3.3.2 Number of Research Papers per Teachers in the Journals during the Academic Year 2017 - 2018

Title of Paper	Name of the Author/s	Department of the Teacher	Name of Journal	ISSN Number
A Novel Based Resource Allocation Method on Cloud Computing Environment Using Hybrid Differential Evolution Algorithm	Dr.M.Venkatesan	CSE	Journal of Computational and Theoretical Nanoscience	1546-1955 1546-1963
An Effective Load Balanced and Congestion Control Protocol for Wireless Multimedia Networks	Dr.M. Venkatesan	CSE	Asian Journal of Research in Social Sciences and Humanities	2249-7315
Grey Wolf Optimizer Based Web Usage Data Clustering With Enhanced Fuzzy C Means Algorithm	Dr.B.Kalaavathi	CSE	International Journal of Data Mining Techniques and Applications	2278-2419
Medical Image Fusion Based on Multiscale Transforms	Dr.B.Kalaavathi	CSE	Journal of Medical Imaging and Health Informatics	2156-7018 2156-7026
Similarity Based Image Re-Ranking Using Support Vector Machine	Dr.M. Vimaladevi	CSE	International Journal for Research & Development in Technology	2349-3585
Farm Monitoring and Controlling Based on Precision Agriculture	Dr. M. Vimaladevi	CSE	International Journal of Recent Engineering Research and Development	2455-8761
Parallel Heuristic Based Segmentation Technique	M.Jaganathan	CSE	Journal of Advanced Research in Dynamical and Control Systems	1943-023X
An Heuristic Cloud Based Segmentation Technique Using Edge and Texture Based Two Dimensional Entropy	Mr.M. Jaganathan	CSE	Cluster Computing	1386-7857

Web Portal Hierarchical Structure of Geospatial Field Data	Mr.V.Gopinath	CSE	International Journal of Innovative Research in Science, Engineering and Technology	2319-8753
Vulnerabilities Attacks on Mobile Operating Systems (Android Versus Ios),A Review	Ms. R.Deebika	CSE	International Journal of Advance Research, Ideas and Innovations in Technology	2454-132X
Vulnerabilities Attacks on Mobile Operating Systems (Android Versus Ios),A Review	Ms.D Kavinya	CSE	International Journal of Advance Research, Ideas and Innovations in Technology	2454-132X
Vulnerabilities Attacks on Mobile Operating Systems (Android Versus Ios),A Review	Ms.R.Sathyapriya	CSE	International Journal of Advance Research, Ideas and Innovations in Technology	2454-132X
Assessment Of Scelic Based High-Power Bidirectional Dc-Dc Converter For Effective Energy Management in PHEV	Dr.R Jeyabharath	EEE	Journal of electrical Engineering	1582-4594
Effective Energy Management in Electric Vehicles Using High-Power Bidirectional DC-DC Converter	Dr.R Jeyabharath	EEE	Asian Journal of Research in Social Sciences and Humanities	2249-7315
Content Based Mammogram Image Retrieval Using Particle Swarm Optimization and Hybrid Classifier	Dr.R Jeyabharath	EEE	Asian Journal of Research in Social Sciences and Humanities	2249-7315
Content Based Mammogram Image Retrieval Using Particle Swarm Optimization And Hybrid Classifier	Dr.P Veena	EEE	Asian Journal of Research in Social Sciences and Humanities	2249-7315
Carrier Shifting Algorithms for the Mitigation of Circulating Current in Diode Clamped Mli Fed Induction Motor Drive	Mr. C Santhakumar	EEE	International Journal of Power Electronics and Drive Systems	2088-8694 2722-256X
A Pulse Width Modulation for PV Connected Diode Assisted Z Source NPC-MLI to Obtain High Voltage Gain	Mr. C. Santhakumar	EEE	Journal of Electrical Engineering	1582-4594

A Multimodal Authentication for Biometric Recognition System Using Hybrid Fusion Techniques	Mr.S Velmurugan	EEE	Cluster Computing	1573-7543 1386-7857
Voice Controlled Smart Wheelchair	Ms.S.Premalatha	ECE	International Journal for Scientific Research and Development	2321-0613
Voice Controlled Smart Wheelchair	Mr.A.Ravi	ECE	International Journal for Scientific Research and Development	2321-0613
Voice Controlled Smart Wheelchair	Mr.J.Divakaran	ECE	International Journal for Scientific Research and Development	2321-0613
Voice Controlled Smart Wheelchair	Ms.E.L.Dhivya priya	ECE	International Journal for Scientific Research and Development	2321-0613
Border Alert System Using Smart Boat to Safeguard the Fisherman	Dr. N. R. Rajalakshmi	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
Border Alert System Using Smart Boat to Safeguard the Fisherman	Mr. K. R Gokul Anand	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
Border Alert System Using Smart Boat to Safeguard the Fisherman	Ms. B. Latha	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
Border Alert System Using Smart Boat to Safeguard the Fisherman	Mr. T. Marthandan	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
Border Alert System Using Smart Boat to Safeguard the Fisherman	Mr. S. Kathik	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248

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A Novel Step for the Enhancement of Security in Airports Using Optical Ideology	Ms.S.Premalatha	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering	2454-4248
A Novel Step for the Enhancement of Security in Airports Using Optical Ideology	Mr.A.Ravi	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
A Novel Step for the Enhancement of Security in Airports Using Optical Ideology	Mr. J.Divakaran	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
A Novel Step for the Enhancement of Security in Airports Using Optical Ideology	Ms. E.L.Dhivya priya	ECE	International Journal on Future Revolution in Computer Science & Communication Engineering (IJFRSCE)	2454-4248
Review Paper Renovation of Wastewater to Utilizable Energy	Mr. K.R.Gokulanand	ECE	International Journal for Scientific Research and Development (IJSRD)	2321-0613
Review Paper Renovation of Wastewater to Utilizable Energy	Mr.S.Karthik	ECE	International Journal for Scientific Research and Development (IJSRD)	2321-0613
CFD Studies on Heat Transfer and Friction Factor Characteristics of A Double Pipe Heat Exchanger	Dr. P.Murugesan	Mechanical	International Journal of Science and Engineering	2454-2016
Heat Transfer Enhancement of Solar Water Heater Using Various Tape Inserts	Mr. R.Vasanthakumar	Mechanical	International Journal of Science and Engineering	2454-2016
Analysis of Welding Robot Manipulator Arm Using Metal Matrix	Mr. G.Gowrisankar	Mechanical	International Journal of Science and Engineering	2454-2016
Extraction of Biodiesel With Neem Oil, Corn Oiland Pongamia Oil Blended With Diesel	Mr. M.Sathishkumar	Mechanical	International Journal of Science and Engineering	2454-2016

Characteristion of Biodiesel Extracted from Cotton Seed Oil Blended with Diesel	Mr. P.Chakravarthi	Mechanical	International Journal of Science and Engineering	2454-2016
Performance Analysis of Ceramic And Carbide Cutting Tools in Machining of EN36	Mr. S.Balamurugan	Mechanical	International Journal of Science and Engineering	2454-2016
Optimization of Cutting Parameters in Milling of Aluminium 7075 Alloy Using Response Surface Methodology	Mr. K.Gopalakrishnan	Mechanical	International Journal of Science and Engineering	2454 - 2016
Optimization of Cutting Parameters in Milling of Aluminium 7075 Alloy Using RSM Methodology	Mr. K.Gopalakrishnan	Mechanical	International Journal of Science and Engineering	2454 - 2016
Experimental Investigation of Heat Transfer Co-Efficient In Nanofluids	Mr. S.Mohanavelan	Mechanical	International Journal of Science and Engineering	2454 - 2016
An Analysis of Energy Efficiency Improvement Through Wireless Energy Transfer In Wireless Sensor Network	Dr. P.Meenakshi Devi	Information Technology	Wireless personal communication Springer	0929-6212 1572-834X
An Analysis of Energy Efficiency Improvement Through Wireless Energy Transfer In Wireless Sensor Network	Ms.M.Dhurgadevi	Information Technology	Wireless personal communication Springer	0929-6212 1572-834X
Implementation of Text and Voice Enabled Artificial Intelligence Chatter Bot	Mr.D.Balakrishnan	Information Technology	Internation Jouranl of Research in Computer Science	2349-3828
Encrypted Bigdata Using AES Deduplication in Cloud Storage	Mr. N.B.Mahesh Kumar	Information Technology	International Journal of Engineering and Computer Science	2319-7242
T-Tracking Algorithm for Data Tracking in Wireless Sensor Networks	Ms.P.Keerthana	Information Technology	International Journal of Engineering Sciences and Research Technology	2277-9655

Title	Author	Department	Journal	ISSN
Network Capacity Based Geographical QOS Routing for Multimedia Streams Over MANET	Ms.P.Keerthana	Information Technology	International Journal of Engineering Sciences and Research Technology	2277-9655
Topic Categorization on Social Network Using Latent Dirichlet Allocation	Ms.S.S.Ramyadharshni	Information Technology	Bonfring International Journal of Software Engineering and Soft Computing	2277-5099
Visible Light Photocatalytic Activity of Pure And Palladium (Pd) Doped SnO2 Nanoparticles By a One Step Facile Route	Dr.D.Madhan	Physics	Journal of Materials Science: Materials in Electronics.	1573-482X
Synthesis of ZnO Nano Wire and ZnO/CeO2 Solid Solution Nano Wire By Bio-Morphing and Its Characterization	Dr.B. Murugesan	Chemistry	Journal of the Taiwan Institute of Chemical Engineers	1876-1070
Synthesis and Photocatalytic Studies of Lanthanum Oxide Doped Nano Carbon Hollow Spheres	Mr.B. Murugesan	Chemistry	Journal of the Taiwan Institute of Chemical Engineers	1876-1070
Intuitionistic Fuzzy Semiprime Ideals In Semigroups	Dr. N.Lalithamani.	Mathematics	International Journal of Current Engineering and Scientific Research	2393-8374, 2394-0697
A New Fuzzy Approach for Segmentation of Chromosomes	Dr. N.Lalithamani.	Mathematics	International Journal of Current Engineering and Scientific Research	2393-8374, 2394-0697

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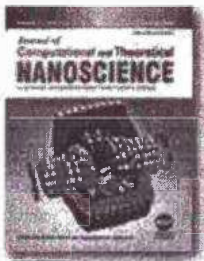
A Novel Based Resource Allocation Method on Cloud Computing Environment Using Hybrid Differential Evolution Algorithm

Authors: Kumar, A. M. Senthil; Venkatesan, M.

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Abstract   � **References**   99 **Citations**   ☰ **Supplementary Data**   ◕ **Article Media**   ⬈ **Metrics**   ➕ **Suggestions**

Nowadays people are connected to the internet and access various Cloud services and store information. Cloud computing assembles a massive number of vi tualized services like infrastructure, platform and software. Cloud computing ensures access to shared resources and common infrastructure and giving services on demand over a network to fulfill dynamic business requests. Implementation of effective multi-objective Resource Allocation is a major issue in cloud computing. Several hybrid optimization algorithms exist to resolve the Resource allocation issues. Genetic Algorithm hybrid with PSO (GAPSO) and Differential Evolution Algorithm hybrid with PSO (DEPSO) are hybrid algorithms of GA and DE, they perform better than ordinary GA and DE. This paper demonstrates the advantage of GAPSO and DEPSO over traditional GA and DE techniques and it exploits multi-objective task scheduling using differential evolution with PSO in cloud data centers. Empirical results show that the proposed DEPSO technique improves the efficiency of multi-objective resource allocation. The experimental results prove that DEPSO is able to achieve a better performance than GAPSO.

https://www.ingentaconnect.com/content/asp/jctn/2017/00000014/00000011/art00025

An Effective Load Balanced and Congestion Control Protocol for Wireless Multimedia Networks

2 authors, including:

Sumathi Kumarasamy
EBET Group of Institutions
6 PUBLICATIONS   15 CITATIONS

Some of the authors of this publication are also working on these related projects:

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Grey Wolf Optimizer Based Web usage Data Clustering with Enhanced Fuzzy C Means Algorithm

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Abstract - Recommendation system plays a major role in web mining and it is applied to many applications such as e-commerce, e-government and e-library. The key challenges of recommendation system is to recommend the users based on their interest among more visitors and huge information. To make this challenge effective, there is a need for clustering algorithm to handle the data. Hence, this research focused on designing effective clustering algorithm to apply it in e-commerce applications. The grey wolf optimization based clustering is proposed to make an efficient clustering method for grouping the users based on their interest. To find the effective clustering, proposed a grey wolf optimization based fuzzy clustering algorithm, and made a comparison on Fuzzy C Means (FCM) based Genetic Algorithm (GA), Entropy based FCM and Improved Genetic FCM (FCM-GA). The experimental results proves that it performs better than traditional algorithms, at the same time the quality is improved.
Keywords - Recommender systems, E-commerce, Fuzzy C Means, Grey Wolf optimization, Fuzzy Clustering.

I. INTRODUCTION

Recent development of World Wide Web (WWW) leads to interface many information's on web and provides web based services such as support, service, shopping sites, etc. Many web based researches were made based on knowledge discovery represented in (Etzioni 1996) [1]. Generally, web mining may classified in to two types, such as web content mining and web usage mining. The web usage mining is a process of clustering the web users based on their common properties. It helps web masters to provide the more suitable and customized services to users in-terms of analyzing the characteristics of groups. In some applications, the recommendation processed by their reviews and purchase history. For further classification, it is necessary to consider some attributes, demographic data, items viewed and subjects interest. In online shopping, the recommendation algorithm is used to personalize the online store with each user interest. It helps to change the websites periodically based on the customer interests. In this research, the proposed method is elaborated in detail. Based on the several challenges represented below, the proposed E-Commerce recommendation is initiated.

- Normally, a retailer having a huge amount of data, millions of customer and several catalog items
- The information content of new user is very less and limited because of few purchases or due to product ratings
- The interaction between the algorithm and customer information must be fast, if it delays the data's will be erased because the customer data is volatile

- It works under the old customers who are all having thousands of purchases and ratings
- The recommendation process must be in real time basis to achieve best recommendation system.

Fu *et al.*, (1999) [2] discussed the web users based on the access patterns. The clustering of web users are made based on their browsing history access patterns on web. Linden *et al* (2013) [3] presented an industry report about the recommendations in online shopping. They made a recommendation algorithm by finding set of customers rating and user's purchased history. The algorithm uses two types of versions namely, collaborative filtering and cluster models. The algorithm represents the recommendations based on the similarity between two customers namely A and B respectively. They represented a common way in vector format indicated in equation 1.1. They also stated collaborative filtering is computationally expensive.

$$Similarity \ (\vec{AB}) = \cos(\vec{AB}^-) = \frac{\vec{A} \cdot \vec{B}}{\|\vec{A}\| \cdot \|\vec{B}\|} \tag{1.1}$$

Sarwar *et al* (2001) [4] analyzed different item-based recommendation generation. They used weighted sum versus regression model to obtain the recommendations from item-item correlation techniques and cosine similarities between each item vectors. Finally, traditional method are compared with the basic k-nearest neighbor approach and proved it is better than user based algorithms. Rakibe *et al* (2013) presented a K-Means based online market analysis. To manage the customer data'as per requirement, the market segmentation is used. Market segmentation includes customer retention strategies, allocation of resources to advertise and segmenting the product price and identify the potential customers. Clustering divides the records presented in the data base, i.e., dividing the dataset into several subclasses. The remaining part of this paper is organized as follows, in section 2 the survey is made about the clustering in detail, it also tabulated similar clustering methods. In section 3, the problem identification is mentioned. In section 4, methodology describes about Fuzzy C-Means based Genetic Algorithm, entropy based FCM, improved genetic FCM and proposed grey wolf optimizer based clustering. Finally experimental results were made in section 5 and summarized in section 6.

