Index Page

3.4.4 Number of books and chapters in edited volumes/books published per teacher during the last five years (5)

Year	2021-22	2020-21	2019-20	2018-19	2017-18
Number	85	139	66	57	55

3.4.4 Number of books and chapters in edited volumes/books published per teacher during the last five years (5)								
3.4.4.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-								
Sl. No.	**Name of the teacher**	**Title of the book/chapters published**	**Title of the paper**	**Title of the proceedings of the conference**	**Year of publication**	**ISBN/ISSN number of the proceeding**	**Whether at the time of publication Affiliating Institution**	**Name of the publisher**
1	Nagadevi Darapureddy	Significance of festivals and understanding Cultural heritage	Significance of festivals and understanding Cultural heritage	Indian Culture	2020	—	Yes	Akhand Publishing House
2	Kavita Agrawal, Bhargav G., Spandana E	Diabetes Diagnosis Prediction Using Ensemble Approach	Diabetes Diagnosis Prediction Using Ensemble Approach		2020		Yes	ISBN: 978-981-15-5545-9
3	Smt. G.R. Rama Devi	Security tool for IOT and Image compression techniques	Security tool for IOT and Image compression techniques		2020		Yes	ISSN:2249- 9598
4	Isha Padhy	Interactive Learning in Mixed Reality	Interactive Learning in Mixed Reality		2020		Yes	
5	Morarjee Kolla, T. Venugopal	International Conference ICDSMLA	Concatenated Global Average Pooled Deep Convolutional Embedded		2020		Yes	
6	K. Spandana, Suresh Pabboju	International Conference Information, Communication & Computing Technology	Applications of iot for soil quality		2020		Yes	ISBN: 978-981-13-8460-8

7	Dr.T.Sridevi	Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing	Image Filter Selection, Denoising and Enhancement Based on Statistical Attributes of Pixel Array		2020		Yes	ISBN 978-981-13-9682-3,Online ISBN 978-981-13-9683-0
8	Dr L Suresh kumar, Dr B Veera Jyothi	Intellectual Property Rights	NA	NA	2020	ISBN-978-1-64919-021-5	Yes	Xpress Publishing
9	Dr L Suresh kumar, Dr B Veera Jyothi	Production And Operation Management	NA	NA	2020	ISBN-978-1-64783-750-1	Yes	Xpress Publishing
10	Dr L Suresh kumar, Dr B Veera Jyothi	Waste Management And its Challenges	NA	NA	2020	ISBN:10-649194501	Yes	Xpress Publishing
11	Sirisha Alamanda	Lecture Notes in Elecrical Engineering - LNEE Volume 698	Phishing URL Detection using Machine Learning Techniques	3rd International Conference on Communications and Cyber Physical	2020	ISBN: 978-981-15-7961-5	Yes	SPRINGER Series
12	S.Rakesh	Proceedings of 5th International Conference on Communication and Electronics Systems	Smart Wearable Device for Women Safety using IoT	5th International Conference on Communication and Electronics	2020	ISBN 978-1-7281-5371-1	Yes	IEEE

13	Sugamya Katta	Advances in Intelligent Systems and Computing	CBIR using SIFT with LoG, DoG and PCA	Proceedings of the Third International Conference on Data Engineering and ommunication	2020	978-981-15-1096-0	Yes	SPRINGER Series
14	Dr.K. Radhika	Load Balancing in Cloud Through Multi Objective Optimization	Load Balancing in Cloud Through Multi Objective Optimization	Advances in Decision Sciences, Image Processing Security and	2020	ISBN: 978-3-030-24321-0	Yes	Springer Nature Switzerland
15	Dr M Venu Gopalachari	A Mining Framework for Efficient Leakage Detection and Diagnosis in Water Supply	A Mining Framework for Efficient Leakage Detection and Diagnosis in Water Supply System	Lecture Notes in Electrical Engineering	2020	978-981-15-7961-5	Yes	Springer Nature Singapore
16	U Sairam	2020 IEEE International Conference for Innovation in Technology (INOCON)	Interviewee Performance Analyzer Using Facial Emotion Recognition and Speech Fluency Recognition	2020 IEEE International Conference for Innovation in Technology (INOCON)	2020	ISBN: 978-1-7281-9744-9	Yes	IEEE
17	U Sairam	2021 5th International Conference on Trends in Electronics and	A Study on IoT Applications Towards Impact of Loss of Data	2021 5th International Conference on Trends in Electronics and	2020	ISBN:978-1-6654-1571-2	Yes	IEEE
18	Dr. V. Swapna	Evolution of Permafrost: An Impact on The Socio-Economic Conditions	Evolution of Permafrost: An Impact on The Socio-Economic Conditions	International Conference on Advances in Chemical Engineering (AdChE) 2020	2020	Not Available	Yes	Conference

19	Dr Y Srinivasa Reddy		Online Education: Challnges in Rural Areas of India	Proceedings of Virtual International Conference on Emerging Trends in Online Education and Global Challenges on	2020	ISSN: 2455-0620	Yes	International Journal for Innovative Research in Multidisciplinary Field, Special Issue
20	Dr.B. M.Pratima		As-deposited sol-gel made TiO2-SiO2 films as protective coatings for silver	AIP Conference Proceedings	2020	ISSN: 0094-243X (print) 1551-7616 (web)	Yes	AIP Conference Proceedings
21	Dr Y Srinivasa Reddy	Assessment of Water Quality Index and Monitoring of Pollutants by Physico-Chemical Analysis in Water	Assessment of Water Quality Index and Monitoring of Pollutants by Physico-Chemical Analysis in Water Bodies	INTERNATIONAL E-CONFERENCE ON MATERIALS PROCESSING &	2020	ISBN: 978-81-946476-9-0	Yes	VANDANA PUBLICATIONS
22	Dr Y Srinivasa Reddy	Recent Advances in the Fabrication of ZnO Based Nanostructures for Opto-Electronic Devices	Recent Advances in the Fabrication of ZnO Based Nanostructures for Opto-Electronic Devices	INTERNATIONAL E-CONFERENCE ON MATERIALS PROCESSING &	2020	ISBN: 978-81-946476-9-0	Yes	VANDANA PUBLICATIONS
23	Dr Y Srinivasa Reddy	Synthesis and thermal expansion of Yttrium doped Ceria based nanomaterials for SOFC	Synthesis and thermal expansion of Yttrium doped Ceria based nanomaterials for SOFC	INTERNATIONAL E-CONFERENCE ON MATERIALS PROCESSING &	2020	ISBN: 978-81-946476-9-0	Yes	VANDANA PUBLICATIONS

24	Dr.K.RAMESH		Effect of Poly Ethylene Glycols for the Conversion of Organic Acids to β Nitrostyrenes	International e-Conference on Materials Processing & Characterizatio	2020	978-81-946476-9-0	Yes	Vandana Publications, India
25	Dr.D.Saritha	NA	Structurally connected Vanadates and Molybdates as Electrode materials		2020	9.786E+12	Yes	Lambert Academic Publishing
26	Dr.D.Saritha	NA	Insertion Type electrodes for Li-ion Batteries	International e-Conference on Materials Processing & Characterizatio	2020	978-81-946476-9-0	Yes	Vandana Publications, India
27	Dr.G.V.Ramesh	2D Layered Structure of Bismuth Oxyhalides for Advanced	Adapting 2D Nanomaterials for Advanced Applications	American Chemical Society	2020	eISSN: 1947-5918, ISSN: 0097-6156	Yes	American Chemical Society (ACS)
28	Dr.N.Mahender Reddy,Dr.G.V.Ramesh	Functional Materials Processing for Switchable Device Modulation	Recent advances in functional materials: Bioelectronics-integrated biosensor applications	Woodhead Publishing Series in Electronic and Optical Materials	2020	ISBN: 9780128242339, 9780128239728	Yes	Elsevier
29	P. Kiran	Advances in Sustainability Science and Technology b	Rayleigh-Benard Convection in the Presence of Synchronous and Asynchronous Thermal Rigid	Proceedings of Fourth International Conference on Inventive Material	2020	ISBN978-981-16-4321-7	Yes	Springer
30	P. Kiran	Advances in Sustainability Science and Technology	Nonlinear thermal instability of couple-stress fluids in porous media under thermal modulation.	Proceedings of Fourth International Conference on Inventive Material	2020	DOI: 10.1007/978-981-16-4321-7_31	Yes	Springer

31	P. Kiran	AIP conf proceedings	The time periodic solutal effect on oscillatory convection in an	Advances in applicable mathematics	2020	0094-243X	Yes	AIP Conference Proceedings
32	B Lavanya	Post Pandemic Economy-Challenges & Solutions,	Work Life Balance during the COVID-19 Pandemic-An Empirical Study	Book chapter	2020	978-93-88808-96-5	Yes	Paramount Publishing House, 1st Ed (2020), pp:187-192
33	Mandakini Paruthi	Examining the Roles of IT And Social Media in Democratic Development and Social Change	Young Citizen's Political Engagement in India: Social Media Use by Political Parties	BookChapter	2020	9.782E+12	Yes	IGI Global
34	Sujanavan Tiruvayipati, Dr.Y.Ramadevi	Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing	Data Engineering and Communication Technology	International	2020	ISBN: 978-981-15-1097-7	Yes	Springer
35	T. Sujanavan, Dr.Y.Ramadevi	Viability of uncomplicated IoT SaaS Development for Deployment of DIY applications over HTTP with Zero Investment	International Virtual Conference on Emerging Trends in Engineering and Technology (ICETE)	International	2020	ISBN 978-3-030-24321-0	Yes	Springer

36	Dr.Y.Ramadevi	Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment, Advances in	International Conference on Emerging Trends in Engineering (ICETE)	International	2019	ISBN978-3-030-24321-0	Yes	Springer
37	Supriya, Dr R. Ravinder Reddy, Dr.Y Ramadevi	A Survey on Emotion's Recognition Using Internet of Things	First International Conference on Artificial Intelligence and Cognitive Computing	International	2019	ISBN978-981-13-1579-4	Yes	Springer
38	Dr.T.Sridevi	Voiceprint-Based Biometric Template Identifications	The Biometric Computing: Recognition and Registration	International	2019	ISBN 10: 0815393644,ISBN 13:9780815	Yes	Chapter
39	K.Sagar, C. Satapathy	A Proficient and Smart Electricity Billing Management	Springer Nature Switzerland AG 2020S : ICETE	International	2019	978-3-030-24321-0	Yes	Springer
40	Dr. S ChinnaRamu	Network Security: Perspectives and Challenges	Network Security: Perspectives and Challenges	National	2019	ISBN: 978-81-938565-7-4	Yes	Archers & Elevators Publishing House
41	Dr.T.Sridevi	Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural	Artificial Intelligence Techniques for Satellite Image Analysis	International	2019	ISBN978-3-030-24177-3	Yes	Springer

42	S. Ramana, N Bhaskar, M. V. Ramana Murthy, and S. China Ramu	Mobile Commerce using ECC and MQTT Protocol	International Conference on Innovative Applied Energy, IAPE-19, Oxford United Kingdom	International	2019	ISBN: 978-1-912532-05-6	Yes	Oxford United Kingdom
43	G. Kavita, Ch.VijayaLakshmimi ,D.Avanthika Shree ,Kavya Thati	Advances in Information Technology and Computing National Conference	Detecting fraud in cyber banking using feature selection and genetic algorithm	National	2019	(ISSN-2349-5162)	Yes	JETIR
44	Spandana K., Pabboju S	ICICCT	Applications of IoT for Soil Quality. In: Gunjan	International	2019	ISBN978-981-13-8460-8	Yes	Springer
45	Dr K. Jagannadha Rao	NA	Use of recycled concrete aggregate in self compacting concrete: A need for sustainable development	International Conference on "Advanced Trends in Mechanical and Aerospace Engineering"	2019	ISBN: 978-0-7354-4059-3	Yes	Dayananda sagar University
46	Dr K. Jagannadha Rao	NA	An Analytical Approach on Effective Selection of Sustainable Materials in Construction Industry by	9th IconSWM-CE (9th International Conference on Sustainable Waste Management	2019	ISBN 978-981-15-3361-7	Yes	KL univeristy publciation

47	Dr K Praveen	NA	Behaviour of Recycled Aggregate based Steel Fiber Reinforced Self-Compacting Concrete Under	National Conference on Advances in Sustainable Construction Materials	2019	ISBN 978-981-15-3361-7	Yes	KL univeristy publciation
48	Dr N R Dakshina Murthy	NA	Optimization of Processed Recycled Aggregate based Self Consolidated Concrete	National Conference on Advances in Sustainable Construction Materials	2019	ISBN 978-981-15-3361-7	Yes	KL univeristy publciation
49	Dr M Koti Reddy	NA	Flexural and Shear behavior of high strength pond ash concrete	National Conference on Recent advancement in civil	2019	ISBN: 978-93-5346-032-7	Yes	ACS College of engineering
50	N Venkatapha nendra Babu	-	Optimal Identification and selection of Phasor Measurement Units-A Methodology	International Conference on Power Systems (ICPS)	2019	978-1-7281-4103-9	Yes	IEEE
51	N. VasanthaG owri	Smart innovations system technologies	Analysis of partial discharge due to copper spherical particle in power transformer under	Intelligent Manufacturing and Energy Sustainability (ICIMES	2019	978-981-15-1616-0	Yes	Springer
52	N.V.Phane ndraBabu	NA	Optimal Combined Over current and Distance Relays Coordination using	Advances in Intelligent Systems and Computing	2019	978-1-5386-4318-1	Yes	IEEE
53	P.V.Prasad	NA	Power quality enhancement using particle swarm optimization based shunt active power	Advances in Electrical and Computer Technologies (ICAECT	2019	978-981-15-1616-0	Yes	Springer

54	G Suresh Babu,	Lecture Notes in Networks and Systems	A Novel tehnique to observe the performance of virtual solar PV module system	Innovations in Electrical &Electronics Engineering (ICIEEE-2019)	2019	978-981-13-3765-9	Yes	Springer
55	Nagadevi Darapureddy	Significance of festivals and understanding Cultural heritage	Significance of festivals and understanding Cultural heritage	Indian Culture	2020	—	Yes	Akhand Publishing House
56	M Rajendra Prasad, D Krishna Reddy	An Experimental System Level Performance Analysis of Embedded Systems for GSM	An Experimental System Level Performance Analysis of Embedded Systems for GSM Application	URSI 2019	2019	978-3-030-24317-3	Yes	Springer, Cham
57	K Sudershan Reddy, MdKhajaRahmatullah, SameehaFahmeen, Quddusa Sultana and D. Krishna Reddy	Comparative Analysis of Serial and Parallel Satellite Positioning Algorithms for GPS and NavIC	Comparative Analysis of Serial and Parallel Satellite Positioning Algorithms for GPS and NavIC	ICDSMLA 2019	2019	978-981-15-1419-7	Yes	Springer Journal

58	Naga SaiRavaliChalla, Padmapriya Kesari, Supraja Reddy Ammana, SatyanarayanaKatukojwala, DatiatreyaSarmaAchanta,	"Design and Implementation of Bluetooth-Beacon Based Indoor Positioning System"	5th IEEE International WIE conference on Electrical and Computer Engineering (WIECON-ECE),	NA	2019	978-1-7281-4499-3	Yes	IEEE
59	T.Aravinda Babu, K.Deergha Rao	NA	“Performance analysis of QC-LDPC &Polar codes for eMBB in 5G Systems”,	6th IEEE International conference on Electrical, Electronics& Computer	2019	978-1-5386-7595-3	Yes	IEEE
60	J Rajeshwar Goud, N V Koteswara Raoand A Mallikarjuna Prasad	"Inset fed Triple Band U- Slot Antenna for GSM900/GSM1900/WLAN Applications"	Accepted for presentation in International Conference on Communications, Signal Processing and VLSI (IC2SV2019)	NA	2019	2249-8958	Yes	Blue Eyes Intelligence Engineering & Sciences

61	Sana Fathima, Sudarshan Reddy Kotla, SameehaFahmeen, Quddusa Sultana and D Krishna Reddy	"Estimation and Analysis of Instrumental Biases for GPS and NavIC Satellites and Receivers"	6th International Conference on Advances in Computer Science, Engineering and Technology 2019 (ICACSET 2019)	NA	2019	2278-3091	Yes	IJATCSE
62	Sudarshan Reddy Kotla, SameehaFahmeen, Quddusa Sultana and D Krishna Reddy	"Augmentation of NavIC with GPS Over Indian Region"	6th International Conference on Advances in Computer Science, Engineering and Technology 2019 (ICACSET 2019)	NA	2019	2278-3091	Yes	IJATCSE

63	P. Naveen Kumar, R. P. Naraiah, KSRS. Jyothsna, T. S. N. Murthy and A. D. Sarma,	Satellite System	"Preliminary Performance Analysis of IRNSS in Sea Environment"	NA	2019	NA	Yes	DOC player
64	N Dhana Lakshmi, Dr. M SatyaSai Ram	ICSCT-2019	"Configuring Artificial Neural Network by using Optimization Techniques to Recognize Speaker	NA	2019	NA	Yes	indersceince
65	K Lakshmanna, N. Alivelu Manga and A.D Sarma	National Space Science Symposium (NSSS)	"Forecasting of Ionospheric Scintillations by using Statistical Models"	NA	2019	NA	Yes	ISRO
66	Devadasku na, N. Santhosh, P. Naveen Kumar and A.D. Sarma	National Space Science Symposium (NSSS)	"Comparative Performance Analysis of Galileo and NavIC at a Low Latitude Station	NA	2019	NA	Yes	ISRO

18

Significance of festivals and understanding Cultural heritage

Nagadevi Darapureddy

Abstract

Festivals are impalpable cultural assets maintaining the past and passing them to the future generations. Festivals are eloquent to indicate culture, traditions, and heritage. Festivals are celebrated irrespective of caste and religion in the country. It creates relations and a strong bond in humanity. It builds social relations and social communication which leads to unity among the people. The present generation will come to know about our customs and old-age practices during these celebrations. Various festivals have religious inchoation and entwine cultural and religious paramountcy in traditional activities. Festivals can accommodate tourism advantages such as increased visitation and development of a destination's image. Communities experience arrange of benefits from festivals. These benefits include building social cohesion, providing a specific time and place for families and friends to show their commitments to the area, and to provide a socially acceptable area for publications. The main aim of this article is to represent the significance of festivals, the main festival which is celebrated grandly in every state

Proceedings of the Fourth International Conference on Microelectronics, Computing and Communication Systems pp 799–813

Diabetes Diagnosis Prediction Using Ensemble Approach

Kavita Agrawal ✉, G. Bhargav & E. Spandana

Conference paper | First Online: 20 September 2020

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 673)

Abstract

Diabetes is considered as one of the most dangerous diseases in the world. It may also aid in causing heart attacks, blindness, etc. So, instead of taking medication for a long time after it has occurred, it is better if we can predict its occurrence at an early stage so as to prevent it. In this paper, we have used an ensemble approach using multiple classifiers to predict the result. We have trained the dataset using a number of classifiers. The dataset used in this paper is based on the parameters that are likely to cause diabetes in India. We got accuracies of each model

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Online ISBN	eBook Packages
978-981-15-5546-6	Engineering Engineering (R0)

Security tool for IOT and Image compression techniques

[illegible]

Security tool for IOT and IMAGE compression techniques

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Abstract

A new era of computation has began with wide spread because of its ease of use and advantages in human kind that is IoT(Internet of Things). IoT is used in many applications like greenhouse, telemedicine monitoring, smart farming etc.

