; probabilistic fuzzy decision tree; loadability margin

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Optimal Nodal Pricing in Tradable Electricity Market

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Abstract— **In regulated electricity markets, an effective transmission pricing method is required to transmission issues and to generate economical generation cost. It is require creating an effective pricing scheme that to provide the useful information to generation, transmission section and customers. These transmission pricing depends on generator, load levels and transmission line constraints. Transmission line constraints result is variations in energy prices throughout the network. The proposed approach is based on AC optimal power flow model with considering of losses. Resulting optimization problem is solved by linear programming approach. Locational Marginal Pricing methodology is used to determine the energy price for transacted power and to manage the network congestion and marginal losses. Variation of LMP values with transmission constraint conditions also studied. Simulation is carried out on IEEE 57 bus system , 400kV and 400/765kV MSETCL system of Maharashtra transmission line for real data bus system and the results are presented.**

Keywords—*Locational Marginal Pricing, Optimal Power Flow, transmission pricing*

I. INTRODUCTION

By Tradition, power industry is vertically integrated, in which the generation, Transmission and distribution are arranged collectively as a single utility to serve its customers. Due to central operation of transmission and distribution system it will remain in a monopoly mode. Under the deregulated electricity 'market environment, transmission networks play a vital role in supporting the transaction between producers and consumers. Due to Transmission Open Access (TOA) the power flow in the lines reach the power transfer limit and so it will leads to a condition known as congestion [1-2]. The congestion may be caused due to a mixture of reasons, such as transmission line outages, generator outages and change in energy demand. Transmission congestion has impact on the entire system as well as on the individual market participants i.e. sellers and buyers. Without congestion low cost GENCOs are used to meet the load demand but if congestion is present in the transmission network then it prevents the demand to be met by the lowest-priced resources due to mentioned transmission constraints and this leads to the allocation of higher price.

Buyers in the market pays ISO based on their price for dispatched energy. The ISO pays sellers in the market based on their respective prices. The LMP difference between two adjacent buses is the congestion cost which arises when the energy is transferred from one location to the other location[3]. Marginal losses represent incremental changes in system losses due to incremental demand changes. Incremental losses yield additional costs which are referred to as the cost of marginal losses. Thus LMP is the summation of the costs of marginal energy, marginal loss and congestion. LMP can be stated as follows:

LMP = generation marginal cost + congestion cost +marginal loss cost

LMP is obtained from the result of Optimal Power Flow (OPF). Either AC-OPF or DC-OPF is used to determine the LMP [7]. To reduce the complexity in the calculation in this paper DC-OPF is used. In DC-OPF only real power flow is considered [6]. Different types of optimization models are used for LMP calculations like LP and Lagrangian[8]. Among these in this paper quadrating programming is used to solve the optimization problem.

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REVIEW ON POWER QUALITY IMPROVEMENT BY USING UPQC

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ABSTRACT:

Today with increase in demand of electricity it is essential to have a good quality of power. As most of the load and power electronics equipment are nonlinear in nature many power quality problems like voltage sag ,voltage swell ,Harmonics, Voltage fluctuation, Flicker, gets introduced in System. UPQC(Unified Power Quality Conditioner)is one of the compensating device which consist of Shunt& Series Active Power Filter Cascaded with dc link capacitor. This paper present review of UPQC to enhance Quality of Power at distribution level Along with overview of different types of UPQC.

INTRODUCTION:

Nowadays, use of electronic and power electronics equipment such as thyristor, IGBT, power converter has been increasing tremendously. As power electronics equipments are nonlinear in nature. So with the increase in use of nonlinear load in power system, power quality problems voltage & current related problem arises in system. These problems are solved by LC passive filters. However, these kinds of filters are unable to solve waveform related problems. Active filters are able to solve this problem, but its cost is high, and difficult to implement in bulk scale. Also, their lower efficiency is low.

UPQC is the compensating device in power distribution network. The UPQC belongs to APF family where shunt and series APF are integrated together to achieve better-quality control on several power quality problems simultaneously. The UPQC consist of arrangement of series and shunt active filters connected by DC link capacitor. The main aim of a UPQC is to compensate for voltage and current related problems.

In this paper, UPQC is used to resolve power quality problems. The series and shunt active power filters of UPQC operate as a voltage and current source converters which are controlled by the PWM signals which are generated by the controllers.

POWER QUALITY:

A constant amplitude and one constant frequency sinusoidal signal is considered as desirable and ideal current or voltage signal. Quality of voltage taken from the utility or that distributed to the end user is referred as voltage or current quality. The fluctuation of voltage, current and frequency from its most favorable worth that may prevent mal-function of the equipment can be considered as power quality problem.

Power quality can have various different meanings and significances. In the view of manufacturer, power quality can be described as the way in which there should be no voltage variety and no noise generation in the system of grounding. In view of utility designer, it can be considered as voltage availability. Whereas for the end users power quality can be considered as the feasibility of utilizing the accessible power for operation of various types of loads. Distribution system is worst affected because of the power quality problems. Power quality becomes poor at the position where loads are connected with the distribution system. So here we'll try to upgrade the quality of power of the distribution system.

POWER QUALITY PROBLEMS:

Power quality problems generally observed in distribution network are as follows

i) SHORT DURATION VOLTAGE VARIATION

It's duration very less i.e. less than 1min. The cause for this are large load energization, fault conditions etc. Short duration voltage variation includes voltage sag, voltage swell and interruption.

a) **VOLTAGE SWELL:**

It is increased in the line-voltage (rms) to 1.1-1.8% of the nominal line-voltage for a small period of half cycle to 1 min. Main cause for this is Swells can be switch off a large load.

b) **VOLTAGE SAG:**

It is a decrease of line voltage (rms) to 10 to 90 % of the standard line-voltage for the period of half cycle to a min. It is also referred as "dip". The main cause for this voltage sag is starting of induction motors.

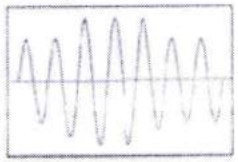

Fig.1 .Voltage Swell

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It's duration may less to less than 1min.The cause for this are large load energization, fault conditions etc. Short duration voltage variation includes voltage sag, voltage swell and interruption.

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b) VOLTAGE SAG:

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Fig 1. Voltage Swell

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"Protection of Distribution Feeder using Directional Overcurrent Elements"

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Abstract: -- Distribution system holds a very significant position in the power system since it is the main point of the link between bulk power and consumers. It usually has radial configuration and has an unbalanced operation. Equipment in distribution protection consists of fuses, reclosers, and sectionalizes. The main priorities are to prevent further damage to utility equipment, as little of the system is taken down as possible, reliability and power quality. The problems associated with protection devices operation and coordination require special review since they may affect the system security and dependability. In order to avoid misoperations in the system, directional elements are needed to be added. Non-directional relays may not provide sensitivity and security for faults on remote points of the circuit. Directional supervision is necessary to set overcurrent pickups with adequate sensitivity for remote faults. Here, an effort is proposed to protect distribution feeder using directional overcurrent elements [1,2]. In the said research

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ORIGINAL CONTRIBUTION

Application of PSAT to Load Flow Analysis with STATCOM under Load Increase Scenario and Line Contingencies

Aparna S. Telang[1] · P. P. Bedekar[2]

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Abstract Load flow analysis is the initial and essential step for any power system computation. It is required for choosing better options for power system expansion to meet with ever increasing load demand. Implementation of Flexible AC Transmission System (FACTS) device like STATCOM, in the load flow, which is having fast and very flexible control, is one of the important tasks for power system researchers. This paper presents a simple and systematic approach for steady state power flow calculations with FACTS controller, static synchronous compensator (STATCOM) using command line usage of MATLAB tool-power system analysis toolbox (PSAT). The complexity of MATLAB language programming increases due to incorporation of STATCOM in an existing Newton–Raphson load flow algorithm. Thus, the main contribution of this paper is to show how command line usage of user friendly MATLAB tool, PSAT, can extensively be used for quicker and wider interpretation of the results of load flow with STATCOM. The novelty of this paper lies in the method of applying the load increase pattern, where the active and reactive loads have been changed simultaneously at all the load buses under consideration for creating stressed conditions for load flow analysis with STATCOM. The performance have been evaluated on many standard IEEE test systems and the results for standard IEEE-30 bus system, IEEE-57 bus system, and IEEE-118 bus system are presented.

Keywords Load flow analysis · Newton–Raphson (N–R) power flow · FACTS · STATCOM · Voltage stability · PSAT

Introduction

Load flow study is an important aspect in the planning and designing phase of a power system. It has always been useful means used by many power system engineers for power system enhancement. In fact these power flow calculations are essential for continuous evaluation and analysis of the power system to meet increased load demand [1]. Introducing fast acting devices called the Flexible Alternating Current Transmission System (FACTS) controllers in the traditional load flow have proved reliable technical solution for the enhancement of power system in context with voltage stability improvement [2–6]. Voltage stability is significant phenomenon in power system planning and operation [7, 8]. The STATCOM is a key element of the FACTS technology. Traditional power flows do not include these newly developed FACTS controllers.

Very few researchers had addressed the issue of how to model FACTS devices for load flow calculations [9]. In earlier research work, models for FACTS devices, required to be implemented in power flow calculations, mostly using the Newton–Raphson method have been developed [10, 11]. A new and appropriate STATCOM model for power flow analysis has been proposed in [12, 13]. The procedure to extend conventional power flow calculations based on Newton–Raphson method, to include multiple FACTS controllers: STATCOM, SSSC, UPFC and IPFC is

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AC-DC OPF based Day-Ahead Electricity Nodal Price Prediction using an ANN

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ABSTRACT

Electricity industries around the world have significantly restructured in order to improve their economic efficiency, reliability of power systems and accountability. Accurate prediction of day-ahead electricity nodal price [illegible] an important activity to address the system operations and price volatility in the restructured electricity market. This will facilitate the market participants to estimate the risk and have better market oriented decision making.

In order to meet the electricity demand and other benefits, many developing countries including India are adopting HVDC transmissions in their existing system. Developing countries need to address this practice while adopting suitable electricity nodal pricing scheme [illegible] its accurate prediction. This [illegible] (1) motivations [illegible] relevance of present study, (2) [illegible] AC-DC OPF based nodal pricing and formulation of day-[illegible] price prediction using Artificial Neural Networks, (3) presenting and comparing numerical results for a real system of developing country like India to demonstrate the rationality and feasibility of the proposed methodology.

General Terms

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Keywords

AC_DC Optimal Power Flow (OPF), Nodal Price Prediction, Artificial Neural Networks

I. INTRODUCTION

The electricity supply industries around the world have experienced [illegible] restructuring process from the vertically regulated monopoly to the competitive market to improve their economic efficiency, reliability of power systems and accountability [1-2]. Under it, the nodal or locational marginal pricing (LMP) is emerged as an important mode of energy pricing [3]. LMPs reveal vital information to the market participants about their bidding strategies and risk management and to the system operators to [illegible] spatch and clearing decisions in network [illegible] markets.

In developing [illegible] the electricity demand [illegible] to more that [illegible] increase in [illegible] is due to insufficient [illegible] and distribution [illegible] in order to [illegible] demand and [illegible] economic benefits of [illegible] developing [illegible] HVDC [illegible] the existing AC [illegible] [2]. Developing countries in this regard address [illegible] adopting suitable electricity nodal pricing scheme [illegible] prediction.

The applic[illegible] in this environment [illegible] to accurately pre[illegible] Market [illegible] price predi[illegible] markets, to [illegible] contracts so [illegible] against risks [illegible] investments recovery in the facility planning and measures to predict possible exercises of market power and detect gaming behaviors which leads to unreasonable prices [2, 3]. Also, forecasted prices provide system operators with measures to predict possible exercises of market power and detect gaming behaviors leading to unreasonable prices [2].

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Since, relation between nodal prices and its influencing variables [illegible] real and reactive demands, bus voltages and angles are non-linear, therefore; NNs are well suited for the problem under study due to their ability to model the complex and non-linear relationship involved in price prediction. This paper demonstrated AC-DC OPF based nodal price methodology and used neural networks to predict peak day-ahead electricity nodal price in a restructured electricity markets. Several NNs like Feedforward Neural Network (FFN) with Back-propogation (BP) algorithm, Cascade Feedforward Neural Network (CFN) networks are used to predict day-ahead nodal prices.

This paper is organized as follows: Section II discusses the need of modeling electricity nodal price and applications of price prediction; Section III demonstrate the AC_DC OPF based nodal pricing methodology and day-ahead electricity price prediction by ANNs; Section IV evaluates the numerical results for real

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Themed Section : Engineering and Technology

Comparison of Locational Marginal Transmission Pricing

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ABSTRACT

Locational marginal price is required in competitive power system.It is require creating an effective pricing scheme that to provide the useful information to generation, transmission section and customers. These transmission pricing depends on generator, load levels and transmission line constraints. Transmission line constraints result is variations in energy prices throughout the network. The proposed approach is based on AC optimal power flow model with considering the losses. Resulting optimization problem is solved by linear programming approach. Locational Marginal Pricing methodology is used to determine the energy price for transacted power and to manage the network congestion and marginal losses. Variation of LMP values with transmission constraint conditions also studied. Simulation is carried out on 220 KV, 765KV MSETCL system of Maharashtra transmission line for real data base. Graphical results are presented.

Keywords: Locational Marginal Pricing, Optimal Power Flow, transmission pricing

I. INTRODUCTION

By Traditional electricity is vertically integrated, in which the generation, transmission and distribution are arranged to supply electrical energy to customers. In traditional electricity market, distribution system operator manages the network. Under the deregulated electricity market environment, transmission pricing plays vital role in supporting the transactions. Transmission lines reach their limits, leading to a congestion. Such congestion is caused by, such as transmission line outages, generator change in load, or changes in load impact on the transmission system. In market participants congestion, demand bids, network flow, lowest-price generation constraints, price.

There are two methods in practice for

uniform and non-uniform pricing structure. In this paper congestion is managed by means of Locational Marginal Pricing (LMP) i.e. non-uniform pricing structure. The LMP at a location is defined as the marginal cost to supply an additional MW increment of power at the location without violating any system security limits [1]. This price reflects not only the marginal cost of energy production, but also its delivery.

Because of the effects of both transmission losses and transmission system congestions, LMP can vary significantly from one location to another. If the lowest priced electricity is allocated for all Location LMP values at all nodes will be same. If congestion present in the system lowest cost energy cannot reach all location, more expensive generators will allocated to reach out the demand. In this situation LMP values will be differ from one location to another. ISO determines the generation and demand schedule as well as LMPs based on increased social welfare maximization, subject to system operational.

LMP = generation marginal cost + congestion cost +marginal loss cost

LMP is obtained from the result of Optimal Power Flow (OPF). Either AC-OPF or DC-OPF is used to determine

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Optimal Spot Pricing of Electricity in Restructured Electricity Market

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Abstract: *In [illegible] recent [illegible] is [illegible] High Voltage Direct Current (HVDC) transmission in the existing AC tran[illegible] [illegible] restructured electricity market, accurate prediction of electricity spot [illegible] activity [illegible] system operations and price volatility in the marketplace. Electricity pric[illegible] [illegible] ed to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. [illegible] odology is either on AC or DC system and its implementation. Since AC real power [illegible] in because of advantages of HVDC system, it developed suitable AC-DC based [illegible] power system. The aim of this paper is to model AC-DC OPF based electricity [illegible] d IEEE 57 Bus System and Real power system. The results are sim[illegible] or real network 400 kV MSETCL. Finally the results obtained are con[illegible] 5 kV AC transmission lines, impact on Bus voltages and optimal ele[illegible]*

Key[illegible] *[illegible] et, HVDC, Short run marginal costing.*

[illegible]ODUCTION

In re[illegible] [illegible]anges due to a worldwide deregulation/privatization process that has sig[illegible] [illegible] markets. In a deregulated system, operators' goals are balancing co[illegible] [illegible]suring that economical and technical constraints are respected. The pri[illegible] [illegible]ers the [illegible] obtain maximum prices for their produced energy, while co[illegible] [illegible]tric power. Prices have to be defined in a free market economy and rest[illegible] [illegible]city market, the desired objective is to achieve a more efficient power syst[illegible] [illegible] pricing scheme becomes a key issue in order to achieve efficient con[illegible] [illegible] and retail (or supply) around the world, it is widely agreed that tran[illegible] [illegible]ly controlled. Today transmission and distribution lines provide the cri[illegible] [illegible]en access to the network and adequate pricing are essential for the de[illegible]

Sev[illegible] [illegible]eveloped in order to meet the various pricing objectives. One of app[illegible] [illegible] Marginal Costing (SRMC) principle. It is a market-pricing app[illegible] [illegible]ystem when congestion occurs on the bulk power grid.

Ele[illegible] [illegible]ive electricity market. The two most important applications i.e. first for[illegible] [illegible]ncial Transmission Rights (FTRs) to hedge the price risk under tra[illegible]

O[illegible] [illegible] for power system planners and operators. The main aim of OPF is [illegible] [illegible] power system network that improve a selected objective function su[illegible] [illegible]on while fulfilling its load flow equations, system protection, and eq[illegible] [illegible] is to meet the required load demand at minimum production cost. sat[illegible] [illegible] power system control variables. In other words, optimal power flo[illegible] [illegible] power system that minimizes an appropriate cost function su[illegible] [illegible]nstraints on power and voltage variables.

Th[illegible] [illegible]PF based electricity spot pricing in restructured electricity market.

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A Review on Prototype design of Distribution Automation for [illegible]kV/0.415kV Substation

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characteristics. The traditional methods used for tracing faults in a distribution network consist of visual inspection by power line circuit. In relation to underground cable system, fault is also located by a special cable test van. However, these traditional fault location methods are unable to locate faults quickly. The increasing necessity on electricity calls for high demand of reliability in power supply. Nowadays, utilities companies are now under obligation, demanded by regulatory bodies to system performance benchmarks. This demand among others is driving the need for making the power distribution system intelligent and smart A circuit breaker is one of the critical components of the power system that automatically detect faults and protect the power system by isolating the faulty point of the circuit. Circuit breakers provided have inherent fault detection and isolation capabilities. These protection interventions are not adequate due to protection integrity on the distribution transformer at distribution substation which is damaged by undifferentiating use of copper links to replace blown High Rapturing Capacity (HRC) fuses and high ground resistance and on the transmission line: the power system uses voltage and current signals to learn the hidden relationship existing in the input patterns. It was observed that the radial basis function neural ability to identify the precise fault direction and more rapidly. This makes it suitable for the real-time purpose. In this, a data collecting device would be suitable for fault detection and isolation. Fault detection indicates the occurrence of a fault in a monitored system: fault isolation establishes the type and/or location of the fault identification determines the magnitude of the fault. After a fault has been detected and diagnosed, in some applications it is required that the fault be self-corrected, usually through controller reconfiguration.

2. LITRATURE SURVEY

Xuesong Zhou, Pengda Xiang, et. al.[1] has describe as With the rapid development of distribution grid, the construction of distribution automation system has become an inevitable trend in the development of electric power industry. It reflects the application of intelligent power distribution and management in power distribution. The fundamental objective of applying the distribution automation system is to improve the reliability

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...ptimal nodal pricing in ...ctricity market

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...ricing into different related factors, such as congestion, generation, power ...ssion prices can be used for to improve the proper usage of transmission ...icing for power structure. The proposed methodology is demonstrated on ...etwork.

following modelling for spot pricing is derived for accurate and minimize form for the buyers and sellers. From this pricing sellers and buyers concentrates on actual generation and transmission costing.