II. LITERATURE SURVEY

Büchner and Mulvenna (1998) [6] described the combination of data mining techniques with internet data, in order to make correct action in electronic commerce. The data which is considered here is server data, web meta information, marketing data and marketing knowledge. Yuan and Cheng

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Medical Image Fusion Based on Multiscale Transforms

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Medical image fusion is used to derive more useful information from different modality medical images. In this paper, medical image fusion method based on multiscale transforms is presented. The proposed method uses the combination of Non-Subsampled Contourlet Transform (NSCT) and Stationary Wavelet Transform (SWT) for the decomposition of images. The decomposed coefficients are fused twice using maximum selection, spatial frequency and variance fusion rules. The reconstructed image is obtained by taking inverse multiscale transforms on fused coefficients. The experimental analysis of the proposed method is performed with several sets of medical images. The fusion results show that proposed image fusion method performs much better than existing state-of-the-art image fusion methods which include pixel averaging, principal component analysis (PCA) and gradient pyramid, discrete wavelet transform (DWT) and NSCT methods in terms of quantitative and qualitative results.

Keywords: Multimodality Medical Image Fusion, Stationary Wavelet Transform, Non-Subsampled Contourlet Transform, Medical Imaging.

1. INTRODUCTION

The image fusion is widely used in various fields like medical imaging, machine vision, remote sensing, microscopic imaging and military applications. The image fusion is the process by which multiple source images are combined to form single fused image without introduction of distortion or loss of information.[1] The fused image provides more information for machine or human perception or further image processing and analysis tasks.[2] In the recent years, medical image fusion plays an important role in clinical applications for diagnosing diseases and better treatment.[3] The different types of multimodality medical images such as Computed Tomography (CT), Magnetic Resonance Angiography (MRA), Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET), Single-Photon Emission Computed Tomography (SPECT) images, X-rays, etc. provide only limited information. These images usually give complementary information. For example, the Computed Tomography image provides the information about bones, but it cannot give the information about physiological changes, while the Magnetic Resonance image provides the information about pathological soft tissues, but it cannot give the information about bones.[4] As a result, information from these multimodality medical images can be integrated to obtain a more accurate description of same object. It helps in diagnosing diseases, better treatment

and also reduces storage cost by storing single fused image instead of multiple-input images.

So far, many image fusion techniques have been developed in the literature.[5–16] Some techniques are dedicated to multimodality medical image fusion.[17–34] These image fusion techniques are classified into three categories which includes pixel level, feature level and decision level fusions.[2] For medical image fusion, pixel level image fusion is usually employed due to the advantages of containing the original measured quantities, easy implementation and computational efficiency.[5] For present work, pixel level fusion is taken. The simplest image fusion method consists of taking the average of the source images, pixel by pixel, to create the fused image. However, this method creates the blurred images where the details are rather reduced.[6] For this reason, the various methods have been developed such as Principal Component Analysis (PCA),[7] Intensity-Hue-Saturation,[8] Independent Component Analysis,[9] Brovey transform,[10] Gradient pyramid,[1] Laplacian pyramid,[11] Ratio-of-low-pass pyramid,[12] Contrast-pyramid,[13] Morphological pyramid,[14] DWT based methods.[15–17] The disadvantage of pyramid based method is that it produces blurred images and does not provide spectral information. The wavelet based methods which is commonly used, perform multiresolution decomposition on input images. The composite image is obtained by performing an inverse multiresolution transform on decomposed images. Although DWT provides good localization both in time and spatial frequency domain, one of the major drawbacks of DWT is

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Similarity Based Image Re-ranking using Support Vector Machine

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Abstract: The examination of client scan objectives for an inquiry can be exceptionally helpful in enhancing web index pertinence and client encounter. Hence this system may be portrait the comprehension of fundamental objectives of client hunts, and our involvement in utilizing the structure to physically arrange inquiries from a web index. To empower differences to be evaluated, it is important to order significant images to an offered topic to one or more sub-subjects or bunches. The proposed system also identifies the difficulties during main test gathering for assessing differing qualities in image recovery. This incorporates selecting suitable subjects, making sub-themes, and measuring the general viability of a recovery framework. It proposes the alleged "navigational" ventures are less common than by and large accepted, while a formerly unexplored "asset looking for" objective may represent a vast part of web quests. In addition to that it shows the learning of client pursuit objectives which may be utilized to enhance future web search tools. Despite the fact that the examination on inducing client objectives or goals for content inquiry has gotten much consideration, little more effort has been proposed for image seek. And also represent how this information of client inquiry objectives may be utilized to enhance future web crawlers. The system utilized proclivity proliferation to bunch of images of confronts, recognize qualities in microarray information. The proposed approach incorporates semantic information into Web Usage Mining and personalization forms.

Keywords —Click-through logs, goal images, image-search goals, semi-supervised clustering, spectral clustering.

I Introduction

Data mining is the domain which encompasses methodology for extracting the hidden predictive information from large databases. It is a powerful new technology with great potential to help companies focus on the most needed information which is maintained by data warehouses. Data mining tools predict future trends and behaviours allowing business to make proactive, knowledge driven decisions. Data techniques are the result of a long process of research and product development. This evolution began when business data was first stored on computers continued with improvements in data access, and more recently generated technologies that allow users to navigate through their data in real time. Data mining is ready for application in the business community. The "why" of person search behaviour is absolutely essential to fulfilling the person's fact. In any case, users don't sit down at their pc and say to themselves, "I suppose I'll perform a little searches." searching is merely a way to an give up – a manner to satisfy an underlying purpose that the user is attempting to gain. Inferring user search goals could be very vital in enhancing seek-engine relevance and consumer revel in. However, given that external texts are not always dependable (i.e., now not guaranteed to precisely describe the photograph contents) and tags are not continually available (i.e., the photos won't have corresponding tags that want to be deliberately created by means of users), those textual data based techniques nevertheless have barriers. It should be possible to infer user picture-seek desires with the visual records of snap shots (i.e., image features) since specific image-search dreams usually have precise visible patterns to be outstanding from every other. The net search engine has long come to be the most vital portal for normal human beings searching out useful data on the web. However, users might enjoy failure when engines like google return irrelevant outcomes that don't meet their actual intentions. Such irrelevance is essentially because of the good sized type of customer contexts and backgrounds, in addition to the paradox of texts personalised net seek (PWS) is a well known class of

Farm Monitoring and Controlling Based On Precision Agriculture

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Abstract: The purpose of the research work is to design a smart farming also known as precision agriculture which allows farmers to maximize yields using minimal resources such as water, fertilizer, and seeds. In this proposed system, the smart farming will be link to smart sensing system and smart irrigator system with the help of wireless communication technology. Our system focuses on the measurement of physical parameters such as soil moisture content, nutrient content, and pH of the soil that plays a vital role in farming activities. A number of high ended sensing technologies are handling in precision agriculture which indulges various observed data that helps farmers to monitor and optimize crops. Wireless sensor networks are playing an important role with the advent of the Internet of things and the generalization of the use of web in the community of the farmers. The Internet of Things having a cloud which may represent the platforms allowscreating web services suitable for the objects integrated on the Internet. This paper presents WSN as the best way to solve the agricultural problems related to farming resources optimization, decision making support, and land monitoring. Monitoring is done with the help of wireless sensor networks and all the control process is done with the help of the microcontrollers.

Index Terms: Big Data, Smart Farming, IoT.

Introduction

The Internet of Things has opened up intensiveworthwhile ways for farmers and growers to cultivate the crops in soil and raise livestock with the use of cheap, easy-to-install sensors and an abundance of insightful data they offer. Prospering on this prolific build-up of the Internet of Things in agriculture, smart farming applications are gaining ground with the promise to deliver 24/7 visibility into soil and crop health, machinery usages, conditions of the storage places, behavior of animal and the energy consumption level. The farming and agricultural industry relies on innovative ideas and technological advancements to help increase yields and better allocate resources Today, a driving force behind increased agricultural production at a lower cost is the Internet of Things (IoT).A sensor is a tool which requires more energy to get information from one area to another. To achieve, IoT product creators often engineer applications to send much less data (or send data less frequently) to save on costs and power. The most IoT agriculture is typically outside or spread over a large area, need to consider a low power application. Otherwise, the service and upkeep of many distant sensors will be overwhelming for the end user.The data packets a sensor can send depends on the different factors such as end user application and local environment. And another important factor will be battery life .Once or twice a day is probably sufficient, which means the battery life will be far greater.Many farms have may contain water storage tanks, dung, Combustile, or livestock feed. Monitorthe water levels of these tanks more than once a day is probably unnecessary.Once the irrigation process starts, continual updates can ensure that the right amounts of water are being released which may leads to reduction of leakages. Some sensors—like moisture sensors—are embedded, and require microcontrollers to interface.Smart farming is a concept quickly catching on in the agricultural business. Offering high-precision crop control, useful data collection, and automated farming techniques, there are clearly many advantages a networked farm has to offer. To provide information about crop yield, rainfall, pest infection farmer need some technology, hence IoT sensors have a capacity to provide such kind of information to farmers. Soil nutrition information is invaluable to production and offer precise data which can be used to improve farming techniques over time.

The proposed system tries to produce a network based farming and agricultural activities so that the farmers can check on the requirements of the crops and accurately predict their growth.

PARALLEL HEURISTIC BASED SEGMENTATION TECHNIQUE

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ABSTRACT

One of the most researched topics in the current day is Cloud Computing. This technology provides users with several features. In image processing applications where, large computation or storage is required, cloud computing is advantageous. A very popular technology in image processing and analysis technology is Edge detection technology which is now being applied across fields such as pattern recognition, image enhancement, image segmentation, feature description and the other image analysis and processing fields. The objects and their boundaries are localized within their boundaries by means of edge detection which forms a basis for different image analysis and also the avenues for machine vision. In the traditional approaches for edge detection, each set of operations is conducted on every pixel and hence are expensive in terms of computation. Also, with these traditional approaches, with the increase in the image size, the time taken for computations also increases. Meta heuristic algorithms help in optimization of the segmentation. This behavior can be mimicked using the notion of the Ant Colony Optimization(ACO) algorithm with artificial agents that explore the graph which denotes the issue to be solved. For optimization of multi modal functions with equivalent or uneven plan function values, Glow Worm Swarm Optimization (GSO) is a popular modern swarm intelligence technique. For effective segmentation processing of images, this work proposes a hybrid parallel ACO-GSO, so that an image can be effectively segmented.

Keywords: Cloud computing, Edge detection, Genetic Algorithm (GA), Ant Colony Optimization, Glow Worm Swarm Optimization (GSO) and hybrid proposed parallel ACO-GSO.

1. INTRODUCTION

Cloud computing [1] is an innovative technology. It enables the users to use computing resources on a pay-per-use basis. This can be widely exploited in the healthcare sector. The infrastructure as well as the platforms that run the applications is provided by the cloud managers [2]. This can deliver computing resources and also storage capacities to

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An heuristic cloud based segmentation technique using edge and texture based two dimensional entropy

M. Ja ganathan[1] · A. Sabari[2]

Abstract

The Edge detection will localize the objects and their boundaries within an image which is a basis for various image analysis and the applications of machine vision. There are conventional approaches to edge detection which are expensive in terms of computation as each set of such operations are conducted for every pixel. In case of approaches that are conventional the time taken for computation will increase with that of the image size. The edge detection is used extensively in case of image segmentation of the medical images. An Ant Colony Optimization algorithm consists of many advantages such as parallelism, robustness and easy computation. The Glowworm Swarm Optimization (GSO) is that probabilistic technique which is used for finding the optimal paths that are connected completely in the guided search by means of using the information on brightness. The technique is also used for solving problems in computation that are reduced in finding. In case of the GSO algorithm where the insects move in a search space that is dictated probabilistically by using transition probabilities. In this work, a heuristic cloud based segmentation is performed using edge method and texture based 2-Dimensional entropy. The results have shown that this method proposed has achieved better performance.

Keywords Image segmentation · Edge detection · Texture · Parallel processing · Ant Colony Optimization (ACO) and Glowworm Swarm Optimization (GSO)

1 Introduction

The image segmentation is the challenging mechanism in digital image process which is used to segment an image into many parts with similar properties. The aim of such a segmentation is simplification that represents an image in an analysable way. The goal of such an image segmentation will be the division of the image into many parts or segments that has similar attributes [1]. The very basis applications in image segmentation will be the content based retrieval of images, the medical imaging, the object detection and tasks of recognition, along with that of the automatic traffic control systems as well as a video surveillance. Image segmentation can further be classified into two different types which are the local segmentation (connected to a certain region or part of the image) and also the global segmentation (connected to segmenting of the entire image that can contain large pixels). The techniques of Image segmentation are edge detection, region based, fuzzy theory based and artificial neural network based image segmentation.

The edge detection techniques [2] is defined as the transform of images to the edge images by means of benefiting from the changes made of the grey tones. The edge detection will divide images by observing the change in the pixels of their intensity. These edges will be the sign of the lack of ending and also the continuity. Resulting from this type of transformation, the edge image will also be obtained without having to encounter any such changes in the physical qualities of the main image. The edge of image includes a significant local change in the intensity that is associated normally with the discontinuity of the image intensity or the first imitative of any of the image intensity. The edge will be that set of connected pixels that lie within the boundary among two different regions differing in their grey value and so these pixels in the edge will be known as the edge points. The edges are distinguished by means of estimating the gra-

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Web Portal Hierarchical Structure of Geospatial Field Data

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ABSTRACT: Geosciences include remote sensing images, climate model simulation and so on. The spatial-temporal data have become more and more multidimensional, enormous and are constantly being modernized. As an outcome, the integrated maintenance of these data is becoming a challenge. A blocked Effective Hierarchical structuredversion within the split-and-merge hypothesis for the compacted storage, endless updating and data querying of multidimensional geospatial field data. The unique multidimensional geospatial field data are split into small blocks in accordance to their spatial-temporal references. The blocks are then characterized and compressed as Hierarchical structures for updating and querying. They are then combined into a single hierarchical tree. The use of buffered binary tree data structure and equivalent optimized operation algorithms, the original data can be constantly compressed, attached, and queried. In comparison with conventionalsystems, the new approach is revealed to keep hold of the features of the original data with much lesser storage expenses and faster computational performance. The outcomeimplies an efficient structure for integrated storage, presentation and computation of multidimensional geospatial field data.

KEYWORDS: Geospatial data, Spatial-Temporal Reference, HTR, RTree.

I. INTRODUCTION

The data observation and model simulation rapidly develops in geosciences. The data from these systems have high dimensionality and huge volumes. Bulk amount of observation of exiting attributes/variables are successively produced by large-scale observation systems. These data are compressed for storage and the lately arrived data must be constantly compressed and attached to the present data, such that these data are integrated to the existing data as a whole. This updation procedure should be done in a short time and can be continually applied for the next piece of fresh data. The compression and storage must preserve the reliability of the spatial-temporal reference (STR) of this data.Balances the data accuracy, compression performance and improve the index and query analysis.The explosion of both the data volumes and dimensionality makes storage, management, query and processing a scary approach for existing results.Conventional methods make use of data indexes to speed up the query and storage. When the dimension grows, the data segmentation along with data structure are becoming complex and inefficient. Big data or data-intensive computing results use parallel data I/O and computation to fasten the data accessing and updating. On the other hand, huge computers and complex computation architectures are required to provide the I/O bandwidth and computation power needed. This condition turns out to be worse when the continuous data compressing, attaching and updating are necessary. Within the current data version and analysis framework, neither the conventional methods nor the big data or data-intensive computing solutions are matched for dynamic data attaching and updating. Hence finding optional data structures that fit the essential storage architecture may be difficult. The current exiting solutions for constant data

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Vulnerabilities attacks on mobile operating systems (Android versus iOS): A review

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ABSTRACT

As the needs of humans are rising, the technology is also growing tremendously, with the adverse necessity in day to day life for the usage of latest technologies mobile phone ranks top in the list. Such ubiquitous computing has several benefits, which also saves a higher intensity of time. With the increased connectivity facilities provided by the smartphones. Every citizen tends to use those facilities. Therefore these smartphones provide an ideal target for the hackers. The giant operating systems so far popular among smartphone users is ANDROID, which is an open source operating system. The next flagging operating system is iOS. The malware writers tend to code for android comparatively. Thus these fly rocketing technologies must be targeted for their safety rather than for their usage. This paper provides an overview of the major reasons for threats in iOS and Android operating systems.