Construction of IoT systems requires a perfect infrastructure planning. Moreover, management and security of these systems are considered to be the most primary and vital challenges by system developers.

IoT is the interconnection of electronic devices and software. The devices which are connected in the network will have different sensors which are used for data collection. Each sensor will monitor a specific condition such as location, vibration, motion, temperature and visual data. Sensors of a device communicate over an IP Network with other devices. IoT-enabled devices will share information about their conditions with software systems, and other machines. This information can be shared in real time or they can be collected and shared at desired intervals. Due to IoT enabled devices, everything will have a digital identity and connectivity, which means that, one can identify, track and communicate with the devices.

Machine-to-Machine (M2M) communication is drawn from the IOT-enabled devices in the network to allow business to automate certain basic tasks without depending on central or cloud-based applications and servic - The number of devices, or nodes, that are connected in the network are bulk in IoT than in traditional systems.

This paper presents the Security solutions for overcoming the challenges faced in storage and transmission of big data images through compression which are used for IoT networks through a lightweight protocol called as MQTT (Message Queuing Telemetry Transport) protocol.

KEYWORDS : Compression , Big Data, Images, Internet of Things (IoT), Machine-to-Machine Communication, MQTT

Interactive Learning in Mixed Reality

XVI International Conference on Recent Trends in Engineering, Applied Science and Management
Osmania University Centre for International Program, Hyderabad (India) TEAM-18
19th May 2018 www.conferenceworld.in ISBN: 978-93-87793-26-2

Interactive Learning in Mixed Reality (May 2018)

Alekhya Lingutla[1], Mohammed Aijaaz[2], Isha Padhy[3]

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ABSTRACT

Mixed reality is the result of blending the physical world with the digital world. It is the next evolution in human, computer, and environmental interaction and unlocks possibilities that before now were restricted to our imaginations. It is made possible by advancements in computer vision, graphical processing power, display technology, and input systems. Microsoft HoloLens is the first self-contained, holographic computer, enabling to engage with the digital content and interact with holograms in the world. Specialized components—like multiple sensors, advanced optics, and a custom holographic processing unit—enable us to go beyond the screen. We present a method of utilizing the HoloLens for advanced learning in Mixed Reality. One methodology of achieving this goal is, when a user is reading a book while wearing the HoloLens, if the user comes across a word which he/she has no idea about, then the user taps on the word using a tapping gesture, this will be recognized by the HoloLens. It then uses Optical Character Recognition (OCR) tools to recognize the word. The next step is to use the word and look up using Google search APIs to get relevant results. The most relevant result will be chosen and is prepared to be rendered as a hologram. The user can interact with the hologram to understand more about it, to have a look from all angles etc.

Keywords:*Annotations, HoloLens, Mixed Reality, Optical Character Recognition, User interfaces*

1. INTRODUCTION

The purpose of this project is to understand and make use of the HoloLens' sensual and natural interface commands, interface with them and connect them to make learning interactive. The entire system is categorized under Mixed Reality [1], implying that the application is superimposed onto the real world. The underlying idea behind the project is to interface with a standalone wearable system, and to develop an application for the HoloLens, using Unity and Visual Studio. The main contribution would be to detail how an application for the HoloLens can be built with the use of available resources.

1.1. Problem Definition

The problem definition is as follows, Interactive Learning in Mixed Reality is to make learning interactive by leveraging the Microsoft HoloLens[2]. Interactivity is achieved by letting the user of the application

Concatenated Global Average Pooled Deep Convolutional Embedded Clustering

ICDSMLA 2019 pp 778–786

Concatenated Global Average Pooled Deep Convolutional Embedded Clustering

Morarjee Kolla & T. Venugopal

Conference paper | First Online: 19 May 2020

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 601)

Abstract

Deep Clustering learns cluster friendly salient features in embedded space. In our previous work of Global Average Pooled Deep Convolutional Embedded Clustering (GAPDCEC) algorithm, the last convolution layer feature maps are pooled to build the embedded space. This considers only spatial information retains in the last convolution layer of the encoder, which unable to capture discriminative features from entire convolutional layers. To address this issue, we propose a solution using concatenation of all convolutional layer outputs and then Global Average

Assoc. Prof. Vinit Kumar Gunjan

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Applications of iot for soil quality

International Conference on Intelligent Computing and Communication Technologies

ICICCT 2019: **ICICCT 2019 – System Reliability, Quality Control, Safety, Maintenance and Management** pp 277–286

Applications of IoT for Soil Quality

K. Spandana & Suresh Pabboju

Conference paper | First Online: 28 June 2019

1091 Accesses | **4** Citations

Abstract

The farming industry has become more important than ever before in the next few decades. Farmers and agricultural companies are turning to the Internet of Things (IoT) to meet demand. Since we need to continuously take measures manually it requires large amount of time. So using this Smart Agriculture we can effectively take the measurements in less amount of time. In this Smart Agriculture sensors can provide continuous measurements with respect to climate changes. Using Internet of things we can produce different ways to cultivate soil. Smart Agriculture and Smart Farming applications will help

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978-981-13-8461-5	Engineering Engineering (R0)

Smart Computing Paradigms: New Progresses and Challenges pp 245–257

Image Filter Selection, Denoising and Enhancement Based on Statistical Attributes of Pixel Array

Vihar Kurama & T. Sridevi

Conference paper | First Online: 01 December 2019

229 Accesses

Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 766)

Abstract

The choice of image filters in computer vision has a significant effect on the image reconstruction and feature extraction. Currently, the most filters are used to enhance images for human consumptions, programmed operations and to reduce the noise, frequency levels in the image. Though it is hard to select an optimal set of filters for a given series of images, in this work, we propose to choose the best assortment of different filters for a given image as the input. By generating the pixel array of the input image, we compute all the image attributes such as

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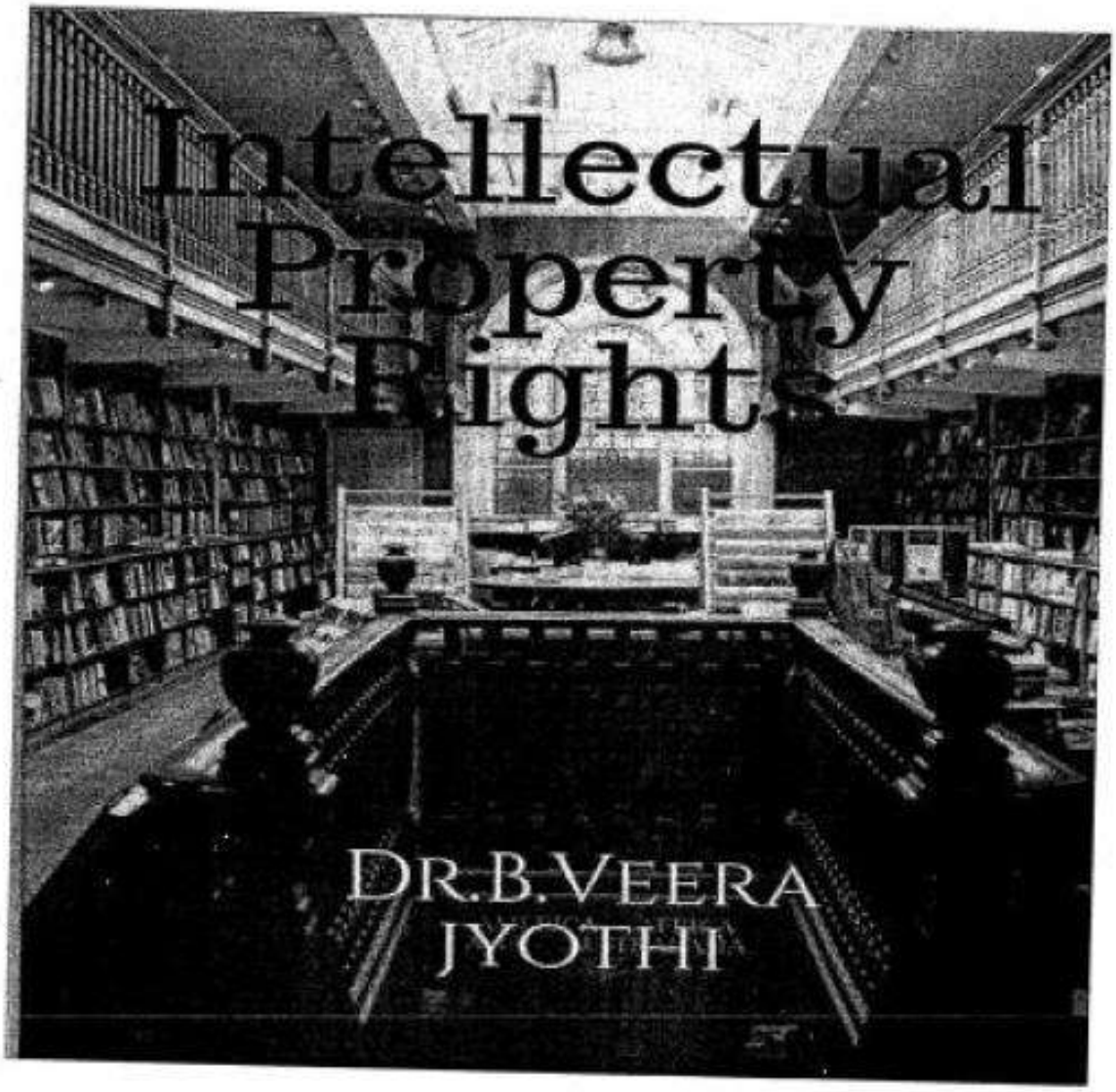
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Production And Operation Management

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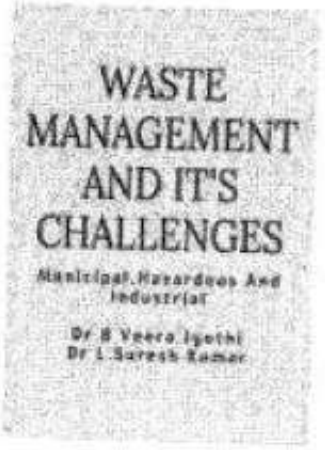
by Dr. L. Suresh Kumar (Author) Dr. B. Veera Jyothi (Author)

Paperback

10 Days Replacement Only

This book discusses about product design and product planning



Waste management and its challenges

municipal, hazardous, industrial

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214 OriginalPaper | Chapter

Phishing URL Detection Using Machine Learning Techniques

Authors: A. Sirisha, V. Nihitha, B. Deepika

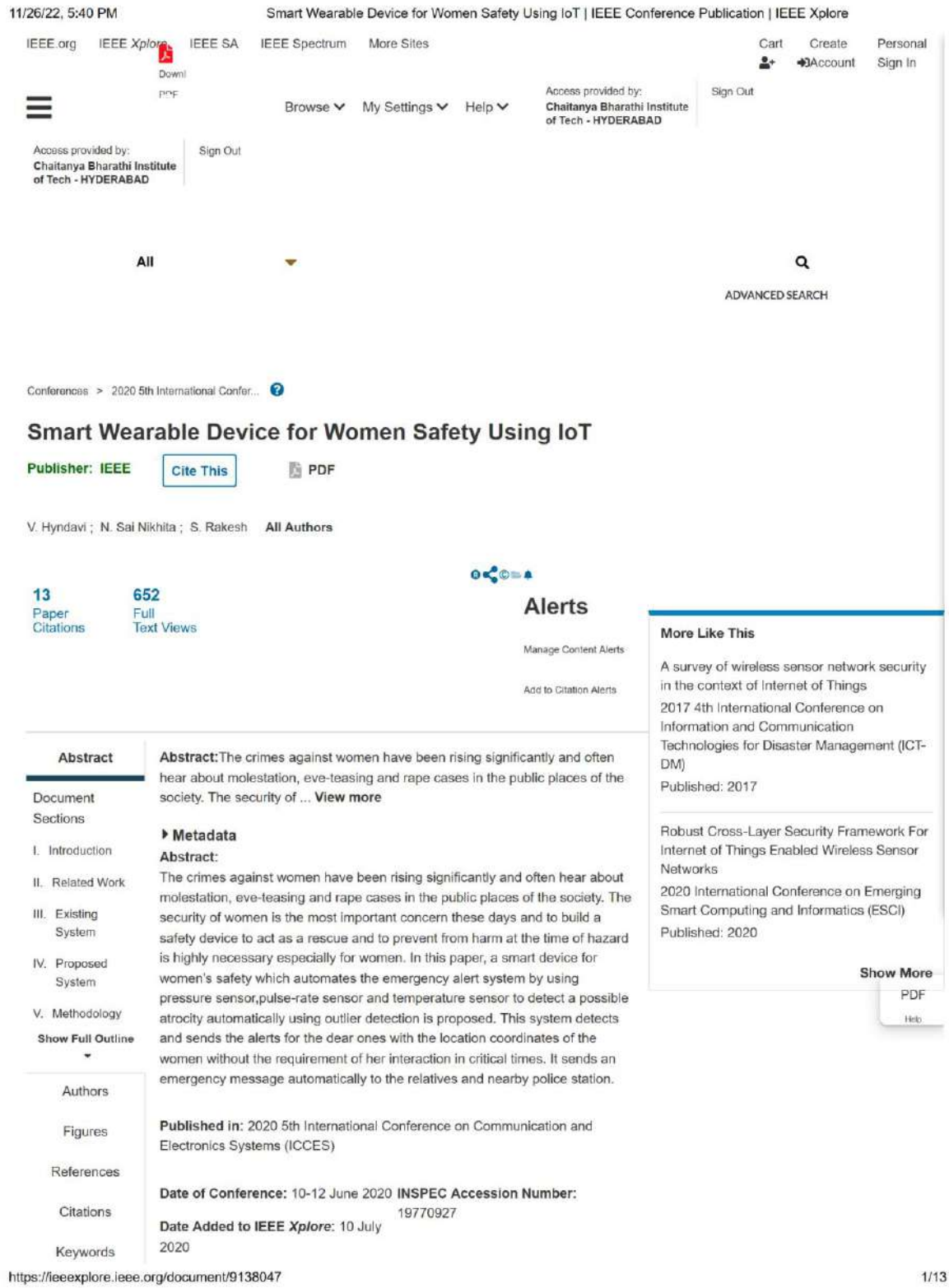
Publisher: Springer Singapore

Published in: ICCCE 2020

Abstract

A criminal act performed online by impersonating others to obtain confidential data like passwords, banking details, login credentials, etc., is known as phishing. Detecting such websites in real-time, is a complex and dynamic problem, which involves too many factors. This work focuses on identifying the important features that distinguish between phishing URLs and legitimate URLs. To detect significant features, statistical analysis is done on the phishing as well as legitimate datasets. Based on the statistical exploration, certain features based on the URL, HTML, JavaScript and Domain were extracted. The prominent and most relevant features to identify the phishing URLs are identified using correlation. The identified subsets of features are then used to train different machine learning based classifiers and the accuracies obtained have been compared. From the experimental analysis it is observed that the extracted features have efficiently detected phishing URLs and the Decision Tree classifier has found with highest accuracy for making the predictions.

Smart Wearable Device for Women Safety using IoT



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Contents

SECTION I.
Introduction

Women are the most integral part of any economy primarily responsible to shape the future of the country. Many crimes against them are not being reported because of society's hypocritic point of view. Various types of humiliations and mistreatment are being faced by the victims who try to report their as saults from society. Only one of four cases lead to conviction trails in India.

Proper precautions should be taken to to build the best solution to this problem This paper proposes an IoT based smart wearable for the safety of women. The device is used to automatically detect such situations and inform the related persons. It not only helps women escape critical situations but also ensures to provide justice to the women by helping them in times of need.

SECTION II.
Related Work

The research of S. A. More [1] discusses using temperature sensors and pulse rate sensors to automatically detect a chance of a possible situation and notify family and friends using a mobile application. [2] discusses the usage of image processing to detect any possibility of danger and proposes various solutions to protect herself. In [3] the authors developed a device which employed PIC16F876A microcontroller and a SIM808 module, which has GPS, GSM and GPRS support which are used to notify the friends and family when the emergency button is pressed. In [4] a system based on the facial features is developed. If the facial expression is a threat-based expression then a report is filed. About [5], GSM and GPS are used to build a safe device. In this system, the message is sent to pre-stored mobile numbers which consist of the body posture of the victim along with her location. In [6] independent triggering of android application and arm device takes place with the help of synchronized Bluetooth connection. The audio and video that have been recorded are sent to the phone numbers which are pre-set in the application along with the location in the form of a call and also a message to alert them In [7], an android app is developed which

CBIR using SIFT with LoG, DoG and PCA

Data Engineering and Communication Technology pp 623–637

CBIR using SIFT with LoG, DoG and PCA

Katta Sugamya, Pabboju Suresh, A. Vinaya Babu & Rakshitha Akhila

Conference paper | First Online: 09 January 2020

668 Accesses

Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 1079)

Abstract

Content based image retrieval using scale invariant feature remodel (SIFT) is employed to discover stable keypoint locations within the scale-space. The extraction of image options can be done by exploiting SIFT or K-means cluster. In the proposed work we can find feature extraction and locating scale-space extrema through SIFT-DoG & SIFT-LoG ways. Finally, planned ways, SIFT-DoG, SIFT-LoG, and PCA are compared.