3. Modelling of Spot Pricing

A. Electricity Nodal Price Equations

$$
\begin{aligned}
&- \sum_{i=1}^{NG} (a_i P_{gi}^2 - b_i P_{Gi} - c_i) - \sum_{i=1}^{NB} \lambda_{pi} (P_{di} - P_{gi} - P_{dci} - P_L) \\
&- \sum_{i=NG+1}^{NB} \lambda_{qi} (Q_{di} - Q_{gi} - Q_{dci} - Q_L) \\
&- \sum_{i=1}^{NG} \rho\, p_{li} (P_{gi}^{min} - P_{gi}) - \sum_{i=1}^{NG} \rho\, p_{ui} (P_{gi} - P_{gi}^{max}) \\
&- \sum_{i=1}^{NG} \rho\, q_{li} (Q_{gi}^{min} - Q_{gi}) - \sum_{i=1}^{NG} \rho\, q_{ui} (Q_{gi} - Q_{gi}^{max}) \\
&- \sum_{i=1}^{NB} \rho\, v_{li} (|V_i^{min}| - |V_i|) - \sum_{i=1}^{NB} \rho\, v_{ui} (|V_i| - |V_i^{max}|) \\
&- \sum_{i=1}^{NB} \rho\, \delta_{li} (\delta_i^{min} - \delta_i) - \sum_{i=1}^{NB} \rho\, \delta_{ui} (\delta_i - \delta_i^{max}) \\
&- \sum_{i=1}^{Nsele} \rho\, p_{fli} (P_{fi}^{min} - P_{fi}) - \sum_{i=1}^{Nsele} \rho\, p_{fui} (P_{fi} - P_{fi}^{max})
\end{aligned}
$$

4. Problem identify and numerical Results

A. OPF based Electricity Spot Price: Problem Simulation and Results

This research methodology has been simulated in Matlab software and results are obtained

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REVIEW ON POWER QUALITY IMPROVEMENT BY USING UPQC

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A Review on Reversible Secure Audio Data Hiding Technique over an Encrypted Domain

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ABSTRACT

Stenography is the art of covered or hidden writing. The purpose of *stenography* is covert communication to hide the existence of a message from a third party. It is very important to hide the secret data efficiently, as many attacks made on the data communication. The host signal can be a still image, speech or video and the message signal that is hidden in the host signal can be a text, image or an audio signal. The cryptography concept is used for locking the secret message in the cover file. The cryptography makes the secret message not understood unless the decryption key is available. It is related with constructing and analyzing various methods that overcome the influence of third parties. Modern cryptography works on the disciplines like mathematics, computer science and electrical engineering. Here a novel reversible audio data hiding scheme over encrypted domain is proposed. In this project, we will develop the encryption process on secret speech signal data bits-level to achieve greater strength of encryption which is hidden inside the cover image. The encryption algorithm applied with embedding method is the robust secure method for data hiding. Compared with the other approaches it provides the higher embedding capacity and is able to reconstruct the original audio perfectly.

Keywords: Cryptography, Encryption, Secret Signal, Cover Signal.

I. INTRODUCTION

In recent years, signal processing in the encrypted domain has attracted considerable research interest. As an effective and popular means for privacy protection, encryption converts the ordinary signal into unintelligible data, so that the traditional signal processing usually takes place before encryption or after decryption. However, in some scenarios that a content owner does not trust the processing service provider, the ability to manipulate the encrypted data when keeping the plain content unrevealed is desired.

Stenography is data security tool which stores the secret information in cover media file in such a way that no one else except the sender of the information and the intended receiver can only suspect the existence of any sort of information. Cryptography is also an information security tool, which provides encryption techniques to conceal the secret information.This Work Proposes a Novel Reversible Audio DataHiding (RIDH) Scheme Over Encrypted Domain. In this project we have to transmit the audio file which is hidden inside a cover image. So that Unauthorized Party cannot be able to Hack it. Reversible data hiding a novel technique which is used to embed additional information in the encrypted images, applies in military and medical images, which can be recoverable with original media and the hided data without loss. A number of reversible data hiding techniques were proposed in the recent years, but on analysis, all lacks in providing the security and authentication.

II. METHODS AND MATERIAL

Literature Review

Jiantao Zhou, Weiwei Sun, Li Dong, Xianming Liu, Oscar C. Au, Yuan Yan Tang [1].They proposed an encrypted-domain RIDH scheme by specifically taking the above-mentioned design preferences into consideration. The proposed technique embeds message

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Detection of Salient Region by Local Spatial Support & High Dimensional Color Transform

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Abstract*—Automatic salient region detection crosswise over pictures, with no earlier data or information of the contentsof the relating pictures, upgrades numerous PC vision and PC illustrations applications. Our approach proposesautomatic salient region detection in a picture which incorporates both the global and local features. The primary inspiration driving this approach is to develop a saliency map using linear combination of colors in a high dimensional color space. By and large, the human recognition is exceptionally confounded and non-straight and in light of that, the salient region comprises of particular color contrasted with the background. The estimation of an ideal development of a saliency map done by gathering the low-dimensional colors to the high-dimensional feature vectors. Moreover, a relative location and color contrast between super pixels are used as a features and resolve the saliency estimation from a trimap by means of learning-based technique to enhance the performance.The extra local features and learning-based calculation supplement the global estimation from the high-dimensional color transformed based calculation.

Keywords- Salient Region Detection, Super Pixel, Trimap, Color Channel, High-dimensional color space, Random Forest

I. INTRODUCTION

The people are specialists at rapidly and precisely recognizing the most outwardly discernible foreground object in the scene, known as salient object, and adaptively concentrate on such apparent critical areas. Salient region detection is essential in picture comprehension and examination. It will probably recognize salient region in a picture in terms of a saliency map, the distinguished areas would draw people's consideration. Numerous past investigations have demonstrated that salient region detection is helpful, and it has been connected to numerous applications including segmentation, object recognition, area based picture recovery, photograph adjustment, picture quality appraisal, versatile compression, and video compression. The advancement of salient region detection has regularly been propelled by the ideas of human visual perception. As color is an imperative visual signal to human, numerous salient region detection procedures are based upon unmistakable color discovery from a picture. The diagram of our strategy is exhibited in fig 1.

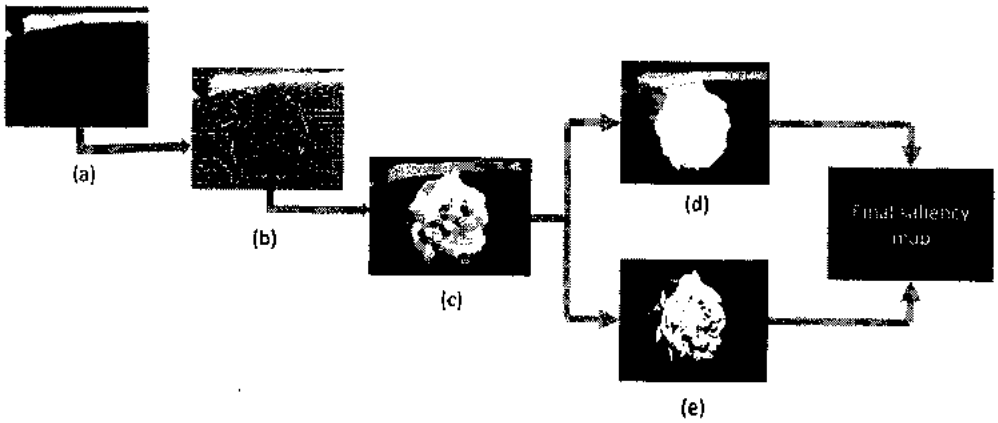

Fig.1. Overview of our method: (a) Input image, (b) Over-segmentation to super pixels, (c) Initial saliency trimap, (d) Global salient region detection via HDCT, (e) Local saliency map via local learning based method

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Content Based Image Retrieval System Based on Classifier Ensemble Approach

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Abstract: We formulate the problem of using an individual classifier for searching the images in the huge database by providing image or its rough sketch as a query. In order to used single classifier for image classification it produce numerous drawbacks, so to avoid this problem a systems comprising of a pool of classifier has to be designed which generates the output which is complement of each other. Though this field has acquired much wide popularity, CBIR has not yet reached its mellowness and is not yet being used on a large scale. In this study, various concepts regarding CBIR like objectives while designing a CBIR system, problems associated while designing an efficient CBIR system, analysis of KNN classifier for this system and a new system overcoming the drawback of using existing methods in terms of computational time and correctness have been discussed.

Key words: CBIR, classifier, ensemble, complement, objectives, terms

INTRODUCTION

Providing textual annotations for the images in large data bases posses difficulty to the user which gives idea that why CBIR is of high interest nowadays. CBIR is a system which gives output depends upon the content of a image to be search (Huurnink *et al*., 2012; Swain and Ballard, 1991). While designing any CBIR System the most common objectives for efficient output (correct image) are:

Finding the images (output) that shares precise characteristics the user has in mind. Providing the output images which closely match to the query image sketch. The search engine must permit for fairly unclear outputs and it should not produce the output that contains all the related images and it should not discard all the irrelevant images because we have to pick one of the images as a output from itself. Relevant images provided as output by the search engine should must contain few images out of entire database (Chen *et al*., 2005). Retrieval of images (Query) from the huge database can be divided into following categories:

- Labeling the images by using texts
- Based on visual characteristics of the image content
- Based on the image semantic features

Retrieval of images by labeling using texts includes some drawbacks that it changes the retrieval system into conventional keywords and it also offers too heavy load and the output remains unclear. In second method, accuracy of the output depends solely on the quality of extracted features. In third method, the image retrieval that uses rough sketch of required image as a keyword is more superior than that of conventional text based. But the challenge is difference exists in mathematical feature extraction model on human beings point of view.

Problems associated while designing an efficient CBIR System: On the basis of various techniques related to the designing of CBIR System following problems have been revealed:

- Problem of difference in color visual scence that every human possessed which creates problem while analyzing color images
- If texture chosen of each method is not defining the complete information about image it will creates problem in text based search
- Automatic selection of shape edge creates difficulty in retrieval using shape features

Composition of a CBIR System: CBIR involves the following four parts in system realization:

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Web Searches for Visual Content: A Multiple Classifier Approach

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Abstract: **Though CBIR field has acquired much wide popularity, CBIR has not yet reached its mellowness and is not yet being used on a large scale. In this paper problem of using single classifier for searching the images in the huge database by providing image or its rough sketch as a query is removed up to certain extent. In order to used single classifier for image classification it produce numerous drawbacks so to avoid this problem a systems comprising of a pool of classifier has to be designed which generates the output which is complement of each other. In This Paper Various concepts regarding CBIR like objectives while designing a CBIR system, Problems associated while designing an efficient CBIR system, Analysis of KNN classifier for this system and a new system is proposed which overcomes the drawback of using existing methods in terms of computational time and correctness.**

Key words- CBIR, Classifiers, KNN

I. INTRODUCTION

While searching on the web finding the exact match of the required image from the huge database is one of the key problem in retrieval of images, mainly two types of retrieval is used that is text based (data such as keywords, tags, or descriptions associated with the image) and content based (using the features of image like shape, texture and color). Figure 1.1 shows the basic need of CBIR and core techniques available. While searching on the web finding the exact match of the required image from the huge database is one of the key problem in retrieval of images, mainly two types of retrieval is used that is text based (data such as keywords, tags, or descriptions associated with the image) and content based (using the features of image like shape, texture and color). Figure 1.1 shows the basic need of CBIR and core techniques available.

Multimedia applications now a day's requires the management of complex data that can be defined as hierarchical objects consisting of several component elements. In such scenarios, the Concept of similarity between complex objects clearly recursively depends on the similarity between component data, making difficult the resolution of several common tasks,

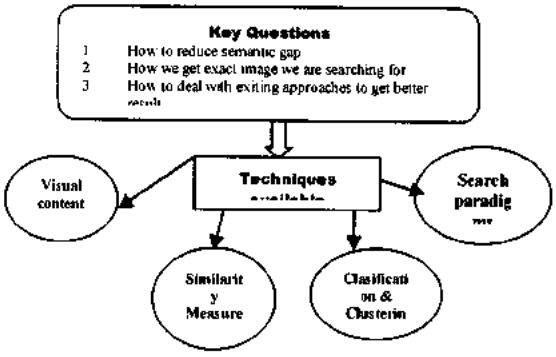

Figure 1.1 CBIR basic needs and available methods for it.

like processing of queries and understanding the impact of different alternatives available for the definition of similarity between objects. Queries regarding CBIR can generally of following types.

I. Keywords,
II. Semantic icons, and
III. User-drawn sketches.

Retrieval of images by labeling using Keywords includes some drawbacks that it changes the retrieval system into conventional keywords and it also offers too heavy load and the output remains unclear. In second method accuracy of the output depends solely on the quality of extracted features. bin third method the image retrieval that uses rough sketch of required image as a keyword is more superior than that of conventional text based. But the challenge is difference exists in mathematical feature extraction model on human beings point of view. However, images frequently lack descriptive text, which eliminates the possibility of text-based searching. In this situation, only content-based method those that directly use an image's pictorial information are feasible.

Major Problems while designing an efficient CBIR system:

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Review Paper on Design and Analysis of Microstrip Patch Antenna for Different Applications

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Abstract – As per Micro strip Patch antenna (MPA) provides low profile and low volume, now a day so it is use in the communication devices. It is premeditated that MPA is focused on planning compact sized micro strip antenna. A printed monopole antenna can be used in wireless communication devices in various operating frequency ranges. In this speedy dynamic world in wireless communication dual or multiband antenna has been playing a vital role for wireless service needs applications. In this paper, we will briefly study the various performance parameter of micro strip Autenna such as Return loss, VSWR, radiation pattern are simulated by using MATLAB on different geometries.

Index Terms – MPA, VSWR, MATLAB, Monopole antenna.

1. INTRODUCTION

A micro strip patch antenna (MPA) is commonly used because it is lightweight, low profile and simple structure antennas with reliability, mobility and good efficiency. They are most appropriate for aerospace and mobile applications. It contain conducting patch on a grounded dielectric substrate [7]. The design of a micro strip antenna initiates by deciding used for the antenna so the size of the patch. Due to the fringing fields on the radiating edges of the antenna there is a line extension related to the patch.

The conducting patch can be of any shape but in fact the rectangular, circular and triangular are commonly used shapes because these shapes are less complex and effective [3]. In this design and analysis has been done for rectangular, circular and triangular shaped patches to find out the best one on the basis of various antenna parameters. The performance of a patch antenna depend not only the shape of antenna but dielectric constant of the substrate, dimensions of the dielectric substrate and ground are also affects the performance of the patch antenna. It may be possible that all shapes gives different performance on different frequencies. Therefore, all the antennas are designed for 2.4 GHz.

The most commonly employed micro strip patch antenna is a rectangular patch [1]. The rectangular patch antenna is approximately a one wavelength long section of rectangular micro strip transmission line. The antenna is loaded with a dielectric as its substrate, the length of the antenna decreases as the relative dielectric constant of the substrate increases. When the air is the antenna substrate the length of the rectangular micro strip antenna is approximately one half of a free space wavelength. The design of Double E- shape patch antenna is as shown in figure below.

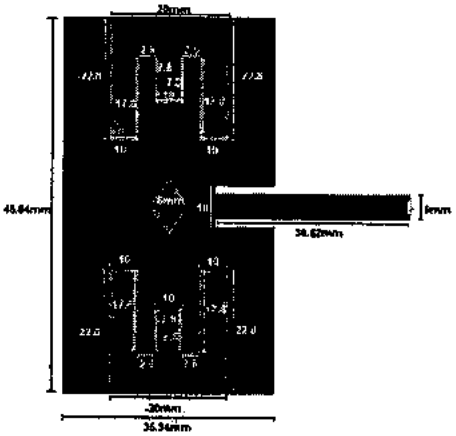

Figure 1 Double E-shape patch antenna

2. STEPWISE PROCEDURE

Step 1: Calculation of the width of Patch (W)-The width of the Micro strip patch antenna is given as

For f o=2.4GHz, ε r=4.4

$$W = \frac{c}{2f_0\sqrt{\frac{\varepsilon_r+1}{2}}} \qquad (1)$$

Step 2: Calculation of effective dielectric constant: Fringing makes the micro strip line look wider electrically compared to its physical dimensions. Since some of the waves travel in the substrate and some in air, an effective dielectric constant is introduced, given as:

$$\varepsilon_{reff} = \frac{\varepsilon_r+1}{2} + \frac{\varepsilon_r-1}{2}\left[1+12\frac{h}{W}\right]^{-\frac{1}{2}} \qquad (2)$$

Step 3: Calculation of Length of Patch (L)-The effective length due to fringing is given as:

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Low Light Video Enhancement Using Effective Framework Approach

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Abstract: Over the several decades, there have been improvements in Digital cameras including resolution and sensitivity. Other than these improvements, digital cameras are still limited in capturing images in low-light conditions. Video in low light is targeted. Many approaches are developed to improve the quality of low light video; however most of them consider video from moderately dark conditions. In this project, we propose an effective framework approach to enhance video from low light condition using noise removal filter technique and Weber's law used to detect the background in video in poor lighting. Finally, the performance of the proposed technique is illustrated through the processing of videos with different backgrounds, the majority of them with poor lighting conditions. The proposed method not only enhances the contrast but also measuring image quality by using MSE, PSNR and Correlation factor. Experimental results show that the proposed method has good performance on enhancing contrast and visibility for a majority of images. The software tool used is a MATLAB.

Keywords: Video, Enhancement, Low Light, Weber's Law, MATLAB.

I. INTRODUCTION

Video has become an integral part of everyday's life. As video surveillance equipment and mobile devices such as digital cameras, smart phones are increasingly used; cameras are expected to capture video content in all lighting and weather conditions. The majority of cameras, however, are not designed to be all-purpose and weather-proof, making the video unusable.

It is well-known that video enhancement as an active topic which received much attention in recent years. The aim is to improve the visuality of the video. Moreover, it helps to analyses background information which is essential to understand the object behaviour without human visual inspection.

There are various applications where digital video is acquired, processed and used, such as surveillance, general identity verification, criminal justice systems, civilian or military video processing. Carrying out video enhancement under low quality video is a challenging problem because of the following reasons.

(i)Due to low light, we cannot clearly extract moving objects from the dark background. Most colour-based methods will fail to identify colour of the moving objects and that of the background are similar.
(ii) The signal to noise ratio is usually very low due to high ISO (ISO is the number indicating camera sensors sensitivity to light). Using a high ISO number can produce visible noise in image.
(iii)Environmental information acts in many types on information. So, dealing with moving tree, fog, rain, behaviour of people in night time video are the difficult
because they lack background due to poor illumination.
(iv)The moving objects region as weight since successive images should change smoothly.
(v) One pixel from a low quality image is important even if it is small, such as the area between the head lights and the tail lights of a moving car.

A general methodology for noise reduction and contrast enhancement is presented. Videos from dark background is targeted. Many approaches are developed for enhancing low light video; however most of them consider video from moderately dark conditions. In this project, we propose an effective framework approach to enhance video from low light environment using appropriate noise removal filter technique and Weber's law used to detect the background in video affected by poor lighting.

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Design and Analysis of Microstrip Patch Antenna for Different Applications

(3)

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Abstract: ***As Microstrip Patch antenna (MPA) is low profile, less costly and low volume, it is used now a day for different applications. Microstrip Patch antenna is targeted for improving its performance based on various factors. A printed antenna can be used in wireless communication at different operating frequencies. In this speedy dynamic world of wireless communication, dual or multiband antenna has been playing a key role for wireless service applications. This paper demonstrate, the performance analysis of microstrip antenna for various parameters such as Return loss, VSWR and radiation pattern. Results are simulated on different antenna geometries. The analysis of antenna for physical parameters such as area of substrate, height of substrate, patch shape and dielectric constant of substrate been done by varying one of them and achieving improve result of performance.***

Keywords: MPA, VSWR, Return Loss, Substrate, HFSS, VNA

1. Introduction

A microstrip patch antenna (MPA) is commonly used because it is lightweight, low profile and simple structure antennas with reliability, mobility and good efficiency [1]. The design of a microstrip antenna initiates by deciding used for the antenna so the size of the patch. There are many types of shapes in patch antenna. Circular, Rectangular and Square shapes are the traditional shapes. But elliptical, triangular, dipole, ring are also uses for patch antenna.

The performance of a patch antenna depend not only on the shape of antenna but dielectric constant of the substrate, dimensions of the dielectric substrate and ground also affects the performance of the patch antenna. It may be possible that all shapes gives different performance on different frequencies.

The most commonly employed micro strip patch antenna is a rectangular patch [6]. The rectangular patch antenna is approximately a one wavelength long section of rectangular microstrip transmission line.