Keywords— Android operating system, iOS, Malware

1. INTRODUCTION

The world is diverse and the needs are not limited, these have created the computing. Rather than using standalone computing, ubiquitous computing has become an ideal one which makes people idle too. With the advent of mobile phones, the communication has become a reachable resource for the rural areas. The Android operating systems serve as the top with more features. Since it's an open source O.S every one could purchase it on ease.

Fig. 1: Graph showing usage of different operating systems in 2018

In the year 2018, about 68.71% of people are using android O.S, 29.60% are using iOS, 0.30% of people are using windows phone, and 0.06% are using Symbian. The iOS are costlier compared with all smartphones since it is not a free source operating system. But still, due to its best features, there is a wide increase in the iOS usage in the current market.
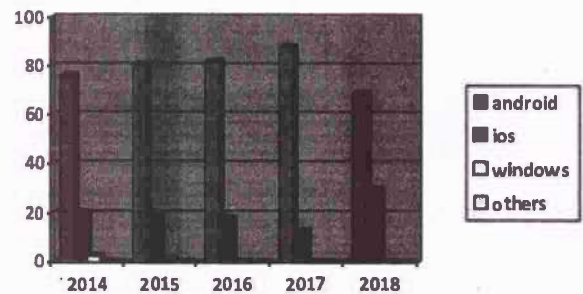

Fig. 2: Graph showing usage of different operating systems in different years

From the above graph, it is observed that the Android O.S has its peak in 2017 and has got down in early 2018. Thus the iOS usage is widening. The below sections shows the reason for the increased usage of iOS compared with the android.

2. THE ARCHITECTURE OF ANDROID OS

Android is an open source operating system, as it is built upon Linux kernel it has achieved that property. Android is built with the software stack comprising of applications, application framework, libraries, Linux kernel. For providing the better mobile application, each layer in the stack is tightly integrated. The coding for Android is done in java.

Thus Android is an open source O.S with interoperability feature, it provides a better way for the developers to design their applications at ease of cost. This also reduces the overall cost to the manufacturer for the phone device in the internet world.

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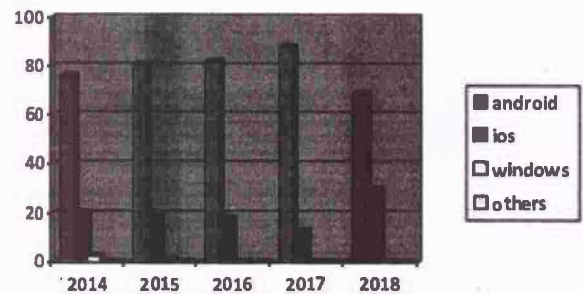

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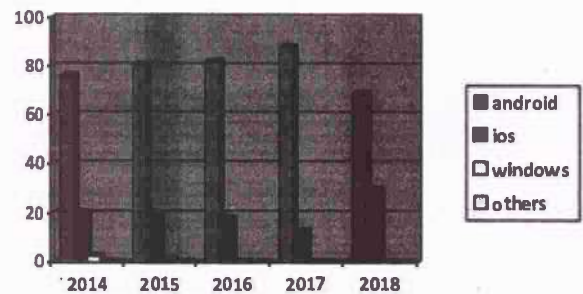

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Thus Android is an open source O.S with interoperability feature, it provides a better way for the developers to design their applications at ease of cost. This also reduces the overall cost to the standalone phone device in the internet world.

ASSESSMENT OF SCELIC BASED HIGH-POWER BIDIRECTIONAL DC-DC CONVERTER FOR EFFECTIVE ENERGY MANAGEMENT IN PHEV

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Abstract: In this paper novel self-computational emotional learning based intelligent controller is proposed for battery charging control in Plug in Hybrid Electric Vehicle (PHEV). PHEV plays a significant role in world's vehicle market for its reduced fuel consumption and less emission of gasoline. The large capacity of a battery in PHEV reduces fuel consumption, but it is an unexpected load in a residential power system. It may cause a Voltage drop in a power system in case of uncoordinated charging of many PHEVs at a time. A high power bidirectional DC-DC converter is introduced in PHEV to charge the battery when the motor in PHEV acts as a generator. Effective of charging of battery reduces the load to the grid which is proposed by novel SCELIC controller in this paper. Effectiveness of the proposed system is simulated using Matlab and compared to the Adaptive neuro-fuzzy controller based charging system. This paper proposes a method to reduce load demand on the distribution grid.

Key words: Plug in Hybrid Electric Vehicles (PHEV), ANFIS, SCELIC, Bidirectional converter, Battery Energy Storage System.

1. Introduction.

The transportation sector is a major consumer of fossil fuel and emanates a high amount of pollution [1]. A recommended solution for this crisis necessitates motivating the higher use of electrified vehicles. Electrified vehicles are categorized as Electric vehicle, Hybrid electric vehicle and Plug in Hybrid electric vehicle. PHEVs have the additional ability to store energy from the electricity grid, using large capacity batteries. The energy stored can drive the vehicle on short trips, by this means it reduces vehicle's dependency on petroleum and potentially CO2 emissions. The major aspect with the PHEV is an abridged discharge of CO2 [2]. The discharge rate of CO2 by different types of vehicles per annum is shown in figure 1. The utilization of PHEV lessen increasing Green House Gas discharges from 2010 to 2050 can vary from 3.4 to 10.3 billion metric tons. The main feature with the PHEV is a reduced discharge of CO2 [2].

PHEVs offer the potential to lessen both gasoline utilization and related emissions. Compared to a HEV battery of PHEV is larger and more powerful motor is used in PHEV [3]. PHEVs are charged by either plugging into electric outlets [4] or by means of on-board electricity generation. Charging of PHEV increases the load on the distribution grid [5].
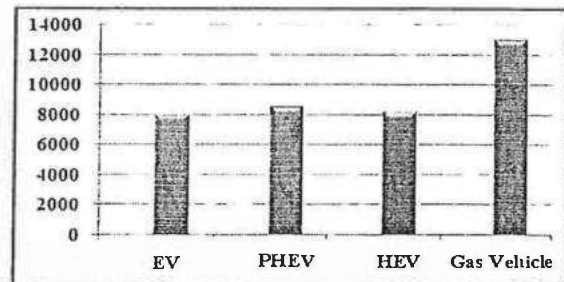

Fig. 1. Emission of CO_2 by vehicles per annum.

Unplanned charging of PHEVs in grid causes a voltage drop which reduces the quality of power in a grid. Since battery of PHEV is larger power consumption is high so in order to maintain power quality and reduces energy consumed from the grid efficient charging of a battery is discussed in this paper. The power use can be downplayed when the battery is turned on using some other sources instead of from the grid. In the period of regenerative braking or when the motor runs above the rated speed the motor works as a generator. This ability can be used to charge the battery in PHEV. For this dual active bridge is proposed in this paper. The dual active bridge is a bidirectional, controllable, de-de converter that has high power abilities consists of a high frequency transformer, eight switching devices, de-link capacitors, and energy transfer inductor. By reason of the symmetry of this converter, with indistinguishable primary and secondary bridges, it is competent of bidirectional power flow control and the cause why it is chosen for PHEV. Modeling of dual active bridge bidirectional converter is analyzed by F. Krismer in 2010 [6]. Chenhao Nan; Ayyanar, R Analyzed PWM control technique for DAB in solid state transformer applications [7].

Various Design schemes and Techniques to Improve the Performance of a Dual Active Bridge with Phase-Shift Control is analyzed by Rodriguez, A et al., in 2015 [8]. High-Efficiency Dual-Active-Bridge DC/DC Converters is discussed with its switching losses by

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Effective Energy Management in Electric Vehicles using High-Power Bidirectional DC-DC Converter

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Abstract

The Plug in Hybrid Electric Vehicle has become passion today for its less emission of gasoline and reduced fuel price. PHEVs have battery to be recharged from a standard power vent. It is an unexpected load in residential power system. Uncoordinated charging of many PHEVs at a time creates a sudden change in load demand of grid causes a potential drop in power system and power loss. PHEV consumes more energy from the grid. This report offers a technique to trim power consumption from the power system. A high power, bidirectional DC-DC converter is introduced in PHEV to charge the battery when the motor in PHEV acts as a generator. In this paper, intelligent fuzzy logic controller is proposed as charging controller of the battery. Performance of the proposed system is simulated using Matlab and compared to the conventional controls. This paper proposes a technique to reduce load demand on distribution grid.

[Top]

Keywords

Plug in Hybrid Electric Vehicles (PHEV), PI controller, Fuzzy logic controller, Bidirectional converter, Battery Energy Storage System.

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Content based Mammogram Image Retrieval using Particle Swarm Optimization and Hybrid Classifier

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Abstract

In this paper present a content-based image retrieval system is designed to retrieve the mammogram images from the large medical image database. The proposed CBIR system consists of three steps. The first step is feature extraction based on shape, marginal and texture features, and the second is a selection of possible features using PSO algorithm. Finally, the third step is the retrieval of mammogram image using the hybrid classifier, a combination of artificial neural network (ANN) with Multilayer Feed-Forward Back propagation (MLFFB). Finally retrieval the mammogram images using MLFFB-ANN based on possible selection features. Furthermore, the results also show that the proposed learning approach of MLFFB-ANN can improve their retrieval performance compared to SVM and Naïve Bayes algorithm.

Top

Keywords

Mammogram, PSO Algorithm, content based image retrieval, Multilayer Feed-Forward Back propagation, and artificial neural network.

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Carrier Shifting Algorithms for the Mitigation of Circulating Current in Diode Clamped MLI fed Induction Motor Drive

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Article Info	ABSTRACT
	Reduction of circulating current is one of the major considerations in inverter fed electrical drives. Diode clamped MLI enables higher output current per phase, thereby rating of the drive gets increased effectively. Various methods of triggering in the inverter legs creates better voltage profile and leads to the enabling of circulating current in the drive system. The induced circulating current flows through the apparatus neutral (N) and supply ground (G) is caused by the existence of parasitic capacitance. This circulating current may cause potential danger especially when parasitic capacitance poses large. In the past, different modulation techniques and conversion topologies have been introduced to minimize the flow of circulating current. However, these techniques lead to complexity, high cost, low voltage profile and efficiency due to lower modulation parameters. This paper proposes PS, POD, PD carrier shifting PWM algorithms for diode clamped MLI to tumbling the circulating current within the each phase of inverter legs. The performances of proposed algorithm, in terms of circulating current, THD, losses and efficiencies are analyzed theoreticallyand are validated via simulation and experimental results.

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1.   INTRODUCTION

Inverters are widely used in different industrial applications for conditioning the power in adjustable speed drives and renewable energy system because of it's ability to generate the desired output profile [1]-[2]. Multi-level topologies are employed mainly to minimize the harmonics in the inverter's output and to reach the required voltage rating of the power equipments. Multilevel inverters are becoming more popular because of it's power rating, reduced harmonics and EM. The multilevel inverter contains three topologies namely diode-clamped (DC-MLI), cascaded inverters (H-bridge-MLI), capacitor clamped inverters (FC-MLI) [3]-[4]. The inverters have various types of modulation strategies to control the performance. Space Vector Modulation (SVM) is one of the most popular PWM techniques. The carrier based PWM strategy can be segregated into two types they are single carrier and multi carrier PWM. The diode clamped multilevel inverters are having some good advance features like stair case waveform and minimized harmonics, and it is having a advantage of controlling the medium voltage drives [5].

In diode clamped inverters, modulation techniques phase disposition (PD), phase opposition disposition (POD), alternative phase opposition disposition (APOD), PS (phase shift) gives best results in terms of constant carrier frequency not synchronized with the stator terminal frequency [6]-[7]. For diode clamped inverters, phase opposition disposition (POD) depends modulation strategy is widely used but it

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A PULSE WIDTH MODULATION FOR PV CONNECTED DIODE ASSISTED Z SOURCE NPC-MLI TO OBTAIN HIGH VOLTAGE GAIN

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Abstract: The Z source inverter/ multilevel inverter (MLI) is an unavoidable converter technology in the power electronics family for renewable energy application since it having a nature of single stage operation. Particularly, in PV application these inverters are boosting the voltage in the single stage while converting DC to AC. Normally, the diode assisted Z Source Neutral Point Diode Clamed (NPC-MLI) with the photovoltaic system produces a supreme voltage gain that is relatively better than other double stage boost conversion practices. This paper mainly explores vector selection approach based pulse width modulation (PWM) for diode-assisted NPC-MLI to obtain a high voltage gain without compromising in waveform quality. To attain a higher voltage, gain maximum dc-link voltage utilization and power switches stress must be reduced. From the above issues in the diode assisted NPC-MLI leads to vector selection approach PWM technique to perform uniform charging and discharging capacitor to obtain maximum voltage gain. The operation of proposed inverter and its relation between the voltage gain and boost duty ratio then voltage stress on the switching device and gain are theoretically investigated. Due to energetic performance, Z source diode assisted NPC-MLI is more capable for wide range dc/ac power conversion in single stage, which is more suitable for PV applications. Besides, theoretically investigated are validated via simulation and experimental results
Key words: Neutral Point Diode Clamed MLI, Space Vector Pulse Width Modulation, boost conversion, diode-assisted NPC-MLI

1. Introduction

Extensively in innumerable power electronic bids, such as photovoltaic (PV) based power generation and distribution system. The most prominent advantage in these claims is the low voltage dc source and required high output ac voltage [2], [4]. The largest aid to the power grid will be based on the development of the photovoltaic generation system through which renewable energy is utilized. The main drawback of the existing solar photovoltaic panels is the wide range voltage drop and high investment cost [5], [6]. Hence, there is a necessity to increase the low de source voltage into a high constant ac voltage. Voltage source converter (VSIs and MLIs) are added to obtain the necessary alternating supply voltage for power grid [7], [14-21]. The initial cost can be minimized by decreasing the number of stages of inverter. Cuk and SEPIC, which have both buck-boost conversion and bidirectional power processing

[8]. For improved performance, the buck-boost converter is modulated by addition of an extension, where commutation count area is studied and improved efficiency is achieved [9]. Nevertheless, the semiconductor devices used in buck- boost circuit lead to huge DC current and higher middle DC-link voltage when the boost duty ratio is extremely high [10]. Considering adding a power conversion stage, causing increase in system cost and reduction in efficiency, Peng[1] introduced Z source converter. This Z source inverter involves of a unique inductor and capacitor connected impedance network (Z network) between the DC source and the main inverter switching circuit and obtain the boost/buck operation characteristics [13]
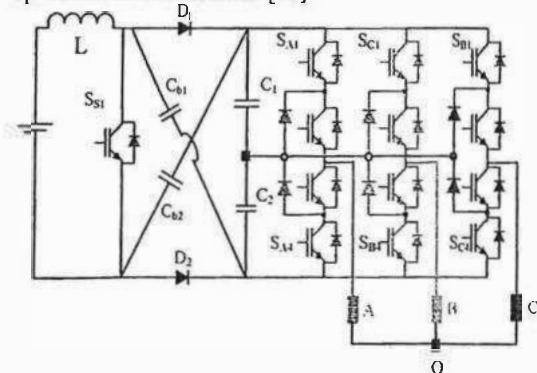
Fig.1.Circuit diagram of diode assisted buck-boost converter with NPC-MLI

In Shoot through (ST) manner a particular leg inverter switch is shorted and providing the bath to charge Z network inductors is to enhance the output voltage. This is offers a single-stage dc to ac power conversion with high the voltage gain [12]. This circuit incorporates an X-shaped capacitor and inductor connected network with diode-assisted in front end of the dc source. When S_{s1} is OFF, the two capacitors (C_1 and C_2) are linked in parallel over two diodes, which are forward-biased and the input de-link voltage Vdc, Vi is equal to capacitor voltage, VC. At this duration, the 3-phase VSI output AC voltage is zero. Now the intermediate dc- link voltage can improve the voltage transfer ratio and reduce the voltage rating of the capacitors. The Numerous PWM approaches are elucidated to obtain the high voltage

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A multimodal authentication for biometric recognition system using hybrid fusion techniques

S. Velmurugan[1] · S. Selvarajan[2]

Abstract

Biometric Recognition and authentication is used in every application for the secured identification of the persons. Several Researches has been carried out in the past decade that concerns only to enhance the accuracy of biometric algorithms for various kinds of features by ignoring the aspects of robustness and reliability. With this objective, new algorithm called effective linear scale authentication has been proposed which works on the principle of hybrid fusion of two feature inputs such as Hand geometry and iris of the users. The two different techniques have been adopted for the Feature Extraction. One is effective linear binary patterns and other is scale invariant fourier transform and it is stored in the databases for the further verification. This algorithm has been tested with the CASIA Image Datasets and the results had clearly proven that the novel idea of fusing the local features to address the scalar and angular inefficiencies of the existing methods.