Keywords

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Load Balancing in Cloud Through Multi Objective Optimization

Advances in Decision Sciences, Image Processing, Security and Computer Vision pp 293–300

Load Balancing in Cloud Through Multi Objective Optimization

S. Jyothsna & K. Radhika

Conference paper | First Online: 13 July 2019

Part of the Learning and Analytics in Intelligent Systems book series (LAIS,volume 3)

Abstract

The Scheduling and Load balancing in cloud is considered as NP complete problem where the tasks are assigned to the cloud are dynamic in nature so the heuristic approach can be followed to find the solution. Load balancing directly affects the reliability, response time, through put and energy efficiency of a server. The optimized solution for load balancing should consider various objectives like minimizing energy consumption and minimum execution time so that reduced cost. Balancing the load across cloud servers is possible through virtual machine (VM)

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ICCCE 2020 pp 1093–1103

A Mining Framework for Efficient Leakage Detection and Diagnosis in Water Supply System

P. Vasanth Sena ✉, Sammulal Porika & M. Venu Gopalachari

Conference paper | First Online: 12 October 2020

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 698)

Abstract

A smart city smart meter water grid have to be reliable and capable to safeguarding the 24 * 7 trustworthy water distribution network that guarantees less wastage by leakages in the pipeline. Distributors and Consumers are turning to the Internet of Things and deep learning to meet requirement. Continuously monitoring the system and taking requirements manually is tedious job. Smart nodes with hall sensors provide continuous measurements and warehoused in database captured

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Interviewee Performance Analyzer Using Facial Emotion Recognition and Speech Fluency Recognition

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***Abstract*—Analysis of the performance of an interviewee is a complex and challenging task. Our proposed system automates this process by building two multiclass classification models. Video captured during an interview is given to the proposed system which extracts frames and Audio from it. Frames are given to the first model which is a facial emotion recognition model it uses HaarCascade classifier, Gabor filters, and Convolution Neural Network for classification of facial emotion as one of these seven emotions like Happy, surprise, angry, disgust, neutral, fear, sadness. Audio is given to the second model which uses Mel frequency cepstral coefficient features and logistic regression for speech classification as four classes Fluent, Stuttering, Cluttering, and Pauses. Predictions of these two models can be combined to give a performance rating for the interviewee. Compared to only CNN based and Deep Neural Network based facial emotion recognition, the Gabor Filter based approach which we have used gave better accuracy with a smaller number of hidden layers and less training time.**

***Keywords*—Gabor Filters, Convolution Neural Networks, Deep Neural Networks, Logistic Regression, HaarCascade Classifier, Mel Frequency Cepstral Coefficients**

I. INTRODUCTION

The traditional way of interviewing candidates is a costly, time taking process and leads to interviewer biases. The interviewer needs to investigate the facial emotions, fluency, gestures, etc. Using an automated system for the process of interviewing candidates doesn't lead to any kind of biases. Even after the candidate is selected for a role, we can still access the candidate performance while he/she is interacting with customers, clients, and teams. Facial emotion recognition is used in different applications like analyzing the performance of a candidate in an interview, drowsiness detection in cars which is used for safe driving, apathy detection, customer reviews link analyzing the emotional state of a person while playing a newly developed video game.

There are different approaches for performing facial emotion recognition but the approach which we are using in this research gives very good accuracy compared to existing techniques because we are using Gabor filters and CNN based approach which is very efficient in performing emotion recognition by training model in very less time which even requires very few hidden layers.

We aim to develop an automated system that can analyse performance of an interviewee. Facial emotion recognition alone is not sufficient for this task along with it we need to perform speech fluency recognition, which tells whether the speech is fluent, Stuttering, Cluttering, has pauses, etc. Speech fluency recognition is performed by extracting a kind of features called as MFCC features, after extracting these MFCC features classifications of speech can be done using one of the algorithms like logistic regression, support vector machine, MLP networks.

II. LITERATURE SURVEY

We have referred several research papers for Facial Emotion Recognition but out of all the techniques involved in Facial Emotion Recognition and Speech Fluency Recognition only Gabor filter-based Techniques [6], MFCC based Audio Classification [3] [8] gave good accuracy. Gabor filters are used in image processing techniques and are used for texture analysis and edge detection [4]. Gabor filters can be used in face recognition, emotion recognition which results in good accuracy compared to other techniques in face detection and discovered that it has various applications and can also used in image recognition [1],[6]. Speech Signal Can be classified by Artificial Neural Networks, Logistic Regression, Support Vector Machine [9]. We have found that Human emotion recognition is used in various domains like job interviews, education, Market Research, Medicine [10]. Facial emotion recognition using CNN [2] is got at recognizing emotions accurately compared to Gabor Filter based technique. MFCC features can be used for classification of music into three classes Rock, Pop, Classic [3], so it can also be used for speech fluency recognition. PyAudio library can be used to extract MFCC features easily and these features can be used for Classification of speech using Classification Algorithms [2].

III. DATASETS

The datasets used for Facial Emotion Recognition are FER2013 dataset and ck+ dataset. FER2013 dataset contains nearly 35800 images, it is distributed as 4953 images- anger, 547 images- disgust, 5121 images- fear, 8989 images- happy, 6077 images- sad, 4002 images- surprise and 6198 images- neutral. ck+ dataset contains around 700 images and it is distributed as 100 images for each emotion type. 80% of images from each dataset are used for training and the remaining 20% of images are used for testing the Facial Emotion Recognition model.

For Speech fluency recognition we have collected fluent speech data from 2 datasets Speech Accent Archive,

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A Study on IoT Applications Towards Impact of Loss of Data

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Abstract-- In IoT environment, the data will be collected from multiple sensors and then it is processed by using data processing workflows and transform these data as per the requirements of the application. New ways should be devised to handle the continuation of data that is to be delivered to applications without having the applications wait for the sensor to recover throughout the data transformation process if one of the sensors is unable to create data due to an environmental / technical problem. This is the way to minimize the time gap of retrieving the loss data from sensor. It's like in networks if a packet is lost in internet, the destination system asks for the retransmission of packet, which consumes more time. Instead of that, a mechanism should be devised to handle the lost data from sensors. In this perspective, the proposed research work discusses about some applications of IoT and also the impact of data loss.

Keywords: Linear Discriminant Analysis [LDA], multi sensor structure, data fusion, Internet of Things [IoT], real-time traffic monitoring, GPS navigation system, hybrid systems.

I. INTRODUCTION

IoT is a platform, where it contains the global network with connected devices, which can collect data and share the information to be used by the applications. A formal definition of Internet of Things (IoT) is a growing network of physical objects and devices, called "Things," as well as individuals. IoT enables many sensors to interconnect with each other for transmitting the data without human intervention, due to which it influencing the nations by various applications like smart cities, smart meter, smart home, healthcare monitoring systems, intelligent cars, smart manufacturing plant, and real-time traffic monitoring, air quality detection in environment, forecasting applications etc. [1] Every one of the above applications have a unique thing to achieve, based on the domain application need sensors are deployed and they are called as sensing applications mentioned in figure 1 which have the ability of sensing the devices that are associated with the sensors to monitor by capturing the data.

we can have many IoT home automation benefits like control on smart energy management, controlling remote home appliances, even in the areas like agriculture we can do live stock monitoring and higher crop quality and better yields in the case of smart cities we can enhance the energy efficiency, traffic management and elimination of crime.

Figure 1: IoT Applications in different fields

Rest of the paper is organized as follows In section 2 related work proposed by different authors and in section 3 loss of data in some applications are discussed, where loss of data is not an issue for GPS navigation system on the other hand health care systems in medical field the loss of data matters and we have shown with a simple case study of regression analysis to predict home ownership based on age and educational background and Pima Indians Diabetes Dataset analysis in section 4, In section 5 conclusion.

The main Objective of these paper is to emphasize how missing data leads to different problems in data analysis and the motivation is to describe the problems with missing data and how if we have multiple sources to collect same type of data gives a better performance.

II. RELATED WORK

Sensor Management for IOT in Smart Home discussed by Prafulla Kumar Choubey [8] proposed an idea of how to do sensor management and reduce the power and bandwidth is given good accuracy. The methodology described here is when They introduced an architecture on small scale and found that output of some sensors can be predicted from the other sensors because instead of keeping all the sensors active if we able to find the dependency between physical factors. Also, this model provides fault tolerance to certain degree as the value of faulty sensor can be predicted until it is replaced and decision can be taken based on that.

Evolution of Permafrost: An Impact on The Socio-Economic Conditions

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Date Written: February 7, 2020

Abstract

In the present technological era, climate change has become the word of the hour. Since 1970, Climate Change has been in discussion and that its adverse effects should be reduced by 2100. But these climate change effects have been observed and felt predominantly since the past 10 years. One such effect is the thawing of permafrost. Permafrost, being an integral component provides stability to the land around the Arctic regions. But, due to thawing of 2,000-43,000 years old permafrost structures around Alaska and Siberia, has resulted in instability triggering in loss of millions of dollars. Due to the unstable nature there has been a historic, economic and cultural revolution in the regions present around the arctic. The permafrost has also been considered as the last remnants of the Ice age and is also a prominent source of the Paleontological remains. Permafrost depletion is a dynamic effect which results in a misnomer to regular people. Due to such changes in permafrost, nature of water, ecosystems and also communities living on the permafrost land will be primarily affected. Therefore, this resulted in release of greenhouse gases and also

Evolution of Permafrost: An Impact on The Socio-Economic Conditions

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Abstract:

In the present technological era, climate change has become the word of the hour. Since 1970, Climate Change has been in discussion and that its adverse effects should be reduced by 2100. But these climate change effects have been observed and felt predominantly since the past 10 years. One such effect is the thawing of permafrost. Permafrost, being an integral component provides stability to the land around the Arctic regions. But, due to thawing of 2,000-43,000 years old permafrost structures around Alaska and Siberia, has resulted in instability triggering in loss of millions of dollars. Due to the unstable nature there has been a historic, economic and cultural revolution in the regions present around the arctic. The permafrost has also been considered as the last remnants of the Ice age and is also a prominent source of the Paleontological remains. Permafrost depletion is a dynamic effect which results in a misnomer to regular people. Due to such changes in permafrost, nature of water, ecosystems and also communities living on the permafrost land will be primarily affected. Therefore, this resulted in release of greenhouse gases and also caused bubbling effect in 72 lakes around Alaska. Thawing of permafrost creates a staggering impact as they contain 1600 billion tons of carbon dioxide and methane stored globally within which 150 billion tons of carbon dioxide and methane is expected to be released by 2100 which is tantamount to the amount of greenhouse gases released by USA alone by the burning of fossil fuels. Acceleration of the adversity of climate change is being observed due to the effects caused by nature and fossil fuels which in turn results in difficulties in sustainability of living beings. Depletion of permafrost also results in land sliding into the sea simultaneously resulting in erosion of 2-5 meters of land per year.

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Online Education: Challenges in Rural Areas of India

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Abstract: *The pandemic COVID-19 has paralyzed the traditional classroom teaching-learning process in India since March 2020. As soon as it is realized that it takes moths to get normalcy in education sector, everyone looked for an alternative, i.e., online classes. Starting from primary schools, high schools, colleges, higher education institutions and universities geared up to meet the needs of the enthusiastic learners. In towns and cities, conduction of online classes is receiving moderately good response. On the other hand, the scenario in rural and remote areas is quite different and needs to be addressed. Most of the rural people are under financial crisis due to loss of their employment or meagre earnings during this period. As the most of the educational institutions started direct online classes, the students need at least medium range smartphones or tabs or laptops. As these gadgets are expensive, the parents are unable to buy them for their children. This has been the main hindrance for online education in rural areas. Further, network connectivity issues also add to their woes*

AIP Conference Proceedings

As-deposited sol-gel made TiO_2-SiO_2 films as protective coatings for silver

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B. Manikya Pratima, K. Uday Kumar, and A. Subrahmanyam

As-deposited sol-gel made TiO_2-SiO_2 films as protective coatings for silver

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Abstract. Silver surface is prone for tarnish when exposed to sulfide and sulfate environments. Present work reports protection of silver surfaces with sol-gel derived mixed oxides of titanium-silicon (TiO_2-SiO_2) thin films prepared at room temperature (300K) by dip coating technique without any post annealing. 0.1M and 0.3M titania and silica individual sols are mixed in fixed volume to prepare 0.1M (TS1) and 0.3M (TS3) titania-silica mixed oxides. The corrosion measurements of the coated and un-coated silver surfaces have been evaluated by conventional electro-chemical measurements; alkaline Na_2S and Na_2SO_4 are the electrolytes. The corrosion rates have been estimated from Tafel plots. The titania-silica protective thin films have shown significant decrease in the corrosion rates: bare silver from 1.06mmpy to protected silver surface 0.07mmpy. Ti-O-Si covalent bonds are revealed in Raman spectra of the mixed oxide films. The present investigation shows that sol-gel derived titania-silica films protect the silver surface from alkaline sulfide and sulfate environment very effectively.

INTRODUCTION

Silver surface tarnishes when exposed to the sulphide[1] in the environment[1,2]. There are several inorganic and organic[3] materials used for the protective coats on silver: polymers, lacquers, Al_2O_3, silica and TiO_2 etc[4–7]. Titania (TiO_2) and silica (SiO_2) thin films, depending on the composition and the degree of homogeneity[3] exhibit unique optical, chemical and mechanical properties[8–12]. The earlier reports[13] on sol-gel titania-silica thin films indicate desired optical and mechanical properties; it is proposed in the present study to employ these titania-silica mixed oxide thin films as protective coatings on silver. Probably, ours is the first report on the use of these mixed thin films of titania and silica as protective coats on the silver surfaces [Indian Patent application number 201841035409 dated 21.09.2018].

The aim of the present work is to evaluate the barrier/protection properties of titania-silica thin films prepared by sol-gel technique (at 300K) on the silver surfaces exposed to sulfide and sulfate environments. Among the various techniques employed to prepare these titania-silica thin films, sol-gel has the advantage of relative ease of process control and the capability of large area coatings even on complex surfaces and is relatively cost-effective[14–18]. In general, the sol-gel derived thin films are subjected to post-deposition treatments, like, annealing at elevated temperatures and extended times to enhance the adherence, optical and mechanical properties[19,20]. There is a vast literature on this sol-gel derived titania-silica thin films; the literature cited is only indicative but not exhaustive. The novelty of the present work is that (i) sol-gel derived titania-silica thin films are used for the first time on silver surfaces and (ii) no post-deposition heat treatment has been conducted on the thin films.

EXPERIMENTAL

The precursors for the TiO_2 and SiO_2 sols are reagent-grade titanium tetraisopropoxide (TTIP) $Ti(OC_3H_7)_4$ (Spectrochem) and tetraethylorthosilicate (TEOS) $Si(OC_2H_5)_4$ (Sigma Aldrich), HCl (Merck) and ethanol (99.99% Merck). Briefly, the individual TiO_2 and SiO_2 sols (500ml) of 0.1M concentration are prepared by adding (with continuous stirring) 14.9ml of TTIP and 11.1ml of TEOS to ethanol respectively.0.3M individual TiO_2 and SiO_2 sols are also prepared in the same way. To prepare the mixed titania-silica sols, the individual sols of TiO_2 and SiO_2 in

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Assessment of Water Quality Index and Monitoring of Pollutants by Physico-Chemical Analysis in Water Bodies

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Assessment of Water Quality Index and Monitoring of Pollutants by Physico-Chemical Analysis in Water Bodies: A Review

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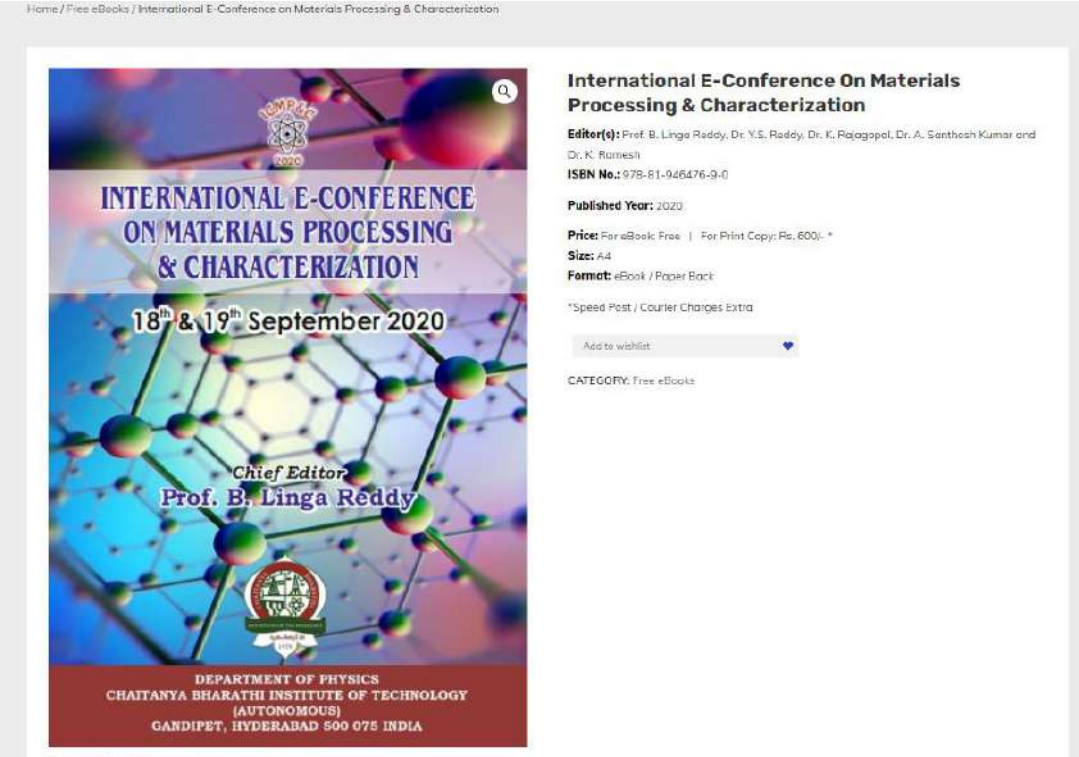
***Abstract*:- Water is said to be polluted when it is changed in its quality or composition directly or indirectly as a result of waste disposal and other human activities so that it becomes less suitable or harmful for drinking, domestic, agricultural, fisheries or other purposes. Water is never pure in a chemical sense. Even in the most unpolluted geographical areas, rainwater contains dissolved carbon dioxide, oxygen and nitrogen and may also carry in suspension dust or other particles picked up from the atmosphere.**

The existence of human society depends on water. The quality of water should be monitor regularly due to its necessary for good human health. If water will be contaminated and frequently used by living being for drinking purposes, then human population suffers from different of water borne diseases. The availability of good quality water is an indispensable feature for preventing diseases and improving quality of life, therefore it is necessary to know details study about different Physico-Chemical parameters such as temperature, Transparency ,hardness, pH, sulphate, chloride, DO, BOD, COD, alkalinity nitrates phosphates used for analysis and testing of water quality. It is necessary to address water quality issues with respect to different water bodies. In addition, since the advent of industrial era, there has been a dramatic increase in the demand for water, commensurate with population growth and improved living standards. In the present study, a review of literature on the quality of natural waters from different parts of Indian sub-continent, in particular, and the globe in general has been discussed briefly.