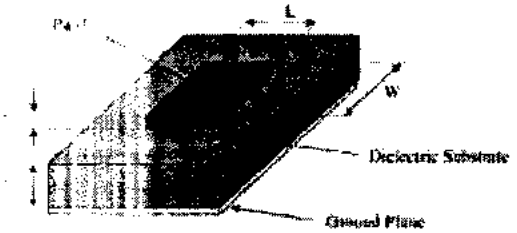

Figure 1: Structure of Microstrip patch Antenna

In above figure parameters are as follows.
Here, t= thickness of patch
h= height of dielectric substrate
L= length of patch
W= width of patch
Patch antenna consist of following:
- Patch (perfect electric conductor)
- Substrate
- Ground (perfect electric conductor)

2. System Analysis

Generally, a patch of the microstrip antenna is made from the radiating material. It is of conducting material such as copper or gold. The patch can be of any shape like circular, triangular, rectangular [4] and even alphabets like H, U, E, C, F etc.

Performance of microstrip patch antenna is based on the various parameters such as VSWR, Return loss, impedance Bandwidth and radiation pattern etc along with physical parameters such as width, height, length and design of patch, and length, height, width of substrate. So it becomes crucial to design appropriate microstrip patch antenna with improved VSWR & return for various application.

The patch of microstrip antenna for various shapes was design earlier and the result associated with it is calculated with respect to VSWR and Return loss. The table given below demonstrates the result for various shape of patch as follows.

Table 1: VSWR & Return loss for various shapes

Type of shape	VSWR	Return loss in dB
H	1.33	-16.34
I	1.37	-15.94
Star	1.43	-16.98
Mho	< 2	-15.83
V	1.08	-28
E	1.031	-34

3.1 Estimation of parameter

Step 1: Calculation of the width of Patch (W)-The width of the Micro strip patch antenna is given as
For f_0=2.4GHz, s_r=4.4

$$W = \frac{c}{2f_0\sqrt{\frac{s_r+1}{2}}} \quad (1)$$

Step 2: Calculation of effective dielectric constant: Fringing makes the micro strip line look wider electrically

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Portable Gadget Based Assistive Text and Label Reading For Blind Person

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ABSTRACT: The project describes framework, a camera-based helpful device which can facilitate the blind people to read text labels from handheld object .This system which is interfaced using raspberry pi, captures the image placed in front of the camera and text in the image is read and can be heard using earphones. The raspberry pi processes, image captured by the camera which is given as input to it and send voice message using earphone or speaker to the blind person. The systems main motive is to style a system that is useful for the physically challenged person like blind persons or visually challenge person to acknowledge the text from captured image and read out with the help of headphone or speakers connected to the raspberry pi processor.

KEYWORDS: TTS Engine, TESSERACT-OCR, PI Camera, Raspberry Pi, IOT

I. INTRODUCTION

In the smart word, blind and visually impaired person face a lot of difficulty in their day to day life. Although all the seven senses have their own importance in our day to day life, Vision is the most important part of human life as 83% of human gets information from the environment via sight because vision is the maximum source of data reception to the brain. The visual impairment is most common disability in the world .As per the 2012,WHO report there are 285 million people visually challenge in the word ,out of them 39 million people are blind and 246 are having low power of vision. The traditional systems for visually impaired people are walking stick and walking stick guide dogs and they are only useful for about five years. To assistance blind or visually impaired people dogs are used and they are trained to lead visually. The main drawbacks of these aids are requirement of necessary skills, training phase. Visually impaired people generally use either the typical white cane but it provides some restriction as long length, recognizing obstacle, difficulty in public places. The Advance technologies are introduced some software and hardware technologies for blind and visually impaired people. Embedded product are integrated part of human life making it smarter & comfortable. The visual impairment is most common disability in the word The existing electronic product available for them have some drawback like complexity in operation ,higher cost ,expensive methodology & installation & tough maintenance. People who are visually impaired still struggle every day in performing actions that can be as simple as moving from one point to another without falling down, So its our chance to do something visually impaired people or blind people .

Shopping is one of the most interesting thing and also one the most essential part of life for every human. But this simple task cannot be easily achieved by the blind. They need others help for satisfying their own requirements .At present in the case of shopping there is no such embedded product which can help them in this regard. Supermarket is the perfect option for them as almost all essential items are available under one roof. But inside the super market it is not possible for them to know what products is in front of them. They need to seek other's help for it. Hence we are

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Portable Gadget Based Assistive and Label Reading For Blind Person: A Review

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Abstract:This project describes a camera-based assistive device which will help the blind people to read text labels and product packaging from handheld object .The portable system which captures the image and text written which are placed in front of the camera can be read out or announced out using earphone or speaker interfaced to the raspberry pi processer. The raspberry pi processor takes the responsibility for authentication of image which is fed as input to it and also alerts the blind person through voice message using earphone or speaker. The proposed system aims at designing an innovative system which is very helpful for the physically challenged like blind persons to recognize the text from captured image and read out using earphone or speakers connected to the raspberry pi processor.

Keywords: TTS Engine, TESSERACT-OCR, PI Camera, Raspberry Pi, IOT

I. INTRODUCTION

Blind people and visually impaired people face a lot of unfavourable challenges in their routine . Vision is most important part of human Physiology as 83% of human gets information from the environment via sight. The visual impairment is most common disability in the world .As per the 2012,WHO report there are 285 million people visually challenge in the word ,out of them 39 million people are blind &246 are having low power of vision. The Oldest and Traditional mobility aids for visually impaired people are walking stick and guide dogs. The guide dogs are assistance dogs and they are trained to lead visually. The main Drawback of this aids are necessary skills, training phase, impaired around obstacles motion and very little information conveyed. Also this White cane has several restrictions such as long length if cane, limitations in recognizing obstacle and difficulty to keep in public places. The Advance modern technologies are introduced some software and hardware technologies for visually impaired people. For visually impaired people Recently there has been lots of Electronic Travel aids (ETA) designed and devised to help visually impaired people navigate independently and safely. Embedded system are integrated part of human life making it smarter and comfortable .the visual impairment is most common disability in the word The existing electronic product available for them have some drawback like complexity in operation ,higher cost ,expensive methodology & installation& tough maintenance. So embedded system for visually impaired & blind people will be our chance to do something for the these people .

Shopping is one of the most interesting thing and also one the most essential part of life for every human. But this simple task cannot be easily achieved by the blind. They need others help for satisfying their own requirements .At present in the case of shopping there is no such embedded product which can help them in this regard. Supermarket is the perfect option for them as almost all essential items are available under one roof. But inside the super market it is not possible for them to know what products is in front of them. They need to seek other's help for it. Hence we are proposing a system by which these people will be able to read the name of the product. This way our aim is to provide the shopping assistant for the blind and the visually impaired.

II. LITERATURE REVIEW

Literature review is carried out to gain knowledge and skill to complete this project. The main sources for this project are the previous publications related to this project. And the other sources are journals and articles. Therefore the analysis of the project did by other researches, these is the possibility to know are lacking in their projects. It is very important to improve and to develop a successful project.

Information about few research papers or previously implemented projects that we have used as a reference for making our project is mentioned below:A number of portable reading assistants are designed specifically for the visually impaired. "K-Reader Mobile" is a mobile application which allows the user to read mail, receipts, fliers, and many other documents[1]. But these systems/device fail to give an economic solution of the problem and are available on specific platforms. No smart phones have designed for blind person until now. Thus accessibility of the Mobile application is a different question However, the document to be read must be nearly flat, placed on a clear, dark surface and contain mostly black text printed on white background and it does not reads from complex backgrounds.

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An Improved Multi-secret Sharing Visual Cryptography Technique for Color Images Using Sterilization Algorithm

G. D. Dalvi and D. G. Wakde

Abstract Security in the recent technology world is an important issue to be taken care of and to be encountered with preventive measure on various aspects. Secret sharing is a technique used in visual cryptography (VC) which divides the image into many shares and by overlapping those shares original image is revealed, but it creates a threat when an intruder get shares with which the image is going to be decrypted easily. However, in the present project work, an extremely useful bitwise operation is performed on every pixel with the help of key. The key is provided by new concept of sterilization algorithm. Initially, Red, Green, and Blue channels get separated from image and are going to be encrypted on multiple levels using multiple shares; it converts an image into unreadable format and by combining all the shares in proper sequence the original secret image is revealed.

Keywords Bitwise operation · Multi shares · Pixel sharing
Sterilization · Algorithm · Keys · XOR · Encryption

1 Introduction

With the ascending of blended media application, there is a tremendous enthusiasm for transmission and secured securing of information. So, security is fundamental to discover good of fashioned certification. If the information is secured, the gate-crashers may not reshape the data. The best way to deal with oversees true blue and secure transmission of the data changes into a testing issue. Cryptographic frameworks bear the cost of the social occasion and security by reducing the likelihood of enemies [1]. It deals with the framework which is used to refresh the data among real and unlimited structures by using encryption and unscrambling

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Computer-aided Diagnosis System for Breast Cancer Using RF Classifier

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***Abstract*—Breast tumor is the most widely detected tumor and one of the major causes for malignancy demise in ladies around the world. The solution for this is early detection and diagnosis. Artificial Neural Network is used as emerging diagnostic tool for breast cancer. The objective of this research is to diagnose breast cancer with a machine learning method based on random forest classifier. MIAS database is used for the digital mammogram images. Preprocessing is generally needed to improve the low quality of image. ROI is determined according to size of suspicious area. After the suspicious region is segmented, features are extracted by texture analysis. Feature selection technique is used for the detection of High-dimensional features.**

A statistical method, gray-level co-occurrence matrix (GLCM) is used as a texture attribute to extract the suspicious area. From all extracted features best features are selected with the help of FCBF which is fast correlation-based feature selection technique. Selected features to improve the accuracy of classification are mean, standard deviation, smoothness, angular second moment (ASM), entropy, and correlation. Random Forest (RF) is used as a classifier. The results of present work show that the CAD system using RF classifier is very effective and achieves the best result in the diagnosis of breast cancer.

***Index Terms*—Breast, cancer, CAD, enhancement, feature selection, mammogram, mammography, random forest.**

I. Introduction

Breast cancer is widely analyzed disease in ladies around the world. It is the most common reason for malignancy demise in ladies in less developed regions and second cause in more developed regions after lung cancer. It has been estimated that nearby 1.6 million cases of breast cancer registered worldwide in 2010 [1], [2].

The survey of 2013 indicates that 230,815 ladies and 2109 gents in the US were determined to have breast cancer.

Estimated New Breast Cancer Cases and Deaths by Sex, United States, 2017 are as shown in Table I [3].

As per the study at NCI's Division of Cancer Epidemiology and Genetics, the cases of breast cancer will raise from 283,000 in 2011 to 441,000 in 2030 [4]. Early diagnosis is very important for survival, particularly in developing countries where the diseases are diagnosed very late. Mammography is the preeminent screening tool that uses X-ray to produce an image of the breast to determine tumor in breast. Mammography has been more effective in screening a symptomatic woman to lessen mortality. In some cases, results might be confused when a mammogram discovers a tumor that looks like malignant but turns out to be benign. On mammogram, dense breast tissue looks white and tumor also looks white. Hence sometimes, even qualified and experienced radiologists may miss breast cancers due to the density of breast [5]. The capable markers of malignancy regularly utilized as a part of assessing mammograms are masses and micro-calcifications. Mass recognition is a troublesome and testing issue than that of micro-calcifications, this is because of variation in size, shape and sometimes masses often exhibit poor image contrast in mammogram [6].

TABLE I
Statistics of Breast Cancer Cases in US, 2017.

Estimated new cases			Estimated deaths		
Male	Female	Total	Male	Female	Total
2470	252 710	255 180	41 070	460	40 610

The CAD system developed here will identify the abnormality in digital mammograms and help radiologists to spot the areas of concern. Hence CAD system for breast cancer has been turned out to be a capable supplementary tool in the battle against breast cancer. It improves the detection rate especially in younger women, where cancer masses are hidden because of dense breast tissue [7], [8].

This paper proposes a novel approach for the location and classification of tumor in breast from digital mammogram. The approach has been done with the support of morphological operations and Random forest classifier algorithm.

The paper is organized as follows. Section II summarizes related works on this topic. In Section III, details of CAD system are given those used for diagnosis of breast cancer such as image enhancement, feature extraction, feature selection, and classification. In Section IV, results and discussion are given and the paper concludes in Section V.

II. Literature Review and Previous Work

A literature review showed the recent developments in computer-aided diagnosis system for breast cancer using statistical approaches and artificial neural networks.

Nugroho *et al.* [9] used multilayer perceptron (MLP) as a classifier and CFS for the feature selection towards breast cancer diagnosis on Mammograms. Texture features are extracted based on histogram and GLCM.

Karahaliou *et al.* [10] proposed a method where they used gray-level and wavelet coefficient texture features of the tissue surrounding MC clusters on mammograms. Probabilistic neural network is used for differentiating malignant from benign with AUC of 0.989.

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Detection and Classification of Breast Cancer from Digital Mammograms using RF and RF-ELM Algorithm

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Abstract- **Neural Network is utilized as a developing analytic tool for the diagnosis of breast cancer. The goal of this research is to determine breast tumor from digital mammograms with a machine learning technique in view of RF and combination of RF-ELM classifier. For digital mammogram images, MIAS database is used. Preprocessing is usually needed to enhance the low quality of the image. The region of interest (ROI) is determined in line with the scale of suspicious region. After the suspicious area is sectioned, features are extracted by texture analysis. GLCM is used as a texture attribute to extract the suspicious area. From all extracted features best features are selected with the help of CBF method. To enhance the exactness of classification, only six features are selected. These features are mean, standard deviation, kurtosis, variance, entropy and correlation coefficient. RF and RF-ELM are used as a classifier. The outcomes of present work show that the CAD system with the usage of RF-ELM classifier may be very powerful and achieves the exceptional results in the prognosis of breast cancer.**

Keywords: Breast cancer, CAD, ELM, Feature selection, Digital Mammogram, MIAS, RF-ELM.

I. INTRODUCTION

Breast cancer is extensively analyzed disease in ladies around the world. It is the most common reason for malignancy demise in ladies in less developed regions and second cause in more developed regions after lung cancer. It has been estimated that near 1.6 million cases of breast cancer registered worldwide in 2010 [1][2]. The survey of 2013 indicates that 230,815 women and 2,109 men in the United States were diagnosed with breast cancer. Estimated New Breast Cancer Cases and Deaths by Sex, United States, 2017 are as shown in Table 1. [3] As per the study at NCI's Division of Cancer Epidemiology and Genetics, Breast cancer will grow from 283,000 cases in 2011 to 441,000 in 2030. [4]
Early diagnosis is essential for survival, in particular in developing countries where the diseases are recognized very late. Mammography is the preeminent screening tool that makes use of X-ray to supply an image of the breast to diagnosis breast tumors. Mammography shows the

Table I
Statistics of Breast Cancer Cases in U.S., 2017

Estimated New Cases			Estimated Deaths		
Male	*Female*	*Total*	*Male*	*Female*	*Total*
2470	252710	255180	460	40610	41070

morphological aspects of the breast, such as the anatomical structures and all the breast tissues, namely glandular, fibrous and adipose tissues. In a few instances, the result is probably stressed whilst a mammogram discovers something that looks like cancers but turns out to be benign. On mammograms, dense breast tissue looks white. Breast masses or tumors also look white; hence sometimes dense tissue hides tumors. Indeed, even qualified and experienced radiologists may miss bosom tumors because of the density of bosom [5]. The successful markers of malignancy often applied as part of assessing mammograms are masses and micro-calcifications. Mass detection is a tough and difficult problem than detection of micro-calcifications, that is because of the variant in size and form found in a mammogram and also masses often show poor image contrast [6].

The CAD system developed here will perceive the abnormality in mammograms and help radiologists to identify the regions of the problem. Hence CAD system for breast cancer has been become out to be a successful supplementary tool in the combat against breast cancers. It improves the detection rate especially in younger women, in which tumors are hidden because of dense breast tissue. [7][8]

This paper proposes a novel technique for breast cancer segmentation and detection from a digital mammogram. The method has been completed with the help of morphological operations and Artificial Neural Networks.

II. LITERATURE REVIEW

A literature evaluates confirmed the current trends in computer-aided diagnosis system for breast cancers with the help of statistical techniques and artificial neural networks. In-Sung Jung *et al.* [9] summarizes the diverse near investigation of neural network algorithms to get the best

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Author Proof

Breast Cancer Diagnosis from Digital Mammograms Using RF and RF-ELM

R. D. Ghongade and D. G. Wakde

Abstract Artificial neural network is used as emerging diagnostic tool for breast cancer. The objective of this research is to diagnose breast cancer with a machine learning method based on random forest (RF) and RF-ELM classifier. MIAS database is used for digital mammogram images. Preprocessing is generally needed to improve the low quality of image. The region of interest (ROI) is determined according to the size of suspicious area. After the suspicious region is segmented, features are extracted by texture analysis. Gray-level co-occurrence matrix (GLCM) is used as a texture attribute to extract the suspicious area. From all extracted features, best features are selected with the help of correlation-based feature (CBF) selection. Selected features to improve the accuracy of classification are mean, standard deviation, kurtosis, variance, entropy, and correlation coefficient. RF and RF-ELM are used as classifiers. The results of present work show that the CAD system using RF-ELM classifier is very effective and achieves the best result in the diagnosis of breast cancer.

Keywords Breast cancer · CAD · ELM · Feature selection · Mammogram RF-ELM

1 Introduction

Breast cancer is extensively identified in women worldwide and is one of the primary causes of cancer demise among them. It is the most successive reason for malignancy demise in ladies in less developed regions and second reason for malignancy demise in developed regions after lung tumor. It has been anticipated

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Random Forest and Extreme Learning Machine Based CAD System for Breast Cancer

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Abstract: Neural network is utilized as rising diagnosis tool for cancer disease. The goal of this exploration is to determine tumor growth in breast with a machine learning method based on RF, ELM and RF-ELM classifier. MIAS database is utilized for the advanced mammogram images. Pre-processing is for the most part expected to enhance the low nature of image. The ROI is resolved by the measure of suspicious region. After the suspicious area is portioned, features are extracted by texture analysis. GLCM is utilized as a surface credit to extricate the suspicious region. From all extracted features best features are chosen with the assistance of CBF and PCA. RF, ELM and RF-ELM are utilized as classifier. The consequences of present research demonstrate that the CAD framework utilizing RF-ELM classifier is exceptionally compelling and accomplishes the best outcome in the finding of breast malignancy.

Key words: Breast cancer, CAD, CBF, ELM, feature selection, mammogram, PCA, RF-ELM

INTRODUCTION

Breast cancer is generally analysed malignancy in ladies worldwide and the one of the main sources of tumour demise among them. It is the most common reason for malignancy demise in ladies in developing areas and second reason in developed areas after lung tumour. It has been assessed that more than 1.6 million instances of bosom tumour enlisted worldwide in 2010 (Jemal *et al*., 2011; Forouzanfar *et al*., 2011). The review of 2013 demonstrates that 230,815 ladies and 2,109 men in the United States were determined to have bosom malignancy.

Estimated new breast cancer cases and deaths by sex in United States in 2017 are 255180 and 41070, respectively (Siegel *et al*., 2017). As per the study at NCI's division of cancer epidemiology and genetics, breast cancer will grow from 283,000 cases in 2011 to 441,000 in 2030, a more than 50% increase (Anonymous, 2015).

Early conclusion is essential for survival, especially in developing nations where the diseases are analyzed late. Mammography is the transcendent screening apparatus that utilizations X-beam to deliver a image of the breast to analysis bosom disease. Mammography has been more successful in screening a symptomatic lady to decrease mortality. At times result may be befuddled when a mammogram finds something that looks like growth, yet, ends up being generous (not tumour). On mammograms, thick bosom tissue looks white. Bosom masses or tumours additionally look white subsequently some of the time thick tissue conceals tumours. Indeed, even qualified and experienced radiologists may miss bosom growths because of the thickness of bosom (Kolb *et al*., 2002). The capable markers of malignancy routinely used as a piece of evaluating mammograms are masses and micro-calcifications. Mass detection is a troublesome and testing issue than that of micro-calcifications, this is because of variation in size and shape observed in a mammogram and furthermore masses regularly display poor image contrast (Cheng *et al*., 2003).