Keywords ELSA · SIFT · CASIA · ELBP · Biometric recognition

1 Introduction

Biometric authentication and recognition has evolved as a new branch of exploration in adoption of newer techniques to offer more security, higher accuracy and speed [1]. The biometric recognition had become a smarter personal authentication systems in modern day banking, medical, and defence systems. Of the many proposed approaches, one of the most successful and widely reputed idea is the Fusion of the different Images [2]. The different modality images such as palm, finger print, hand geometry, iris, Finger knuckle could be taken as the inputs which are then fused in many ways so as to increase the high security mechanisms. In this paper, a novel idea of fusion of local multimodal features known as effective linear scale authentication (ELSA) that includes two distinct feature extraction techniques such as effective linear binary pattern

(ELBP) and scalar invariant fourier transforms (SIFT) to minimize the system error rate. Unlike other algorithms, the proposed algorithm is Scale-invariant and Rotation-Invariant. Since only the local patterns and descriptors were used, it is far superior to other algorithms in terms of bad illumination and noisy inputs. The paper organized as follows as: (A) Related works (B) Proposed Systems with Block Diagram (C) Overall System Designs (D) Results and Comparison (E) Conclusion.

2 Related work

Jobin et al. [3] presented a multimodal biometric system based on fusing iris, palm print, and finger-knuckle. The fusion process is performed using min–max normalization at matching score level. They used log-Gabor in order to extract both iris and palm print features. The features of finger knuckle are extracted using linear discriminant analysis (LDA). Androunikou et al. [4] presented a multimodal biometric combination of voice, face, finger, and palm for 30 individuals entered to the system using BOLYBIO datasets. They used 5 data captured sessions for each biometrics; 4 for training, and 1 for testing. They combine the single traits at the output level using simple

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Voice Controlled Smart Wheelchair

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Abstract— This project describes the significant design to build a voice-controlled wheelchair. The project is intended to increase the ease of mobility for disabled/injured people. The design would allow these people to live more independently. Presently, people use blow- tubes or chin-joysticks to control motorized wheelchairs. Speech recognition is a prominent technology which can give an alternative to people to interact with machines or devices especially to those who are quadriplegics. The rate of physically challenged and old aged people is increasing day by day. They are not able to move and has to dependent upon others for their movement. The project aims at controlling a wheelchair by means of human voice. The voice recognition is done by android phone and is connected to the wheelchair system using Bluetooth technology. The design and implementation of a voice controlled wheelchair motion based on an efficient and unique algorithm for accurately detecting voice commands. The proposed voice controlled wheelchair can be very effective for persons with disabilities where they can dynamically give the wheelchair voiced instructions instead of being stagnant in a place for its controlling. Apart from its possible application in industrial automation, voice controlled robotic motion can also encourage the view of a wheelchair as a partner rather than a tool by providing a smooth, easy and flexible mean of self-reliant movement for the physically challenged people.

Key words: Wheelchair; Voice Recognition; Atmega8; Artificial Intelligence

I. INTRODUCTION

There exist a lot of people today who have lost limbs due to various reasons, like wars, natural calamities, accidents, health reasons, etc. These people use normal wheelchairs, which require muscular force to move. In addition, there are patients who have lost their arms or legs, due to nervous system disorder or due to paralysis and cannot move the wheelchair with their hands. They find difficult to move even locally. Life of these people tends to be a burden on their family and in fact they themselves feel dependent on others for their existence. As a result they find themselves in a state of emotional and mental disturbance. For such people, the concept of voice controlled wheelchair was introduced.

The basic output expected by an automated wheel chair is to respond according to its input command. It should be robust enough to carry the weight of an average human and not give jerks while moving or stopping. In case of a voice controlled wheelchair, it is expected that proper inputs are received even in the case of noisy environment. The chair should be robust enough to be used in day to day life.

The various intelligent models which implement the concept of voice controlled wheelchair discuss their making and focus on their merits and demerits.

A handicapped person with locomotive disabilities needs a wheelchair to perform functions that require him or her to move around. He can do so manually by pushing the wheelchair with his hands. However many individuals have week upper limbs or find the manual mode of operating too tiring. Hence it is desirable to provide them with a motorized wheelchair that can be controlled by moving a through voice commands. The power wheelchair control interfaces currently still not enough to provide truly independent mobility for substantial number of person with disabilities. Through research and design wise, the power wheelchair to control development along safe and effective use of the provision independence and self-use mobility.

This project will provide disability weight innovative solutions to handle the wheelchairs to use voice interface. The main part of the design is to control the motion of the wheelchair. There are four condition of motions are considered, moving forward, moving in reverse direction, moving to the left and moving to the right. There are four condition of motions are considered, moving forward, moving in reverse direction, moving to the left and moving to the right.

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An intelligent motorized wheelchair for handicapped person using voice technology and our goal is to move towards making accessible manipulation of everyday objectives to individuals with the motor impairment.

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Border Alert System using Smart Boat to Safeguard the Fisherman

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Abstract—Due to the lack of awareness about the ocean frontiers and advanced alert instruments in the boats, fishermen are caught and killed by the naval forces of the neighbouring country. Hence, maritime security has become major concerns of all coastal areas. The fundamental requirement of maritime security is protecting the fisherman and providing the assistance about sea frontiers via alerting, tracking and monitoring of vessel. Hence, a path breaking technology of border alert system using smart vessel is proposed here that would foster the coast guard officials to effectively monitor the fishermen and alert them if they sail inside the other country's border.

The embedded system is implemented here to alert the border to safeguard the fisherman and make the good relationship between seaside nations. This system uses GNSS which helps to find out the current latitude and longitude values of vessel. If the fishermen are very close to the IMBL means then smart boat border alert system aware the fishermen through visual and audio alert. If the fisherman did not take any reaction about the alerts and move further, then the smart vessel should be reversed automatically and information will be transmitted to nearby Coast Guard station. Then the guards in the shore can assist and provide additional help to those fishermen.

Keywords- Fisherman, IMBL Border, GNNS, Engine Control Unit.

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I. INTRODUCTION

Historically, there is no border problem and there is no conflicts till the civil war in 1983. After this, due to security concern, the seaside nations are isolated by their International Maritime Boundary Line (IMBL) borders. Such as, there are three boundaries of borders are defined. The first two borders come under the parental country circumstances. The last border between the two countries will be a final state boundary. First two border crossing will be monitored by parental government.

In Tamilnadu, about 20,000 vessels make spinning routinely stay into the International Maritime Boundary Line (IMBL) of India- Sri Lanka for fishing. The identification of international borderline is fairly difficult for fisherman in almost all given situations. They could be easily caught or imprisoned by sea pirates or foreign navy while crossing these borders inadvertently. This lack of knowledge in identifying the maritime boundaries of two countries during fishing could put the lives of the fisherman in a lot of danger such as, killing and detention. The foreign trawler easily overcoming our coastguard security force by killing or imprisoning the fisherman. Even though, the existence of elaborate understanding, various agreements and excellent relations between the Indo-Srilankan, the most outstanding problem is being going on for trans-border fishing. Hence, the fishermen issue has trigged unexpected fret in the relations.

The main problem in the fishing rights in the Palk Bay is that of the conflict between the laws of the sea and traditional fishing rights. Sometimes, the death of penalty and imprisonment of the Tamil Nadu fishermen, supposedly by the Sri Lankan Navy, becomes an emotive right to life and livelihood (human rights) issue in the domestic politics of maritime boundary between India and Srilanka. Defense is a key factor to enable safe navigation in fishing in sea. Hence, National defense are addressed in terms of marine safety, maritime security, lifesaving, law enforcement, maritime environmental security and fisheries by Indian coastal guard.

Thus, the target of proposed system is designed here to foster the coast guard officials to effectively monitor the fishermen and encourage the fisherman to explore inside our sea nation border by using smart boat vessel. The figure 1 describes the maritime boundary between India and Srilanka.

Figure 1: Maritime boundary between India and Srilanka

II. LITERATURE SURVEY

Sureshkumar et al. (2010) proposed the design of Low Cost Maritime Boundary Identification Device Using GPS System to navigate the fishermen and provide guidance about the nautical border with GPS. Surekha et al. (2014) proposed system using ARM processor. They identified the location of the travelling the boat using GPS and alerts the fisher man if the boat nears to the boundary and also passes information to control section through ZIGBEE transmitter.

Naveen et al.(2014) proposed the work of Border Alert and Smart Tracking System with Alarm Using DGPS and GSM is used to tracking the location of the boat using DGPS and to trigger an alarm which consist of a Piezo – Buzzer, when the border is crossed. Also, in addition, the DGPS information is send to control room where it is read and then through a GSM device, information is send to the family at regular time

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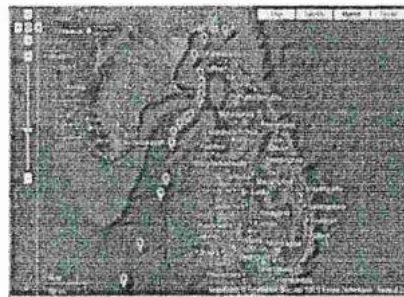

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Border Alert System using Smart Boat to Safeguard the Fisherman

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Abstract—Due to the lack of awareness about the ocean frontiers and advanced alert instruments in the boats, fishermen are caught and killed by the naval forces of the neighbouring country. Hence, maritime security has become major concerns of all coastal areas. The fundamental requirement of maritime security is protecting the fisherman and providing the assistance about sea frontiers via alerting, tracking and monitoring of vessel. Hence, a path breaking technology of border alert system using smart vessel is proposed here that would foster the coast guard officials to effectively monitor the fishermen and alert them if they sail inside the other country's border.

The embedded system is implemented here to alert the border to safeguard the fisherman and make the good relationship between seaside nations. This system uses GNSS which helps to find out the current latitude and longitude values of vessel. If the fishermen are very close to the IMBL means then smart boat border alert system aware the fishermen through visual and audio alert. If the fisherman did not take any reaction about the alerts and move further, then the smart vessel should be reversed automatically and information will be transmitted to nearby Coast Guard station. Then the guards in the shore can assist and provide additional help to those fishermen.

Keywords- Fisherman, IMBL Border, GNNS, Engine Control Unit.

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I. INTRODUCTION

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In Tamilnadu, about 20,000 vessels make spinning routinely stay into the International Maritime Boundary Line (IMBL) of India- Sri Lanka for fishing. The identification of international borderline is fairly difficult for fisherman in almost all given situations. They could be easily caught or imprisoned by sea pirates or foreign navy while crossing these borders inadvertently. This lack of knowledge in identifying the maritime boundaries of two countries during fishing could put the lives of the fishermen in a lot of danger such as, killing and detention. The foreign trawler easily overcoming our coastguard security force by killing or imprisoning the fisherman. Even though, the existence of elaborate understanding, various agreements and excellent relations between the Indo-Srilankan, the most outstanding problem is being going on for trans-border fishing. Hence, the fishermen issue has trigged unexpected fret in the relations.

The main problem in the fishing rights in the Palk Bay is that of the conflict between the laws of the sea and traditional fishing rights. Sometimes, the death of penalty and imprisonment of the Tamil Nadu fishermen, supposedly by the Sri Lankan Navy, becomes an emotive right to life and livelihood (human rights) issue in the domestic politics of maritime boundary between India and Srilanka. Defense is a key factor to enable safe navigation in fishing in sea. Hence, National defense are addressed in terms of marine safety, maritime security, lifesaving, law enforcement, maritime environmental security and fisheries by Indian coastal guard.

Thus, the target of proposed system is designed here to foster the coast guard officials to effectively monitor the fishermen and encourage the fisherman to explore inside our sea nation border by using smart boat vessel. The figure 1 describes the maritime boundary between India and Srilanka.
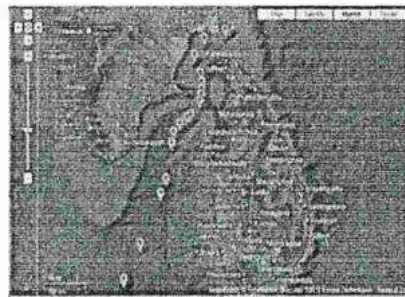

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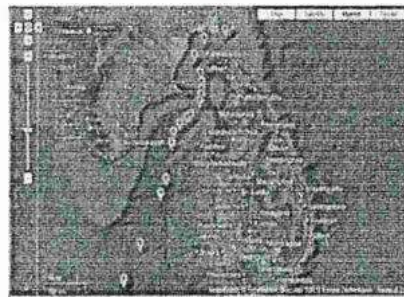

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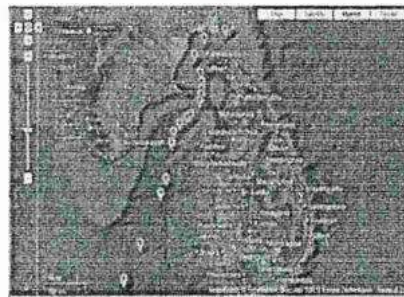

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A Novel Step for the Enhancement of Security in ARIPORTS Using Optical Ideology

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Abstract—The security systems in airports are very important and the detection of entry of unauthorized person must be in high rate so as to have an improved efficient system. The real time systems in airports are implemented based on CCTV cameras. These CCTV cameras are used to record the events for future references. The high rapidity of correlation must be performed for the improvement of security in airports. Firstly, 4f system is introduced into the real time security system of the airport. The introduction of this optical system improves system performance and high speed of correlation. This optical system is designed in the simulation environment of MATLAB. The CCTV images and database images are compared together in MATLAB for various conditions. These conditions help to define the performance of the projected system and to have a better evaluation of the projected architecture. The projected system can outperform conventional correlator based systems with elevated speed of correlation. The projected system enabled by dynamic Fourier plane correlator system was found to have high speed performance.

Keywords- *4f system, optical system, Lens, Fourier transform, correlation, security*

I. INTRODUCTION

The existing correlation based security system has low efficiency and was found to have inefficient detection of inputs. To replace this low efficient system, a high speed and more efficient output producing system is needed. Such a system was designed with the optical principles. The optical systems perform correlation at high speed when compared to other conventional systems. The optical systems have the ability to detect the input at high rate and also supports for better correlation detection. The 4f system has an image plane, Fourier plane and object plane. The Fourier plane of the 4f system is rearranged. This re arrangement makes the system works as a high speed correlator. The performance of the designed system was compared with the existing conventional system.

II. OPTICAL IDEOLOGIES

A. Optical Signal Processing

Optical signal processing has the ability to modify the information content of data signals, at the same time, preserving certain properties of the physical carrier. It also explains the work of Fresnel and Fraunhofer.

B. Fourier Optics

Fourier optics is the study of classical optics using Fourier transform, in which the wave is regarded as a superposition of plane waves that are not related to any identifiable sources. Fourier optics can be seen as the dual of the Huygens Fresnel principle, in which the wave is, regarded as a superposition of expanding spherical waves which radiate outward from actual current sources via a Greens function relationship.