Keyword: Physico - chemical Parameters, Transparency, Hardness, Human health

INTRODUCTION

Modern civilization is dependent on water for irrigation, industry, domestic needs, shipping, sanitation and disposal of waste. Most of our water bodies such as ponds, lakes, streams and rivers have become polluted as a consequence of increasing industrialization, urbanization and other development activities. Water is said to be polluted when it is changed in its quality or composition directly or indirectly as a result of waste disposal and other human activities so that it becomes less suitable or harmful for drinking, domestic, agricultural, fisheries or other purposes. Temperature, turbidity and total suspended solids in water bodies can be greatly affected by human activities such as agriculture, deforestation and the use of water for cooling. The release of untreated domestic or industrial wastes high in organic matter into water bodies results in a marked decline in oxygen concentration and a rise in ammonia and nitrogen concentrations, downstream of the effluent input.[1] Industrial activities which discharge large organic loads include, pulp and paper production and food processing. Uncontrollable discharge of industrial waste water often causes pollution due to toxic metals. Other sources of metal pollution are leachates from urban solid waste landfills and mining waste dumps. Under certain hydrogeological conditions, unsewered domestic waste can cause severe ground water contamination by pathogenic bacteria, nitrate and other pollutants. Pumping of industrial waste water into ground water has resulted in high nitrate, arsenic and iron content.[2] Many pollutants may also be found in solution form in water. These may be phosphates, fluorides, nitrates and certain metals or may be unnatural materials such as pesticides[3]. Many causes of pollution including sewage and fertilizers, contain nutrients such as nitrates and phosphates. In excess levels, nutrients over stimulate the growth of aquatic plants and algae. Excessive growth of these types of organisms consequently clogs our water ways, use up dissolved oxygen as they decompose, and block light to deeper waters. This in turn proves very harmful to aquatic organisms as it affects the respiration ability of fish and other invertebrates that reside in water.



International E-Conference on Materials Processing & Characterization-2020

Recent Advances in the Fabrication of ZnO Based Nanostructures for Opto-Electronic Devices

Santhosh Kumar A*, G. Nataraju, Y. Srinivasa Reddy and B. Linga Reddy*
Department of Physics, Chaitanya Bharathi Institute of Technology

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Abstract

In recent years, there has been increasing interest in ZnO nanostructures due to their variety of shapes and availability of simple and cost effective processing. While there are still unanswered questions concerning fundamental properties of this material, in particular those related to defects and visible luminescence lines, great progress has been made in synthesis methods and device applications of ZnO nanostructures. In this review, we will provide a brief overview of synthesis methods of ZnO nanostructures, with particular focus on the growth of oriented arrays of nanorods/nanoarrays which are of interest for optoelectronic device applications.

Keywords: ZnO, Nanostructures, Fabrication, Opto-electronics, DSSC

1. Introduction

Semiconducting oxide nanostructures such as ZnO, TiO_2, SnO_2, CuO_2 and so on are the focus of current research efforts in nanotechnology due to their special shapes, compositions, chemical, and physical properties. They have now been widely used in the fabrication of energy saving and harvesting devices such as solar cells [1, 2], Lithium ion batteries, fuel cells, transistors, Light emitting devices (LEDs), hydrogen production by water photolysis and its storage, water and air purification by degradation and adsorption of organic pollutants and toxic gases, environmental monitoring by their applications in the fabrication of gas, humidity and temperature sensors, UV screening, and photodetectors [1-3]. Instead of

Synthesis and thermal expansion of Yttrium doped Ceria based nanomaterials for SOFC

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[2]Department of Physics, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India
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***Email:** pv.pss@kitsw.ac.in

Abstract
A kind of electrolyte materials for intermediate temperature solid oxide fuel cells (IT-SOFCs) were prepared by sol-gel method. Thermal expansion of the yttrium based electrolytes was studied by dilatometry. Thermal expansion measurements on the sintered samples were carried out from room temperature (RT) to 1000^0C. The average linear thermal expansion coefficient range was found to increase with increasing Y. The thermal expansion curves for all values of x displayed rapid increase in slope at high temperatures.
Keywords: Solid Oxide Fuel Cells, Sol-gel, Electrolytes, Thermal Expansion

1. Introduction
The solid oxide fuel cell (SOFC) is an electrochemical device that can be used for either stationary or mobile generation of electrical energy as a clean, reliable and flexible power production [1]. SOFC is regarded as a highly efficient power-generation system with future application. A typical high-temperature SOFC uses 8 mol% Yttria-Stabilized Zirconia (YSZ) as the electrolyte, which is usually operated at temperatures as high as 800^0C–1000^0C.

Effect of Poly Ethylene Glycols for the Conversion of Organic Acids to β –Nitrostyrenes underConventional and Non-Conventional Conditions

International E-Conference on Materials Processing & Characterization-2020

Effect of Poly ethylene glycols for the Conversion of Organic acids to β – nitrostyrenes under conventional and Non-conventional Conditions.

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2 Department of Chemistry, Osmania University, Hyderabad -500001, Telangana (India)
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Abstract

Poly ethylene glycols (PEG-200, 300, 400, 600, 4000 and 6000) supported reactions were conducted with certain α, β-unsaturated acids in presence of metal nitrates under solvent free (solid state) and mineral acid free conditions. The reactants were ground in a mortar with a pestle for about 30 minutes. The aromatic acids underwent nitro decarboxylation and afforded β-nitro styrene derivatives in very good yield while α, β-unsaturated aliphatic carboxylic acids gave corresponding nitro derivatives. Addition of PEG accelerated rate of the reaction enormously. Reaction times substantially decreased from several hours to few minutes followed by highly significant increase in the product yield. Among the several PEGs, PEG-400 has been found to be much more effective than other PEGs.

Keywords: Poly ethylene glycols (PEG); rate accelerations; α, β-unsaturated acids; metal nitrates; solvent free (solid state); β-nitro styrene derivatives; α, β-unsaturated aliphatic

Structurally connected Vanadates and Molybdates as Electrode materials

Saritha D.

Structurally connected Vanadates and Molybdates as Electrode materials

Electrode materials for Li ion batteries

LAP LAMBERT Academic Publishing

This book presents the Electrochemical performance of three structurally related compounds MVMoO7 (M= Fe3+, Cr3+, Al3+) as electrode materials for Li-ion batteries. It is observed that the voltage corresponding to the redox couples V5+/V4+ and Mo6+/Mo5+ are significantly different for AlVMoO7 vis-à-vis the Fe and Cr analogues. This study provides conclusive evidence that the presence of different counter cations in the lattice (trivalent ions in the present case) does affect the energetics of the redox process of the electrochemically active species. FeVMoO7, CrVMoO7 and AlVMoO7 react with 3.5 Li, 2.5 Li and 3.3 Li per formula unit, respectively of which reversible extraction of 2.2 Li, 1.3 Li and 2.6 Li respectively, is possible. The results of cycling studies show that FeVMoO7 and AlVMoO7 phases exhibit a reversible capacity of 160 mAhg-1 and 180 mAhg-1 without any noticeable capacity fading even after 20 cycles. Reversibility of reaction of Li is more facile in AlVMoO7 vis-à-vis the other phases.

I have completed my MSC in Chemistry in 2006 from Andhra University Vizag. I have done my Ph.D. in Material science on SYNTHESIS, CHARACTERIZATION AND STUDIES ON ELECTROCHEMICAL LI INSERTION IN SELECT TRANSITION METAL COMPOUNDS WITH CHANNEL STRUCTURES from Indian Institute of Technology, Madras (IITM). Working as Assistant Professor at CBIT, HYD.

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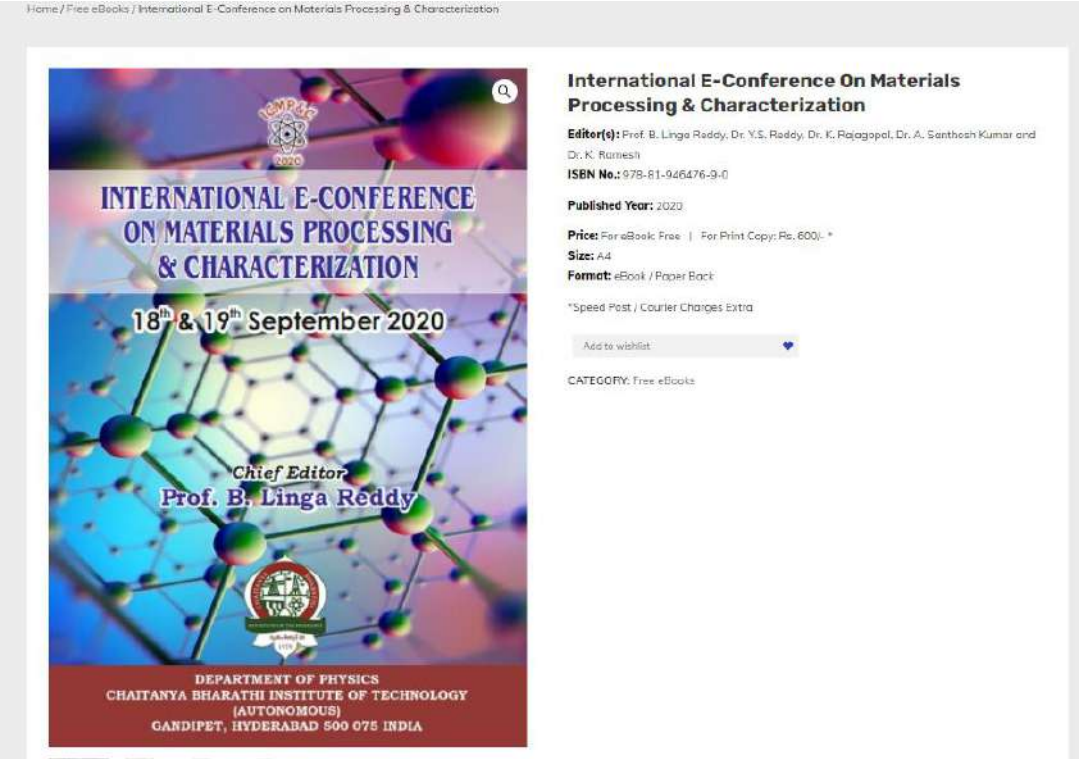
Insertion Type electrodes for Li-ion Batteries



Insertion-Type Electrodes for Li-Ion Batteries

D.Saritha
Department of Chemistry, Chaitanya Bharathi Institute of Technology (A), Hyderabad, Telangana, 500075, India
Corresponding author's email: dsaritha_chm@cbit.ac.in

Abstract

Li-ion battery research enormously spotlight on progression in the fabrication, optimization, and categorization of electrode resources. They became popular as energy storage resources particularly owing to energy and power densities, life span, price and protection. The brisk expansion of electronic devices and electric vehicles stress a great energy density. Consequently, metals, alloys and transition-metal oxides have been employed as anodes for Li-ion batteries. Transition-metal oxide anodes further organized into alloying-category, conversion-category insertion-category materials. The extensive enlightenment on contemporary comprehension of insertion-type resources as anodes for Li- ion batteries will be offered in this paper with few instances.

Keywords: Insertion, electrode, Li-ion battery, anodes

1. Introduction

The research society is currently paying interest on well-organized energy storage approaches intended for the progress of optional energy for the substitution of fossil fuels [1]. Electric vehicles replaced by gasoline driven transport vehicles reduces the release of greenhouse gases. Li-ion batteries take part in a major task owing to their superior energy, power density, extensive cycle existence and small self-discharge [1]. These batteries are employed in several versatile devices as cellular phones, laptops and digital electronics [2]. The enhancement of Li-ion battery energy density can be accomplished by advancing either superior capacity anode and cathode electrode resources. The novel anode materials can be categorized into three chief types supported on their reaction procedure 1) Insertion/de-insertion materials with few instances carboneous materials $Li_4Ti_5O_{12}$ TiO_2 etc; 2)

Chapter Name: 2D Layered Structure of Bismuth Oxyhalides for Advanced Applications. Title: Adapting 2D Nanomaterials for Advanced Applications

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2D Layered Structure of Bismuth Oxyhalides for Advanced Applications

Muvva D. Prasad, Gubbala V. Ramesh, and Sudip K. Batabyal*

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Adapting 2D Nanomaterials for Advanced Applications
Chapter 12, pp 295-315

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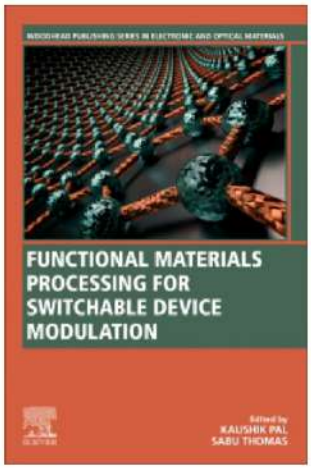
ISBN13: 9780841298927 **eISBN:** 9780841298910

SUBJECTS: Chemical structure, Electrical conductivity, Layers, Sensors, Two dimensional materials

Abstract

Development of two-dimensional (2D) layered nanomaterials of bismuth oxyhalides (BiOCl, BiOBr, and BiOI) has attracted considerable interest due to the renewable energy conversion. A new class of 2D layer semiconductor materials and tunable morphologies enhance the photocatalytic reactions. The dominant {001} facet engineering structures and bandgap controlling can be achieved by changing the stoichiometry ratios of the precursor solution. Synthesis of polymer composite thin films and fabrication methods involve free-standing flexible films, which are used as a dip photocatalyst for degradation of pollutants. 2D nanomaterials and surface-interaction engineering modification with noble metal nanoparticles establish hybrid nanostructures. The hybrid nanostructures enhanced the light absorption property through the plasmonic effect-induced "hot electrons" that improve the conductivity of the materials and are used in photodetector and surface-enhanced Raman scattering applications. The bandgap of the 2D layer nanomaterial was controlled by modulating the thickness and concentration of the precursor element. 2D layer structures of bismuth oxyhalides are a promising avenue for featured diverse technologies and wide applications in electronics, optoelectronics, photodetectors, and photovoltaics.

Book Title: Functional Materials Processing for Switchable Device Modulation. Chapter Title: Recent advances in functional materials: Bioelectronics-integrated biosensor applications Elsevier Ltd, Chapter 12, pp 221-239, 2021



Functional Materials Processing for Switchable Device Modulation

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Recent advances in functional materials: Bioelectronics-integrated biosensor applications

12

Gubbala V. Ramesh[a,*], Ch. G. Chandaluri[b,*], Kiran Kumar Tadi[c], Naveen K. Dandu[d], and N. Mahender Reddy[a]

[a]Department of Chemistry, Chaitanya Bharathi Institute of Technology (A), Hyderabad, Telangana, India, [b]Faculty of Chemistry, Humanities and Sciences Division, Indian Institute of Petroleum and Energy, Visakhapatnam, Andhra Pradesh, India, [c]Centre for Healthcare Advancement, Innovation and Research, Vellore Institute of Technology, Chennai, Tamilnadu, India, [d]Material Science Division, Argonne National Lab, Argonne, IL, United States

12.1 Introduction

Bioelectronics has emerged due to expeditious advances in the fields of nanotechnology, biotechnology, information, and communication technology (ICT) [1]. The term bioelectronics was first proposed in 1968. Back then, the term was defined as the intermolecular electron transfer found in biological systems, although its current meaning is somewhat different [2]. In 2005, Tony Turner defined it as "a recently coined term for a field of research that works to establish a synergy between electronics and biology" [3]. Bioelectronics integrates biomolecules and electronic elements in the development of functional devices; it has been a major research initiative for future practical applications. Ever-expanding technologies allowed small biomolecules, such as proteins and nucleic acids, to use intrinsic electronic features to design and fabricate complex bioelectronics. Understanding the principles of charge transfer inside organic material is exceedingly beneficial in the development of sustainable instruments such as electrocardiograms, cardiac pacemakers, and blood pressure and flow monitoring. Bioelectronic technologies have benefits in terms of miniaturization, new features, or implantability, and will replace future devices based on silicon.

A biosensor is a unique type of bioelectronic device used for bioanalysis; it usually contains physiochemical transducers and biological sensing materials (bioreceptors). The basic function of a sensor is to convert the input variable into a suitable measurement signal. In the past decade, the materials and resources needed to create biosensing devices have been developed. These have improved the sensitivity, selectivity, and multiplexing capacities of today's biosensors through significant technological

* Equally contributed.

Functional Materials Processing for Switchable Device Modulation. https://doi.org/10.1016/B978-0-12-823972-0.00002-2

Rayleigh-Bénard Convection in the Presence of Synchronous and Asynchronous Thermal Rigid Boundary Conditions.

Proceedings of Fourth International Conference on Inventive Material Science Applications pp 323–336

Rayleigh-Bénard Convection in the Presence of Synchronous and Asynchronous Thermal Rigid Boundary Conditions

Palle Kiran

Conference paper | First Online: 20 October 2021

365 Accesses

Part of the Advances in Sustainability Science and Technology book series (ASST)

Abstract

This paper investigates the effect of time-periodic temperature modulation on Rayleigh-Benard convection using rigid isothermal boundary conditions. The time-periodic temperature modulation has been considering in three different modes, out-of-phase (OPM), lower boundary (LBMO), and in-phase modulation (IPM). Heat transfer results are calculated in terms of the Nusselt and mean Nussult numbers through the finite amplitude of convection which is derived from the Ginzburg-

Kiran, P. (2022). Rayleigh-Bénard Convection in the Presence of Synchronous and Asynchronous Thermal Rigid Boundary Conditions. In: Bindhu, V., R. S. Tavares, J.M., Ţălu, Ş. (eds) Proceedings of Fourth International Conference on Inventive Material Science Applications. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-16-4321-7_28

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Nonlinear thermal instability of couple-stress fluids in porous media under thermal modulation.