The CAD framework created here will identify the abnormality in digital mammograms and help radiologists to detect the ranges of concern. Subsequently, CAD framework for breast malignancy has been ended up being a competent supplementary apparatus in the battle against breast tumour. It enhances the identification rate particularly in more youthful ladies where disease masses are shrouded on account of thick bosom tissue (Cheng *et al*., 2006; Motakis *et al*., 2009).

This study proposes a novel approch for breast cancer segmentation and detection from digital mammogram images. The approach has been carried out with the assistance of morphological operations and Artificial Neural Networks (ANNs).

Literature review: A literature review showed the current improvements in CAD systems for breast cancer utilizing factual methodologies and artificial neural networks.

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Assistant Navigation System for Visually Impaired People

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ABSTRACT: There are about 285 billion visually impaired people in the world; 39 billion people in that are blind and 285 billion are low vision. They are not able to experience the world the way we do. This System aims to provide this missing experience for them. The system uses state of the art deep learning methods from Microsoft Cognitive Services for image classification and tagging. The Experience is powered by Ear Phone or Speaker. This System aims bring the beautiful world as a narrative to the visually impaired. The narrative is generated by converting the scenes in the front of them to text which describes the objects in the scene. Examples of text includes 'A group of people playing a game of football', 'yellow trunk parked next to the car' ,'a bowl of salad kept on table'. For the first prototype of the system, one line along with some keyword are played as an audio to the users but in the later versions a detailed description would be added as the feature.

KEYWORDS: Raspberry Pi 3, Assistant Navigation System, Webcam, Visually Impaired, Amazon Web Services, Microsoft APIs.

I. INTRODUCTION

Vision is most important part of human Physiology as 83% of human gets information from the environment via sight. The 2011 statistics by the World Health Organisation (WHO) estimates that there are 285 billion people in the world are visually impaired; 39 billion people in that are blind and 246 billion with low vision. The Oldest and Traditional mobility aids for visually impaired people are walking stick and guide dogs. The guide dogs are assistance dogs and they are trained to lead visuallyimpaired around obstacles. The main drawback of these techniques is necessary skills, training phase, range of motion and very little information conveyed. Also this White cane has several restrictions such as long length if cane, limitations in recognizing obstacle and difficulty to keep in public places. The Advance modern technologies are introduced for the visually impaired people for navigation includes both hardware and software. Recently there has been lots of Electronic Travel aids (ETA) [1] designed and devised to help visually impaired people navigate independently and safely. Also recently, high end technological solutions have been introduced to help blind people navigate independently. The Blind people use the Global Positioning System (GPS) [2] technology for outdoor navigation to identify position and orientation and location due to need for the line of sight contact to satellite, they still need addedmechanisms to improve on the resolution and proximity detection to prevent accident of the blind persons with other objects and hence person life in danger. However in comparison to other technologies many blind guidance systems uses an array of ultrasonic sensors[3],[4] which is basically works on the principle of the ultrasonic sound generation and alert mechanism. Also, the ultrasonic is popular because the technology is relatively inexpensive, and also ultrasound emitters and detectors are small enough to be carried without the need for complex circuitry.
For both blind and visually impaired people, our proposed work offers a simple, efficient, configurable electronic intelligent system to help them in their mobility regardless of where they are, outdoor or indoor. Also, the user of the system does not need to carry a stick or any other self-explanatory tool. The Blind person can just wear a cap just like

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Radon and Wavelet Transforms for Handwritten Script Identification

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Abstract

Recognition of multi-script documents, both printed and handwritten, is still a challenge due to the script dependence of OCR. Identification of script is a significant process in design of multi-script OCR system for processing of multi-script documents. In this paper, we focus on wordwise script identification, as without surprise we can see many scripts mixed in single line. We present a method, which mainly comprises three steps—word extraction, feature computation, and classification. Using morphological dilation, words are extracted. Radon and wavelet transforms are employed to extract the features based on directional and multi-resolution analysis. In classification, performance of LDA, SVM, and KNN classifiers is studied separately. Experiments with our dataset of Kannada and Roman words show that the presented method is robust for wordwise handwritten script identification.

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Business Remodelling: Exploring New Initiatives In Key Business Functions

Effectiveness of Digital Advertising on Instagram Followers

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ABSTRACT

The use of social media sites as part of a company's marketing strategy has increased significantly in the past years. Regardless its popularity, there is still very limited information to answer some of the key issues concerning the effectiveness of social media marketing.

Purpose/objectives:

1. To know Digital and Social Media Strategic Imperatives.
2. To study Strategic Insights of Social Media Imperatives.
3. To know the effectiveness of digital Advertising.

This study is an attempt to understand the Effectiveness of digital advertising on social media. The intent was to scrutinize revitalization on social media.

Major contributions: Instagram advertising related activities were analyzed to identify the correlation between the effectiveness of digital advertising on social media sites. The theoretical part is framed through the books, journals, previous research papers and articles. Researcher attempted to study and investigate effectiveness of digital advertising on social media sites specifically *Instagram.* Also total of 30 follower's surveys were collected in Amravati and these were analyzed using statistical tools.

Implications: Findings show that promotional advertising on *Instagram* motivates the users to know the upcoming brands and their existence with the help Quotes, Campaigns, Videos and Images on it. The study finds that social media advertisement effectiveness is highly influenced by its messages/contents quality. The study also finds that the youth generation is the main user of *Instagram.*

Keywords: Digital Advertising, Instagram, Social Media Digital Marketing

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Management Practices in the Digital Age

Dr. Garima Gupta

Dr. Soma Dey

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to be positively correlating with online medicine purchases. Privacy is found to be a very dominant factor motivating online pharmacy. Respondents were discriminated on characteristics viz; education (X1), use of internet for various applications (X2) and variety products purchased online with Discriminant Model Y = - .687+ .058 X1 +.140 X2 + .120 X3 with 79% accuracy.

Research implications: *The Internet has revolutionized the way in which ordinary people conduct their everyday business. The inputs of this study facilitate a greater understanding on online pharmacy and online consumer buying behavior.*

Conclusion: *Internet pharmacies benefit consumer's online healthcare shopping experience providing convenience and efficiency. Online marketing of prescribed drugs comes out to be effective e-commerce contrivance for Pharma Marketing. Privacy being dominant factor motivating online pharmacy amongst Consumers.*

Recommendations: *The source of communication should be transparent and easily reliable. Use and their effectiveness should be communicated to all such that it saves time.*

Further scope for study: *Other factors affecting online buying behavior like more marketing specializations in E-commerce and a study of complete mechanism of online prescribed drugs can be focused in future researches.*

Keywords: *SWOC, Healthcare, Online-Pharmacy, E-commerce, Discriminant Analysis*

Introduction

Internet has evolved into a self-organizing media, capable of multiple interactions within. A large number of consumer products including drugs are being advertised and sold over the Internet. [1] Though the marketing of drugs over the Internet is an inevitable outcome of the booming e-economy, it poses unique ethical, legal and quality challenges. These challenges are important for the consumer, physician and regulator perspectives.

Amongst the many commercial activities that are now flourishing in this environment are Internet Pharmacies (e-Pharmacies, Cyber Pharmacies), providing a variety of products (e.g. health and beauty products) as well as prescription drugs. Some pharmacies only dispense drugs with a valid prescription, some provide online consultations for prescribing and dispensing medicines, and some dispense medications without a prescription. [2] There are a number of reasons that may lead patients to the use of the internet in search of medical care. It acts as a second opinion or second doctor for desperate patients. Also, it gives insight into patient problems, as well as the drugs that could cure them. [3]

Nature and scope of the study

The rising acceptance of e-commerce among consumers has led to the emergence of niche healthcare portals in the country. Out of the total size of the e-commerce industry, the healthcare segment is a small fraction as of now but it is expected that the convenience and access to the consumers will be a differentiator for the online segment as compared to the traditional pharmaceutical retail. As it works on business to customer model, therefore it is of immense importance to understand behavior

of end users. To contribute to same, the study has been undertaken to make SWOC analysis for online pharmacy. Respondents were chosen accordingly to know how frequent they interact with e-commerce, current awareness amongst them about online pharmacy, their buying behavior. The study tried to explore the buying – selling avenues for online prescribed drugs.

Research being descriptive in nature, various statistical tools has been used to analyze primary data and to reach on conclusion. Tools viz: Cross Tabulation, Correlation, and other statistical tools like Chi-Square Test, Discriminant Analysis etc. used for this purpose.

Research Proposition

Research gap: There are millions of people online any time and they all are a potential consumer in the online market. Morcover, consumers have new demands in the Internet medium, especially health care and drugs. Therefore, it becomes more important to answer consumer's demands to retain the customers. To retain customers, research on Indian consumer's behavioral aspects in context of the process of producing e-Prescriptions; buying intentions; purchasing over the internet; and barriers, is vital.

Statement of Research Problem: Online pharmacy is in nascent stage in India. Hence it is imperative to understand how the factors that are essentially affecting the purchasing intentions of shopping of drugs online. This demands analyzing the process of producing e-Prescriptions, and how consumer decide &make purchasing over the internet. Comprehensive study of existing model with statistical tool is what this study is focused on.

Literature review

1	Major Characteristics Of Online Consumers	The typical Internet user of the twentieth century is young, professional, and affluent with higher levels of income and higher education (Palumbo and Herbig, 1998). They value time more than money which automatically makes the working population and dual-income or single-parent households with time constraints better candidates to be targeted by non-store retailers (Burke, 1997).
2	Online Shopping Behavior	Uncertainties about products and shopping processes, trustworthiness of the online seller, or the convenience and economic utility they wish to derive from electronic shopping determine the costs versus the benefits of this environment for consumers (Teo et al., 2004).
3	The Online Purchasing Process	Many studies frequently mention that there is a vast amount of window shopping taking place online but the number or the rate of surfers who turn into purchasers or regular buyers are very low (Mayer, 2002; Betts, 2001; Oliver, 1999). This might happen because of the lack of consumer intention to purchase an offering from the online environment at the outset. On the other hand, the reasons of abandoning purchases are much more technical such as unexpected shipping costs or transaction complexity (Harvard Business Review, 2000). In other words, some consumers accept to shop from the Internet in principle but technical complexities or ineffective systems discourage them.

4	Consumer Satisfaction And Loyalty In The Online Market	There are two approaches taken to induce loyalty into consumers in an online context. One approach is to focus on concrete factors. For example, creating a convenient and well-designed online store and offering secure transactions are the keystones of satisfying e-consumers (Szymanski and Hise, 2000). Personalization attempts and increasing the social value of online experiences are very important to make consumers build strong brand relationships in the cyber pharmacy world.
5	User Satisfaction	Satisfaction can be defined as an individual's positive or negative reactions to the use of information or computer technology (Bailey and Pearson, 1983). Information search requires less effort online than offline. Alba et al. (1997) contends that a significant benefit of online search and shopping is the vast number of alternatives accessible to consumers without physical strain in a brick and-mortar retail environment.
6	Buying Strategies	Buying strategies can be conceptualized as either simplifying or optimizing in information gathering. Kiel and Layton (1981) found that consumers satisfied with their previous purchases searched less information for the next purchase.
7	Situational Factor	Urgency and time pressure are situational variables. An immediate need shortens purchase decision time and therefore reduces information seeking. Time pressure reflects the consumer's perception of time availability and sacrifice Radatz, C. (2004).
8	Motivation To Search	Schmidt and Spreng (1996) define motivation as the desire to expend effort in gathering and processing information, which is characterized by both direction and intensity of the effort.
9	Benefits Of Online Medicinal Purchase(Strength)	Mills D.(2000) Internet pharmacies offer a host of benefits. They are convenient and allow customers to avoid nuisances such as going out in bad weather, parking hassles, standing in line, and the inevitable wait for the prescription to be filled.
10	Counterfeiting / Protection Of Digital Property(Weakness)	Another threat hosted by the Internet is its vulnerability to counterfeiting especially through the choice of domain names that should be trademarked by an institution closely affiliated with that name (Stimson, 1998).
11	Prospect For E- Pharmacy (Opportunities)	Discounts are prevalent, although they rarely exceed 20%. Still, that's been enough to provoke the strong pharma retail lobby to protest the entry of online pharmacies. Montoya, I. D., & Jano, E. (2007)
12	Confront Of Online Pharmacy (Challenges)	Henny, J (2000). Senior citizens without a medicare prescription drug benefit may turn to internet sites to gain access to more competitively priced prescription drugs sold from foreign pharmacies. Ethical conduct ensuring privacy and confidentiality of the patient is one of the corners tones of medical practice. Bernall J(1999)

Online Pharmacy In India

Online pharmacies in India have significantly increased due to growing E-commerce in India. An online pharmacy is an Internet-based vendor of prescription drugs, and

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3.3.6 - h-index of the Institutional Publications during the year. (based on Scopus/ Web of Science)

Title of Paper	Name of Author	Title of the Journal	Year of Publication	h - Index	Institutional affiliation as mentioned in the publication	No. of citations excluding self citations
An EPQ Model for deteriorating items with mix demand pattern	Prof. P. S. Ardak	International Journal of Mechanical Engineering and Technology, Vol 8	2017-18	1	-	3
A Survey on Opinion Mining on Tourist Domain	Dr.C.A. Dhawale	IJPT, June	2017-18	05	-	12

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International Journal of Mechanical Engineering and Technology (IJMET)
Volume 8, Issue 6, June 2017, pp. 59–69, Article ID: IJMET_08_06_007
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AN EPQ MODEL FOR DETERIORATING ITEMS WITH MIX DEMAND PATTERN

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ABSTRACT

EPQ models are effective tools of the inventory control. The present work proposes EPQ model exclusively for deteriorating items. The mix demand pattern is used as a reference. In this model, demand rate in production up time is considered as inventory dependent and kept constant during down time. A differential calculus method is employed to get the optimum solution of the model. The effect of inventory dependent consumption is also discussed in this model. The proposed EPQ model competently proves the convexity of the total cost function. Study includes numerical example and related sensitivity analysis. It has been shown here that the total cost is convex function of production up time. From sensitivity analysis it has been observed that production up time and total cost per unit time, both are highly sensitive to change in production and demand rate. Demand consumption parameter reduces the total inventory and hence holding cost.

Key words: Deteriorating items, EPQ, Inventory dependent consumption rate, mix demand.

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http://www.iaeme.com/IJMET/issues.asp?JType=IJMET&VType=8&IType=6

1. INTRODUCTION

Traditional EPQ models are widely used owing to its ease in application. In the past several decades, numerous research efforts have been undertaken to extend the basic EPQ model by relaxing various assumptions so that the model conforms more closely to real-world situations. The Economic Production Quantity (EPQ) model is commonly used by practitioners in the fields of production and inventory management to assist them in making



Dr. Chitra Dhawale

CSE Department
Machine Learning Expert

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TITLE	CITED BY	YEAR
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Comparative analysis of security mechanism of mobile IPv6 threats against binding update, Route Optimization and Tunneling AK Barbudhe, VK Barbudhe, C Dhawale 2014 IEEE 6th International Conference on Adaptive Science & Technology ...	4	2014
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A cooperative approach for malicious node detection in impromptu wireless networks D Gupta, C Dhawale, S Misra 2016 International Conference on Computational Techniques in Information and ...	3	2016

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Research Article

A SURVEY ON OPINION MINING ON TOURIST DOMAIN

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Abstract

Currently most tourists use the Internet for selecting their tourist place. To confirm their decision they take a review of experienced tourist. The web contains many websites which provide a review on tourist domain. This paper provides a survey of different methods used for classifying the review and proposed a method for suggesting the polarity of review and classifying the review according to the category suggested by the user.

Introduction

Today's world is the scientific world. In daily life, human can use all the things made from science and one of the most important thing is the Internet. Many social networking sites like Twitter, Face book, etc. are available on Internet. Internet provides the useful information to people. Many things are available on the Internet. Internet provides us huge volume of data. Peoples are using these sites in their day to day life. They are giving their opinion regarding the news that are posted on different websites available on Internet, also providing their feedback regarding different products, their opinion related to politicians etc. This opinionated data is used by the product manufactures to check the popularity of their product or to compare their product to the competitor and decide whether any changes have to be done in their product or not. Also, they checked their competitor's progress.

If anyone wants to buy some products they can check the review regarding that product on Internet. Then they can decide which product is good and which they have to purchase. This is the example of the product only, in this way the opinion not restricted to product only it may be for movies, restaurant, travel, TV serial, about any articles, post ,tourist places etc. and we get opinionated data by Internet and process that opinionated data for different purposes. Like opinion spam detection, emotion recognition, opinion classification, opinion summarization etc.

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3.3.7 - Faculty participation in Seminars/Conferences and Symposia during the year: 2017-18

No. of Faculty	International level	National level	State level	Local level
Attended Seminar/ Workshops	Nil	53	Nil	Nil
Presented Papers	03+08+7+05 = 23	01	Nil	Nil
Resource	Nil	01	01	Nil
Total	**23**	**55**	-	-

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Department of First Year Engineering

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Dr. D. G. Wakde
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CERTIFICATE

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This is to certify that Prof./Dr./Mr./Ms. S.A. KHAPRE
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has actively participated in the International Conference on Recent Trends in Science & Technology held on 22nd & 23rd March, 2018 and has presented a research paper entitled
CONVOLUTION STRUCTURE FOR FRACTIONAL COSINE TRANSFORM
during technical session of the conference.

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2016 International Conference on Computational Techniques in Information and Communication Technologies (ICCTICT)

A Cooperative approach for Malicious Node Detection in impromptu Wireless Networks

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***Abstract*—Security is at stake once communication takes place between mobile nodes in very hostile surroundings. Contrary to the wired networks, the exclusive individuality of mobile impromptu networks produce variety of major challenges to security style, like mutual wireless medium, open peer-to-peer specification, stern resource constraints and extremely dynamic topology. These unfavorable conditions clearly need a case for making dimensional security remedies that get not solely wide selection protection however additionally acceptable network performance. Popularly used existing routing protocols designed to include the wants of such endemic networks don't address doable threats aiming at the disruption of the protocol itself. The most important challenge in impromptu wireless networks is energy inefficiency; beneath bound circumstances, it's virtually not possible to interchange or recharge the batteries. Thence it's fascinating to stay dissipation of energy at lower purpose, a number of the issues area unit restricted energy reserve and lack of centralized coordination. During this paper, we tend to establish the safety problems, discuss the challenges and propose the cooperative approach for malicious node detection**

***Index Terms*—Malicious Node, Attack, Collaborative approach, Cluster Head.**

I. INTRODUCTION

Mobile ad hoc network is structured by the nodes in the absence of a rigid infrastructure where all nodes move randomly and all the nodes process themselves. In MANET, every node acts not only as a node but also as a router. In an infrastructure mobile network, nodes have base stations within their transmission range [2]. In contrary to this, mobile ad hoc networks are indigenous and devoid of infrastructure support. Low cost and powerful wireless transceivers are popularly used in mobile applications due to the progress of wireless communication technology. Due to the absence of fixed infrastructure, network topology in MANET changes when nodes move in or out of the network [1]. As a result, the routing protocols need to adaptively adjust routing based on available nodes. The resources owned and controlled by a node are said to be local to it, while the resources owned and controlled by other nodes and those that can only be accessed through the network are said to be remote. The external attackers can inject false routing information or advertise incorrect routing table information to break down the network [4]. The compromised node attacker are able to generate valid signatures using their private keys [5], they are difficult to detect and can create several damages in the networks. Because of their own private keys, the intrusion preventive measures such as authentication and encryption cannot reduce the effect of compromised node attacker. Moreover, the wireless channel is accessible to malicious attacker and legitimate user, hence it is more vulnerable to all kinds of network attacks. One conspicuous characteristic of MANETs, from the security point of view, is the lack of protection. MANET is a capable technology but it has certain features that are considered inclined, which leads to security weakness in the technology such as, weakened centralized management, less resource availability, scalability, dynamic topology, limited power supply etc. In MANET, all networking operations such as routing the message and forwarding the packets are performed by nodes themselves in a centralized manner. For these reasons, providing security to mobile ad hoc network is very difficult task [10]. To prevent and detect attacks like black hole, wormhole, rushing attack etc and to secure the communication among the nodes of wireless ad hoc network, many intrusion detection techniques have been introduced. They can be classified into mainly three categories: signature based, anomaly based and specification based intrusion detection [3].