Fraunhofer diffraction is created, which emanates from a single spherical wave phase center. Fresnel diffraction pattern is created, which emanates from an extended source, consisting of a distribution of spherical wave sources in space.

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When an optical wave is transmitted through an aperture in an opaque screen and travels some distance in free space, its intensity distribution is called as diffraction pattern. If light were treated as rays, the diffraction pattern would be a shadow of the aperture. Because of the wave nature of light, the diffraction pattern may deviate slightly or substantially from the aperture shadow, depending on the distance between aperture and observation plane, the wavelength and the dimensions of the aperture.

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The optical system works much faster than the conventional system, for performing correlation. The light rays are passed through the aperture present in object plane. The aperture can be of any shape including an outline of an

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Review Paper Renovation of Wastewater to Utilizable Energy

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Abstract— The need for alternate eco-friendly fuel is increasing rapidly with the depletion of non-renewable energy resources. Simultaneously, Management of waste water is being a big deal for government. This is mainly due to rapid urbanization and over population. Several disposal methods have been established and functioning till date. Increasing population leads to increment of the quantity of wastes which finally leads to dump of sewage results in production of diseases. An alternative method for disposal of sewage waste could be generation of renewable energy which is much essential today to compensate the insufficient energy. Here is a simple approach to treat the waste water and converting it into electricity where solar panels are one of the sources used for energy production and prevents the increment of household waste water. This process can either be followed by municipality at the destination of sewage collection or by a community level of people to fulfil their daily power needs. At community levels, a centralized collection and waste water treatment from households including toilets answers not only proper sanitation but if treated scientifically, yields renewable energy as well.

Key words: Wastewater, Recycling, Solar Dish Antenna, Energy Storage

I. INTRODUCTION

Increasing human activities are consuming the natural energy sources leading to the depletion of fossil fuels. The present-day energy scenario in India and around the globe is precarious. The need for alternative fuel [13], [3] has made us to initiate extensive research in identifying potential, cheap and renewable sources for energy production. The building of sustainable society will require reduction of dependency on fossil fuels and lowering the amount of pollution that is generated. Current methods to produce energy are not sustainable, and concerns about climate and global warming require developing new methods of energy production using renewable and carbon-neutral sources.

In India alone, no more than 30% of sewage generated by 377 million people flows through treatment plants. The rest is dumped in rivers, seas, lakes and wells, polluting three-fourths of the country's water bodies, according to analysis of various data sources. An estimated 62,000 million litres per day (MLD) sewage is generated in urban areas, while the treatment capacity across India is only 23,277 MLD, or 37% of sewage generated, according to data released by the government in December 2015. Further parsing of this data reveals that of 816 municipal sewage treatment plants (STPs) listed across India, 522 work. So, of 62,000 MLD, the listed capacity is 23,277 MLD but no more than 18,883 MLD of sewage is actually treated. That means 70% of sewage generated in urban India is not treated. While 79 STPs don't work, 145 are under construction and 70 are proposed, according to the Central Pollution Control Board's (CPCB) Inventorization of Sewage Treatment Plants report.

India's towns and cities contaminate their own water, with no improvement over the years. Sewage generation in India from class-I cities (with a population more than 100,000) and class-II towns (population 50,000–100,000) is estimated at 38,255 MLD, of which only 11,787 MLD (30%) is treated, according to the Faecal Sludge Management report by Water Aid, a safe-water and sanitation advocacy, quoting a 2009 CPCB report.

The untreated sewage is dumped directly into water bodies, polluting three-fourth of India's surface water resources, the FSM report said. Up to 80% of water bodies could be polluted, the report said. Operation and maintenance of existing treatment capacity is below par, with 39% plants not conforming to environmental rules for discharge into streams, the CPCB's 2009 report said. Of the 522 working STPs across India, maximum are in the northern state of Punjab, which has 86. But no more than 38 work. Uttar Pradesh has the most working STPs (62), followed by Maharashtra (60) and Karnataka (44). An estimated 75% to 80% of water pollution is from domestic sewage, discharged untreated into local water bodies[4], [11], [12].

II. EXISTING MODEL

A. Scientific Idea (Microbial Fuel Cell)

The increased energy consumption along with unbalanced energy management has called in for serious awareness of renewable energy sources. Due to this increased interest in renewable energy, fuel cell technology [10], [11], [5] has gained importance in recent years. Microorganisms have proven to be promising agents for electricity generation. Microorganism, media and inoculum development are the materials and models used. The effluent from a rice mill was used for isolating the microorganism capable of degrading varying substrates. The isolated microorganism was characterized as Pseudomonas from the morphological and biochemical test results. The organism was maintained on minimal agar slants at 4 degree Celsius and sub cultured every month. Cells from agar slants were scrapped off and suspended in 10 ml of sterile water. The cell suspension was shaken thoroughly to break up any aggregates and was used as the inoculum in 100 ml of medium in 250 ml Erlenmeyer flasks. The suspension culture was grown at 30 degree Celsius on a rotary shaker at 240 rpm. The cells in the exponential phase were used for the experiments with the MFC. The studies were carried out in a medium which had the following composition (gm/l) beef extract 1.0, peptone 5.0, yeast extract 2.0 and sodium chloride 5.0. The initial pH of the medium was adjusted to 7.0 using 0.1 N potassium hydroxide and 0.1 N hydrochloric acid, prior to autoclaving (120 degree Celsius for 20 min).

B. MFC Construction & Operation

The MFC consisted of a 4.0 cm 4.0 cm 1.0 cm acrylic chamber with provision for the electrode and the inlet. The

Review Paper Renovation of Wastewater to Utilizable Energy

Gokul Anand K. R.[1] Karthik S.[2] Sugumar S.[3] Hemavarthini M.[4] S. Boopathy[5]

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Abstract— The need for alternate eco-friendly fuel is increasing rapidly with the depletion of non-renewable energy resources. Simultaneously, Management of waste water is being a big deal for government. This is mainly due to rapid urbanization and over population. Several disposal methods have been established and functioning till date. Increasing population leads to increment of the quantity of wastes which finally leads to dump of sewage results in production of diseases. An alternative method for disposal of sewage waste could be generation of renewable energy which is much essential today to compensate the insufficient energy. Here is a simple approach to treat the waste water and converting it into electricity where solar panels are one of the sources used for energy production and prevents the increment of household waste water. This process can either be followed by municipality at the destination of sewage collection or by a community level of people to fulfil their daily power needs. At community levels, a centralized collection and waste water treatment from households including toilets answers not only proper sanitation but if treated scientifically, yields renewable energy as well.

Key words: Wastewater, Recycling, Solar Dish Antenna, Energy Storage

I. INTRODUCTION

Increasing human activities are consuming the natural energy sources leading to the depletion of fossil fuels. The present-day energy scenario in India and around the globe is precarious. The need for alternative fuel [13], [3] has made us to initiate extensive research in identifying potential, cheap and renewable sources for energy production. The building of sustainable society will require reduction of dependency on fossil fuels and lowering the amount of pollution that is generated. Current methods to produce energy are not sustainable, and concerns about climate and global warming require developing new methods of energy production using renewable and carbon-neutral sources.

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CFD STUDIES ON HEAT TRANSFER AND FRICTION FACTOR CHARACTERISTICS OF A DOUBLE PIPE HEAT EXCHANGER

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Abstract:

Simulation work on heat transfer and pressure drop characteristics of a double pipe heat exchanger were studied for different hot water flow rate. The inner and outer diameters of tube are 22.4mm and 47.8mm, hot and cold water were used as working fluid in inner tube and annulus side respectively. The simulation work on simple tube for various flow are (2,4,6,8,10)LPM. The simulation results obtained from the tube were compared with standard correlation and finally the discrepancies were studied.

Keywords:

Simulation, CFD, Heat transfer coefficient, Friction factor.

I. INTRODUCTION

Heat exchanger are devices that provide the flow of thermal energy between two or more fluids at different temperature. Heat exchanger are used in a wide variety of applications. These include process, chemical and food industries, electronic, environmental engineering, waste heat recovery, manufacturing industry, air-conditioning and space applications. The double pipe heat exchanger consists of one pipe placed concentrically inside another of a larger diameter pipe with appropriate fittings. The major use of double pipe heat exchanger is for sensible cooling or heating of process fluids where small heat transfer areas (up to $50m^2$) are required. P.Murugesan et.al [1] report the experimental study the heat transfer and pressure drop characteristics of a double pipe heat exchanger and found that experimental result were fitted with standard correlation with minimum deviation P.Sivashanmugam et.al [2] reported the simulation study on tube fitted with helical twist insert and compared the experimental data with simulation data. Masoud Rahimi et.al [3] compare the experimental and CFD result of heat transfer and friction factor characteristics for the tube fitted with modified twisted tape insert. The aim of this work is to model double pipe heat exchanger using CFD and to study the heat transfer and friction factor character ristics at different hot water flow rates. Then the comparison made between simulation and standard correlation result.
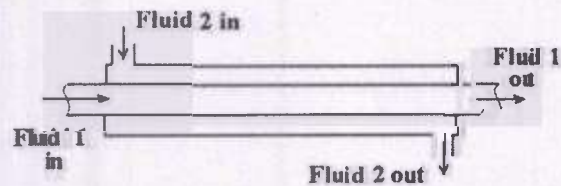

Fig. 1 Simple plane tube

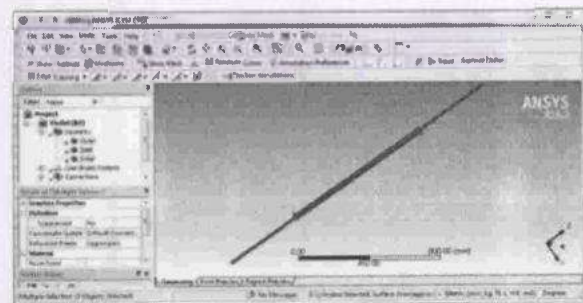

Fig.2 Simulation model of plane tube

II. LITERATURE SURVEY

[1]   P. Murugesan and K. Mayilsamy has made a study on CFD Studies on heat transfer of a double pipe heat exchanger for simple tube.

[2]   Sabbir Hossain Analysis in heat trancefer in a circular tube insert and without by using the finite element method.

HEAT TRANSFER ENHANCEMENT OF SOLAR WATER HEATER USING VARIOUS TAPE INSERTS

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Abstract—: Solar energy is radiant light and heat from the sun that is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaics, solar thermal energy. It is an important source of renewable energy .Solar water heating (SWH) is the conversion of sunlight into heat for water heating using a solar thermal collector. A variety of configurations are available at varying cost to provide solutions in different climates and latitudes. SWHs are widely used for residential and some industrial applications. Our project is to enhance the heat transfer of solar water heater using various tape inserts like v-cut tapes..

Keywords: Solar thermal flat plate collector, Twisted tapes

1.INTRODUCTION:

Heat transfer in a solar water heater could be enhanced by means of twisted tapes, inserted inside the fluid flow tubes, which induce swirl flow and act as turbulence promoters. . A variety of configurations are available at varying cost to provide solutions in different climates and latitudes. SWHs are widely used for residential and some industrial applications. A solar thermal collector collects heat by absorbing sunlight. A collector is a device for capturing solar radiation. Solar radiation is energy in the form of electromagnetic radiation from the infrared (long) to the ultraviolet (short) wavelengths .A typical flat-plate collector is a metal box with a glass or plastic cover on top and a dark-colored absorber plate on the bottom. Objective is to enhance the heat transfer of solar water heater using various tape inserts like v-cut tapes. Also to automate the equipment.

1.1 TYPES OF SOLAR WATER HEATING SYSTEMS

a)Active solar water heating systems

Direct Circulation Systems

Pump circulates domestic water through the collector(s) and into the building. This type of system works well in climates where it rarely freezes The direct pumped system has one or more solar energy collectors installed on the roof and a storage tank located somewhere within the building. A pump circulates the water from the tank up to the collector and back again. This is called a direct (or open loop) system because the sun's heat is transferred directly to the potable water circulating through the collector and storage tank. . Neither an anti-freeze nor heat exchanger is involved.

Indirect Circulation Systems

Pump circulates a non-freezing, heat transfer fluid through the collector(s) and a heat exchanger. This heats the water that then flows into the home. This type of system works well in climates prone to freezing temperatures.

This system design is common in northern climates, where freezing weather occurs more frequently. An anti-freeze solution circulates through the collector, and a heat exchanger transfers the heat from the anti-freeze solution to the storage tank water. When toxic heat exchanger fluids are used, a double-walled exchanger is required. Generally, if the heat exchanger is installed in the storage tank, it should be located in the lower half of the tank. A heat transfer solution is pumped through the collector in a closed loop. The loop includes the collector, connecting piping, the pump, an expansion tank and a heat exchanger. Since water is used as a heat transfer fluid, it never needs to be changed like pressurized antifreeze systems. Most plumbing codes do not require double wall heat exchangers for drainback systems using distilled water.

b) Passive solar water heating systems

ANALYSIS OF WELDING ROBOT MANIPULATOR
ARM USING METAL MATRIX

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Abstract:

Nowadays robots play major role in most of the industries. Typical applications of robots include welding, painting, assembly, pick and place, packaging and labelling. The aim of the project is to develop an efficient welding robot manipulator arm to increase its work envelope by using Metal Matrix.

Metal matrix composites (MMCs) possess significantly improved properties including high specific strength , specific modulus, damping capacity and good wear resistance compared to unreinforced alloys. Among various Metal Matrix used, fly ash is one of the most inexpensive and low density reinforcement available in large quantities as solid waste by product during combustion of coal in thermal power plants

Keywords:

Aluminium 6061, Fly ash, Stir Casting,

I. Introduction:

Aluminium fly ash metal matrix composite is strengthen composite in which soft and ductile aluminium matrix is strengthen by the hard and brittle fly ash particles. Aluminium based metal matrix composites are improving their high strength, high isotropic and good wear resistance. Fly ash particles are low cost, low density and available in large quantities of waste by-product in thermal power plants and industries. In this study, fly ash particles are generated in the combustion of coal is chosen to reinforcement material. In India coal produces about 1100 lacks tons of fly ash per year from burning about 2500 lacks tons coal for power generation. Present days fly ash utilization improved and reduces the pollution in environment, now in present day's fly ash is focusing and improving their investigating in various fields like MMCs, bricks, agricultural and etc.

By adding fly ash reinforcement with commercially aluminium to make aluminium fly ash composite is improving their properties in strength and hardness and reduces the weight of the commercially aluminium. Hence, composites with fly ash reinforcement are overcome the cost barrier for wide applications. By adding of commercially aluminium with fly ash is decreases the need of intensive energy-aluminium, by resulting in energy savings. By mixing the aluminium fly ash composites by using stir casting process method, in stir casting process is mixing conventionally in directly furnace it will reduce the time for mixing the aluminium and fly ash. Mixing the aluminium with fly ash particles in the ratio of 5% to 20% of weight in the aluminium. To studied on aluminium and fly ash chemical analysis in testing Laborites. Hence, studied before and after physical and mechanical properties of aluminium fly ash metal matrix composite and also comparing with pure aluminium. The aluminium fly ash composite are mainly used in aerospace, industries and other engineering application.

EXTRACTION OF BIODIESEL WITH NEEM OIL, CORN OIL AND PONGAMIA OIL BLENDED WITH DIESEL

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ABSTRACT-

The main objective of the project is to extract biodiesel from three types of oils namely Corn oil, Neem oil and Pongammia Pinnate oil. Bio-Diesel is extracted from these oils by adding methanol and sodium-hydroxide, due to this addition of chemical components glycerol and Bio-Diesel is separated. Glycerol is separated by filtration process, the extracted bio-diesel's fuel property is found by the performance test done with Diesel Engine. The blending ratio for the performance test is taken as B10, B20, that is 20% of oil and 80% of Diesel. Each oil is tested separately by blending with diesel and final test will be with the mixture of three oils with diesel. The parameters are taken as flash point, fire point, viscosity, moisture, break thermal efficiency, cloud point, pour point iodine content, ash content, kinematic viscosity and calorific value.