Proceedings of Fourth International Conference on Inventive Material Science Applications pp 361–372

Nonlinear Thermal Instability of Couple-Stress Fluids in Porous Media Under Thermal Modulation

S. H. Manjula & Palle Kiran

Conference paper | First Online: 20 October 2021

Part of the Advances in Sustainability Science and Technology book series (ASST)

Abstract

Temperature modulation effect on chaotic convection in a porous media saturated with couple stress fluid has been investigated. Three different profiles of thermal modulations, OPM (out of phase modulation), LBMO (lower boundary modulation), IPM (in phase modulation) have been investigated. The Darcy-Brinkman model has been employed for the porous media. The transition from stable mode to the unstable mode in terms of chaos analyzed with modulation and couple stress parameter. Lorenz system of equations Lorenz (Deterministic non-

Copyright information

About this paper

Cite this paper

Manjula, S.H., Kiran, P. (2022). Nonlinear Thermal Instability of Couple-Stress Fluids in Porous Media Under Thermal Modulation. In: Bindhu, V., R. S. Tavares, J.M., Ţălu, Ş. (eds) Proceedings of Fourth International Conference on Inventive Material Science Applications. Advances in Sustainability Science and Technology. Springer, Singapore. https://doi.org/10.1007/978-981-16-4321-7_31

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The time periodic solutal effect on oscillatory convection in an electrically conducting lluid layer

Cite as: AIP Conference Proceedings **2261**, 030004 (2020); https://doi.org/10.1063/5.0016964
Published Online: 05 October 2020

Palle Kiran, S. H. Manjula, P. Suresh, and P. Raj Reddy

The Time Periodic Solutal Effect On Oscillatory Convection In An Electrically Conducting Lluid Layer

Palle Kiran[1, a)], SH. Manjula[2, b)], P. Suresh[3, c)], P. Raj Reddy[4, d)]

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Abstract. The present article is to study mass transfer in an electrically conducting Newtonian fluid layer subject to imposed time-periodic solutal modulation. The mass transfer coefficient is calculated by complex Ginzburg Landau (CGLE) amplitude equation. It is a cubic equation involving oscillatory finite amplitude and obtained using solvability condition. A weakly nonlinear analysis is applied to investigate mass transfer in the layer. The oscillatory convection is discussed in the presence of oscillatory solutal Rayleigh number. The amplitude equation (CGLE) is solved numerically to evaluate mass transfer in terms of the various system parameters. The effect of individual parameter on mass transport is discussed in detail. Further the mass transfer is more for oscillatory mode than the stationary mode. Finally it is also found that, solutal modulation can be effectively applied in either enhancing or diminishing the mass transfer.

Keywords: Weakly nonlinear theory, Oscillatory magneto-convection, Complex Ginzburg−Landau model, Solutal modulation.

INTRODUCTION

Thermal convection is the flow of fluid induced by a temperature difference, or gradient. Rayleigh-Benard convection (RBC) is a particular type of thermal convection problem heating a bottom and cooling top of a horizontal fluid layer creates a vertical temperature gradient. And by the laws of thermal expansion, the fluid on the bottom is less dense than that on the top, and creates an unstable situation. The effect of gravity imposes a downward force on the fluid, while the heat transfer imposes an upward force. A variation on this problem was originally studied by Lord Rayleigh in the early (1900), with an attempted explanation of the problem published in a 1916 article.

Study of Rayleigh B´enard convection (RBC) gained lot of attention due to its prominent applications in thermal and engineering sciences. Instability in a fluid layer is to understand the nature of convective flow under some physical constraints. Numerous applications can be drawn related to convective flows where saving energy is a key point. Study of magnetoconvection in a fluid layer is motivated by Thomson (1951), and Chandrasekhar (1961) and numerous applications such as: astrophysical, geophysical, and in particular sunspots. Convection in the earth metallic core and stellar interiors often occurs in the presence of strong magnetic fields. Nakagawa (1957,1959) studied megneto-convection experimentally and reported that at high strength of magnetic field determines the effect of Chandrasekhar number Q on critical
Rayleigh number to stabilize RBC.

Rudraiah (1984), the effect of externally imposed vertical magnetic field on double diffusive convection is investigated. Both linear and nonlinear theories are examined and the stability criterion as well as heat and mass transport presented. It is observed that magnetic field enhances stability criteria and diminished the heat mass transfer. It is pointed that magnetic field can be used to control stability criteria as well as reduce heat mass transfer. Another interesting concept to regulate stability criteria or heat mass transfer is modulation. This modulation concept is either gravity, thermal, rotational, magnetic and solutal etc. The gravity modulation is given by Gresho and Sani (1970), thermal modulation by Venezian, (1969), rotational modulation by Bhadauria and Kiran, (2014) and magnetic modulation by

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Work Life Balance during the COVID-19 Pandemic-An Empirical Study

Young Citizen's Political Engagement in India: Social Media Use by Political Parties

Mandakini Paruthi (School of Management Studies, Chaitanya Bharathi Institute of Technology, India), Priyam Mendiratta (School of Business Studies, Sharda University, India) and Gaurav Gupta (School of Business Studies, Sharda University, India)

Source Title: Examining the Roles of IT and Social Media in Democratic Development and Social Change (/book/examining-roles-social-media-democratic/234359)

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Abstract

Social media has emerged as a dominant digital medium platform in contemporary society. The quick development of social media has instigated changes concerning the way publics to interact with a group of people with similar ideologies, the quality of information they share, or the opportunity to acquire and share ideas. Social media use has a major influence on public relations, marketing, and political communication. Therefore, politicians are formulating their strategies to reach increasingly networked individuals. The chapter defines political engagement concept, focuses on excessive use of social media to understand how the emergence of digital citizenship is changing political engagement. In addition to this, the chapter also examines whether the use of social media exercise any effect on 2014 and 2019. General elections outcome or not and discuss the proposed conceptual framework for future empirical testing. The chapter highlights the various concerns needed to be taken care of while using social media as a marketing tool for promoting political participation and engagement.

Chapter Preview

Top

Introduction

Social media has emerged as a dominant digital platform in the present-day digital society (Kumar & Nanda, 2019b). It has become an essential part of community discussions and communication. The quick development of social media has instigated changes concerning the way publics interact with group of people with similar ideologies, the quality of information they share or the opportunity to acquire and share ideas. Social media platforms are increasingly being accessed and used at all times and places, resulting in major impact on public relations, marketing, and political communication. Therefore, politicians are also utilizing the social media in formulating their strategies to reach increasingly networked individuals (Pradhan & Kumar, 2015). They are giving more preference to social media attention of the public in driving political engagement.

Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment, Advances in Decision Sciences

Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment

Sujanavan Tiruvayipati & Ramadevi Yellasiri

Conference paper | First Online: 13 July 2019

Part of the Learning and Analytics in Intelligent Systems book series (LAIS,volume 3)

Abstract

IoT administrations are ordinarily conveyed of IoT as physically disconnected vertical arrangements, in which all framework segments running from tangible gadgets to applications are firmly coupled for the prerequisites of each explicit venture. The productivity and versatility of such administration conveyance are naturally constrained, presenting noteworthy difficulties to IoT arrangement developers. In this context, we propose a novel SaaS structure that gives basic stage administrations to IoT arrangement suppliers to productively convey and constantly expand their administrations for DIY applications over HTTP with no investment required. This paper initially presents the IoT SaaS engineering, on which IoT arrangements can be conveyed as virtual verticals by utilizing figuring assets and middleware benefits on free cloud services. At that point we present the itemized instrument, usage of area intervention, which helps arrangement suppliers to productively give area explicit control applications by designing their own SaaS for IoT. The proposed methodologies are exhibited through the implementation of a sample experiment for building the need. A prototype proposed method is discussed in this paper.

Cite this paper

Tiruvayipati, S., Yellasiri, R. (2020). Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment. In: Satapathy, S.C., Raju, K.S., Shyamala, K., Krishna, D.R., Favorskaya, M.N. (eds) Advances in Decision Sciences, Image Processing, Security and Computer Vision. Learning and Analytics in Intelligent Systems, vol 3. Springer, Cham. https://doi.org/10.1007/978-3-030-24322-7_27

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A Survey on Emotion's Recognition Using Internet of Things

A Survey on Emotion's Recognition Using Internet of Things

K. P. L. Sai Supriya ✉, R. Ravinder Reddy & Y. Rama Devi

Conference paper | First Online: 05 November 2018

Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 815)

Abstract

Emotions play an important role in human life, because the emotions allow other people to understand the feelings. Emotions are obtained due to some physiological changes in human. When a person is in a situation where he is unable to speak, then their emotions can be used to understand the feelings. By using Internet of things, the emotions are going to be detected. In the first step, the sensors are placed on the human body. These sensors will capture the data, and real-time monitoring can be done. The data which is collected from the sensors is used for the emotion detection. Here the different works on IoT which is used for human

Cite this paper

Sai Supriya, K.P.L., Ravinder Reddy, R., Rama Devi, Y. (2019). A Survey on Emotion's Recognition Using Internet of Things. In: Bapi, R., Rao, K., Prasad, M. (eds) First International Conference on Artificial Intelligence and Cognitive Computing . Advances in Intelligent Systems and Computing, vol 815. Springer, Singapore. https://doi.org/10.1007/978-981-13-1580-0_31

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Voiceprint-Based Biometric Template Identifications

Chapter

Voiceprint-Based Biometric Template Identifications

By Akella Amarendra Babu, Sridevi Tumula, Yellasiri Ramadevi

Book The Biometric Computing

Edition	1st Edition
First Published	2019
Imprint	Chapman and Hall/CRC
Pages	18
eBook ISBN	9781351013437

ABSTRACT

Performance improvement of the speaker recognizers using the traditional methods like signal processing, has hit a dead end. Speech researchers are therefore now focusing on other techniques and processes to supplement the traditional methods to reduce the gap in communication interfaces between humans and machines. Voiceprint based biometric identifications is evolving as a new technique. Phonetic distance measurement is one such evolving technique and the cutting edge researchers are inspired to work on this technique to circumvent and overcome the above problem. This chapter covers a new speaker recognition model based on the pronunciation variability. The pronunciation variability is used to identify the voiceprint of the speakers. The Kullback-Leibler divergence relative entropy criterion is used for the speaker identification and verification. An adaptation model is designed for the unsupervised dynamic adaptation of the new pronunciation variants. The multi-layered code book memory using the modified vector quantization technique is designed to keep the word confusability low and ensures efficient retrieval of the pronunciation variants. The confusion matrix and performance metrics are used for performance evaluation of pronunciation classifier. The pronunciation classification error rate, OOV error rate and word error rate are used for evaluation.

A Proficient and Smart Electricity Billing Management System

A Proficient and Smart Electricity Billing Management System

P. Pramod Kumar ✉ & K. Sagar

Conference paper | First Online: 13 July 2019

Part of the Learning and Analytics in Intelligent Systems book series (LAIS,volume 3)

Abstract

Electricity is an energy that play a major role in human life. In day to day life, each and every device from machinery to wrist watch everything works on electricity. It is the most basic requirement next to food, shelter, and clothing. From the past decade's lot of changes took place in electricity departments but even now they are using manual billing system. This system has a wide range of disadvantages like malpractices are done while billing, escaping from punishment if any late payments, manpower for billing and collecting bills and wastage of paper billing. And moreover, if a fire accident or a technical problem arises the whole lane (transformer) will be terminated from power supply this may cause an inconvenience to the peer consumers too. Here, we are concerned about the economic loss that arises due to the manual billing system. In the manual billing system, every month end or for a couple of months bill is generated. An employee from the electricity department comes to each and every house for billing the meters based on the number of units the consumer has consumed.

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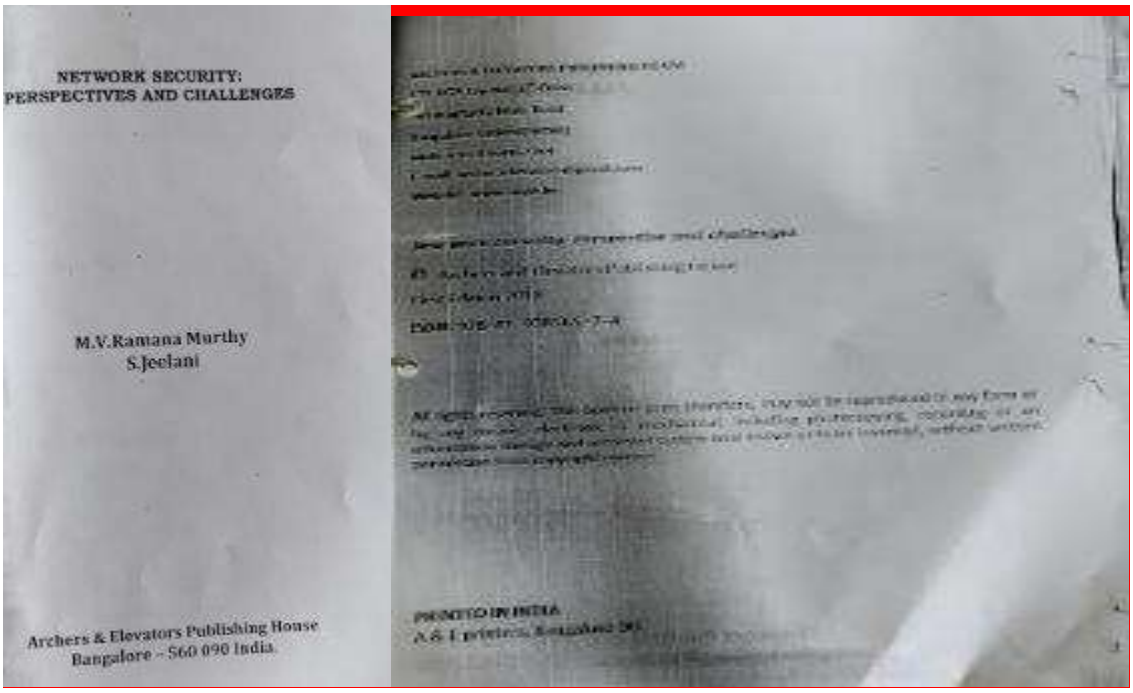
Network Security: Perspectives and Challenges



Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural Networks

Detection of Natural Features and Objects in Satellite Images by Semantic Segmentation Using Neural Networks

Vihar Kurama, Samhita Alla & Sridevi Tumula

Chapter | First Online: 14 November 2019

Part of the Remote Sensing and Digital Image Processing book series (RDIP,volume 24)

Abstract

In recent years, Neural Networks have become one of the most research focused areas of Artificial Intelligence. From detecting objects in real time to the classification of images, these Neural Networks are efficient and are achieving maximum possible accuracies based on the given inputs. In this work, we use Neural Networks for detecting features in satellite images. Using image segmentation and object detection techniques, we find objects, like roads, buildings, trees, and other resources, in the satellite images. In this work, Neural Network architecture used for segmentation of the images is ConvNet also called Convolutional Neural Network. U-Net which has a convolutional autoencoder architecture maps the layers to find the features and resources in the given satellite images. U-Nets do per-pixel semantic alignment for finding objects and features which result in segregation of resources. By using

Cite this chapter

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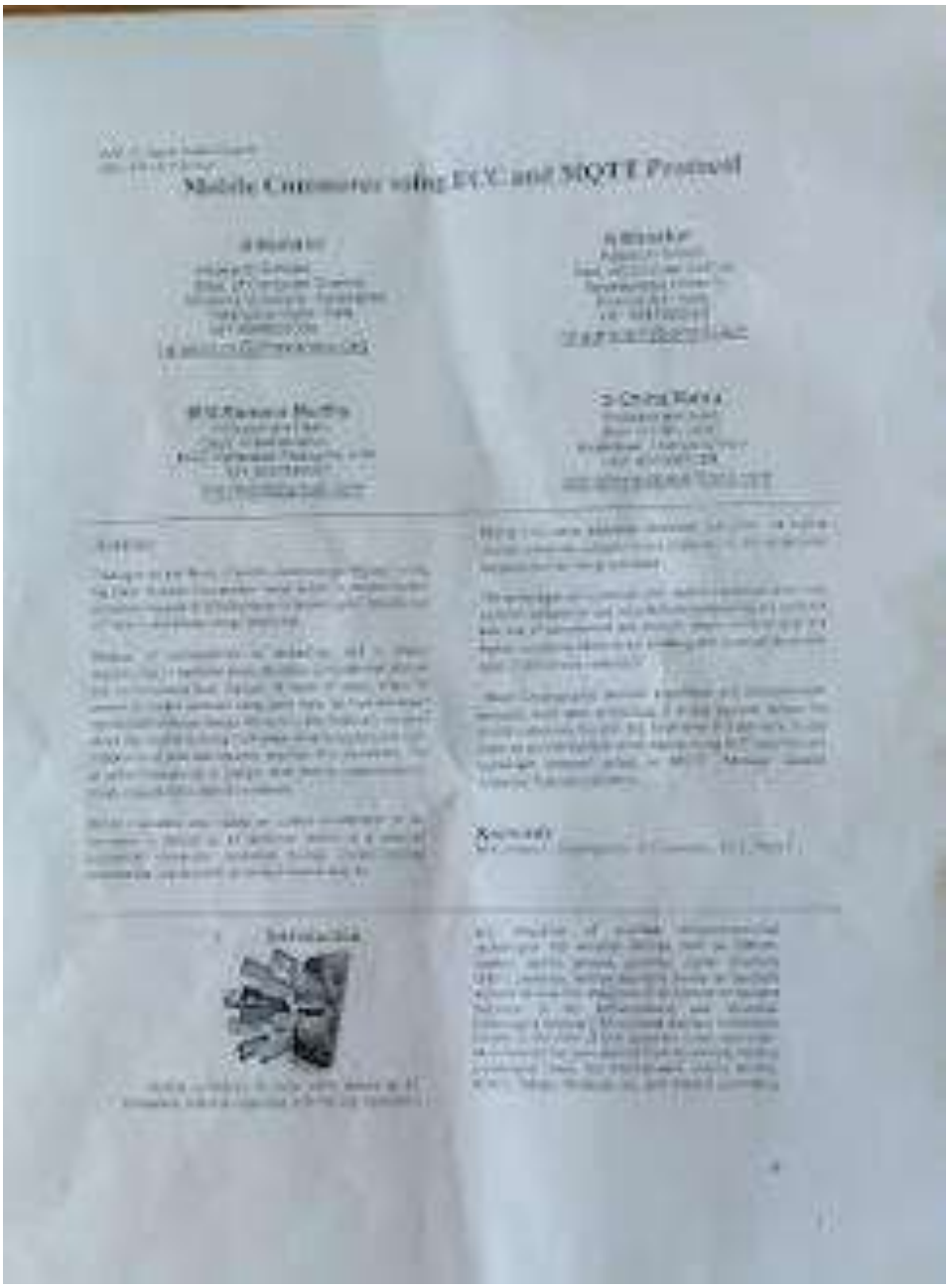
Mobile Commerce using ECC and MQTT Protocol



Detecting fraud in cyber banking using feature selection and genetic algorithm

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DETECTING FRAUD IN CYBER BANKING USING FEATURE SELECTION AND GENETIC ALGORITHM

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Abstract : In the last decade,due to extensive development of information technology and communication infrastructure there has been a rapid advancement in financial and banking system and Services. Banks and other financial institutions have invested in the field of modern technologies to provide more updated and efficient products and services. Thus, the variety of relevant products and services and also the number and value of transactions have increased. As online transactions became more and more popular, the frauds associated with them have also grown affecting the industry largely. Financial fraud has been a big concern for many organizations across industries, as billions of dollars are lost yearly because of this fraud. Securing transactions, detection of new ways of fraud and abuse in financial documents, the discovery of finished and unfinished frauds, detection and discovery of processes and operations of money laundering and etc. are among the most challenging issues in this area. The existing algorithms used do not give results considering different aspects of a transaction being carried out. However, there are a few researches which quote many features, but they are not practically implemented. Here a solution to the field of fraud detection in cyber banking is provided using feature selection and genetic algorithm. The bank data is given in an excel sheet and feature selection is applied to the data. To increase the accuracy of detected fraud, genetic algorithm is applied to the output of feature selection.