The practical side of attacks can be broadly grouped as application level attacks and network level attacks. Application level attacker tries to steal into, bring about change or resist access to information of a particular application, whereas Network level attacker attempts to restrict the capabilities of network, reduces speed or

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Voltage Security Assessment by Using PFDT and CBR Methods in Emerging Power System

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Abstract

This paper exhibits varied methods for voltage security assessment in a restructured power system. This paper primarily lays emphasis on two methods that are Probabilistic Fuzzy Decision Tree (PFDT) and Case Based Reasoning (CBR). In PFDT, Decision Tree plays an integral role for classification of system. For further classification of power system security, an algorithm is developed to categorise the buses which trouble the security most. After classification of system, by using minimum amount of load curtailment of voltages on buses which made insecure to secure load. Optimization of load is done by curtailing reactive power from insecure buses. In CBR, old cases from database are used for solving the problems of new case. Hence, PFDT is re-trained in system during real operation for solving the new operating states which are found insecure in CBR approach. In case of emergency or a critical situation, structure of the power system networks changes but in such a condition CBR also gives better results by using re-training process. After re-training in real-time, CBR revises its database by accepting new conditions and stored for their further uses. These two methods are analysed on the standard test system i.e. IEEE-30 Bus along with desired accuracy.

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Keywords: Case based reasoning; optimal load shedding; probabilistic fuzzy decision tree; loadability margin

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Research Paper



Power quality based optimal nodal pricing in tradable electricity market

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Abstract

Optimal Power Flow method described the nodal transmission pricing into different related factors, such as congestion, generation, power and electric load limitations. These details of each bus transmission prices can be used for to improve the proper usage of transmission congestion and power grid and to get reasonable transmission pricing for power structure. The proposed methodology is demonstrated on IEEE57 bus system and Maharashtra utility electric 400/765kv network.

Keywords: *Locational marginal pricing, power quality.*

1. Introduction

Many developed and developing countries have spent substantial resources and efforts on implementing market-oriented reforms in their electric power sectors since 1990. Today most of the electricity reform processes are based on the market-orientation approaches to meet variety of objectives i.e. efficiency (techno-economic), competition, privatization, and new regulatory structure [4]. In general, reforms involve the introduction of competition into electricity generation; establishment of regulation; organization of markets for Generation (G), Transmission (T) and Distribution (D); network regulation; privatization of existing assets; promotion of new investments, and allowing for cost-reflective electricity tariffs. The drivers of reforms in developed countries differ from those of developing countries. Enhanced competition and consumer choice have dominated the reform rationale in the former while improved financial and operational performance and increased investment capital for improving electricity service levels are the main driving forces in developing countries. Also the reform programmes adopted by these countries include the elements like introduction of competition into electricity Generation, Transmission, Distribution and supply providers, restructuring the industry in order to enable the introduction of competition, privatization of the unbundled generators and suppliers, development of a new regulatory framework etc. It discover new solution to require load demand at low cost, which satisfied conditions, by adjustment of power system control variables or to find the problem deals with an optimal operating point of a power system that minimizes cost function like generation and transmission loss. This paper design with implementation of electricity pricing in regulated electricity market.

2. Electricity Spot Pricing

In regulated markets, pricing required for to solve the bidding issues and get current market values to buyers and sellers. Pricing depends on generator, loads , congestion, private sectors, fuels. Constraints variation gives energy prices from electricity network. The given work is depends on AC-DC power flow transmission pricing. The following modelling for spot pricing is derived for accurate and minimize form for the buyers and sellers. From this pricing sellers and buyers concentrates on actual generation and transmission costing.

3. Modelling of Spot Pricing

A. Electricity Nodal Price Equations

$$L = \sum_{i=1}^{NG} (a_i P_{gi}^2 - b_i P_{Gi} + c_i) - \sum_{i=1}^{NB} \lambda_{pi} (P_{di} - P_{gi} - P_{dci} + P_L)$$
$$- \sum_{i=NP-1}^{NB} \lambda_{qi} (Q_{di} - Q_{gi} - Q_{dci} - Q_L)$$
$$+ \sum_{i=1}^{NG} \rho\, v_{li} (P_{gi}^{min} - P_{gi}) - \sum_{i=1}^{NG} \rho\, v_{ui} (P_{gi} - P_{gi}^{max})$$
$$+ \sum_{i=1}^{NG} \rho\, q_{li} (Q_{gi}^{min} - Q_{gi}) - \sum_{i=1}^{NG} \rho\, q_{ui} (Q_{gi} - Q_{gi}^{max})$$
$$+ \sum_{i=1}^{NB} \rho\, v_{li} (|V_i^{min}| - |V_i|) - \sum_{i=1}^{NB} \rho\, v_{ui} (|V_i| - |V_i^{max}|)$$
$$+ \sum_{i=1}^{NB} \rho\, \delta_{li} (\delta_i^{min} - \delta_i) - \sum_{i=1}^{NB} \rho\, \delta_{ui} (\delta_i - \delta_i^{max})$$
$$+ \sum_{i=1}^{Ngele} \rho\, P_{fli} (P_{fi}^{min} - P_{fi}) - \sum_{i=1}^{Ngele} \rho\, P_{fui} (P_{fi} - P_{fi}^{max})$$

4. Problem identify and numerical Results

A. OPF based Electricity Spot Price: Problem Simulation and Results

This research methodology has been simulated in Matlab software and results are obtained

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A Review on Prototype design of Distribution Automation for 11kV/0.415kV Substation

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Abstract –The electric power distribution network it is an essential section of the electric power system. It supplies electrical power to the customer. Automating the distribution network allows for better efficiency, reliability, and level of work through the installation of distribution control systems. In this paper we design real time visualization, monitoring and controlling of electrical distribution system using MATLAB. All the equipment must be visible, all the parameters must be measured and if any fault or abnormal condition occurs in distributed feeders then it should be categorize from healthy part of power system. It increases reliability of power system. Presently, research and development efforts are focused in the area of communication technologies. An electric energy is an essential ingredient for the industrial and all around development of any country

Index terms –Distribution Substation, Circuit breaker, Relay, MATLAB.

1. INTRODUCTION

The distribution of electric power and its protection is a dare for engineers, due to the complex environment of the networks. The major role of protection is to safeguard the whole system to maintain continuity of source by identifying faults and to reduce destruction to equipment. A good protection system must ensure system reliability through the operation of the protection system for all types of faults in all locations in the network. The system must be steady and secured. In a power distribution network, fault can occur due to overloading, overvoltage, power swings, etc. When a fault occurs, protection equipment initiates operation of circuit breakers, to reenergizes the faulted part. Generally, circuit breakers work for one of the primary devices in the network protection scheme against faults. This protective action must be done before excessive currents and voltages cause damage to connected equipment, such as transformers. Fault detection and location and classification have been a goal of power system engineers since the creation of distribution and transmission systems. Quick fault detection can help to protect equipment by allowing the disconnection of faulted lines before any significant damage is done. Fault location in electric power distribution systems still presents many challenges due to its varied topological and operational characteristics. The traditional methods used for tracing faults in a distribution network consist of visual inspection by power line circuit. In relation to underground cable system, fault is also located by a special cable test van. However, these traditional fault location methods are unable to locate faults quickly. The increasing necessity on electricity calls for high demand of reliability in power supply. Nowadays, utilities companies are now under obligation, demanded by regulatory bodies to system performance benchmarks. This demand among others is driving the need for making the power distribution system intelligent and smart A circuit breaker is one of the critical components of the power system that automatically detect faults and protect the power system by isolating the faulty point of the circuit. Circuit breakers provided have inherent fault detection and isolation capabilities. These protection interventions are not adequate due to protection integrity on the distribution transformer at distribution substation which is damaged by undifferentiating use of copper links to replace blown High Rapturing Capacity (HRC) fuses and high ground resistance and on the transmission line; the power system uses voltage and current signals to learn the hidden relationship existing in the input patterns. It was observed that the radial basis function neural ability to identify the precise fault direction and more rapidly. This makes it suitable for the real-time purpose. In this, a data collecting device would be suitable for fault detection and isolation. Fault detection indicates the occurrence of a fault in a monitored system; fault isolation establishes the type and/or location of the fault identification determines the magnitude of the fault. After a fault has been detected and diagnosed, in some applications it is required that the fault be self-corrected, usually through controller reconfiguration.

2. LITRATURE SURVEY

Xuesong Zhou, Pengda Xiang, et. al.[1] has describe as With the rapid development of distribution grid, the construction of distribution automation system has become an inevitable trend in the development of electric power industry. It reflects the application of intelligent power distribution and management in power distribution. The fundamental objective of applying the distribution automation system is to improve the reliability

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Optimal Spot Pricing of Electricity in Restructured Electricity Market

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Abstract: ***In developing countries, recent trend is to adopt High Voltage Direct Current (HVDC) transmission in the existing AC transmission system to gain its techno-economical benefits. In restructured electricity market, accurate prediction of electricity spot prices have become an important activity to address the system operations and price volatility in the marketplace. Electricity pricing i.e. Spot pricing is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid. Most of the methodology is either on AC or DC system and its implementation. Since AC real power system is not mainly revamped with DC system because of advantages of HVDC system, it developed suitable AC-DC based OPF methodology and its implementation on real power system. The aim of this paper is to model AC-DC OPF based electricity spot pricing and its implementation on standard IEEE 57 Bus System and Real power system. The results are simulated both for standard IEEE-57 Bus system and also for real network 400 kV MSETCL. Finally the results obtained are compared at several possible conditions like addition of 765 kV AC transmission lines, impact on Bus voltages and optimal electricity spot prices.***

Keywords: Optimal power flow, Spot pricing, Electricity market, HVDC, Short run marginal costing.

I. INTRODUCTION

In recent years, the electricity industry has undergone drastic changes due to a worldwide deregulation/privatization process that has significantly affected power system management and energy markets. In a deregulated system, operators' goals are balancing consumer power demand using the available generation and ensuring that economical and technical constraints are respected. The prime economical aspect is the social benefit, i.e. power suppliers should obtain maximum prices for their produced energy, while consumers should pay the lowest prices for the purchased electric power. Prices have to be defined in a free market economy and restricted only by power exchange rules. In restructured electricity market, the desired objective is to achieve a more efficient power system facilitated by competition. A optimal and sustainable pricing scheme becomes a key issue in order to achieve efficient competition. While competition is introduced in generation and retail (or supply) around the world, it is widely agreed that transmission is a natural monopoly and should remain centrally controlled. Today transmission and distribution lines provide the critical physical link that makes competition feasible. Thus open access to the network and adequate pricing are essential for the development of competition.

Several electricity transmission pricing methods have been developed in order to meet the various pricing objectives. One of approach of electricity pricing is Spot pricing based on Short Run Marginal Costing (SRMC) principle. It is a market-pricing approach used to manage the efficient use of the transmission system when congestion occurs on the bulk power grid.

Electricity Spot prices have several applications in the competitive electricity market. The two most important applications i.e. first forecasting of electricity prices and secondly to design Financial Transmission Rights (FTRs) to hedge the price risk under transmission congestion.

Optimal Power flow (OPF) is one of the most significant problems for power system planners and operators. The main aim of OPF is to discover new techniques for the optimal settings of a given power system network that improve a selected objective function such as total generation cost, system loss, bus voltage deviation while fulfilling its load flow equations, system protection, and equipment operating limits. The basic objective of OPF problem is to meet the required load demand at minimum production cost, satisfying units' and system's operating constraints, by adjustment of power system control variables. In other words, optimal power flow (OPF) problem deals with finding an optimal operating point of a power system that minimizes an appropriate cost function such as generation cost or transmission loss subject to certain constraints on power and voltage variables.

This study deals with modeling and implementation of AC-DC OPF based electricity spot pricing in restructured electricity market.

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Comparison of Locational Marginal Transmission Pricing

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ABSTRACT

Locational marginal price is required in restructured power system.It is require creating an effective pricing scheme that to provide the useful information to generation, transmission section and customers. These transmission pricing depends on generator, load levels and transmission line constraints. Transmission line constraints result is variations in energy prices throughout the network. The proposed approach is based on AC optimal power flow model with considering of losses. Resulting optimization problem is solved by linear programming approach. Locational Marginal Pricing methodology is used to determine the energy price for transacted power and to manage the network congestion and marginal losses. Variation of LMP values with transmission constraint conditions also studied. Simulation is carried out on 220kV, 400Kv & 765kV MSETCL system of Maharashtra transmission line for real data bus system and the results are presented.

Keywords: Locational Marginal Pricing, Optimal Power Flow, transmission pricing

I. INTRODUCTION

By Tradition, power industry is vertically integrated, in which the generation, Transmission and distribution are arranged collectively as a single utility to serve its customers. Due to central operation of transmission and distribution system it will remain in a monopoly mode. Under the deregulated electricity market environment, transmission networks play a vital role in supporting the transaction between producers and consumers. Due to Transmission Open Access (TOA) the power flow in the lines reach the power transfer limit and so it will leads to a condition known as congestion [1-2]. The congestion may be caused due to a mixture of reasons, such as transmission line outages, generator outages and change in energy demand. Transmission congestion has impact on the entire system as well as on the individual market participants i.e. sellers and buyers. Without congestion low cost GENCOs are used to meet the load demand but if congestion is present in the transmission network then it prevents the demand to be met by the lowest-priced resources due to mentioned transmission constraints and this leads to the allocation of higher price.

There are two types of pricing methods are available in practice for congestion management [10]. They are uniform and non-uniform pricing structure. In this paper congestion is managed by means of Locational Marginal Pricing (LMP) i.e. non-uniform pricing structure. The LMP at a location is defined as the marginal cost to supply an additional MW increment of power at the location without violating any system security limits [1]. This price reflects not only the marginal cost of energy production, but also its delivery.

Because of the effects of both transmission losses and transmission system congestions, LMP can vary significantly from one location to another. If the lowest priced electricity is allocated for all Location LMP values at all nodes will be same. If congestion present in the system lowest cost energy cannot reach all location, more expensive generators will allocated to reach out the demand. In this situation LMP values will be differ from one location to another. ISO determines the generation and demand schedule as well as LMPs based on increased social welfare maximization, subject to system operational.

LMP = generation marginal cost + congestion cost +marginal loss cost

LMP is obtained from the result of Optimal Power Flow (OPF). Either AC-OPF or DC-OPF is used to determine

AC-DC OPF based Day-Ahead Electricity Nodal Price Prediction using an ANN

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ABSTRACT

Electricity industries around the world have significantly restructured in order to improve their economic efficiency, reliability of power systems and accountability. Accurate prediction of day-ahead electricity nodal price has now become an important activity to address the system operations and price volatility in the restructured electricity market. This will facilitate the market participants to estimate the risk and have better market oriented decision making.

In order to meet the electricity demand and other benefits, many developing countries including India are adopting HVDC transmissions in their existing system. Developing countries need to address this practice while adopting suitable electricity nodal pricing scheme and its accurate prediction. This study aims at (1) motivations and relevance of present study, (2) presenting AC-DC OPF based nodal pricing and formulation of day-ahead nodal price prediction using Artificial Neural Networks. (3) presenting and comparing numerical results for a real system of developing country like India to demonstrate the rationality and feasibility of the proposed methodology.

General Terms

Nodal Price Prediction

Keywords

AC_DC Optimal Power Flow (OPF), Nodal Price Prediction, Artificial Neural Networks

1. INTRODUCTION

The electricity supply industries around the world have experienced extensive restructuring process from the vertically regulated monopoly to the competitive market to improve their economic efficiency, reliability of power systems and accountability [1-2]. Under it, the nodal or locational marginal pricing (LMP) is emerged as an important mode of energy pricing [3]. LMPs reveal vital information to the market participants about their bidding strategies and risk management and to the system operators to perform market dispatch and clearing decisions in network congested electricity markets.

In developing countries, the electricity demand have expected to more that double in coming years as compared to about 30 to 40% increase in developing countries is due to insufficient transmission and distribution capacity. Also in order to meet the electricity demand and to gain techno-economic benefits of investment, many developing countries now adopting HVDC transmissions in the existing AC transmission system [2]. Developing countries in this regard address these issues while adopting suitable electricity nodal pricing scheme and its accurate prediction.

The application of nodal pricing in this environment is to accurately predict the electricity prices. Market participants need price prediction information to maximize their profits in spot markets, to negotiate bilateral contracts so that they can hedge against risks of price volatility in spot market, to ensure investments recovery in the facility planning and measures to predict possible exercises of market power and detect gaming behaviors which leads to unreasonable prices [2, 3]. Also, forecasted prices provide system operators with measures to predict possible exercises of market power and detect gaming behaviors leading to unreasonable prices [2].

Several hard computational techniques like time series models, auto regressive and auto regressive integrated moving average (ARIMA) models [5], [6] and combination of wavelet transform (WT) and ARIMA techniques have been tried to predict electricity prices [7]. A generalized autoregressive conditional heteroskedastic (GARCH) methodology is used to predict next-day electricity prices [8]. Though these techniques are found accurate, but are limited to a large amount of historical information and the computational cost.

Besides, several soft computational techniques based on Artificial Intelligence approach are also been proposed. [3] suggested Neural Networks (NNs) and fuzzy-c-means approach to forecast LMPs. [4] presented a WT based NN model to forecast price to improve the forecasting accuracy. [5] proposed a feedforward NNs for forecasting next-week electricity prices. [9] proposed self-organized map and support-vector machine for forecasting short-term electricity price. [10] employed fuzzy inference system and least-squares estimation for short-term price forecasting in wholesale electricity markets. [11] proposed the use of two ANNs: the first to predict the day-ahead load and second to forecast the day ahead market clearing price (MCP). [12] suggested NNs and fuzzy logic modeling for forecasting energy prices. [13] developed Bayesian framework to analyze the uncertainties involved in a MCP prediction. [14] used NNs extended Kalman filter to predict MCP and confidence interval in a deregulated power market. A sensitivity analysis of similar day parameters is used to increase the accuracy of NNs and to forecast hourly electricity prices [15]. As these techniques do not require modeling the system; instead, they find an appropriate mapping between the several inputs and the output, usually learned from historical examples, thus being computationally more efficient. The advantages of ANNs of being able to approximate any nonlinear function and being able to solve problems where the input–output relationship is neither well defined nor easily computable, as ANNs are data-driven.

Since, relation between nodal prices and its influencing variables i.e. real and reactive demands, bus voltages and angles are non-linear, therefore; NNs are well suited for the problem under study due to their ability to model the complex and non-linear relationship involved in price prediction. This paper demonstrated AC-DC OPF based nodal price methodology and used neural networks to predict peak day-ahead electricity nodal price in a restructured electricity markets. Several NNs like Feedforward Neural Network (FFN) with Back-propogation (BP) algorithm, Cascade Feedforward Neural Network (CFN) networks are used to predict day-ahead nodal prices.

This paper is organized as follows: Section II discusses the need of modeling electricity nodal price and applications of price prediction; Section III demonstrate the AC_DC OPF based nodal pricing methodology and day-ahead electricity price prediction by ANNs; Section IV evaluates the numerical results for real

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Voltage Security Assessment by Using PFDT and CBR Methods in Emerging Power System

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Abstract

This paper exhibits varied methods for voltage security assessment in a restructured power system. This paper primarily lays emphasis on two methods that are Probabilistic Fuzzy Decision Tree (PFDT) and Case Based Reasoning (CBR). In PFDT, Decision Tree plays an integral role for classification of system. For further classification of power system security, an algorithm is developed to categorise the buses which trouble the security most. After classification of system, by using minimum amount of load curtailment of voltages on buses which made insecure to secure load. Optimization of load is done by curtailing reactive power from insecure buses. In CBR, old cases from database are used for solving the problems of new case. Hence, PFDT is re-trained in system during real operation for solving the new operating states which are found insecure in CBR approach. In case of emergency or a critical situation, structure of the power system networks changes but in such a condition CBR also gives better results by using re-training process. After re-training in real-time, CBR revises its database by accepting new conditions and stored for their further uses. These two methods are analysed on the standard test system i.e. IEEE-30 Bus along with desired accuracy.