Keywords: pongamia, neem, corn, viscosity, density, flash and fire point.

I-INTRODUCTION

In the modern world, the demand for non-renewable energy sources is increasing day by day due to modernization and mechanization. Demand for electricity and enormous increase in the number of automobiles has resulted in greater demand for petroleum products. The increasing demand for the petroleum-based fuels has led to oil crises in the recent times. Therefore, attention has been focused on developing the renewable or alternate fuels to replace the petroleum-based fuels for transport vehicles. In the energy scenario fossil fuels occupies dominant place. Fossil fuels are being extensively used in transportation and as well as in the industries. The consumption of these fuels is steadily increasing in the world wide. India has 4th rank in the world with respect to consumption of fossil fuels. The availability of fossil fuels in the nature are limited, scares and non-renewable and extensive use causes environmental pollution. Biofuel is gaining importance in the world as alternative source for fossil fuels and these are renewable and eco friendly in nature. Biofuel is broad term which includes ethanol, biogas and biodiesel. Biodiesel is alkyl esters of the fatty acids found in vegetable fats, seeds (edible and non-edible) and animal fats can be used as a feed stock for biodiesel production. The economical production of biodiesel in the world is already in place. US and Europe are leading countries in the production of biodiesel in the world. India which imports almost 80 percent of the crude oil and by spending 1/3rd of its total GDP on the procurements of the fossil fuels. To reduce the import and to achieve self reliance in energy, India initiated a Biofuel policy on 2009.

1.1 Neem seed oil

Neem is a tree in the family 'maliaceae' which grows various parts in India. It's scientific name 'Azadirachta indica'. The evergreen tree is large, reaching 12 to 18 meters in height with a girth of up to 1.8 to 2.4 meters. The seeds have 40% oil which has high potential for the production of biodiesel. It has a higher molecular weight, viscosity, density, and flash point than diesel fuel.

1.2 Corn seed oil

Corn oil is a weed found in India. It is introduced, naturalized and occur as wasteland weed in almost every part of India. Corn oil (maize oil) is oil extracted from the germ of corn (maize). Its main use is in cooking, where its high smoke point makes refined corn oil valuable frying oil. Corn oil is also a feedstock used for biodiesel. Other industrial uses for corn oil include soap, salve, and paint. Rust proofing for metal surfaces, inks, textiles, nitroglycerin and insecticides. It is sometimes used as a carrier for drug molecules in pharmaceutical preparations.

1.3 Pongamia seed oil

Pongamia pinnata is medium evergreen tree which contains about 25-32 per cent of oil in their seeds and this tree has special characters such as wide adoptability and multipurpose in nature grows in waste land and marginal lands. This tree is planted as biofuel species in the various afforestation programmes and also found naturally.

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CHARACTERISTION OF BIODIESEL EXTRACTED FROM COTTON SEED OIL BLENDED WITH DIESEL

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Abstract

Alkyl esters of long chain fatty acids are called biodiesel. These esters can be obtained from transesterification of triglycerides with Methanol/ Ethanol. New and renewable alternative fuels as a substitute for petroleum based fuels have become increasingly due to environmental concerns, unstable costs and transportation problems. One of the renewable alternative fuel is biodiesel which is domestically produced new or used vegetable oil and animal fat. Oil or fat is reacted with alcohol (Methanol or Ethanol).This reaction is called transesterification. Blending of biodiesel extracted from cotton seed oil increases the efficiency and also blending of biodiesel is to be carry out by using anhydrous methanol chemical as an agent. This reduces particulate matters, hydrocarbons, carbon-dioxide & carbon monoxide. Three different types of volume proportion of biodiesel blend with diesel extracted from cotton seed oil with egg shell is to be taken for the characterization and the results are to be compared.

Keywords: Bio diesel, Methanol, Ethanol, CI engine Blends.

1. INTRODUCTION

Bio-diesel is an alternative to petroleum-based fuels derived from vegetable oils, animal fats, and used cooking oil including triglycerides. Vegetable oils are widely available from various sources, and the glycerides present in the oils can be considered as a viable alternative for diesel fuel. They have good heating power and provide exhaust gas with almost no sulphur and aromatic polycyclic compounds. Vegetable oils are produced from plants, their burning leads to a complete recyclable carbon dioxide (CO2). CO2 associated with solar energy falling on earth gets converted in to the feedstock through photosynthesis. Vegetable oils available through this feedstock can be used to produce biodiesel.

The use of vegetable oil for energy purposes is not new. It has been used world over as a source of energy for lighting and heating since time immemorial. As early as in 1900, a diesel-cycle engine was demonstrated to run wholly on groundnut oil at the Paris exposition. Even the technology of conversion of vegetable oil into biodiesel is not new and is well established. However the unprecedented rise in fuel prices recently has made it economically attractive. The present availability of vegetable oils in the world is more than enough to meet the edible oil requirements, and surplus quantity available can partially meet requirements of biodiesel production. However, there is a considerable potential to further enhance the oilseeds production in the world to meet the increasing demand for food and biodiesel.

PERFORMANCE ANALYSIS OF CERAMIC AND CARBIDE CUTTING TOOLS IN MACHINING OF EN36

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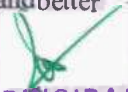
Abstract: The aim of this research is to compare ceramic and carbide cutting tools in milling EN36. The hardness of the workpiece material was measured and found to be 62 HRC. In the present work a series of tests were conducted in order to evaluate the tool performances by adopting tool life. In all experiments cutting forces, flank wear and surface roughness values were measured throughout the tool life. No cutting fluid was used during the milling operations. Study of the tool life and failure modes shows that tool life was determined by the flank wear and surface roughness generated on the workpiece. The main conclusion is that tool life of ceramic insert was longer than the carbide insert although much higher cutting speeds were used.

Keywords: ceramics, wear, tool life, cutting force.

1. INTRODUCTION

Ceramic cutting tools in recent years have been sought in many applications due to their improved properties like good thermal shock resistance, good high-temperature strentgh, creep resistance, low density, high hardness and wear resistance, electrical resistively, and better

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eP(H)

OPTIMIZATION OF MACHINING PARAMETERS IN DRILLING OF AL7075 ALLOY USING RSM METHODOLOGY

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Abstract:

The Proper selection of drilling parameters is one of the significant challenges in the drilling process. In this study, we design a new method for selection of optimal machining parameters during drilling operation and their performance has been investigated. The study deals with multiple-performance optimization of machining 7075 aluminium alloy during drilling process. This material is most commonly-used material in aerospace industry having zinc as the primary alloying element. The drilling parameters used for this experiment include cutting speed, feed rate and drilling tool and the two output parameters are surface roughness and material removal rate. The experiment results are collected and analysis using statistical software Minitab17. Analyses of variances are employed to determine the most significant control factors affecting the surface roughness and material removal rate. ANOVA has shown that the depth of cut has significant role to play in producing higher material removal rate and cutting speed has significant role to play for producing lower surface roughness.

Keywords:

Al7075 Alloy, drilling process, Surface Roughness, Minitab17, ANOVA.

Introduction:

Drilling

Drilling is a cutting process that uses a drill bit to cut a hole of circular cross-section in solid materials. The drill bit is usually a rotary cutting tool, often multipoint. The bit is pressed against the work piece and rotated at rates from hundreds to thousands of revolutions per minute. This forces the

Cutting edge against the workpiece, cutting off chips from the hole as it is drilled.

In rock drilling, the hole is usually not made through a circular cutting motion, though the bit is usually rotated. Instead, the hole is usually made by hammering a drill bit into the hole with quickly repeated short movements. The hammering action can Be performed from outside of the hole (top-hammer drill) or within the hole (down-the-hole drill, DTH).

Aluminium 7075 Alloy

Aluminium alloy 7075 is an aluminium alloy, with zinc as the primary alloying element. It is strong, with strength comparable to many steels, and has good fatigue strength and average machinability, but has less resistance to corrosion than many other Al alloys. Its relatively high cost limits its use to applications where cheaper alloys are not suitable.

7075-aluminium alloy's composition roughly includes 5.6–6.1% zinc, 2.1–2.5% magnesium, 1.2– 1.6% copper, and less than a half percent of silicon, iron, manganese, titanium, chromium, and other metals. It is produced in many tempers, some of which are 7075-0 ,7075-T6, 7075-T651

The alloy composition of 7075 Aluminium alloy

Component Wt.%	Aluminium 87.1-91.4
Chromium 0.18-0.28	copper 1.2-2
Iron Max 0.5	Silicon Max 0.4
Titanium Max 0.2	Zinc 5.1-6.1
Magnesium 2.1-2.9	Manganese Max 0.3
Other Each max 0.05	other Total max 0.15
Component Wt.%	Aluminium 87.1-91.4
Chromium 0.18-0.28	copper 1.2-2
Iron Max 0.5	Silicon Max 0.4
Titanium Max 0.2	Zinc 5.1-6.1
Magnesium 2.1-2.9	Manganese Max 0.3
Other Each max 0.05	other Total max 0.15

Optimization of cutting parameters in milling of Aluminium 7075 alloy using response surface methodology

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Abstract—the project is to investigate the effect of cutting parameters on the surface roughness and metal removal rate in aluminium 7075 alloy end milling. Aluminium is the lightest material which has the density of 2.8 g/cm³. The results and material of this experiment can be applicable in the manufacture of aircraft and aerospace industry. This experiment can be done using the Computer Numerical Controlled (CNC) milling machine with 10mm diameters carbide tool with end mill cutter. The parameter like speed, feed rate and depth of cut will be changed for each experiment. For this Minitab16 Statistical software is used and the results will be determined using Response Surface Methodology (RSM). The developed RSM model was tested using Analysis of Variance (ANOVA).

Keywords: Aluminium alloy 7075, CNC milling machine, end milling, carbide tool, surface roughness, Response surface methodology.

I. INTRODUCTION

Aluminium is the lightest material which has the density of 2.8 g/cm³. The use of materials with low specific weight is an effective way of reducing the weight of structures. Aluminium alloys are among the most commonly used lightweight metallic materials as they offer a number of different interesting mechanical and thermal properties.Aluminium alloy 7075 is an Aluminium, with zinc as the primary alloying element. It is strong, with a strength comparable to many steels, and has good fatigue strength and average machinability, but has less resistance to corrosion than many other Al alloys. Its relatively high cost limits its use to applications where cheaper alloys are not suitable. The results of the research could be applied in the manufacture of automotive components and mold industry [1]. The application of the fuzzy logic integrated with taguchi method for minimizing the surface roughness and maximizing the material removal rate simultaneously, in CNC end milling of AL7075 T6 aerospace Aluminium alloy. The input parameters taken into consideration are speed, feed, depth of cut and nose radius. AL7075 T6 is one of the highest strength Aluminium alloy in 7000 series family [2]. The work piece material was Aluminium 7075- T6 material was chosen in this study is usually employed in the aerospace industry to manufacture components that demand: lighter, harder, stronger, tougher, stiffer, more corrosion- and erosion-resistant properties [3]. The trained ANN is able to predict the Ra values with reasonable accuracy. Taguchi S/N ratio analysis and ANN are useful to find the optimum combination of parameters for getting a good surface finish [4]. S/N noise ratio and Analysis of Variance (ANOVA) approve that parameter more significant affect the surface roughness is feed rate follow by cutting speed and depth of cut. Almost the correlation between dependent variable with independent variable very close and strong, which is approval by using multiple regression analysis. The value experiment with calculated almost closed. It means the Taguchi method have produced more accurate prediction value [5]. Tool life of ball nose end mill depending on up-copying and down-copying. The aim was to determine and compare the wear of ball nose end mill for different types of copy milling operations for various tool materials. Moreover, surface roughness in up-copying and down-copying was also measured and compared [6]. The experiment to find the surface roughness through feed cutting forces. They have used finite element modelling (FEM). It is considered a famous method belonging to the numerical simulation methods [7]. The parameter optimization of end milling operation for Inconel 718 super alloy with multi-response criteria based on the taguchi orthogonal array with the grey relational analysis. Nine experimental runs based on an L9 orthogonal array of Taguchi method were performed [8]. The effect of machining parameters spindle speed, feed and depth of cut were investigated during Face Milling of Wrought Cast Steed grade B

EXPERIMENTAL INVESTIGATION OF HEAT TRANSFER CO-EFFICIENT IN NANOFLUIDS

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ABSTRACT:

In this paper, the results of the experimental investigation on the thermal properties of Nano fluid are presented. Conventional fluids such as water, ethylene glycol are normally used as heat transfer fluids. Various techniques are applied to enhance the heat transfer. One of the advanced techniques among them is suspension of nanoparticle in the base fluids as water, ethylene glycol, oil. The present work is to develop an experimental arrangement to test the heat transfer properties of the Nano fluids and compare it with the conventional base fluids such as water. Since a solid metal have a large thermal conductivity, it is mixed with the base fluids to increase the conductivity of the fluids. Here the metals used to mix with the base fluid is Aluminium, Silver, Zinc, Graphite and Molybdenum. However, these metals have not been of interest for practical application due to sedimentation, erosion, etc., the advancement in the material technology has made it possible to produce nanometre sized particles that can overcome these problems. Adding the Nano particles with the base fluid increases the heat transfer coefficient with the same Reynolds number. Depending upon the concentration of the Nano fluids, the heat transfer coefficient changes.

Keywords: Nano fluids, Heat transfer, Heat exchanger, Heat transfer coefficient.

1. INTRODUCTION

Nano fluid came into picture in the field of heat transfer in systems since it was introduced by Choi. The heat transfer coefficient of a fluid depends on thermal properties like conductivity, viscosity and specific heat. In Nano technology, a particle is defined as a small object that behaves as a whole unit in terms of its transport and properties. It is further classified according to size: In terms of diameter, fine particles cover a range between 100 and 2500 nanometres, while ultra-fine particles, on the other hand, are sized between 1 and 100 nanometres.

Similarly, to ultra-fine particles, nanoparticles are sized between 1 and 100 nanometres, though the size limitation can be restricted to two dimensions. Nanoparticles may or may not exhibit size-related properties that differ significantly from those observed in fine particles or bulk materials.

These suspended Nano particles can change the transport and the thermal properties of the base fluid. Increasing the heat transfer rate in various equipment used in microelectronics, industry, transportation, electronic, and etc. becomes a serious field of study for researchers and engineers. For decades,

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An Analysis of Energy Efficiency Improvement Through Wireless Energy Transfer in Wireless Sensor Network

M. Dhurgadevi[1] · P. Meenakshi Devi[2]

Abstract In a wireless sensor network, wireless Energy transfer is a demanding technology for the energy difficulties in recent times. The foremost disadvantage of presentation is limited duration because WSN contains only restricted battery energy at a node. Therefore, we anticipated cluster-related wireless energy transfer in this document. The foremost intention of the method is to augment the duration of the sensor network through charging by the help of this wireless power transfer technology. So that, mobile charging vehicle (MCV) is established to move within the network and charge the sensor node battery wireless. The sensor nodes in the network are collected as a cluster for energy efficiency. Here, the cluster head is chosen for each one cluster in the network which is based on the rank metric value. Suppose, if one node in the network is reducing its energy, then the CH will send charge request and route ID to the MCV. Afterward, the MCV recognize the node by means of the exacting route and establish to charge the node. The reproduction consequences illustrate that the network lifetime of our anticipated method is enhanced than obtainable method.