***IndexTerms* - cyber banking, feature selection, genetic algorithm, fraud detection.**

I. Introduction

With the increase in the development of people's access to the internet, the use of online transactions in daily trades have increased. One of the most important problem of e-commerce is internet payment systems and fraud in e-payments. Financial fraud can, not only cause financial damages to the relevant organization but also causes the loss of credit and damage to customer's confidence towards the system. Thus, in case of not using the fraud detection mechanisms, we should expect the increase of fraud statistics in e-banking system. Today, a large volume of financial and monetary transactions are performed on the internet. These services and transactions are not done in person. This makes the criminals remain unknown on the internet and encourages and stimulates the swindlers and fraudsters. Due to the lack of physical presence of customers in the context of electronic services, the need to recognize the identity for providing these services is very important and critical from the perspective of financial and monetary institutions. Perhaps it can be claimed that the main limitation in providing more extensive banking services is the need to recognize the identity of individuals. This issue is the most important factor of fraud attractiveness in the context of e-services and is increasing due to the development of e-banking services. Financial frauds can be widely classified as:

1. Bank fraud : It can be defined as "whoever knowingly executes to defraud a financial institution; or to obtain any of the money, funds, credits, assets, securities, or other property owned by a financial institution, by means of fraudulent pretends," that is, mortgage fraud, money laundering, etc.
2. Insurance fraud : It is the one which occurs in between the insurance process. It can happen while in application, billing, rating, claims, eligibility process etc. and are dedicated mostly by healthcare providers, consumers, agents or brokers, company employees and others.
3. Security and commodities fraud : It includes theft from manipulation of the market, securities accounts and wire fraud. It widely includes market manipulation, high yield investment fraud, commodities fraud, foreign exchange fraud, late-day trading, broker embezzlement, etc.
4. Other related financial fraud : It includes frauds such as mass marketing fraud and corporate fraud.

The fraud detection methods are divided into the two following main groups [17] :

1. Anomaly detection: In this method, the history of customer behaviour is considered a normal behaviour and any deviation from this behaviour can be recovered as an anomaly or fraud.
2. Misuse detection: This method focuses on specific behaviours of customer and assumes some unknown behaviours as a fraud. The main objective is to propose a new technique to detect fraud in e-banking using a new combination of algorithms to serve the purpose.

Financial fraud is normally discovered through outlier detection process enabled by data mining techniques, which also identify valuable information by revealing hidden trends, relationships, patterns found in a large database. Data mining, defined as "a process that uses statistical, mathematical, artificial intelligence, and machine learning techniques to extract and identify useful information and subsequently gain knowledge from a large database", is a major contributor for detecting different types of financial fraud through its diverse methods, such as, logistic regression, decision tree, support vector machine (SVM), neural network (NN) and naive Bayes.

Applications of IoT for Soil Quality. In: Gunjan

Applications of IoT for Soil Quality

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Abstract. The farming industry has become more important than ever before in the next few decades. Farmers and agricultural companies are turning to the Internet of Things (IoT) to meet demand. Since we need to continuously take measures manually it requires large amount of time. So using this Smart Agriculture we can effectively take the measurements in less amount of time. In this Smart Agriculture sensors can provide continuous measurements with respect to climate changes. Using Internet of things we can produce different ways to cultivate soil. Smart Agriculture and Smart Farming applications will help the farmer with 24/7 visibility into soil, crop health, and energy consumption level. This paper presents how to analyze soil moisture levels, soil type and soil quality according to the water and climate change. By considering all this factors, farmers can decide which type of crop is suitable for the particular soil to get profit instead of using traditional lengthy methods, and how much fertilizers have to use according to nutrients level in soil.

Keywords: IoT · NodeMCU · Smart agriculture

1 Introduction

Our country produce crop production with the foremost food staples. The farming industry is going to become very important in upcoming years. According to the UN Food and Agriculture Organization the world has to produce 70% more food in 2050 than 2006 [14]. In India agriculture system the continuous assessment for soil quality, type, evapotranspiration, and moisture levels are not done. Farmers need to take help of the soil department to know about features of soil [17, 18]. IoT is one of the technology which can provide a solution for this problem, which aims to extend system with more features. This paper presents to monitor soil moistures and consider different sensors to collect the data. Sensors are to be connected to the device through WiFi module and data which is retrieved from the sensor can be stored in the server or cloud. Later on the sensor data, data analysis has to be performed. From this analysis farmer can decide which crop can be choose according to the soil and climate change.

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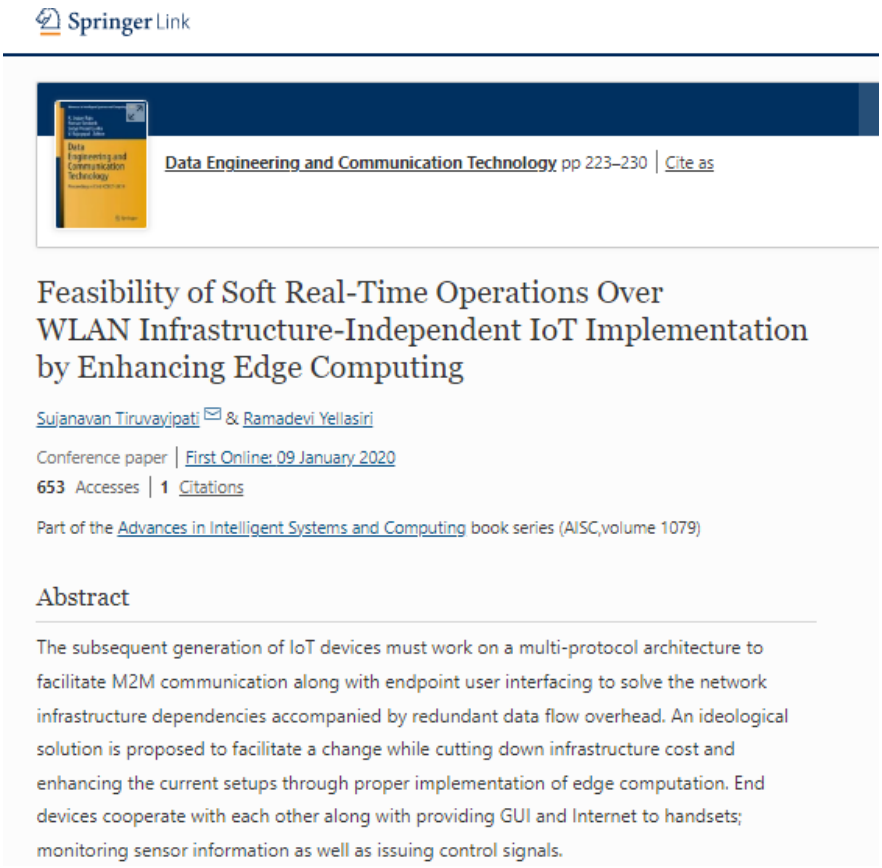
https://doi.org/10.1007/978-981-13-8461-5_31

1. **Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing**



Springer Link

Data Engineering and Communication Technology pp 223–230 | Cite as

Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing

Sujanavan Tiruvayipati & Ramadevi Yellasiri

Conference paper | First Online: 09 January 2020

653 Accesses | 1 Citations

Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 1079)

Abstract

The subsequent generation of IoT devices must work on a multi-protocol architecture to facilitate M2M communication along with endpoint user interfacing to solve the network infrastructure dependencies accompanied by redundant data flow overhead. An ideological solution is proposed to facilitate a change while cutting down infrastructure cost and enhancing the current setups through proper implementation of edge computation. End devices cooperate with each other along with providing GUI and Internet to handsets; monitoring sensor information as well as issuing control signals.

Cite this paper

Tiruvayipati, S., Yellasiri, R. (2020). Feasibility of Soft Real-Time Operations Over WLAN Infrastructure-Independent IoT Implementation by Enhancing Edge Computing. In: Raju, K., Senkerik, R., Lanka, S., Rajagopal, V. (eds) Data Engineering and Communication Technology. Advances in Intelligent Systems and Computing, vol 1079. Springer, Singapore. https://doi.org/10.1007/978-981-15-1097-7_19

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2. **Viallility of uncomplicated IoT SaaS Development for Deployment of DIY applications over HTTP with Zero Investment**

Springer Link

Advances in Decision Sciences, Image Processing, Security and Computer Vision pp 206–213

Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment

Sujanavan Tiruvayipati ✉ & Ramadevi Yellasiri

Conference paper | First Online: 13 July 2019

580 Accesses

Part of the Learning and Analytics in Intelligent Systems book series (LAIS,volume 3)

Abstract

IoT administrations are ordinarily conveyed of IoT as physically disconnected vertical arrangements, in which all framework segments running from tangible gadgets to applications are firmly coupled for the prerequisites of each explicit venture. The productivity and versatility of such administration conveyance are naturally constrained, presenting noteworthy difficulties to IoT arrangement developers. In this context, we propose a novel SaaS structure that gives basic stage administrations to IoT arrangement suppliers to productively convey and constantly expand their administrations for DIY applications over HTTP with no investment required. This paper initially presents the IoT SaaS engineering, on which IoT arrangements can be conveyed as virtual verticals by utilizing figuring assets and middleware benefits on free cloud services. At that point we present the itemized instrument, usage of area intervention, which helps arrangement suppliers to productively give area explicit control applications by designing their own SaaS for IoT. The proposed methodologies are exhibited through the implementation of a sample experiment for building the need. A prototype proposed method is discussed in this paper.

Cite this paper

Tiruvayipati, S., Yellasiri, R. (2020). Viability of an Uncomplicated IoT SaaS Development for Deployment of DIY Applications Over HTTP with Zero Investment. In: Satapathy, S.C., Raju, K.S., Shyamala, K., Krishna, D.R., Favorskaya, M.N. (eds) Advances in Decision Sciences, Image Processing, Security and Computer Vision. Learning and Analytics in Intelligent Systems, vol 3. Springer, Cham. https://doi.org/10.1007/978-3-030-24322-7_27

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Use of recycled concrete aggregate in self compacting concrete: A need for sustainable development

MF-104: USE OF RECYCLED CONCRETE AGGREGATE IN SELF COMPACTING CONCRETE: A NEED FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT

Construction has a major share in developing infrastructure in any Country. Accordingly, in the next five years, infrastructure in India will need a huge expenditure. 'Recycled' concrete aggregate could be a reliable alternative to using natural aggregates in concrete construction which unfortunately is not put to re-use. Dumping of wastes on land is not only causing shortage of space, but also environmental problems in cities. Further, due to urbanization, distance between demolition waste generation area and disposal land area has also become longer and therefore, transportation cost for disposal has increased and thus resulted in the excessive use of energy. Recycling of demolished waste can offer not only the solution of growing waste disposal problem, but will also help to conserve natural resources for meeting increasing demand of aggregates for long time to come for construction industry leading to sustainable development.

This paper describes the outcome of tests carried out about the use of Recycled Concrete Aggregate in Self Compacting Concrete(RASCC). Recycled aggregates used in this study were generated by crushing of construction and demolition waste (CDW). Seven different grades of concrete mixes (M20 to M70) were produced with five recycled aggregate contents (0%, 25% 50%, 75% and 100%). Compressive strength, split tensile strength and flexural strength of the concrete were determined. It was observed that there was no significant variation in compressive strength, split tensile strength and flexural strength of concrete. The findings from the study show that the recycled concrete aggregate may be useful for construction industry as an alternative construction material to natural aggregates.

Keywords: *Recycled concrete aggregate, Construction and Demolition Waste (CDW), Recycled Aggregate Self Compacting Concrete(RASCC). Sustainable Environment.*

Proceeding Abstract Book of National Symposium on Sustainable Waste Management (NSSWM-2019)
20th April, 2019

An Analytical Approach on Effective Selection of Sustainable Materials in Construction Industry by Environmental Management System (EMS) & Green Supply Chain Management

Srinivas Vasam[1*], Dr.K. Jagannadha Rao[2], Dr. M.V.Seshagiri Rao[3], Vasu Kathi[4]
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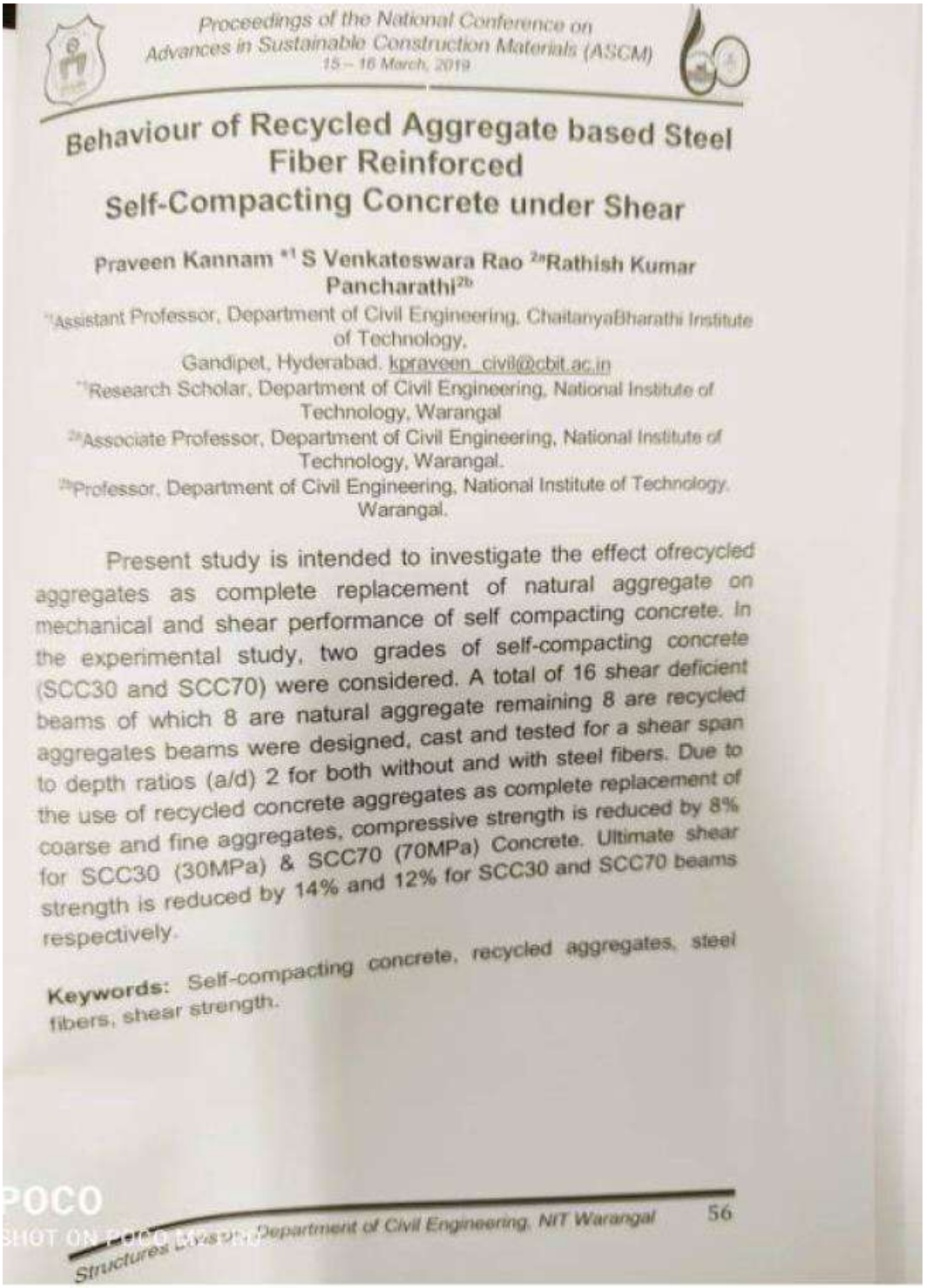
Abstract

For the construction industry the 'sustainability' has become a common word and is also a mandatory concept that is being persisted by the client in the contract itself such has become its importance. The construction industry which has been the predominant contributor for the environmental pollution has been trying to march towards reduction of CO_2 foot prints by making use of sustainable materials.

In this paper, a critical literature review has been conducted about the sustainability and its concepts in a detailed manner. Further review has also been conducted on the possible new sustainable materials which might yield better results in reduction of CO_2 emission and shall sustain though the life span of the project in an effective and efficient manner. Under pinning the fact that selection of these sustainable materials for different construction projects has become a major concern in present construction industry. This paper shall discuss on possible effective methods for identification of suitable sustainable materials for the projects by environmental management system and green supply chain management. From this paper it can be understood that construction industry is slowly marching towards usage of eco-friendly materials and more importantly trying to implement an effective environmental materials selection system such as adoption of green supply chain management thereby which striving towards reduction of CO_2 emission in projects.