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Keywords: Case based reasoning; optimal load shedding; probabilistic fuzzy decision tree; loadability margin

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Optimal Nodal Pricing in Tradable Electricity Market

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***Abstract*— In regulated electricity markets, an effective transmission pricing method is required to transmission issues and to generate economical generation cost. It is require creating an effective pricing scheme that to provide the useful information to generation, transmission section and customers. These transmission pricing depends on generator, load levels and transmission line constraints. Transmission line constraints result is variations in energy prices throughout the network. The proposed approach is based on AC optimal power flow model with considering of losses. Resulting optimization problem is solved by linear programming approach. Locational Marginal Pricing methodology is used to determine the energy price for transacted power and to manage the network congestion and marginal losses. Variation of LMP values with transmission constraint conditions also studied. Simulation is carried out on IEEE 57 bus system , 400kV and 400/765kV MSETCL system of Maharashtra transmission line for real data bus system and the results are presented.**

Keywords*—Locational Marginal Pricing, Optimal Power Flow, transmission pricing

I. INTRODUCTION

By Tradition, power industry is vertically integrated, in which the generation, Transmission and distribution are arranged collectively as a single utility to serve its customers. Due to central operation of transmission and distribution system it will remain in a monopoly mode. Under the deregulated electricity market environment, transmission networks play a vital role in supporting the transaction between producers and consumers. Due to Transmission Open Access (TOA) the power flow in the lines reach the power transfer limit and so it will leads to a condition known as congestion [1-2]. The congestion may be caused due to a mixture of reasons, such as transmission line outages, generator outages and change in energy demand. Transmission congestion has impact on the entire system as well as on the individual market participants i.e. sellers and buyers. Without congestion low cost GENCOs are used to meet the load demand but if congestion is present in the transmission network then it prevents the demand to be met by the lowest-priced resources due to mentioned transmission constraints and this leads to the allocation of higher price.

Buyers in the market pays ISO based on their price for dispatched energy. The ISO pays sellers in the market based on their respective prices. The LMP difference between two adjacent buses is the congestion cost which arises when the energy is transferred from one location to the other location[3]. Marginal losses represent incremental changes in system losses due to incremental demand changes. Incremental losses yield additional costs which are referred to as the cost of marginal losses. Thus LMP is the summation of the costs of marginal energy, marginal loss and congestion. LMP can be stated as follows:

LMP = generation marginal cost + congestion cost +marginal loss cost

LMP is obtained from the result of Optimal Power Flow (OPF). Either AC-OPF or DC-OPF is used to determine the LMP [7]. To reduce the complexity in the calculation in this paper DC-OPF is used. In DC-OPF only real power flow is considered [6]. Different types of optimization models are used for LMP calculations like LP and Lagrangian[8]. Among these in this paper quadrating programming is used to solve the optimization problem.

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REVIEW ON POWER QUALITY IMPROVEMENT BY USING UPQC

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ABSTRACT:

Today with increase in demand of electricity it is essential to have a good quality of power. As most of the load and power electronics equipment are nonlinear in nature many power quality problems like voltage sag ,voltage swell ,Harmonics, Voltage fluctuation, Flicker, gets introduced in System. UPQC(Unified Power Quality Conditioner)is one of the compensating device which consist of Shunt& Series Active Power Filter Cascaded with dc link capacitor. This paper present review of UPQC to enhance Quality of Power at distribution level Along with overview of different types of UPQC.

INTRODUCTION:

Nowadays, use of electronic and power electronics equipment such as thyristor, IGBT, power converter has been increasing tremendously. As power electronics equipments are nonlinear in nature. So with the increase in use of nonlinear load in power system, power quality problems voltage & current related problem arises in system. These problems are solved by LC passive filters. However, these kinds of filters are unable to solve waveform related problems. Active filters are able to solve this problem, but its cost is high and difficult to implement in bulk scale. Also, their lower efficiency is low.

UPQC is the compensating device in power distribution network. The UPQC belongs to APF family where shunt and series APF are integrated together to achieve better-quality control on several power quality problems simultaneously. The UPQC consist of arrangement of series and shunt active filters connected by DC link capacitor. The main aim of a UPQC is to compensate for voltage and current related problems.

In this paper, UPQC is used to resolve power quality problems. The series and shunt active power filters of UPQC operate as a voltage and current source converters which are controlled by the PWM signals which are generated by the controllers.

POWER QUALITY:

A constant amplitude and one constant frequency sinusoidal signal is considered as desirable and ideal current or voltage signal. Quality of voltage taken from the utility or that distributed to the end user is referred as voltage or current quality. The fluctuation of voltage, current and frequency from its most favorable worth that may prevent mal-function of the equipment can be considered as power quality problem.

Power quality can have various different meanings and significances. In the view of manufacturer, power quality can be described as the way in which there should be no voltage variety and no noise generation in the system of grounding. In view of utility designer, it can be considered as voltage availability. Whereas for the end users power quality can be considered as the feasibility of utilizing the accessible power for operation of various types of loads. Distribution system is worst affected because of the power quality problems. Power quality becomes poor at the position where loads are connected with the distribution system. So here we'll try to upgrade the quality of power of the distribution system.

POWER QUALITY PROBLEMS:

Power quality problems generally observed in distribution network are as follows

i) SHORT DURATION VOLTAGE VARIATION

Its duration very less i.e. less than 1min.The cause for this are large load energization, fault conditions etc. Short duration voltage variation includes voltage sag, voltage swell and interruption.

a) VOLTAGE SWELL:

It is increased in the line-voltage (rms) to 1.1-1.8% of the nominal line-voltage for a small period of half cycle to 1 min. Main cause for this is Swells can be switch off a large load.

b) VOLTAGE SAG:

It is a decrease of line voltage (rms) to 10 to 90 % of the standard line-voltage for the period of half cycle to a min. It is also referred as "dip". The main cause for this voltage sag is starting of induction motors.

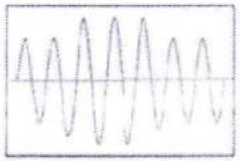

Fig.1 .Voltage Swell

Mokalkar SPP

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POWER QUALITY IMPROVEMENT BY USING UPQC

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Power quality can have various different meanings and significances. In the view of manufacturer, power quality can be described as the way in which there should be no voltage variety and no noise generation in the system of grounding. In view of utility designer, it can be considered as voltage availability. Whereas for the end users power quality can be considered as the feasibility of utilizing the accessible power for operation of various types of loads. Distribution system is worst affected because of the power quality problems. Power quality becomes poor at the position where loads are connected with the distribution system. So here we'll try to upgrade the quality of power of the distribution system.

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Fig 1. Voltage Swell

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"Protection of Distribution Feeder using Directional Overcurrent Elements"

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Abstract: -- Distribution system holds a very significant position in the power system since it is the main point of the link between bulk power and consumers. It usually has radial configuration and has an unbalanced operation. Equipment in distribution protection consists of fuses, recloses, and sectionalizes. The main priorities are to prevent further damage to utility equipment, as little of the system is taken down as possible, reliability and power quality. The problems associated with protection devices operation and coordination require special review since they may affect the system security and dependability. In order to avoid misoperations in the system, directional elements are needed to be added. Non-directional relays may not provide sensitivity and security for faults on remote points of the circuit. Directional supervision is necessary to set overcurrent pickups with adequate sensitivity for remote faults. Here, an effort is proposed to protect distribution feeder using directional overcurrent elements [1,2]. In the said research

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ORIGINAL CONTRIBUTION

Application of PSAT to Load Flow Analysis with STATCOM under Load Increase Scenario and Line Contingencies

Aparna S. Telang[1] · P. P. Bedekar[2]

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Abstract Load flow analysis is the initial and essential step for any power system computation. It is required for choosing better options for power system expansion to meet with ever increasing load demand. Implementation of Flexible AC Transmission System (FACTS) device like STATCOM, in the load flow, which is having fast and very flexible control, is one of the important tasks for power system researchers. This paper presents a simple and systematic approach for steady state power flow calculations with FACTS controller, static synchronous compensator (STATCOM) using command line usage of MATLAB tool-power system analysis toolbox (PSAT). The complexity of MATLAB language programming increases due to incorporation of STATCOM in an existing Newton–Raphson load flow algorithm. Thus, the main contribution of this paper is to show how command line usage of user friendly MATLAB tool, PSAT, can extensively be used for quicker and wider interpretation of the results of load flow with STATCOM. The novelty of this paper lies in the method of applying the load increase pattern, where the active and reactive loads have been changed simultaneously at all the load buses under consideration for creating stressed conditions for load flow analysis with STATCOM. The performance have been evaluated on many standard IEEE test systems and the results for standard IEEE-30 bus system, IEEE-57 bus system, and IEEE-118 bus system are presented.

Keywords Load flow analysis · Newton–Raphson (N–R) power flow · FACTS · STATCOM · Voltage stability · PSAT

Introduction

Load flow study is an important aspect in the planning and designing phase of a power system. It has always been useful means used by many power system engineers for power system enhancement. In fact these power flow calculations are essential for continuous evaluation and analysis of the power system to meet increased load demand [1]. Introducing fast acting devices called the Flexible Alternating Current Transmission System (FACTS) controllers in the traditional load flow have proved reliable technical solution for the enhancement of power system in context with voltage stability improvement [2–6]. Voltage stability is significant phenomenon in power system planning and operation [7, 8]. The STATCOM is a key element of the FACTS technology. Traditional power flows do not include these newly developed FACTS controllers.

Very few researchers had addressed the issue of how to model FACTS devices for load flow calculations [9]. In earlier research work, models for FACTS devices, required to be implemented in power flow calculations, mostly using the Newton–Raphson method have been developed [10, 11]. A new and appropriate STATCOM model for power flow analysis has been proposed in [12, 13]. The procedure to extend conventional power flow calculations based on Newton–Raphson method, to include multiple FACTS controllers: STATCOM, SSSC, UPFC and DPFC is

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AC-DC OPF based Day-Ahead Electricity Nodal Price Prediction using an ANN

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Electricity industries around the world have significantly restructured in order to improve their economic efficiency, reliability of power systems and accountability. Accurate prediction of day-ahead electricity nodal price is considered an important activity to address the system operators and price volatility in the restructured electricity market. This will facilitate the market participants to estimate the risk and have better market oriented decision making.

In order to meet the electricity demand and other benefits, many developing countries including India are adopting HVDC transmissions in their existing system. Developing countries need to address this practice while adopting suitable electricity nodal pricing scheme with its accurate prediction. This paper has (1) motivations and relevance of present study, (2) presentation of AC_DC OPF based nodal pricing and formulation of day-ahead price prediction using Artificial Neural Networks, (3) presenting and comparing numerical results for a real system of developing country like India to demonstrate the rationality and feasibility of the proposed methodology.

General Terms

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Keywords

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1. INTRODUCTION

The electricity supply industries around the world have experienced a major restructuring process from traditionally regulated monopoly to the competitive market environment for their economic efficiency, reliability of power systems and accountability [1-2]. Under it, the nodal or locational marginal pricing (LMP) is emerged as an important mode of energy pricing [3]. LMP's reveal vital information to the market participants about their bidding strategies and risk management and to the system operators to provide economic signals and clearing decisions in network competitive electricity markets.

In developing countries like India, electricity demand is expected to more than double by year 2012 [4]. This huge increase in demand is due to significant population growth, and distribution of wealth. In order to meet the electricity demand and other economic benefits of restructuring, many developing countries are adopting HVDC transmissions for the existing AC transmission system [5]. Developing countries in this regard address the issue of developing suitable electricity nodal pricing scheme with its accurate prediction.

The applications of price forecasting for this environment are to accurately predict the nodal prices. Nodal price prediction is important for market participants, to develop bidding strategies and risk management to hedge against risks, power system security to operate the system economically and reliably, investments recovery in the facility planning and measures to predict possible exercises of market power and detect gaming behaviors which leads to unreasonable prices [2, 3]. Also, forecasted prices provide system operators with measures to predict possible exercises of market power and detect gaming behaviors leading to unreasonable prices [2].

Several hard computational techniques like time series models, auto regressive and auto regressive integrated moving average (ARIMA) models [5], [6] and combination of wavelet transform (WT) and ARIMA techniques have been tried to predict electricity prices [7]. A generalized autoregressive conditional heteroskedastic (GARCH) methodology is used to predict next-day electricity prices [8]. Though these techniques are found accurate, but are limited to a large amount of historical information and the non-computational cost.

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CERTIFICATE OF PARTICIPATION

Workshop on the Role of Local Chapters

PRESENTED TO

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P.R. Pole (Patil) College of Engg. & Mgt., Amravati

Conducted by Indian Institute of Technology Kanpur

at

P.R. Pole (Patil) College of Engg. & Mgt., Amravati

on

11th Nov. 2017

Prof. Satyaki Roy
NPTEL Coordinator, IIT Kanpur

CERTIFICATE OF PARTICIPATION

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PRESENTED TO

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P.R.P.C.E.M. Amravati

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on

11th May 2017



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NPTEL Coordinator, IIT Kanpur

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.4 Extension Activities

3.4.1 - Number of extension and outreach program conducted in collaboration with industry, community

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	338
2	CSE	339-346
3	Mechanical Engg.	347-359
4	MCA	360-362

3.4 Extension Activities

3.4.1 - Number of extension and outreach program conducted in collaboration with industry, community and

Sr. No.	Title of the activities	Organizing unit/agency/collaborating agency	No. of teachers co-ordinate such activities	No. of students participated in such activities
01.	Virtual Lab	IIT Bombay	02 (Prof V.B.Gadicha / Prof F.M.Shelke)	120
02.	Use of Solar Energy	Mechanical deptt.	05	120
03.	Design & Analysis of Power Transmission System for Cotton Feeding Automatic Central Trolly.	Mechanical deptt.	Prof. V. G. Gore	06
04.	Design & Analysis of Horizontal hydraulic press machine	Mechanical deptt.	Prof. S. S. Dhoke	06
05	NPTEL Local Center	M.C.A Deptt	Dr.C.A.Dhawale	150
06	IIT Spoken Tutorial	M.C.A Deptt	Dr.C.A.Dhawale	350

Sri Sangeeta Maharaj Prasanna

P. R. Pote Patil Edu. & Welf. Trust's, Group of Institutions, College of Engineering & Management, Amravati

(Recognized by AICTE, New Delhi, DTE, Mumbai & Affiliated to SGBAU, Amravati)

Pote Estate, Pote Patil Road, Kathora, Amravati. (Maharashtra)

Ph. No. [illegible] Fax No. [illegible]

Email: [illegible]

[illegible] Date: 23/02/2018

To,

Prof. Santosh Narenlin,

Lab 125B,

Dept. of Chemical Engineering,

IIT Bombay, Powai, Mumbai-76

Subject: Request for setting up virtual lab's nodal center

Respected Sir,

P. R. Pote Patil Group of Educational Institute, Amravati is foremost name in higher education in [illegible] region of Maharashtra. The group offers under graduate and post graduate courses in [illegible] of engineering, management and technology. The group aims to develop a pursuit of knowledge in students, commitment to economic, social and cultural upliftment of masses.

P. R. Pote Patil College of Engineering and Management has been started in the year 2009 with vision design student's future scientifically. Within a short span of years, the institute has attained a strong footing amongst all the technical colleges of Amravati region.

[illegible] Engineering (UG) courses are offered by the institute:

[illegible] Communication Engineering

[illegible]

[illegible]

[illegible]

[illegible]

Following Engineering (PG) courses are offered by the institute:

[illegible] Power System

[illegible] Science & Engineering

[illegible] Communication Engineering

[illegible]

[illegible] of departments had participated in virtual lab outreach workshop [illegible] Institute of Engineering & Technology at Nagpur. Fascinated with this [illegible] set up virtual labs nodal center in our premises. We all adequate [illegible] mentioned an expression of interest Eligibility documents. [illegible] ready to disseminate the use of facility in [illegible]

[illegible] to establish virtual lab nodal center. [illegible] do the needful.

P. R. Pote College of Engineering & Management, Amravati

Virtual Labs Nodal Centre (VLNC)

Activity: Students Training Session on Virtual Labs.

Date: 25/09/2017-06/10/2017 **MONTH: Sept, Oct 2017**

Session Time: 11.00- 5.30 pm

Venue: Virtual Lab, P. R. Pote COEM, Amravati

Department: All

Total No. of Users: 1454

Total Usage (No. of Experiment(s): 8095

Sl. No.	Department	No. of Users	No of Expt. Usage
1	CSE	394	2126
2.	EXTC	25	130
3.	ELEC	387	1800
4.	MECH	69	392
5.	CIVIL	195	915
6.	FIRST YR	384	2492
	Total	1454	8095

Coordinator: Prof. E. M. Shelke

Nodal Centre Coordinator: Prof. V. D. Gadicha

Outreach Partner (IIT B): Mr. Pushpdeep Mishra, Project Manager, IITB-V Labs

Head of the Department

Principal (I/C)

Virtual Labs

An initiative of Ministry of Human Resource Development
under the National Mission on Education through ICT
www.vlabs.iitb.ac.in

Santosh Noronha
Chemical Engineering :
Healthcare, Educational Tech :
Indian Institute of Technology Bombay, Powai,

noronha@iitb.ac.in
(22)25767238 / 25764246
(22)25764227
Mumbai 400 076, India.

Ref No: VL/M/2/NCS0/004 Date: 2nd May 2017

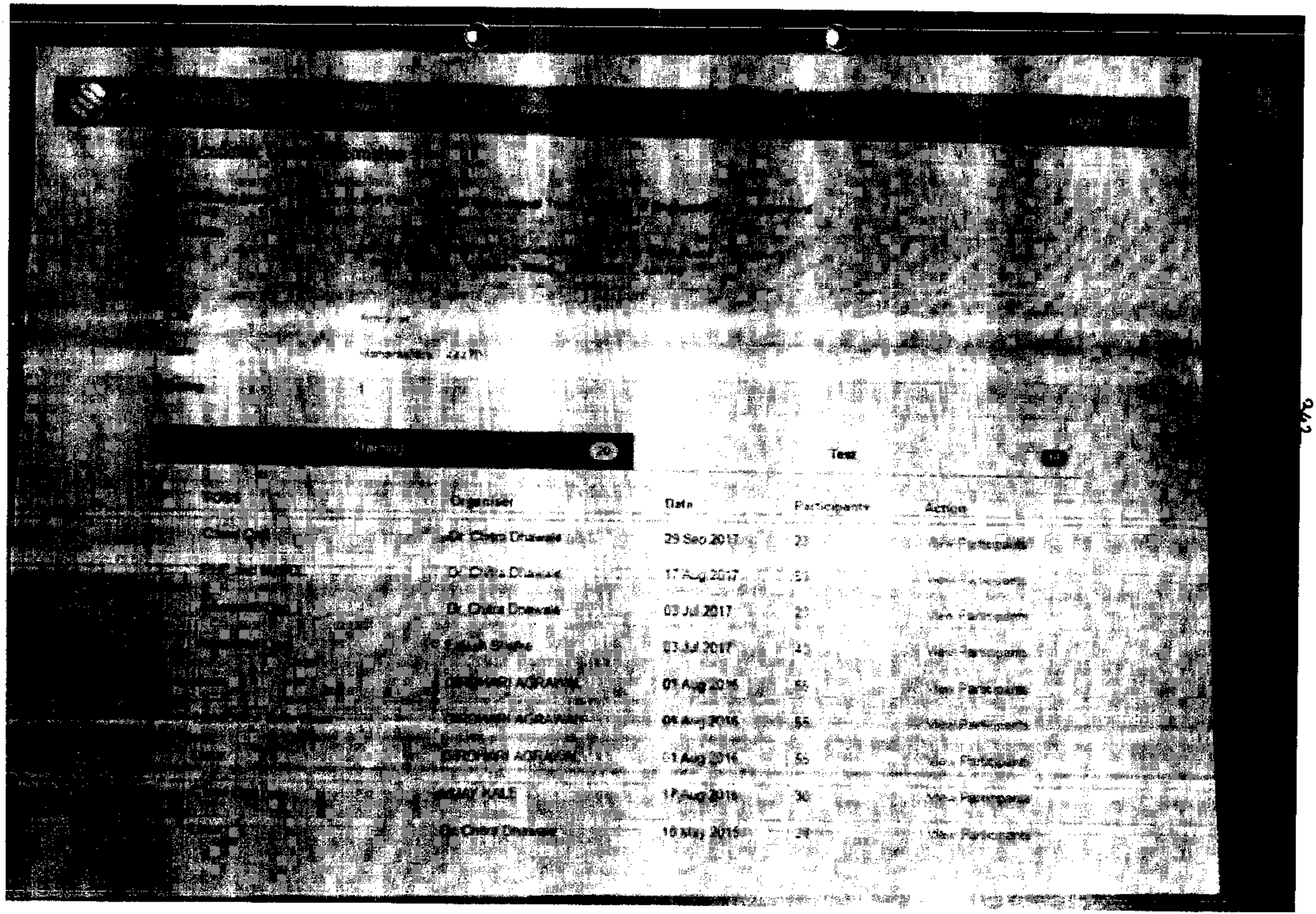
To,
The Principal
P.R Pote College of Engineering & Management,
Pote Patil Road, Pote Estate,
Kathora, Amravati

Dear Sir,

With reference to your Expression of Interest for Virtual Labs Nodal Centre (VLNC), it gives me immense pleasure to designate your college as a Nodal Centre for Virtual labs. As recommended by you, Prof.V.B. Gadicha has been nominated as the Nodal Coordinator from your college. This approval is valid up to 31st Dec 2017 and is subject to the Terms & Conditions attached and any subsequent directives as issued by MHRD.