Keywords Wireless Energy transfer · Wireless sensor network · Mobile
charging vehicle (MCV) · Rank metric · Cluster head

1 Introduction

Generally, the wireless sensor network contains several battery sensors. Sensors misplace its energy on sensing, conveying and receiving. The battery charge will also misplace in redundant condition. In wireless sensor network, the demanding procedure is to augment

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An Analysis of Energy Efficiency Improvement Through Wireless Energy Transfer in Wireless Sensor Network

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IMPLEMENTATION OF TEXT AND VOICE ENABLED ARTIFICIAL INTELLIGENCE CHATTER BOT

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Abstract— *This paper shows the implementation of an artificial intelligent chatterbot with whom human can interact by speaking to it and receive a response by chatterbot using its speech synthesizer. Objective of this paper is to show application of chatterbot that can be used in various fields like education, healthcare, and route assistance. It is statistical model and chatterbot is based on AIML (Artificial Intelligent Markup Language) structure for training the model and uses Microsoft voice synthesizer for providing speech recognition system and natural language processing.*

Keywords— *Chatterbot; Voice Synthesizer; AIML*

1. INTRODUCTION

By using natural language user can interact with system very easily even if user doesn't know how to read and write so, it becomes incentive for user to use this system. The model receives response from user either in form of text or in form of speech and thus responds to user in both format text as well as sound thus facilitating simple and user friendly request and response system. Developing such system raises many issues as accent varies from person to person resulting in understanding what is meaning of user request. The performance also varies according to amount of corpus available for training the model.

Concept of chatterbot came into existence with "Alice" which is used to receive question from user and it was based on pattern recognition. Large amount of sentences were involved in training the model. The response provided by this bot was very monotonous which gives feeling of chatterbot being a machine and it's functionality were very limited as response for each input was predefined.

Chatterbot is sub field of AI. AI is artificial intelligence which is a branch of computer science whose main focus is to develop and study intelligent programs and machine which can be helpful to people in their daily work and make their life easy. Artificial intelligence is not limited to chatterbot it involves NLP (natural language processing), Social aware intelligence, knowledge representation and inferring from that knowledge.

This is bot system implemented by using AIML. AIML is artificial intelligence markup language which is another flavor of XML (extensible markup language). AIML has been used in this model such that it parsing and declaration different kinds of sentences can be easy. AIML is base of chatter bot brain.

For the purpose of natural language understanding, Microsoft speech recognition is used which helps in speech recognition and speech synthesis for speech to text and text to speech to make it more user friendly for people.

2. RELATED WORKS

The bot system began in early nineteenth century where first chess playing machine was built such that a system act as a player and other player an human can play against it, such that system giving a feeling of another person existence. Here is different chatter bot build for various purposes.

ALICE was implemented with pattern matching algorithm which was as simple as string matching technique. ALICE takes the text as input and produces output as text which was like question and answer based system. Whereas another chatter bot[5][6] which was build earlier known as Elizabeth requires set of input rules, keyword patterns for identifying input and output rules to produce required response.

The recursion based approach was implemented in ALICE chatter bot and it is a vital feature for the model to work properly. Since it was recursion based so calling function by itself made it easy to respond appropriately but it overflow the stack. However rules in other bot may lead to language specific chatterbot such that it sticks to particular language therefore to make it language independent one has revised all the rules to work it properly and produce output.

ALICE can combine two answers in the case of splitting during the normalization process, or by recursive process. In Elizabeth we cannot partition the sentence in two parts and then combine the result.

Pattern-managing matching process is the vital feature of ALICE chatterbot, but it is simple and used algorithm is depth-first search which result in producing no output also. DFS tries to find algorithm finds the longest common subsequence pattern matching the required text in the database where other one Elizabeth produce output according to the first keyword matched.

Both systems are memory based. Elizabeth's dynamic process, it can perform other actions while other conversation is in process, is considered an excellent feature which is not in ALICE.

Encrypted Bigdata Using AES Deduplication in Cloud Storage

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Abstract: Benefited from cloud computing, users can achieve an effective and economical approach for data sharing among group members in the cloud with the characters of low maintenance and little management cost. Meanwhile, it must provide security guarantees for the sharing data files since they are outsourced. Unfortunately, because of the frequent change of the membership, sharing data while providing privacy-preserving is still a challenging issue, especially for an untrusted cloud due to the collusion attack. Moreover, for existing schemes, the security of key distribution is based on the secure communication channel, however, to have such channel is a strong assumption and is difficult for practice. In this paper, a secure data sharing scheme for dynamic members was proposed. Firstly, a secure way for key distribution without any secure communication channels, and the users can securely obtain their private keys from group manager was proposed. Secondly, this scheme can achieve fine-grained access control, any user in the group can use the source in the cloud and revoked users cannot access the cloud again after they are revoked. Thirdly, the scheme from collusion attack, which means that revoked users cannot get the original data file even if they conspire with the untrusted cloud was protected. In the proposed scheme, by leveraging polynomial function, a secure user revocation scheme was achieved. Finally, this scheme can achieve fine efficiency, which means previous users need not to update their private keys for the situation either a new user joins in the group or a user is revoked from the group. The results will show effectiveness of the scheme for potential practical deployment, especially for big data deduplication in cloud storage.

Keywords: cloud computing, cryptography, deduplication, dropbox

1. Introduction

Cloud Storage is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations), and the physical environment is typically owned and managed by a hosting company. These cloud storage providers are responsible for keeping the data available and accessible, and the physical environment protected and running. People and organizations buy or lease storage capacity from the providers to store user, organization, or application data.

Cloud storage services may be accessed through a co-located cloud computer service, a web service application programming interface (API) or by applications that utilize the API, such as cloud desktop storage, a cloud storage gateway or Web-based content management systems.

Big data is a term for data sets that are so large or complex that traditional data processing applications are inadequate to deal with them. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying, updating and information privacy. The term "big data" often refers simply to the use of predictive analytics, user behavior analytics, or certain other advanced data analytics methods that extract value from data, and seldom to a particular size of data set. "There is little doubt that the quantities of data now available are indeed large, but that's not the most relevant characteristic of this new data ecosystem."

In cryptography, encryption is the process of encoding messages or information in such a way that only authorized parties can read it. Encryption does not itself prevent interception, but denies the message content to the interceptor. In an encryption scheme, the intended communication information or message, referred to as plaintext, is encrypted using an encryption algorithm, generating cipher text that can only be read if decrypted. For technical reasons, an encryption scheme usually uses a pseudo-random encryption key generated by an algorithm. It is in principle possible to decrypt the message without possessing the key, but, for a well-designed encryption scheme, large computational resources and skill are required. An authorized recipient can easily decrypt the message with the key provided by the originator to recipients, but not to unauthorized interceptors.

The purpose of encryption is to ensure that only somebody who is authorized to access data (e.g. a text message or a file), will be able to read it, using the decryption key. Somebody who is not authorized can be excluded, because he or she does not have the required key, without which it is impossible to read the encrypted information.

2. Related Work

M.Bellare, S.Keelveedhi, and T.Ristenpart proposed that the study of problem of providing secure outsourced storage and it supports deduplication and resists brute-force attacks. DupLESS, which combines a CE-type base MLE scheme with the ability to obtain message-derived keys with the help of a key server (KS), shared amongst a group of clients. The clients interact with the KS by a protocol for oblivious Pseudo Random Function (OPRFs), ensuring that the KS can cryptographically mix in secret material to the per message keys while learning nothing about files stored by clients.

These mechanisms ensure that DupLESS provides strong security against external attacks which compromise the Storage Service (SS) and communication channels (nothing is leaked beyond file lengths, equality, and access patterns), and that the security of DupLESS gracefully degrades in the face of comprised systems The substantial increase in security comes at a modest price in terms of performance, and a small increase

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INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY

T-TRACKING ALGORITHM FOR DATA TRACKING IN WIRELESS SENSOR NETWORKS

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ABSTRACT

In Wireless Sensor Network the sensor nodes are being dispersed spatially, so the target tracking has become a key factor. In the existing system they have used the Face Tracking for tracking the target. They have developed non-overlapping region called Face. In that they have used Brink Detection algorithm for selecting the edges and Optimal Selection algorithm for selecting sensor node in each face. However, if the selected node fails then tracking accuracy will be lost. In this paper we have a new tracking scheme, called t-Tracking is designed to overcome the target tracking problem in WSNs considering multiple objectives: low capturing time, high quality of tracking (QoT). A set of fully distributed tracking algorithms is proposed, which answers the query whether a target remains in a "specific area" (called a "face"). When a target moves from one face to another face all the possible movements will be mentioned. Then query will be sent to all those nodes about their energy and coverage area. Based on the response from those nodes the best nodes will be selected for continuing tracking when the target moves to the next face. The result of this t-Tracking is compared with already existing face tracking..

Keywords: Wireless sensor networks, target tracking, sensor selection, edge detection, face tracking, fault tolerance.

I. INTRODUCTION

Wireless sensor network (WSN) refers to a cluster of spatially detached and committed sensors for recording and monitoring the substantial status of the surroundings and organizing the composed data at a central position. WSNs determine ecological environment like wind speed and direction, pressure, temperature, pollution levels, sound, humidity, etc.

A wireless sensor network (WSN) in other words can be defined as a system of (possibly low-size and low-complex) devices denoted as nodes that can intellect the surroundings and converse the data collected from the monitored area all the way through wireless links; the information is forwarded,
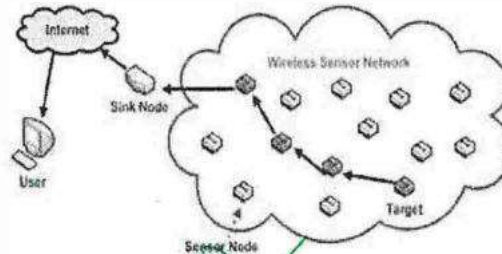

Fig.1 Example of wireless sensor network

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INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY
NETWORK CAPACITY BASED GEOGRAPHICAL QOS ROUTING FOR MULTIMEDIA STREAMS OVER MANET

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ABSTRACT
The Mobile Adhoc Network (MANET) support in anywhere and anytime wireless communication expands the multimedia applications' scope. Ever demanding task of multimedia applications to determine the quality of routers among huge number of portable devices is to improve Quality of Service (QoS). To support real time multimedia streams, several geographical based QoS routing protocols have been proposed; however, the portable devices' expansion leads to stringent QoS demands in MANET. The main reason behind the QoS demand is the dynamic network capacity which relies on network size, node mobility, density, node energy, and communication range. The existing protocols are inefficient to the delay sensitive multimedia applications over MANET due to the lack of attention on dynamic network capacity. This work presents a new Network Capacity based Geographical routing (NCG) along with several routing schemes such as Radio Range Regulation (RRR) routing, Virtual Destination Routing (VDR), and Virtual Void Routing (VVR) called NCG++. is called NCG++. The NCG++ routing estimates the network capacity in terms of QoS, facilitating minimum energy for every node to provide the QoS for varying network size, node mobility, and node density. Finally, this work simulates and compares the proposed NCG++ routing protocols performance with the existing QoS-GPSR. Thus, the performance evaluation illustrates that the NCG++ routing protocol outperforms the existing protocols.

Keywords: *Mobile Adhoc Network, QOS Routing, QOS Provisioning for Multimedia,Network Capacity, Scalability, and Mobility.*

I.   INTRODUCTION
A set of wireless connected portable devices is composed of the infrastructure-lessMANET.The enormous growth in wireless technologies demands attention on the multimedia applications such as digital video, audio, and file transfer. The MANET supports the real time multimedia communications which requires an end-to-end data transmissionwithout any interruption. A key factor to support the uninterruptible data transfer is QoS which contains a set of service requirements such as delay, delay jitter, bandwidth, network resources and packet loss. To provide the QoS, the determination of communication links needs to satisfy the service requirements. Hence the geographical routing is preferred for multimedia streams more than the topology based routing. Several geographical based routing protocols have been proposed to provide the QoS guarantee for multimedia applications under MANET.

The existing protocols include multiple routing constraints such as delay, bandwidth, and link stability to assure the QoS provision. However, it does not allow the greater user mobility under a large scale network. Large number of highly portable devices expends the node energy owing to the node density, mobility, and the node movement. which in turn leads to frequent changes in the network capacity. The dynamic network capacity affects the highly sensitive QoS parameters such as delay adthro ughput resulting in noncooperative routing for the multimedia streams. The lack of attention on network sca lability and node mobility induced dynamic network capacity is a main problem in the existing geographical C)oS routing protocols. As a result, an effective routing protocol is needed to deal with the network capacity factors such as network area, node mobility, density, and node energy.

In this paper, a new geographical routing protocol which tolerates the dynamic network capacity namely

Topic Categorization on Social Network Using Latent Dirichlet Allocation

S.S. Ramyadharshni and Dr.P. Pabitha

Abstract— Topic modelling is a powerful technique for analysis of large document collection. Topic modelling is used for finding hidden topic from the collection of document. In the twitter api, it is essential all the tweet documents are properly categorized. For automatically categorizing the twitter document topics The efficient detection is modelled by an LDA method for probabilistic model and for separation of words from the document.LDA is widely used to estimate the multinomial observation and each topic is categorized by a probabilistic distribution over the words. The multinomial distribution of the topics is regarded as the feature of the document. The proposed system resulted in an increase in accuracy for detection of the topic categorization.

Keywords— LDA, Topic Model, Multinomial Distribution, Probabilistic Distribution.

I. INTRODUCTION

SOCIAL Networks is an online platform that allow user to communicate with each other and also share their information through the internet using a computer, tablet, mobile phone etc. which is also used to posting information, comment the post, message to friends etc. Images, video also shared through the social network which is very useful for spreading the information quickly. Social network and micro-blogging site have become dynamic and widely used media for communication purpose. By using these sites user can share their information on various topics.

Social network analysis has emerged as a key technique in modern sociology. It has also gained a significant role in the following fields anthropology, biology, demography, computer science, history, geography, communication studies economics, political science, developmental studies, and social psychology.

An important process in natural language processing is to determine the category of documents in a process of text classification[1]. The techniques of text classification has the wide range of applications in areas such as web, teaching, classifying mails whether spam or not. The process of extracting interesting information and the knowledge from unstructured text from a large text files and sentences is called as text mining[2]. Usually, the occurrence of a term in a document is measure by IDF and Term Frequency-IDF. The

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topic similarity measure defines the number of keywords that are similar present in a document. Information diffusion prediction aims at predicting the users who will spread information. The information diffusion probability calculation has its own areas of applications such as crowd sourcing, rumor diffusion, army, government and many. As there has been an enormous increase in network size and the interaction frequency among the users for an effective generalization and efficient inference[3]. Most of the information diffusion models that have been proposed has observed the structure of the network and interactions between the users. In accordance with the time the models have not been analyzed.[4] It is clear from the data that there is a need for detecting the most influential user in a group of network. A proposed mechanism which is designed to detect the influential user detection based on the attributes of the user and the network and the evaluation of the proposed system is done by compiling metric valuation.
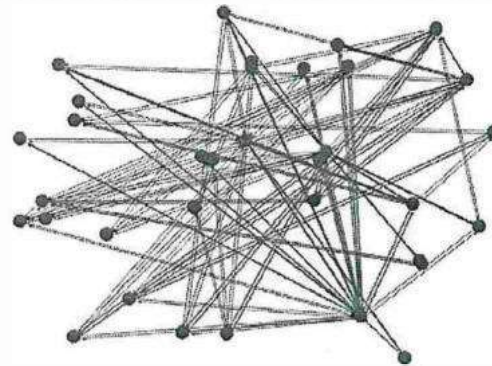

Fig. 1.1: Social Network

II. RELATED WORKS

K. Zhang et. al proposed to Predict retweeting using probabilistic matrix factorization technique. Convert retweeting behaviour problem to a matrix factorization problem. Message semantic embedding information is employed in designing a semantic regularization term to constrain the matrix factorization objective function the technique used are Clustering algorithm Gradient descent Algorithm Probabilistic Matrix Factorization the advantage of this method is introduced above fail to discover these intrinsic geometric structure of the message embedding space. To deal with this limitation introduce message semantic embedding and assume that messages can be divided into a number of semantic group[5] .NOW Chen et al. proposed that the influence maximization is the problem of finding a small set of seed nodes in a social network that maximizes the spread of

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Visible light photocatalytic activity of pure and palladium (Pd) doped SnO$_2$ nanoparticles by a one step facile route

D. Madhan[1] · M. Sangeetha[2] · P. Rajkumar[3]

Abstract In this paper, we report palladium (Pd) doping induced modifications in the structural, optical and photocatalytic behavior of SnO$_2$ nanoparticles. Powder X-ray diffraction and transmission electron microscope studies confirmed that both the pure and Pd doped SnO$_2$ (Pd: 0, 5, 10 wt%) crystallized in tetragonal rutile-type structure with spherical morphology. Furthermore crystallinity is reduced upon Pd doping. The crystallite size decreased from 42 to 35 nm and 31 for pure, 5 and 10 wt% Pd doped SnO$_2$ respectively. A noticeable red shift in the absorption edge was found and band gap narrowing in the range of 3.67–3.25 eV after doping by Pd. The photoluminescence emissions observed in the visible region are attributed to the defect levels rising due to oxygen vacancies. The photocatalytic activities of the pure and Pd doped SnO$_2$ samples were evaluated by the degradation of Methylene Blue (MB) Rhodamine B (RHB) in an aqueous solution under visible light irradiation. The photocatalytic activity and reusability of Pd (10 wt%) doped SnO$_2$ was much higher than that of the pure SnO$_2$. The improvement mechanism by Pd doping was also discussed.