Keywords: Environmental management system, Green supply chain, Supply chain management

Behaviour of Recycled Aggregate based Steel Fiber Reinforced Self-Compacting Concrete Under Shear



Proceedings of the National Conference on
Advances in Sustainable Construction Materials (ASCM)
15 – 16 March, 2019

Behaviour of Recycled Aggregate based Steel Fiber Reinforced Self-Compacting Concrete under Shear

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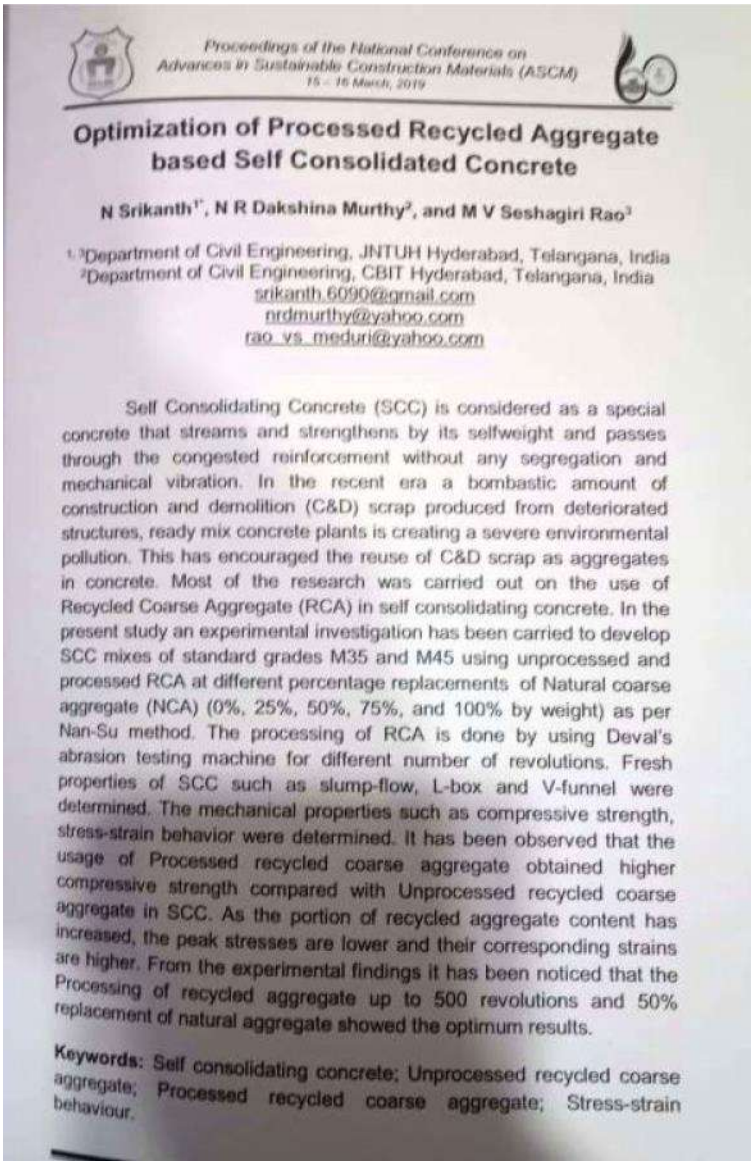
Present study is intended to investigate the effect ofrecycled aggregates as complete replacement of natural aggregate on mechanical and shear performance of self compacting concrete. In the experimental study, two grades of self-compacting concrete (SCC30 and SCC70) were considered. A total of 16 shear deficient beams of which 8 are natural aggregate remaining 8 are recycled aggregates beams were designed, cast and tested for a shear span to depth ratios (a/d) 2 for both without and with steel fibers. Due to the use of recycled concrete aggregates as complete replacement of coarse and fine aggregates, compressive strength is reduced by 8% for SCC30 (30MPa) & SCC70 (70MPa) Concrete. Ultimate shear strength is reduced by 14% and 12% for SCC30 and SCC70 beams respectively.

Keywords: Self-compacting concrete, recycled aggregates, steel fibers, shear strength.

Optimization of Processed Recycled Aggregate based Self Consolidated Concrete



Proceedings of the National Conference on
Advances in Sustainable Construction Materials (ASCM)
15 – 16 March, 2019

Optimization of Processed Recycled Aggregate based Self Consolidated Concrete

N Srikanth[1*], N R Dakshina Murthy[2], and M V Seshagiri Rao[3]

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Self Consolidating Concrete (SCC) is considered as a special concrete that streams and strengthens by its selfweight and passes through the congested reinforcement without any segregation and mechanical vibration. In the recent era a bombastic amount of construction and demolition (C&D) scrap produced from deteriorated structures, ready mix concrete plants is creating a severe environmental pollution. This has encouraged the reuse of C&D scrap as aggregates in concrete. Most of the research was carried out on the use of Recycled Coarse Aggregate (RCA) in self consolidating concrete. In the present study an experimental investigation has been carried to develop SCC mixes of standard grades M35 and M45 using unprocessed and processed RCA at different percentage replacements of Natural coarse aggregate (NCA) (0%, 25%, 50%, 75%, and 100% by weight) as per Nan-Su method. The processing of RCA is done by using Deval's abrasion testing machine for different number of revolutions. Fresh properties of SCC such as slump-flow, L-box and V-funnel were determined. The mechanical properties such as compressive strength, stress-strain behavior were determined. It has been observed that the usage of Processed recycled coarse aggregate obtained higher compressive strength compared with Unprocessed recycled coarse aggregate in SCC. As the portion of recycled aggregate content has increased, the peak stresses are lower and their corresponding strains are higher. From the experimental findings it has been noticed that the Processing of recycled aggregate up to 500 revolutions and 50% replacement of natural aggregate showed the optimum results.

Keywords: Self consolidating concrete; Unprocessed recycled coarse aggregate; Processed recycled coarse aggregate; Stress-strain behaviour.

Flexural and Shear behavior of high strength pond ash concrete

National Conference on "Recent Advancements in Civil Engineering" (NCRACE-2K19)

FLEXURAL AND SHEAR BEHAVIOR OF HIGH STRENGTH POND ASH CONCRETE

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Abstract: Concrete is most widely used construction material. Traditionally concrete is made up of cement, river sand as fine aggregate, crushed stone aggregate as coarse aggregate and potable water. Nowadays, river sand is not readily available for use in many places. Instead of natural river sand, crusher sand or manufactured sand obtained from stone aggregate quarries is widely used as fine aggregate in concrete. The main objective of this study was to identify alternative source of good quality fine aggregates which is depleting very fast due to the fast pace of construction activities in India. In the present study the experimental investigations carried out to evaluate the effects of replacing the pond ash with river sand use of super plasticizer, on various concrete properties. Use of pond ash is a waste industrial by-product of power plants provides great opportunity to utilize it as an alternative to normally available aggregates It is found that as the percentage of Pond ash increases from 10% to 15% the strength of the pond ash concrete increases but the results are lower than the target mean strength of the respective M50 and M60 grades of concrete. Hence in the present work 20% replacement of sand by pond ash is considered and the target mean strength values are obtained. The target mean strength of (M50, 66 N/mm² and M60, 69 N/mm²) pond ash replacement was considered to cast the cubes, cylinders and prisms reinforced concrete beams. The Flexural Behaviour of RC beams shows that the ultimate load carrying capacity and shear capacity of concrete. The 28days characteristic compressive strength of M50 and M60 grade Pond ash concrete is 6% and 7.7% higher than the target mean strength of M50 and M60 conventional concrete respectively. The flexural behavior of RC beams with pond ash shows that the failure is brittle when compared to the conventional concrete. The energy absorbed by the conventional beams is more than the pond ash beams. Therefore pond ash is suggestible for construction practices by improving the properties by conducting future studies.

Keywords: High strength concrete, Pond Ash, Fine aggregate, Waste material, Environmental issues, Mechanical properties, Flexural behavior.

1. INTRODUCTION

1.1 GENERAL

Concrete is a commonly used building material in the world. Conventional concrete is a mixture of cement, fine aggregate, coarse aggregate and water. Compare to all other ingredients, aggregates occupy 75 to 80 % of the total volume of concrete and affect the fresh and hardened properties of concrete. In the total composition of concrete, 25 to 30 % was engaged by the fine aggregate in volume. The quality of concrete is persistent by its mechanical properties. The mechanical properties mainly divided into short-term and long-term properties. Compressive strength, Split tensile strength, Modulus of Elasticity and Flexural strength are short term properties. Porosity and impermeability are the long term properties.

1.2 HIGH STRENGTH CONCRETE

American concrete Institute defines a high-strength concrete and high performance concrete as concrete that has a specified compressive strength to design of 6,000 psi (41 MPa) or greater. Under the ACI definition durability is optional and this has led to

Optimal Identification and selection of Phasor Measurement Units- A Methodology

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***Abstract*—The Phasor measurement unit (PMU) is becoming an important tool for monitoring, controlling and protecting the electric networks. Hence its deployment for the present and future power system networks has become a great challenge for the planning engineers. The optimal PMU placement (OPP) is quite important strategy for deploying the PMUs optimally. Since the optimization techniques yield multiple solutions, it has become an important task again for the engineers to select the best set out of all the available solutions of results. This paper, after presenting the literature on various optimization methods used for solving OPP problem, suggests Multiple Criteria Decision Making (MCDM) methods to select the suitable solution based on the criteria.**

Keywords*— *PMU; Observability; OPP; optimization; constraints; MADM; Alternatives; Attributes;

I. Introduction

The invention of Phasor Measuring Unit (PMU) has introduced the backup protection schemes[1], adaptive protection schemes [2-8], model analysis based network redesigning and highly secured power networks [9-10]. Starting from the introduction of optimal PMU placement, many authors have suggested many algorithms to answer the optimal PMU placement. Most of these placements were purely based on observability constraints. And, their results are different from author to author even though their number is different. But, the power utilities are not clear about which set of PMUs should be considered and which set will serve the most of their purpose. To answer this problem, this paper suggests the Multi-Attribute Decision Making methods to be used for selecting the best solution for their desired criteria.

This article is sectionalized as follows: section I introduces PMU and the problem of OPP. Sections II-V List out the mathematical, topological and heuristic algorithms used for solving OPP problem. Section-VI introduces to MCDM techniques and explains TOPSIS method. After discussing the results in section IV, it concludes the work in section V.

A. Phasor Measurement Unit

The Phasor Measurement Unit (PMU) is capable of measuring various synchronized parameters from the power system. To achieve synchronism, it uses synchronizing signals from Global Positioning Satellite (GPS). This has made the PMU the most prominent tool for various power system strategies.

The observability of a bus can be referred as its ability of being measured either directly or indirectly by the PMU placed either to itself or its incidence bus.

978-1-7281-4103-9/19/$31.00 ©2019 IEEE

II. Mathematical Algorithms

A. Integer Linear Programming (ILP)

An Integer Linear Programming (ILP) is deterministic strategy in which all the design parameters would take only integer values. An integer linear programming (ILP) based optimal PMU placement for system observability was introduced in [11] where it considers the locations of conventional measurements. The algorithm [12] extends to incorporate conventional measurements to identify the optimal PMU locations. This scheme also gives the PMU locations under any desired level of redundancy. An ILP based multi-stage PMU placement is suggested in [13]. It models zero-injection constraints as linear.

B. Integer Quadratic Programming (IQP)

It deals with the optimization of a quadratic objective function subjected to linear constraints. It assures integer values to all the design variables. In [14], a PMU placement technique was suggested using integer quadratic programming, but, with no including zero-injection effect. It considers both normal as well as the outage of a transmission line or PMU conditions. Paper [15] suggests another IQP approach that uses the network connectivity matrix to determine optimal PMU locations.

III. Topological Algorithms

A. Depth First Search (DFS)

The Depth First Search algorithm is a recursive algorithm used for traversing network. It searches the vertices of network based on the criteria called backtracking. This algorithm continues visiting all the nodes until the unvisited nodes have been visited. Authors have used DFS algorithm to solve the OPP problem. As the DFS criterion is rigid and unitary, the solution may not be optimum. So, it is failed in finding optimum solution even though it is computationally faster.

B. Minimal Spanning Tree (MST)

It is nothing but the modified DFS method. This modification makes the MST algorithm faster, and improves the complexity and convergence.The PMU placement strategies using this approach are implemented.

Analysis of partial discharge due to copper spherical particle in power transformer under different oil flow models using CFD

Intelligent Manufacturing and Energy Sustainability pp 391–400

Investigation of Partial Discharge Due to Copper Spherical Particle in Power Transformer Under Various Oil Flow Models Using CFD

N. Vasantha Gowri

Conference paper | First Online: 15 February 2020

Part of the Smart Innovation, Systems and Technologies book series (SIST,volume 169)

Abstract

Power transformer is an important and costly device in electrical power system. Analysis of power transformer is useful to protect the device from different hazards. Mineral transformer oil acts as a coolant and part insulation in power transformers. Transformer cooling is ensured by non-directed or directed flow of oil inside the transformer. Transformer oil is found to consist of conducting

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Dr. Suresh Chandra Satapathy

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Investigation of Partial Discharge Due to Copper Spherical Particle in Power Transformer Under Various Oil Flow Models Using CFD

Author: N. Vasantha Gowri

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Abstract

Power transformer is an important and costly device in electrical power system. Analysis of power transformer is useful to protect the device from different hazards. Mineral transformer oil acts as a coolant and part insulation in power transformers. Transformer cooling is ensured by non-directed or directed flow of oil inside the transformer. Transformer oil is found to consist of conducting particles moving along the flow path of transformer oil. Particles which are conductive in nature when come in contact with the disc, get stress formed on them and may lead to partial discharge (PD). Partial discharge due to particle is one of the grounds of failure of transformers. To find the behaviour of

Optimal Combined Overcurrent and Distance Relays Coordination using Teaching Learning based Optimization

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***Abstract*— Relay coordination is an important aspect to maintain proper power system operation and control. Relays should be organized in such a way that every relay should have a backup and Coordination time interval (CTI) between primary and back up and different zones of the relay should be maintained to achieve proper fault identification and fault clearance sequence. The relays should operate in minimum desirable time satisfying all the co-ordination constraints. So, relay coordination is nothing but highly constraint problem. Heuristic techniques are often used to get optimal solution of this kind of problem. In this paper this constraint problem is solved by Teaching learning based optimization(TLBO) on a WSCC-3-Machine-9bus system. Proper desirable time setting multiplier (TSM) with minimum operating time of relays are calculated. We also incorporated intelligent over current relay characteristics selection to get the desired results in this work. The results seem to be satisfactory as the results obtained from TLBO are comparatively better than so called conventional methods like Genetic Algorithm(GA) and Particle Swarm Optimization (PSO).**

Keywords*— *Coordination of relay; Coordination time interval; Teaching learning based optimization; Plug setting; Time setting multiplier; Over current relay characteristics.

I. INTRODUCTION

Relays should be organized such a way that every relay should have a backup and CTI between primary and back up and different zones of the relay should be maintained. Relay co-ordination is necessary to achieve proper fault identification and fault clearance sequence. These relays must be able to distinguish between the normal operating currents including short time over currents that may appear due to certain equipment normal operation(e.g- Motor starting currents, transformer inrush currents) and sustained over current due to fault conditions. During fault conditions , these relays must operate quickly isolating the faulted section of the network and allows for continued operation of the healthy circuits. If primary relay meant for clearance of the fault fails, backup relay must operate after providing for sufficient time discrimination for the operation of primary relays. Hence the operation of back up relays must be coordinated with those of the operation of the primary relays. The flexible settings of the relays (e.g- plug setting , Time multiplier setting and possibly selection of suitable time-current operating characteristics), must be set to achieve the desired objectives.

Over current and distance relays are often used for protection of power system. Now a days this scheme is used in almost all sub-transmission system. To achieve better co ordination , a distance with a distance, an over current with a over current relay and an over current relay with a distance relay must be coordinated. One of them will act as main relay and another one as back up. Proper co-ordination time interval should be maintained between them.

The study of co-ordination of relays was first done among over current relays. Initially it is done by using linear programming method including simplex, two-phase simplex and dual simplex methods[1]-[4]. But the problem regarding using these methods is the solution will not come unless all the constraints are satisfied.

So, people gradually started to use intelligent and meta – heuristic approaches which gives optimal solution instead of exact solution meeting all the constraints criteria. In ref.[5], optimal co-ordination is done by Genetic Algorithm. Ref.[6] shows optimal co ordination by using Particle swarm optimization and Ref.[7] shows the time co ordination by using evolutionary algorithm. But these schemes are having two types of problems. First one is mis coordination and other one is lack of solution for relays with both discrete and continuous time setting multipliers (TSMs). The problems are resolved in [8] by adding a new expression with the objective function. All the above discussed methodologies are done by using over current relays and the relay characteristics are assumed to be fixed. While in digital relays different over current relay characteristics can be selected. So, the algorithm for relay co ordination should be capable of selecting the best fitting characteristics of over current relays to have optimal co ordination.

Ref.[9] shows relay co ordination with an hybrid GA algorithm which is helpful in relay coordination of over current and distance relays. Ref.[10] shows relay co ordination using GA and intelligent relay characteristics selection. Ref.

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Power quality enhancement using particle swarm optimization based shunt active power filter

Power quality Enhancement using Particle swarm optimization based shunt active power filter

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Abstract. The shunt active power filter is one compelling arrangement is utilized for reducing the source current harmonics distortion in nonlinear load distribution system. The synchronous reference frame (SRF) control algorithm is utilized for creating the current controlled reference signals. The acquired reference control signals are compared with hysteresis controller for better switching of shunt active power filters. Generally SRF with PI controlled shunt active power filter are used for harmonic compensation. But, they won't give better results to bigger variety loads. In these papers a particle swarm optimization (PSO) system is proposed for better tuning of PI values of SRF with PSO-PI controlled shunt active power filter. The simulation results without and with conventional PI and furthermore with PSO-PI is analyzed for nonlinear load distribution system.

Keywords: Shunt active power filter, PI controller, PSO-PI controller, Harmonic compensation, synchronous reference frame theory.

1 Introduction

In presently, the vast number utilization of power electronic and nonlinear devices causes harmonic in distribution system [1]. The harmonic distortion may cause power quality issues, for example, low productivity, poor power factor and influence the neighbouring communication lines [2-5]. These issues are repaid by using passive filters. However, these passive filters are huge in size, consistent compensation and low over loading capacity. To keep away from these disadvantages a shunt active power filters with voltage source inverter (VSI) is created for compensation of current source harmonics and for power factor correction [6]. The triggering signals for the VSI based shunt active power filter are gotten from the proposed synchronous reference frame control algorithm with PI controller [7-10]. The DC interface voltage of VSI is normally controlled by utilizing conventional PI control technique. In conventional technique obtained PI values are not agreeable. In this case, by utilizing PSO control program the obtained PI values are exact and keep up the constant dc bus voltage when compared with the conventional PI controller [11, 12]. PSO is an iterative based enhancement method. It is actualized dependent on the behaviour of of bird's flock and fish school. In pso, the particles have with certain velocity and position in a space is taken from the social conduct of creatures. Here population is called swarm. Swarm comprise of number of particles. Every particle in swarm looking through the best position individually encounters and speaks with their neighbouring best position in swarm insight and gets the position and updates their position and velocity. The particle is seen in the best approach to show signs of improvement and better looking position. The updating of velocity of every particle is their very own encounters and in addition involvement with their neighbours. PSO method is increasingly proficient tackling nonlinear, non differential and high dimensional issues [13-15].