Kindly acknowledge receipt of this letter and acceptance of the Terms & Conditions.

We thank you again for your interest in the Virtual Labs project and appreciate your endeavour in the service of the student community. Wishing you all the best!


Test
Organiser
Date
Participants
Action
29 Sep 2017
23
17 Aug 2017
03 Jul 2017
03 Jul 2017
01 Aug 2016
01 Aug 2016
01 Aug 2016
17 Aug 2016
10 May 2015

Certificate for completion of Advanced Cpp Training

This is to certify that AVANTI DESHMUKH has successfully completed **Advanced Cpp** test organized at **P.R.Pote Group of Educational Trust's College of Engineering & Management** by **Falesh Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR** at **P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the **Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India.**

September 26th 2017

Prof. Kannan M Moudgalya
IIT Bombay

Certificate for Completion of Advanced Cpp Training

This is to certify that **SHAMALI PARADAKHE** has successfully completed **Advanced Cpp** test organized at **P.R.Pote Group of Educational Trust's College of Engineering & Management** by **Faiban Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR** at **P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the Spoken Tutorial Project, **IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India.**

September 26th 2017

Prof. Kannan M.Moudgalya
IIT Bombay

Certificate for Completion of Advanced Cpp Training



This is to certify that **ANUSHRI SHIRBHATE** has successfully completed **Advanced Cpp** test organized at **P.R.Pote Group of Educational Trust's College of Engineering & Management** by **Falesh Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR** at **P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the **Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India**.

September 26th, 2017

Prof. Kannan M Moudgalya
IIT Bombay

Certificate for Completion of Advanced Cpp Training

Talk to a Teacher

This is to certify that **PRIYANKA LODH** has successfully completed **Advanced Cpp** course organized at **P.R.Pote Group of Educational Trust's College of Engineering & Management** by **Falesh Shelke** with course material provided by the Talk To A Teacher project at IIT Bombay.

Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training. **ATUL JAMNEKAR** at **P.R.Pote Group of Educational Trust's College of Engineering & Management** invigilated this examination. This training is offered by the **Spoken Tutorial Project, IIT Bombay, funded by National Mission on Education through ICT, MHRD, Govt. of India.**

September 26th 2017

Prof. Kannan M Moudgalya
IIT Bombay

943

JGL/GAF/PHA/18-19/69 Dated: 17th May 2018

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, Ms. Roshni Nikose, (Student of P. R. Pote (Patil) College of Engineering & Management, Amravati) has completed the Project work on the topic "Design & Analysis of Horizontal Hydraulic Press Machine", during the period from 25.01.2018 to 24.05.2018 in our organization.

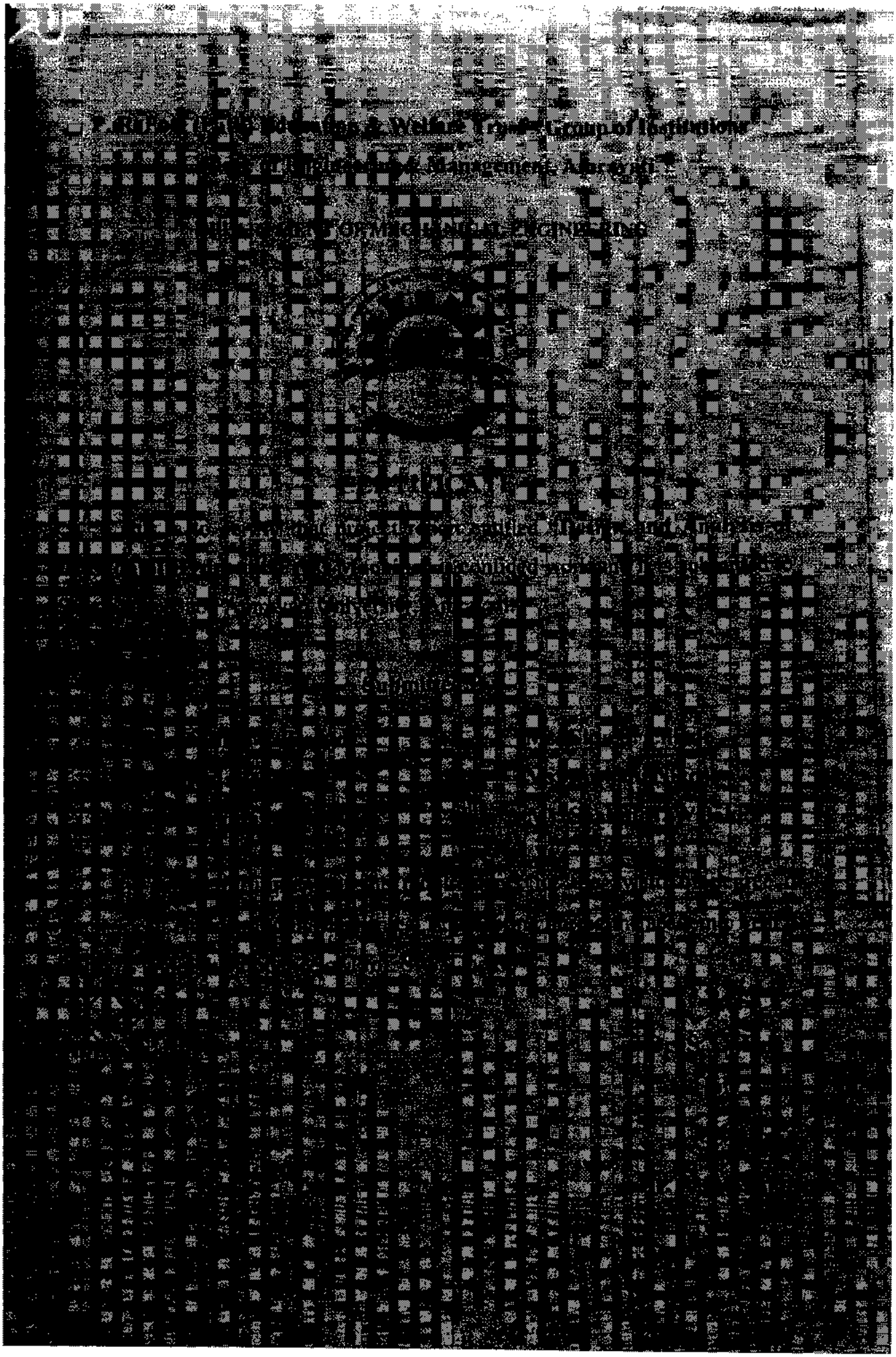
She has been sincere, hardworking and punctual in her work.

We wish her success in her future endeavors.

For Jadhao Gears Limited.

Authorized Signatory

JADHAO GEARS LIMITED




Melghat Tiger Reserve
TIGER TECH
2018
PARTICIPATION CERTIFICATE
This certificate is awarded to
Mr./Ms. KRISHNA R. SHARMA
representing P. R. POTE (PATIL) COLLEGE OF ENGG for Participating in
& MANAGEMENT, AMRAVATI
Tiger Tech - 2018. A project presentation competition.
Date : 25 March 2018
Divisional Forest Officer
Melghat Tiger Reserve
VNIT Campus, Nagpur
Knowledge Partners
Wildlife Conservation Trust
WWF
SATPUDA FOUNDATION

Melghat Tiger Reserve

TIGER TECH 2018

PARTICIPATION CERTIFICATE



This certificate is awarded to

Mr./Ms. SOHAL M. SAWARKAR

representing P.R. POTE (PATIL) COLLEGE OF ENGG & MANAGEMENT, AMRAVATI for Participating in Tiger Tech - 2018. A project presentation competition.

Date : 25 March 2018

Divisional Forest Officer
Melghat Tiger Reserve

VNIT Campus, Nagpur

Knowledge Partners

Wildlife Conservation Trust

WWF

SATPUDA FOUNDATION

253

Melghat

Melghat Tiger Reserve

TIGER TECH 2018

PARTICIPATION CERTIFICATE

This certificate is awarded to

Mr./Ms. PRATHAMESH S. TIPAE

representing P. R. Pote (Patil) College of Engg. for Participating in

AND MANAGEMENT, AMRAVATI

Tiger Tech - 2018, A project presentation competition

Date - 25 March 2018

Divisional Forest Officer
Melghat Tiger Reserve

VNIT Campus, Nagpur

Knowledge Partners

Wildlife Conservation Trust

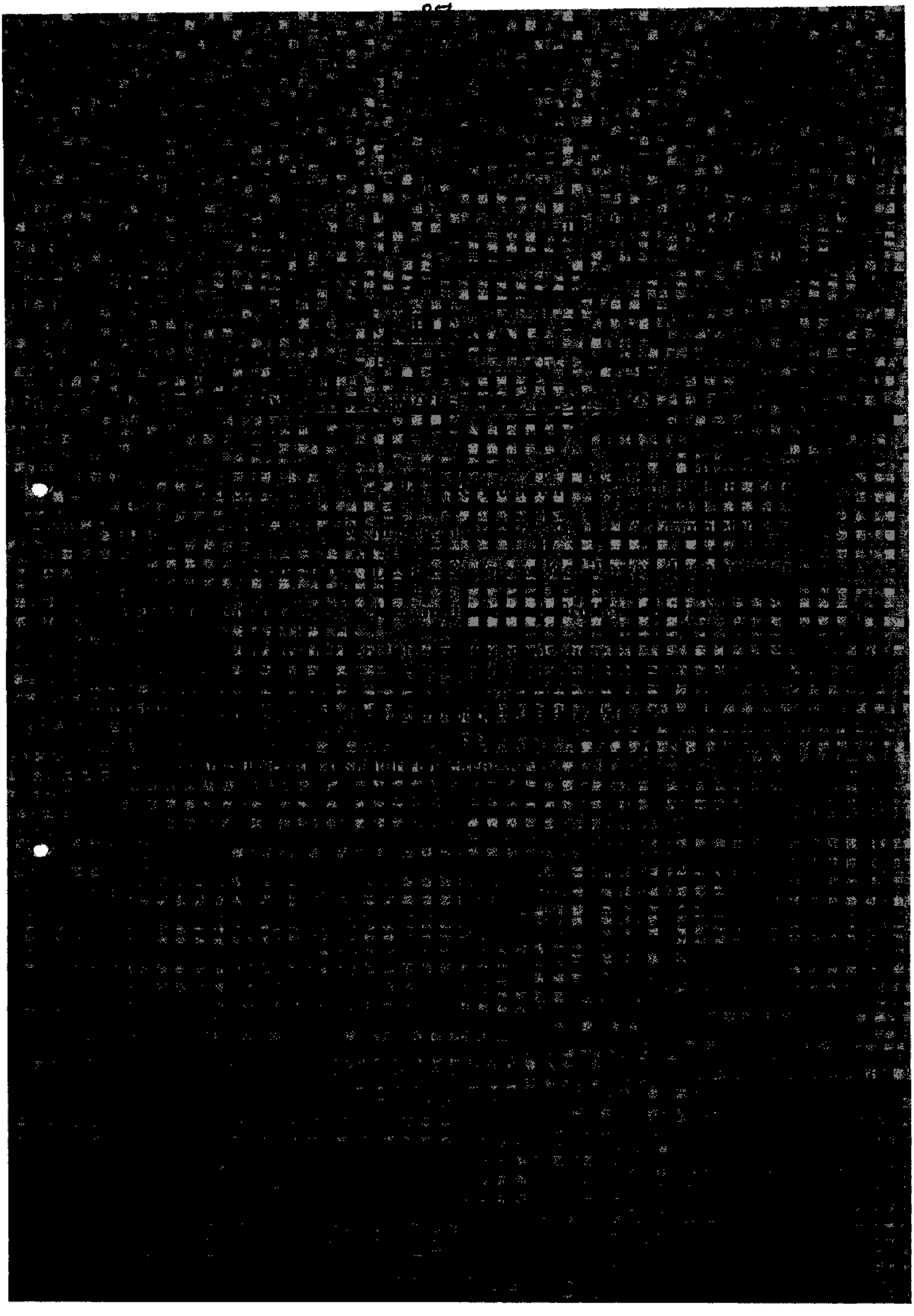
WWF

PARTICIPATION CERTIFICATE

This certificate is awarded to

[illegible]


Melghat Tiger Reserve
TIGER TECH
2018
PARTICIPATION CERTIFICATE
This certificate is awarded to
Mr./Ms. KRISHNA R. SHARMA
representing P. R. POTE (PATIL) COLLEGE OF ENGG, for Participating in
& MANAGEMENT, AMRAVATI)
Tiger Tech - 2018. A project presentation competition.
Date : 25 March 2018
Divisional Forest Officer
Melghat Tiger Reserve
VNIT Campus, Nagpur
Knowledge Partners
Wildlife Conservation Trust
WWF
SATPUDA FOUNDATION



355

JADHAO
Innovating Right Solutions

JGL/CAF/PHA/18-19/75

Dated: 24th May 2018

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, **Mr. Achyut V. Bhoyar,** (Student of P. R. Pote College of Engineering & Management, Amravati) has completed his Project work on the topic **"Design & Analysis of Power Transmission System for Cotton Feeding Automatic Central Trolley"** during the period from 8th Aug 2017 to 16th Feb 2018 in our organization.

He has been sincere, hardworking and punctual in his work.

We wish him success in his future endeavors.

For Jadhao Gears Limited.

JADHAO GEARS LIMITED
FORMERLY KNOWN AS JADHAO GEARS PVT. LTD.
D9/2,10,11 MIDC AREA
AMRAVATI-444605

Authorized Signatory

SINCE 1986

JADHAO GEARS LIMITED
D9/2, 10 & 11, MIDC Area, Amravati - 444 605 (MS) INDIA. Telefax : + 91 - 721 - 2522987 2521382
Website: www.jadhaogroup.com; www.jadhaogroup.in; e-mail: jadhaogearspvtltdmkt@gmail.com; jgdmarketing@jadhaogroup.in
Rolling Presses, Cotton Cleaning & Material Handling System

JADHAO

JGL/CAF/PHA/18-19/77

Dated: 24th May 2018

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, **Mr. Vaibhav S. Ghodeswar,** (Student of P. R. Pote College of Engineering & Management, Amravati) has completed his Project work on the topic **"Design & Analysis of Power Transmission System for Cotton Feeding Automatic Central Trolley"** during the period from 8th Aug 2017 to 16th Feb 2018 in our organization.

He has been sincere, hardworking and punctual in his work.

We wish him success in his future endeavors.

For Jadhao Gears Limited.

JADHAO GEARS LIMITED D9/2,10,11 MIDC AREA AMRAVATI 444 605

Authorized Signatory

SINCE 1986

JADHAO GEARS LIMITED
D9/2, 10 & 11, MIDC Area, Amravati - 444 605 (MS) INDIA. Telefax : + 91 - 721 - 2522967, 2521382
Website: www.jadhaogn.com; www.jadhaogroup.in; e-mail: jadhaogearsupvtltdmkt@gmail.com; jgpmarketing@jadhaogroup.in
Cotton Ginning Machines, Cotton Baling Presses, Cotton Cleaning & Material Handling Systems, Electrical Control Panels, Oil Expeller & Cotton Seed Dryer.

JGL/CAF/PHA/18-19/80

Dated: 24th May 2018

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, **Mr. Rupesh S. Hanskar** , (Student of P. R. Pote College of Engineering & Management, Amravati) has completed his Project work on the topic **"Design & Analysis of Power Transmission System for Cotton Feeding Automatic Central Trolley"** during the period from 8th Aug 2017 to 16th Feb 2018 in our organization.

He has been sincere, hardworking and punctual in his work.

We wish him success in his future endeavors.

For Jadhao Gears Limited.

Authorized Signatory

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D5/2,10,11
MIDC AREA
AMRAVATI-444605

JADHAO GEARS LIMITED
D5/2, 10 & 11, MIDC Area, Amravati - 444 605 (MS) INDIA. Telefax : + 91 - 721 - 2522951, 2521382
Website: www.jadhaogh.com, www.jadhaogroup.in; e-mail: jadhaogearsdvttomkc@gmail.com, jgl@amrapur.jadhaogroup.in
Cotton Ginning Machines, Cotton Baling Presses, Cotton Cleaning & Material Handling Systems
Cotton Seed Dryer

SINCE 1986

JADHAO

JGL/CAF/PHA/18-19/78

Dated: 24th May 2018

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, **Mr. Sumit B. Bhusari,** (Student of P. R. Pote College of Engineering & Management, Amravati) has completed his Project work on the topic **"Design & Analysis of Power Transmission System for Cotton Feeding Automatic Central Trolley"** during the period from 8th Aug 2017 to 16th Feb 2018 in our organization.

He has been sincere, hardworking and punctual in his work.

We wish him success in his future endeavors.

For Jadhao Gears Limited.

Authorized Signatory

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D3/2,10,11 MIDC AREA
AMRAVATI-444805

SINCE 1986

DHAO GEARS LIMITED
10 & 11, MIDC Area, Amravati - 444 805 (MS) INDIA. Telefax : +91 - 721 - 2522257, 2521352
www.jadhaogn.com, www.jadhaogroup.in, e-mail: jadhaogearsolvotomkt@gmail.com, jgl.marketing@jadhaogroup.in
Cotton Ginning Machines, Cotton Baling Presses, Cotton Cleaning & Material Handling Systems
Electrical Control Panels, Oil Expeller & Cotton Seed Dryer

JGL/CAF/PHA/18-19/79

Dated: 24th May 2018

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, **Mr. Sarang S. Landge** , (Student of P. R. Pote College of Engineering & Management, Amravati) has completed his Project work on the topic "**Design & Analysis of Power Transmission System for Cotton Feeding Automatic Central Trolley**" during the period from 8th Aug 2017 to 16th Feb 2018 in our organization.

He has been sincere, hardworking and punctual in his work.

We wish him success in his future endeavors.