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1 Introduction

Commonly used materials for production of semiconductor gas sensors includes SnO$_2$, ZnO, TiO$_2$, and WO$_3$. Among all the materials, tin oxide provides as an exclusive material because of its basic chemical and physical characteristic. Since SnO$_2$ is an n-type semiconductor material with large energy gap (3.6 eV). It has rutile structure (a = 4.737 Å and c = 3.186 Å), the conductivity of SnO$_2$ is very responsive to the surface states in the temperature range from 300 to 800 K, in which redox reactions occur on the surface of metal oxides. The SnO$_2$ surface reveals outstanding absorption properties and reactivity because of the presence of independent electrons in its conduction band, and existence of surface and bulk oxygen vacancies and active chemisorbed oxygen. SnO$_2$ can be synthesized in a stable, highly dispersed state with crystallite sizes of 5–20 nm. A crucial disadvantage of SnO$_2$ based chemical sensors is their small selectivity. Selectivity of these sensors can be enhanced by inclusion of dopants, which have a strong effect on the electronic and catalytic properties of the surface. Recently, various applications associated with the photocatalyst have seen the day in the area of cleaning water and air, hydrogen production, and self-cleaning materials. This technique has been recommended in environmental production because of its ability to oxidize the organic and inorganic materials. The degradation of organic pollutants in water and air by photocatalysis, using semiconductors, has fascinated wide consideration [1]. Therefore, semiconductor photocatalysts have been extensively explored in the field of photochemistry and environmental protection [2]. Tin oxide has established a huge scientific attention due to its wide range of applications such as sensors, opacities, Electrochromic devices and overcoat for thin film magnetic recording devices [3].
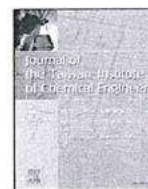
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Synthesis of ZnO nanowire and ZnO/CeO₂ solid solution nanowire by bio-morphing and its characterization

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ABSTRACT

ZnO nanowire (NW), ZnO/CeO₂ solid solution nanowire (SSNW) and composite nanowire (CNW) were resulted by varying the proportions of CeO₂, synthesized by bio-morphing. The nano sized cellulosic fibrils present inside the micro fiber bundles of banana (Musa Balbisiana Colla) pseudo stem were used as bio-morphing template. The high aspect ratio of NW imitates the internal morphology of the cellulosic micro fiber bundles (CMFB) used. Raw CMFB and synthesized NWs morphology, composition, crystallinity, band gap energy and functionalities were examined by FESEM, EDX, TEM, XRD, UV–visible DRS and FTIR respectively. The formation mechanism of NW within the natural CMFB also proposed with the help of TG-DTA. Reaction kinetics and mechanism of dye degradation of Direct Red dye (DRD) was investigated under UV and solar light irradiation, the effects of DRD concentration, catalyst dosage and pH were also explored using the synthesized SSNW. The degradation studies substantiated the enhanced photocatalytic degradation under solar light.

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1. Introduction

Researchers are keen to harvest solar light energy in various applicable routes such as solar cells, dye sensitized solar cells, photo water splitting and photocatalysis in order to maximize the renewable resource utilization. These energy resources play a major role in environmental remedial actions directly like pollution prevention by dye degradation and production of hydrogen fuel by water splitting. When compared with most commonly used UV active photocatalysts, TiO₂ and ZnO are low cost, used to degrade organic pollutants such as dyes and pesticides effectively in earlier decades. Recently synthesized nano structured ZnO in various morphologies, with increased surface defects [1] and narrowed band gap with defects [2] procures the visible light absorption. It can be listed by the following investigations, evidently dumb-bell shaped [3] and platelet ZnO [4] emerge from microwave assisted methods and flower like [5] and nanorod arrays [6] of ZnO morphologies were materialized from hydrothermal process. At the same time, it was reported that the catalytic seeds mentioned in the above methods may poise the catalyst, resulting in the change of optical and structural properties [7,8].

Among these morphologies, ZnO NW with high aspect ratio (length and diameter of more than 1 μm and less than 100 nm respectively) showed a great attention owing to its visible range photonic band gap [9]. Due to their quasi one dimensional (1D) structure, high surface to volume ratio and very high electron transfer efficiency, it can be considered as uni-dimensional channel for transporting electrons, holes and photons [10]. Effectively doping a metal or metal oxide on ZnO nano structures further enhances the photonic absorption in the visible region. Detailed investigations were carried out in Ag doped ZnO nano rod arrays [11], Ag and Au coated ZnO NW arrays [12] and WO₃, CuO, and NiO loaded ZnO nanorod [13].

On the other hand, biomorphic process are cost effective, abundant and reproducible for the synthesis of nano sized particles with the defined morphologies compared with artificial synthetic templates used in nano material synthesis [14]. Bio-materials were utilized for their hierarchically grown-up structure, optimized by evolutions over a long period of time. Some of the bio-materials such as jute fiber [15] and cotton fiber [16] are explored as cellulosic derived biomorphic templates. These bio-materials were extensively used for the synthesis of biomorphic micro tubular structures of SnO₂ [16], hollow fiber with porous walls of ZnO [14] and TiO₂ fiber [17] by sintering the bio-materials incrusted with the corresponding solutions of the metal precursors. Similarly plenty of research work has been carried out with micro sized banana

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Synthesis and photocatalytic studies of lanthanum oxide doped nano carbon hollow spheres

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ABSTRACT

Nano Carbon Hollow Spheres (NCHS) with a mean size of 40–70 nm were synthesized from *Ricinus Communis* (RC) oil by air controlled, low temperature direct pyrolysis in an indigenous reactor assembly using multi-metal catalyst derived from *Alternanthera sessilis* stem. The multi-metals present in the stem acts as a green catalyst for the formation of NCHS. The synthesized carbon spheres has a bulk density of $0.025 \, g/cm^3$ and BET surface area of $631 \, m^2/g$. Bubble growth mechanism was proposed for the formation of NCHS. A visible light active lanthanum doped NCHS (La@NCHS) photocatalyst was synthesized by doping lanthanum oxide with NCHS by chemical co-doping scheme. The particle size, morphology, graphitic layer arrangements, functionalities, band gap energy and composition of the La@NCHS were evaluated using FE-SEM, HRTEM, XRD, FT-IR, DRS and EDX. Kinetics and mechanism of UV and solar light supported dye degradation study for basic methylene blue (MB) was investigated and the effects of MB concentration, catalyst dosage and pH were explored for La@NCHS. The synthesized composite catalyst has excellent photocatalytic degradation under solar light.

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1. Introduction

Ongoing demand and scarcity of clean water creates great concern due to the rapid industrialization and population growth. This precious water was polluted by many industrial processes such as dyeing, tanning, pulping etc. Among the pollutants, dying industry waste water caused severe environmental problems owing to the deep coloration, toxic and carcinogenic nature [1,2]. The dyeing industry waste water can be treated by Chemical, Physical and Biological methods like adsorption [3], membrane separation [4], different precipitation (coagulation/flocculation) [5] and advanced oxidation [6] technologies. Each of these treatments offers special advantages, but have some limitations and challenges like, dye selective, cost control, tedious optimization process, ineptness for disperse dyes, longer acclimatization phase [7], summarized that intensive energy input and sludge formation are common challenges [8].

In recent investigations, detoxification cum degradation of dyeing effluent was achieved simultaneously by semiconductor photocatalyst resulting in harmless end products. For instance, photocatalysts TiO_2 [9], ZnO [10], WO_3 and CdS [11] covers a wide range of interest because of their fruitful photocatalytic behavior in complete removal of organic dyes from effluent by UV irradiation.

On the other hand, exciting carbon morphologies grown on metal catalysts create novel pathways in various fields of science and technologies, especially hollow carbon nano spheres and carbon nano-tubes have been successfully used as composites for hydrogen storage [12], super capacitors [13], PEM fuel cell cathode [14], oral drug delivery [15,16] and for the treatment of oil contaminated water [17].

The growth of hollow carbons, bamboo shaped tubes and smooth tubes were investigated at higher temperature pyrolysis (1950–2600 °C) of benzene, ethylene and acetylene with multi-metal salt catalysts (Fe, Ni and Co) [18]. The aligned bamboo shaped CNTs were also prepared by vapor deposition of acetylene by Fe catalyst at 550–950 °C without encapsulation of metal particles in CNT [19]. Particularly, the decomposition of oil into a carbon nucleus with solid/liquid & liquid/gas interfaces ends with the concentric texture growth of fluid cokes [20,21]. Carbon spheres were classified according to their size as (i) 2–20 nm (Cn family and carbon onions) (ii) 50 nm–1 μm (CNS) and (iii) greater than 1 μm (carbon beads) [22]. By taking methane as a carbon source, carbon spheres or carbon nano-tubes were produced by varying

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INTUITIONISTIC FUZZY SEMIPRIME IDEALS IN SEMIGROUPS

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Abstract

In this paper, we introduce the notion of intuitionistic fuzzy semiprimality in a Semigroup which is an extension of fuzzy semiprimality and investigate some of their related properties.

Keywords: Intuitionistic fuzzy semigroup, intuitionistic fuzzy ideal, intuitionistic fuzzy bi-ideal, intuitionistic fuzzy semiprime, intuitionistic fuzzy leftsimple.

Mathematics Subject Classification (2000): 20M12, 04A72.

1. Introduction

After the introduction of fuzzy sets by L. A. Zadeh[9], the fuzzy set theories have found many applications in the domain of mathematics. The concept of intuitionistic fuzzy sets was introduced by K. T. Atanassov[1, 2], as a generalization of the notion of fuzzy sets.

N. Kuroki[5] introduced and studied fuzzy ideals and fuzzy bi-ideals in semigroups. In this paper, we consider the intuitionistic fuzzification of the concept of a semiprime ideal in a semigroup and some properties of such ideals are investigated.

2.Preliminaries

Let S be a semigroup. By a subsemigroup we mean a non-empty subset A of S such that $A^2 \subseteq A$, and by a left(right) ideal of S we mean a non-empty subset A of S such that $SA \subseteq A$ $(AS \subseteq A)$. By two sided ideal or simply ideal, we mean a non-empty subset of S which is both a left and a right ideal of S. A subsemigroup A of a semigroup S is called a bi-ideal of S if $ASA \subseteq A$. A semigroup S is said to be right (resp.left) zero if $xy = y$ $(xy = x)$ for all $x, y \in$ S. A semigroup S is said to be regular if for each $x \in S$, there exists $y \in S$ such that $x = xyx$. A semigroup S is said to left (resp.right) simple if S itself is the only left (resp.right) ideal of S.

A mapping $\mu : S \to [0, 1]$ is called a fuzzy set of S and the complement $\bar{\mu}$ is a fuzzy set in S given by $\bar{\mu}(x) = 1 - \mu(x)$ for all $x \in S$.

An intuitionistic fuzzy set (IFS) A in a non empty set X is an object having the form $A = \{<x, \mu_A(x), \nu_A(x) > / x \in X\}$, where the functions $\mu_A : X \to [0, 1]$ and $\nu_A : X \to [0, 1]$ denote the degree of membership and the degree of non membership of each element $x \in X$ to the set A, respectively, and $0 \leq \mu_A(x) + \nu_A(x) \leq 1$ for all $x \in X$.

Notation: For the sake of simplicity, we shall use the symbol $A = <\mu_A, \nu_A>$ for the IFS $A = \{<x, \mu_A(x), \nu_A(x) > / x \in X\}$.

3. Intuitionistic fuzzy semiprime ideals

In what follows, let S denote a semigroup unless otherwise specified.

Definition 3.1. Let A be an IFS in X and let $t \in [0, 1]$. Then the sets $U(\mu_A ; t) = \{x \in X : \mu_A(x) \geq t\}$ and $L(\nu_A; t) = \{x \in X : \nu_A(x) \leq t\}$ are called a μ-level t–cut and ν-level t-cut of A, respectively.

Definition 3.2. Let A be an intuitionistic fuzzy set of a set X. For each pair $<t, s> \in [0, 1]$, the set $A_{<t, s>} = \{x \in X: \mu_A(x) \geq t$ and $\nu_A(x) \leq s\}$ is called the level subset of A.

A NEW FUZZY APPROACH FOR SEGMENTATION OF CHROMOSOMES

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Abstract

Image segmentation has become one of the important tools to be used in the field of medicine. Segmentation is typically used to identify objects or other relevant information in digital images. Banding pattern is one of the unique parameter in karyotyping chromosome to detect chromosomal abnormalities which are the causes for birth defects. One of the main problems in computer vision system is analysing images having high uncertainty degree. Fuzzy set theory is ideally suited for dealing with the treatment of such uncertainty problem in the segmentation process. The segmentation simplifies and changes the representation of an image into something that is more meaningful, easier to analyse and easy to understand. This paper presents the concept of fuzzy algorithm for segmentation of dark bands in chromosome.

Keywords: Image processing, Segmentation, Chromosome image, Fuzzy logic, Membership function

1. Introduction

In the nucleus of each cell, the DNA molecule is packaged into thread-like structures called chromosomes.The ends of the chromosome are called telomeres. Each chromosome arm is divided into regions, or cytogenetic bands, that can be seen using a microscope and special stains. The cytogenetic bands are labelled p1, p2, p3, q1, q2, q3, etc., counting from the centromere out toward the telomeres. The study of whole set of chromosomes is known as karyology. Centromere position, length, banding pattern and polarity are the four parameters which are used for segmentation and identification of karyotype.

In humans, each cell normally contains 23 pairs of chromosomes, for a total of 46. Twenty-two of these pairs, called autosomes, look the same in both males and females. The 23rd pair, the sex chromosomes, differs between males and females. Females have two copies of the X chromosome, while males have one X and one Y chromosome. Chromosomes in metaphase can be identified using special staining techniques called banding. Metaphase chromosomes make the classical picture of chromosomes (karyotype). A band is defined as a part of chromosome which is clearly distinguishable from its adjacent segments by appearing darker or brighter with more banding techniques. The chromosomes are visualized as consisting of a continuous series of bright and dark bands.

The development of fuzzy set theory and fuzzy logic provided an opportunity for the human science to incorporate a mathematical framework with attractive properties. Image segmentation is a vital part of image processing. Segmentation has its application widespread in the field of medical images, traffic image, pattern recognition etc. Medical image segmentation is difficult in image processing. The application of fuzzy technology in information processing is already important and it will certainly increase the importance in the future. Nowadays some of the most commonly used segmentation techniques are thresholding, clustering methods, histogram-based methods, edge detection and region growing. Edge detection is a well-developed field on its own within image processing. Region boundaries and edges are closely related, since there is often a sharp