In this paper a VSI based shunt active power filter is implemented. Here the Proportional & Integral values of the of PI controller for the DC link voltage is controlled by utilizing PSO program rather than conventional PI control for better harmonic reduction and power factor enhancement. The simulation results with PI and PSO-PI is analyzed in MATLAB/SIMULINK software.

2 Shunt Active Power Filter

Fig-1. Shows the system setup of three phase three wire non linear load distribution system with the proposed shunt active power filter.

The nonlinear load introduces harmonics disturbance at the source side. The harmonics disturbance is eliminated by connecting shunt active power filter. The shunt active power filter comprises of 3-Leg voltage source inverter with dc link capacitor. The voltage source inverter comprises of 6 IGBT switches with anti parallel diodes. The gate signals to IGBT's are gotten from the proposed synchronous reference frame control circuit. The filter inductance L_f is utilized for smoothing the injected compensating currents.

A Novel tehnique to observe the performance of virtual solar PV module system

Innovations in Electrical and Electronics Engineering pp 653–660

A Novel Technique to Observe the Performance of Virtual Solar PV Module System

G. Suresh Babu & N. R. Sai Varun

Conference paper | First Online: 24 March 2020

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 626)

Abstract

Photovoltaic (PV) energy source or a PV emulator is required to analyze the performance of PV equipment under fluctuating conditions. Typical PV modules are costly and static with limited customization abilities. A PV emulator can realize the characteristics of various PV modules under various test conditions (type of locality, climatic conditions, different irradiations, varying temperatures, and various maximum power point tracking (MPPT)

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18

Significance of festivals and understanding Cultural heritage

Nagadevi Darapureddy

Abstract

Festivals are impalpable cultural assets maintaining the past and passing them to the future generations. Festivals are eloquent to indicate culture, traditions, and heritage. Festivals are celebrated irrespective of caste and religion in the country. It creates relations and a strong bond in humanity. It builds social relations and social communication which leads to unity among the people. The present generation will come to know about our customs and old-age practices during these celebrations. Various festivals have religious inchoation and entwine cultural and religious paramountcy in traditional activities. Festivals can accommodate tourism advantages such as increased visitation and development of a destination's image. Communities experience arrange of benefits from festivals. These benefits include building social cohesion, providing a specific time and place for families and friends to show their commitments to the area, and to provide a socially acceptable area for publications. The main aim of this article is to represent the significance of festivals, the main festival which is celebrated grandly in every state

Advances in Decision Sciences, Image Processing, Security and Computer Vision pp 327–334

An Experimental System Level Performance Analysis of Embedded Systems for GSM Application

M. Rajendra Prasad & D. Krishna Reddy

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Part of the Learning and Analytics in Intelligent Systems book series (LAIS,volume 4)

Abstract

As per the requirement of embedded industry domain the processor system level performance has to be evaluated and tuned to match the required constraints of an application specification, so system level design methodology for embedded application-specific development system is becoming challenging. A novel System Level Design Methodology (SLDM) is developed to implement system level computational platform to evaluate the system level performance, investigate the system level issues and performance improvements of

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ICDSMLA 2019 pp 458–465

Comparative Analysis of Serial and Parallel Satellite Positioning Algorithms for GPS and NavIC

K. Sudershan Reddy ✉, Md. Khaja Rahmatullah, Sameeha Fahmeen, Quddusa Sultana & D. Krishna Reddy

Conference paper | First Online: 19 May 2020

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 601)

Abstract

India has established its native satellite navigation system called as Indian Regional Satellite Navigation System (IRNSS) which is officially named as Navigation with Indian Constellation (NavIC). Global Positioning System (GPS) is an all-round, all weather, real time global satellite navigation and positioning system developed by US. In these systems, the time needed for the computation of satellite positioning affects the accuracy of the final observation point positioning. However, as GPS is widely used in real

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"Inset fed Triple Band U- Slot Antenna for GSM900/GSM1900/WLAN Applications"

International Journal of Engineering and Advanced Technology (IJEAT)
ISSN: 2249 – 8958, Volume-8, Issue-6S3, September 2019

Inset fed Triple Band U-Slot Antenna for GSM900/GSM1900/WLAN Applications

J. Rajeshwar Goud, N. V. Koteswara Rao, A. Mallikarjuna Prasad

Abstract:-To cover Global System for Mobile Communication(GSM) and WLAN frequency bands, three distinctive Inset fed antennas like rectangular microstrip, dualband dual slot and antennas are designed. Inset fed microstrip antenna is used for GSM1900 with an impedance bandwidth from 1.90GHz to 1.96GHz. Inset fed dual band dual slot antenna is used for GSM1900 and WLAN with impedance bandwidth is considered first band from 1.90GHz to 1.95GHz and second band from 2.38GHz to 2.42GHz. The proposed Inset fed triple band antenna is used for GSM900, GSM1900 and WLAN with appropriate position of slot, is to operate in frequency ranges of first band is from 920MHz to 940MHz, second band is from 1.91GHz to 1.94GHz and third band is from 2.39GHz to 2.43GHz. A correlation among various feed widths, feed lengths and slot widths are exhibited in this paper.

Keywords—Inset fed, Triple band, Dual band, Slot antenna, HFSS, Patch antenna, GSM, WLAN.

I. INTRODUCTION

In present days, design of dual band and triple band patch antennas are highly desirable for wireless communication applications. Patch antennas inferable from their favorable circumstances, for example, low profile, reasonable to produce, light weight and simple to create. Inspite of these points of interest, there are not many inconveniences like limited bandwidth, less power dealing with limit in patch antennas [1-2]. For the most part patch antennas work in various frequency bands, separate antennas are used to cover each band which prompts space-confining issue. One approach to satisfy this necessity is utilizing various antennas, yet it will build the size and intricacy of the system. To overcome this issue, slot antennas are required which gives dual band and triple band frequencies using single antenna with appropriate slot position. From now on it diminishes the system size and multifaceted nature [3]. Large bandwidth can be achieved by adjusting the slot dimensions, which include different shapes like rectangular, triangular, circular [4], elliptical [5], triangles [6] are reported. To achieve dual band operation edge feed has been used [7]. Multi service wireless system, Wide band or dual band and triple band antennas are needed[8-11].

To obtain dual band and triple band behavior in patch antennas by providing slot and excite the antenna in orthogonal direction or Y-shape using microstrip line feeds[12-14]. Regardless, these dual band and triple band slot antennas are large in size, most of the wireless applications minutarized antennas are needed. In literature designed edge cut dual band slot antenna, which finds applications in Bluetooth/WLAN and WiMAX [15] and Corner cut Insetfed dual band slot antenna for PCS and Bluetooth/WLAN Applications [16] which improves the impedance matching.

A novel design of Inset fed triple band U slot, Insetfed dual band dual slot and Inset fed microstrip antennas were presented. These antennas are little in size, straightforward development and minimal effort. By providing inset feed to these antennas better impedance matching is achieved. Dual band and triple band operation is obtained with appropriate slot dimensions, which find applications in GSM and WLAN. The VSWR, return loss, peak gain, peak directivity, radiation pattern and radiation efficiency are explained as well as design details of these antennas are discussed in this paper.

II. ANTENNA CONSTRUCTION AND DESIGN

The Inset fed microsrip antenna geometry is showed up in fig.1, Inset fed dual band dual slot microstrip antenna configuration is showed up in fig. 2, and Inset fed tripleband U slot microstrip antenna structure is showed up in fig.3.

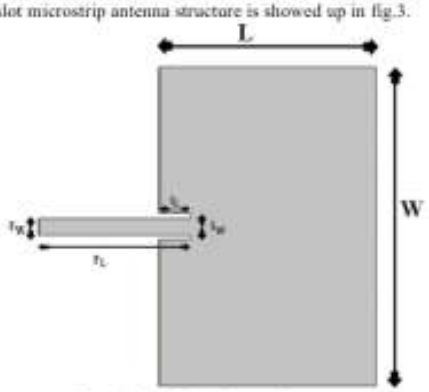

Fig. 1. Inset fed microstrip antenna

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"Estimation and Analysis of Instrumental Biases for GPS and NavIC Satellites and Receivers"

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Estimation and Analysis of Instrumental Biases for GPS and NavIC Satellites and Receivers

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ABSTRACT

The positional accuracy of Global Positioning System (GPS) and Navigation with Indian Constellation (NavIC) are affected by errors, one of the predominant errors is instrumental delay. This delay distorts the satellite signal and effect the position accuracy. To counter this problem, efficient models shall be used. In this paper, satellites' and receivers' instrumental bias is estimated using a modified Fined Receiver Bias (FRB) method, Singular Value Decomposition (SVD) technique and Self-Calibration of Pseudo Range Error (SCORE) model. The FRB method is based on the minimization of standard deviation of vertical Total Electron Content (TEC) computed from different satellites. The SVD based Least Mean Square (LMS) algorithm uses the values of one-day period corresponding to four GPS and NavIC stations. It uses data from dual frequency GPS receivers. To derive the instrumental bias errors the SCORE technique uses a self-consistency constraint on the receiver's measurements of ionospheric delay.

Key words: FRB, Instrumental Delay, SVD, SCORE

1. INTRODUCTION

GPS is a satellite based navigation system developed by the Department Of Defense (DOD) of United State Government. The GPS consists of six orbital planes with four satellites each. Hence, GPS constellation contains a minimum of 24 satellites [1]. NavIC has a 7-satellite constellation which covers India and a range of 1,500 km beyond its borders [2]. NavIC can provide position accuracy of within 10m over the Indian landmass and less than 20m over the oceans. NavIC system operates at two frequencies L5 and S that provide two types of services i.e. Standard Positioning Service (SPS) for civilians and Restricted Service (RS) for specific users. The accuracy of user position depends on ranging errors. For better position estimation these errors should be analyzed and mitigated. The GPS receiver makes corrections for clock errors and other effects but there are still residual errors which are not corrected. The signal that is modulated by the carrier is delayed by the instrumental bias [3]. The amount of delay in the signal is directly proportional to the TEC in the signal path and inversely proportional to the square of the operating frequency.

2. SINGULAR VALUE DECOMPOSITION ALGORITHM

To reduce multipath errors noise and Singular Value Decomposition (SVD) algorithm is used. The SVD based LMS algorithm is used to estimate the instrumental biases [4].

Step 1: The GPS position is estimated using Bancroft method and Kalman filter.

Step 2: The earth-centered angle is estimated using elevation angle (E) of the satellites with respect to the ground station GPS and also IRNSS receiver.

[E, S, A] = elevation (receiver(x,y,z),satellite(X,Y,Z)) (1)

Where, x,y,z are the receiver's and X,Y,Z are the satellite's coordinates respectively.

Step 3: TEC is estimated using GPS dual frequency and pseudo ranges by using the following formula.

TEC=(P2-P1)/40.30*($f1^2 * f2^2$)/($f1^2 - f2^2$) (2)

Where, f1 and f2 are the GPS frequencies, P1 and P2 are the pseudo ranges

Step 4: Slant TEC is computed using the vertical TEC and Slant factor,

STEC= Slant factor*TEC-(fitted biases) (3)

Where, Slant factor is estimated from,

1+(16*((0.53-elev).^3)) (4)

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Augmentation of NavIC with GPS Over Indian Region

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ABSTRACT

Global Positioning System (GPS) satellites are used to provide navigational services to the users in India. But now for security reasons, Indian Space Research Organization (ISRO) has developed its own navigation satellite system called as Indian Regional Navigation Satellite System (IRNSS). IRNSS is renamed as Navigation with Indian Constellation (NavIC). NavIC is an emerging satellite based navigation system offering an independent positioning and timing service over India and neighboring regions. Position accuracy of NavIC is 10m on land and 20m in Indian Ocean within 1500km around Indian Boundary. Moreover, to increase user position accuracy, the NavIC can be augmented with other navigation systems. This paper focuses, initially, on the analysis of satellite visibility of augmented NavIC with GPS. Comparative analysis of NavIC and NavIC augmented with GPS is also done in terms of Position Dilution of Precision (PDOP). PDOP specifies the user position error caused by the relative position of the satellites.

Key words: DOP, GPS, NavIC, Satellite Visibility.

1. INTRODUCTION

In May 2006, India decided to develop its own Navigation satellite system called as Indian Regional Navigation Satellite System (IRNSS) [1]. IRNSS is also known as Navigation with Indian Constellation (NavIC). The requirement of such a navigation system is driven by the fact that access to Global Navigation Satellite Systems (GNSSs) like GPS is not guaranteed in hostile situations. NavIC provides two services, one is the Standard Positioning Service (SPS) open for civil use and the other is Restricted Service (RS), encrypted one, for authorized users (military). NavIC if augmented with other navigation systems is expected to provide navigation and guidance with good accuracy. This paper focuses on the assessment of satellite visibility of NavIC-7 (NaivIC with 7 satellits) augmented with GPS. Comparative analysis of the augmented system with standalone NavIC-7 is also done in terms of PDOP.

2. OVERVIEW OF GPS AND NAVIC

The GPS constellation consists of a minimum of 24 satellites positioned in six orbital planes. Each orbit consists of 4 satellites. The orbital planes are inclined at an angle of 55° with respect to the equator. A minimum of 4 satellites are visible from any point on the surface of the earth. The GPS satellites are placed at a height of 20,200 km from the surface of the earth[2].

The NavIC has three segments. They are: Space segment, Ground segment and User segment. The NavIC space segment has a constellation of 7 satellites, orbiting above the earth at a height of 36000 km approximately. Out of 7 satellites, 3 satellites are placed in Geostationary Orbit (GEO) and 4 satellites are placed in Geosynchronous Orbits (GSO). NavIC satellites in Geosynchronous Orbits (GSO) are at a height of 36000 km, and are inclined at an angle of ±29° with the equator [3]. Due to this inclination, satellites provide coverage to the higher and lower latitudes near the poles. In Geostationary Orbit (GEO) they remain above the equator.

3. ESTIMATION OF SATELLITE VISIBILITY OF NAVIC-7 AUGMENTED WITH GPS

In case of NavIC-7, three SVs (IRNSS-1C, 1F, 1G) are GEO and four SVs (IRNSS-1I, 1B, 1D, 1E) are GSO. There is a possibility of the overlap of two GSO SVs (IRNSS-1I,1D) with the other two GSO SVs (IRNSS-1B,1E) respectively, twice a day, deteriorating the geometry required for proper positioning. Hence, the best as well as the worst cases of satellite visibility are considered for NavIC-7. Augmentation of NavIC with GPS is done according to their respective timings i.e. the constellation of NavIC at 6:00 am is augmented with the constellation of GPS at the same time and so on [4]. Latitude and longitude range of satellite visibility for all the four cases is shown in Table 1.

Preliminary Performance Analysis of IRNSS in Sea Environment”

"Configuring Artificial Neural Network by using Optimization Techniques to Recognize Speaker Voice"

Forecasting of Ionospheric Scintillations by using Statistical Models

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Global Positioning System (GPS) signals when propagate through ionosphere, experience random amplitude and phase fluctuations due to ionospheric irregularities. The variations in amplitude and phase if severe enough, degrade the receiver position accuracy and may result even complete loss of lock. The occurrence of ionospheric scintillations depends on geographic area, time of the day, solar cycle and season. From the literature, the occurrence of scintillations is more in low latitude region, medium at polar region and low at mid latitude region. Forecasting of scintillations is necessary in strategic applications to avoid the disruption of services. Significant work on forecasting TEC over low latitude region is reported, but not much on forecasting scintillations. In this paper, various forecasting statistical models like Holt-Winter (H-W), Exponential Smoothing (ES) and Grey Model (GM)) are used for forecasting amplitude (S_4) and phase (σ_ϕ(rad)) scintillations of GNSS signals. In the present analysis, the Golden Section Search method is used for optimization of statistical errors for better performance. The Golden Section Search method provides the optimum values of smoothing coefficients (α, β and γ) for achieving the minimum statistical error. For this analysis, GAGAN TEC receiver data (2016) of low latitude station Hyderabad is considered. Acquired data is segregated into 4 seasons namely winter (January and February), pre-monsoon or summer (from March to May) and southwest monsoon or rainy (from June to September) and post monsoon or autumn (from October to December) according to India Meteorological Department (IMD) and is used for analysis. Finally, the forecasted results are compared with observed scintillations for evaluating the performance of models in terms of various statistical parameters like Standard Deviation (SD), Mean Square Deviation (MSD), Mean Absolute Error (MAE), Mean Absolute Percentage Error (MAPE) and Mean Percentage Error (MPE). The forecasted results due to considered models are satisfactory. Our preliminary results indicate that the performance of Grey model is better than the rest of the models.

“Comparative Performance Analysis of Galileo and NavIC at a Low Latitude Station

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Galileo is an emerging civilian controlled Global Navigation Satellite System (GNSS), being developed by European Space Agency (ESA) and European Union (EU). Galileo comprises of 30 MEO (Medium Earth Orbit) satellites constellation. Currently, 17-satellites are operational and are visible from India at different times. The NavIC (Navigation with Indian Constellation) is an independent and indigenous regional navigation system developed by ISRO, India. NavIC is a seven satellites constellation, three are geostationary and four are geosynchronous satellites, and provides continuous visibility over Indian region. The Galileo operates on L-band (1-2 GHz) whereas NavIC operates on both L-band and S-bands (2-4 GHz). The advantage of S-band is ionospheric delay is relatively less, but susceptible to interference. Galileo's received signal power levels are 3dB higher than NavIC. For evaluating the comparative performance of Galileo and NavIC, 24-hours data form two static-mode receivers with 5^0 mask-angle located at Osmania University, Hyderabad (17°24'28.07"N, 78°31'4.26"E) are considered for two continuous days (8 and 9 August 2018). During a whole day, 3-8 Galileo satellites are visible; whereas a minimum 4 satellites are available for about 4-5 hours. Often, Galileo DOP's values (1.5) are better than NavIC DOP's (2.5). A good Galileo satellite geometry results in best GDOP (1.88) and PDOP (1.70) better than NavIC when four or more satellites are visible. For a dual frequency receiver with 99% of service to public, the Galileo horizontal position accuracy (4-meters) is better than NavIC horizontal accuracy (5-meters). The Galileo satellites E3, E7 and E25 are at high elevations (>60^0) and therefore, experience less propagation effects due to troposphere and ionospheres and are useful to obtain better accuracy. In contrast to GPS, the high elevated satellites are useful for low latitude and polar region's weather monitoring. It is likely that, NavIC with Galileo satellites rather than GPS will provide more precise and reliable GNSS applications and services in low latitude regions.

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