For Jadhao Gears Limited,

Authorized Signatory

JADHAO GEARS LIMITED
9/2, 10 & 11, MIDC Area, Amravati - 444 605 (MS) INDIA. Telefax : - 91 - 721 - 2522967, 2521382
Website: www.jadhaogin.com; www.jadhaogroup.in; e-mail: jadhaogearsp.dtdmkt@gmail.com; jgl.marketing@jadhaogroup.in
Manufacturers of: Cotton Ginning Machines, Cotton Baling Presses, Cotton Cleaning & Material Handling Systems, Electrical Control Panels, Oil Expeller & Cotton Seed Driver

SINCE 1986

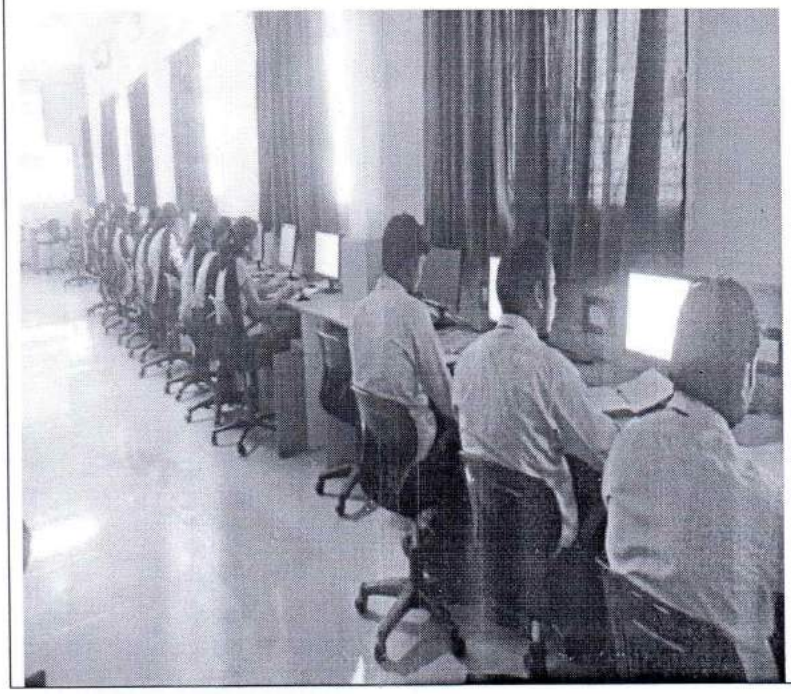
P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions
College of Engg. and Management, Amravati

Department of M.C.A.

IIT Spoken Tutorial Programmes and Test
Planned / Conducted
Year 2017-18

Sr. No	Activity	Convener/ Expert	Planned period	Conducted Date	No. of Students Participated
1	IIT Spoken Tutorial Program for MCA I Year Advance C	Prof. V. M. Kale	28 Sept 2017	05 Oct 2017	21
2	IIT Spoken Tutorial Program for MCA II Year PHP MySql	Prof. V. M. Kale	26 Sept 2017	12 Oct 2017	23

Lecturer /A.P.
P.R. Pote (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati.



IIT SPOKEN TUTORIAL TEST ON PHP MY SQL SYMCA DT: 12/10/201

I

Lecturer /A.P.
P.R. Pote (Patil) Education & Welfare Trust
Group of Institutions College of Engg. & Manage
Kathora Road, Amravati

- **IIT Spoken Tutorial Program For MCA I on 5/10/2017**

IIT SPOKEN TUTORIAL TEST ON ADVANCE C FYMCA



Lecturer / A.P.
P.R. Pote (Patil) Education & Welfare Trust's
Group of Institutions College of Engg. & Management
Kathora Road, Amravati.

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.4.2 - Awards and recognition received for extension activities from Government and other recognized Institutions

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	363

3.4.2 - Awards and recognition received for extension activities from Government and other recognized Institutions

Name of the Activity	Award/recognition	Awarding bodies	No. of Students benefited
On 15th Indian Society for Technical Education (ISTE) Maharashtra – Goa State Level Student's Convention 2018 at Sandip Foundations, Nashik	Best Student Award	ISTE & Sandip Foundation Nashik.	01

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.4.3 - Students participating in extension activities with Government Organizations, Non-Government

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	364

3.4.3 - Students participating in extension activities with Government Organizations, Non- Government

Name of the scheme	Organizing unit/ agency/ collaborating agency	Name of the activity	Number of teachers coordinated such activities	Number of students participated in such activities
NIL	NIL	NIL	NIL	NIL

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.5 Collaborations

3.5.1 - Number of Collaborative activities for research, faculty exchange, student exchange during the year 2018-19

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	365

3.5 Collaborations

3.5.1 - Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of Activity	Participant	Source of financial	Duration
NIL	NIL	NIL	NIL

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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3.5.2 - Linkages with institutions/industries for internship, on-the-job training, project work, sharing of facility.

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	366
2	CSE	367-368
3	Mechanical Engg.	369

3.5.2 - Linkages with institutions/industries for internship, on-the-job training, project work, sharing of facility

Nature of linkage	Title of the Linkage	Name of the partnering institution/ industry	Duration (From-To)	Participant
Part Time (Project Analysis)	Thinking Objected Oriented Way in High Level Languages	Axioms TechGuru Pvt. Ltd.	19 June 2017	1. Ms. Tejaswini Pote 2. Ms. Pratiksha Sonone
Part Time	Automobile & Vehicle Dynamics	AMZ Automotive	24th to 30th July, 2017	117

3.5.3 - MoUs signed with institutions of national, international importance, other universities, corporate houses etc. during the year

www.axiomtechguru.com

Axiom TechGuru Pvt. Ltd.

"IT SOLUTIONS BY, IT MASTERS"

CIN U72300MH2015PTC270316

(Software Research & Development Company)

G-5, Anand Rajani Apts , IT Park Road, Opp. Datta Mandir, Nagpur - 22 (O) 0712-6603564 6503564

E-mail : axiomtechguru@gmail.com, researchbyaxiom@gmail.com

To whomsoever it may concern

This is to certify that **Ms. Prachi Sonone** student of **B.E.Third Year (CSE)** has worked in our organization as **an Intern** from **19 Jun 2017** to **30 Jun 2017** on **C,C++ and Data Structure** having good experience and knowledge in **Software designing and development.**

She has successfully completed **Industrial Orientation Training**(IOT) administered by **Axiom TechGuruPvt. Ltd., Nagpur.** She has been very sincere, efficient and co-operative team member.

Ms. Prachi Sonone is reliable, hardworking & professional. I wish her all the very best in her future endeavours.

For (Axiom TechGuruPvt. Ltd.)

Ms. [illegible] Farah Hussain

(Business Analyst)

For (Axiom TechGuruPvt. Ltd.)

Mr. Sushil Pudke

(Director)

H.O.D. (Comp. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

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(Software Research & Development Company)

G-5 Anand Rajani Apts., IT Park Road, Opp. Datta Mandir, Nagpur - 22 (O) 0712-6603564, 6503564

E-mail : aximotechguru@gmail.com, researchbyaxiom@gmail.com

To whomsoever it may concern

This is to certify that **Ms.Tejaswi Pote** student of **B.E.Third Year (CSE)** has worked in our organization as **an Intern** from **19 Jun 2017** to **30 Jun 2017** on **C,C++ and Data Structure** having good experience and knowledge in **Software designing and development.**

She has successfully completed **Industrial Orientation Training**(IOT) administered by **Axiom TechGuruPvt. Ltd., Nagpur.** She has been very sincere, efficient and co-operative team member.

Ms.Tejaswi Pote is reliable, hardworking & professional. I wish her all the very best in her future endeavours.

For (Axiom TechGuruPvt. Ltd.)

Ms. Rizwan Farah Hussain

(Business Analyst)

For (Axiom TechGuruPvt. Ltd.)

Mr. Sushil Pudke

(Director)

H.O.D. (Comp. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

PRPCEM/ME/Genl/2016-17/01
Date:- 22nd April 2017

Subject:- Permission to conduct 7 days Workshop at our campus.

Elite Techno Group, Pune is a prominent facility provider for Automotive as well as SAE INDIA events held all over India. They conduct variety of training programs for students participating in various automotive Competitions.

This group is planning to conduct 7 days workshops for **Vidarbha region** on **Automobile & Vehicle Dynamics with Practical Session** probably during **24 - 30 July 2017.** To assess the participants from various colleges, guest lectures/seminars will be arranged by them at different locations. On sufficient availability of students (100 participants) in this region, workshop will be arranged by them. It will be our honor to arrange this seminar at our campus. To conduct the workshop, they need our college resources such as seminar hall & sound System etc.

It is requested to please permit for the workshop.

To
The Principal,
P.R.P.C.E.M., Amravati.

Benefits accrued from this workshop to our College/Institute:

- This will help in development of [illegible]
- They are intended to sign MoU [illegible] region; it will be beneficial for our college [illegible] NAAC.
- After signing MoU [illegible] partner [illegible]

P. R. Pote (Patil) Education & Welfare Trust's Group of Institutions College of Engg. & Management, Amravati

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Session 2017-18

3.5.3 MoUs signed with institutions of national, international importance, other universities, corporate houses etc. during the year.

Sr.No.	Particulars	Page Number
1	AQAR Cover Page	370
2	Mechanical Engineering	371-372
3	MCA	373-375
4	CSE	376-378

3.5.3 - MoUs signed with institutions of national, international importance, other universities, corporate houses etc. during the year

Sr. No.	Organization	Date of MoU signed	Purpose and	Numberof students/teachers participated
01.	AMZ Automotive	22nd July.,2017	Industry Training	117 Students
02.	Axioms Softech Pvt. Ltd	13-Jan-2017	Networking and Industry Training	124 Students
03	Ctronics-Pvt.LTd	5th August 2017	Major Project Internship	16 students

P.R.Pote College of Engineering & Management Amravati

Training Program on Automobile & Vehicle Dynamics

III cell of the department has conducted Training Program on 'Automobile & Vehicle Dynamics (AVD)' took place **at P. R. Pote (Patil) College of Engineering & Management, Amravati** on **July 24 – 30, 2017.** Over 200 Students from various Colleges in Amravati region, This type of training program was held first time with joint venture of **AMZ Automotive & Team Optimech Racing - Dept of Mechanical Engineering, PRPCEM** in Amravati region. It will helps the students for converting their theoretical ideas into practical for upcoming Automotive Competitions like SAESUPRA, SAEBAJA, RCDC & Go- Kart. It will build the actual practical knowledge for students by providing 4 days separate practical session in training program.

The **Guest of the training program Mr. Khushal Singh, (Research Associates of AMZ Automotive),** who provide grass root training to students on vehicle dynamics.



Programe Coordinator

HOD
Mech Dept

H.O.D. (Mech. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

ELITE - TECHNO GROUPS

Inspiring young generation

Date: 12th April 2017

SAMPLE MEMORANDUM OF UNDERSTANDING

The memorandum of understanding may be treated as an official agreement to the terms and conditions understood between ELITE TECHNO GROUPS (Herein referred as "Party of the first part") and **P. R. Pote (Patil) Education & Welfare Trust's Group of Institution(Integrated Campus), Amravati** ("Party of second part"). As per the negotiations held between the two parties, the following things are agreed upon:

- Party of first part will conduct **7 days Training Program on Automobile & Vehicle Dynamics with practicle session**, in association with Party of second part.
- The training shall be held on **24th July to 30th July 2017.**
- The fee of the training will be **5000/-** Rupees per participant inclusive kit which includes a Course book on Automotive Dynamics & Designing and a DVD and certificate for all the participants.
- The amount if collected by the Party of second part shall be submitted to Party of first part on the last day of the training program.
- Party of first part will provide complete technical support to all teams participating in engineering design and race competition of Party of second part (SAE events).
- Party of second part will provide Seminar hall with projector and mike system for the first 3 days and on last 4 days a lab space for practical session to party of first part.
- To make it a national level training program and to promote the host college [illegible] update the event on its official website, upload promotional post on [illegible] twitter, instagram etc.
- Party of first part will personally invite students from all the colleges [illegible] email (20000+ student database), posters, bulksms etc.

NOTE: This is a sample MOU to give an idea about the terms [illegible] we will abide to this MOU if and only we get good response [illegible] MOU will be automatically cancelled and there will be no [illegible] training program.

Authorized Signature:

Party of first part

Elite Techno [illegible]

Ctronics Systems
Building Attitude
Swanand, Ganesh Colony, Amravati - 444605
Website: www.ctronicsystems.com
Email: info@ctronicsystems.com
+ 9823540321, 8888462000, 8793952[illegible]

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MoU") is made on 24 day of July 2017 ("Effective Date")

Between

Ctronics Systems, having its office at "Swanand", Ganesh Colony, Amravati 444605 Maharastra India (hereafter called "Ctronics Systems" which expression unless it be repugnant to the subject or its context includes their successors and assigns) of the FIRST PART.

And

Department of MCA, P.R.Pote College of Engineering and Management, Amravati (hereafter called as "College" which expression unless it be repugnant to the subject or its context includes their successors and assigns) of the SECOND PART.

(Ctronics Systems and College are hereafter individually referred to as "Party" and collectively referred to as "Parties")

Terms and Conditions:

1. Duration

This MoU shall be Valid for one (1) year from the effective date and therefore it may be renewed on mutually agreed terms. This MoU shall be reviewed after 6 months.

2. Purpose

The main purpose of this MoU is:

- To get internship for MCA third year students for Project and Dissertation
- To introduce the latest technologies to the students
- To enhance the technical skills of the students
- To make the student employable in the industry

3. College's Standards of Performance:

College shall expend reasonable efforts as follows:

- The College should provide at least 4 projects
- The College should provide facilities of computer labs for project development

4. Cronics standard of Performance:

Cronics shall expend reasonable efforts as follows:

- Cronics would provide the latest tools for project development.
- Cronics would provide the latest tools for project development.
- Cronics would guide each student in each batch during the development phases.
- Cronics would provide essential support for installation of software in the labs.
- The projects developed by the students under this partnership would be property of MCA department.

5. Mutual Obligations:

Both the parties shall appoint one person as one point of contact for smooth execution of the MoU. (Mr.Shrikant Pande (Director) from Cronics System, Amravati and Dr. Dhawale (Head, MCA Dept) from PRPCEM, Amravati.)

6. Limitations and Warranties:

Each party shall ensure that the other is not put to any liability for any act of the respective party under this MoU.

Each party represents that they have full power and authority to enter into this MoU in general.

7. General:

Both the parties may receive information proprietary to other party (the "Confidential Information") in the course of performance of their obligations under this MoU. Confidential Information is not meant to include any information which (a) is publicly available (b) is rightfully received by the parties from third parties without accompanying secrecy obligations (c) is already in either parties possession and was lawfully received from the sources other than the parties or (d) is independently developed by the parties. The two bodies understand and acknowledge that the Confidential Information is valuable and confidential and agrees that it will at all times be kept in trust, to be disclosed only to such persons as have a "need to know" the same for the effective implementation of this MoU and that it will only be used by the parties for the other benefits of others.

Both the parties understand and agree that all written or other tangible data and documentation developed or procured by the other party in performing its obligations under this MoU, whether in printed or electronic form, belongs to other party and that other party will have all rights, title and interest therein.

The college shall only have the right to accept and implement the syllabus/ curriculum as per the decision of the statutory bodies of the College.

Both the parties agree that "Cronics Systems" is not bound on account of this MoU to recruit any / all number of students from College.

Each party shall be at liberty to terminate this MoU with a written notice period of one (1) month to the other party without any compensation and seeking legal redress.

Arbitration:

Any and all disputes or differences between Ctronics Systems and College arising out of or in connection with this MoU or its performance shall, so far as it is possible, be settled by negotiations between the Parties amicably through consultation.

Any dispute or difference arising out of or in connection with this MoU, which is not amicably settled as aforesaid, shall be resolved and decided by Sole Arbitrator to be appointed by Ctronics Systems in accordance with the provisions of Arbitration and Conciliation Act, 1996 or any amendment thereof. The language of arbitration shall be English and the place of arbitration shall be at Pune only.

Each party shall bear and pay its own costs and expenses in connection with the arbitration proceedings unless the arbitrators direct otherwise.

Indemnification:

Both the parties shall indemnify and hold each other harmless from and against any claim, loss, liability, or expense, including, but not limited to damages, patent and trademark infringement, costs and attorneys fees, arising out of or in connection with any acts or omissions of their agents or employees.

[illegible] whereof both parties put their hard seal on the day, month and year herein mentioned.

IN WITNESS WHEREOF, to show their assent, the duly authorized representative of the parties hereto have signed the Agreement and set their seals as below:

Signed for and on behalf of	Signed for and on behalf of
For Ctronics Systems	P.R. Pote College of Engineering and
Management	
For CTRONICS SYSTEMS	
Proprietor	H.O.D. Dept. of MCA
	P.R. Pote (Patil) Education & Welfare
Shukant Pande	Dr. C. A. Dhawale Group of Institutions College of Engg. & Mar
	Kathora Road, Amravati
Director	Head, MCA Dept. PRPCEM, Amravati
Authorized Signatory	
Witness to both:	
1. Signature:	2. Signature:
Name: Anup A[illegible]	Name: Prof. V.M. Kale
Address: Ctronics Systems	Address: Dept. of MCA, PRPCEM, Amravati
[illegible]	

Visit us at http://www.axiomsoftindia.com

Axiom Softech Pvt. Ltd.

"IT SOLUTIONS BY, IT MASTERS"

CIN : U72300MH2015PTC270316
(Software Research & Development Company)
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E-mail : solutions.axiomsoftech@gmail.com, sushil@axiomsoftindia.com

MEMORANDUM OF UNERSTANDING

ENTERED INTO ON 13 DAY OF Jan. 2017

BETWEEN

AXIOM SOFTECH PVT. LTD.
AND
P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI

To promote interaction and co-operation.

This Memorandum of Understanding (MoU) is entered between **Axiom Softech Pvt. Ltd.** A company incorporated under the Indian Companies Act, 1956 having its registered office and represent by its undersigned of the ONE PART and **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** represent by undersigned of the OTHER PART.

Whereas **Axiom Softech Pvt. Ltd. and P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** shall be hereinafter jointly referred as the "Parties" and singularly as a "Party".

The **Axiom Softech Pvt. Ltd. & P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** have decided to agree to establish industry-academic collaboration in area of mutual interest and in accordance with terms and conditions set forth in this Memorandum of Understanding (MoU), **Axiom Softech Pvt. Ltd.** and **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** agree on following activities:

1. **Axiom Softech Pvt. Ltd.** will offer summer/winter Internship to students of **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** at **Axiom Softech Pvt. Ltd.** so that the students get hands on experience of live project & live research. The number of students, who can be selected for internship, would be based on some selection process includes Aptitude Test, Technical Test and followed by the personal Interview.

2. **Axiom Softech Pvt. Ltd.** will arrange to provide periodic Industrial visits to students and faculty of **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** at its sites to enable them to get practical exposure and learning from interaction with staff members of Axiom's research team.

3. Depending on requirement **Axiom Softech Pvt. Ltd.** Will provide Technical Workshop, Faculty Development Program, CRT, Industrial Orientation Program, and Guest Lecture with identified deliverable to be executed by **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI.**

4 **Axiom Softech Pvt. Ltd.** may participate in campus placements to hire talent from **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI**

5. **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** will give preference to officials of **Axiom Softech Pvt. Ltd.** in pursuing advanced Research and Development to students as per Axiom's requirement.

6. **Axiom Softech Pvt. Ltd.** may arrange technical workshops/Forum/Guest lecture in **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** for faculty and students. **All the one day activity will be non-commercial.** For the activities containing more than one day, detail modalities including financial would be mutually worked out for each assignment.

7. The parties mutually agree to share the information in hard and soft form available with them in strict confidence; and will respect the intellectual property rights of each other. If the decision not to peruse a collaborative activity is taken, all the information shall be returned to the rightful/source owner.

8. The parties mutually agree to share infrastructure facilities like laboratories, class rooms, library, etc. whenever required for execution of the various programs as per the mutually agreed schedule and conditions.

9. Each party shall appoint one nodal officer to take periodically review and identify ways to strengthen cooperation between both the parties.

H.O.D. (Comp. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati

This MoU will be effective from the date it is signed by representative of the parties. It will remain valid for two years, and may be continued thereafter by suitable review and agreement. Either party may give MoU termination by giving written to other party six months in advanced. Once terminated, neither **Axiom Softech Pvt. Ltd.** Nor **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** will be responsible for any losses, financial or otherwise, which the other party may suffer.

However **Axiom Softech Pvt. Ltd.** and **P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMARAVATI** will ensure that all activities in progress are allowed to be completed successfully.

IN WITNESS WHEREOFF the two parties have signed this understanding on the day and date as above.

For PRPCEM, Amaravati

Executive member

Principal

.....

Dr. (Mrs.) S. D. Wakde

Principal

P. R. Pote (Patil)

College of Engineering & Management

Amravati.

Witness

Mohd. Zahair

For Axiom Softech Pvt. Ltd.

Executive member

Mr. Sushil Pudke

Director,

Axiom Softech Pvt. Ltd. Nagpur.

.....

Rizwan Fakah Hussain

(Business Analyst)

H.O.D. (Comp. Dept.)

P.R.Pote (Patil) College of Engg. & Management

Amravati.