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22, First Floor, ShivLoke Phase-IV,
Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India
Website: www.blueeyesintelligence.org
Email: director@blueeyesintelligence.org, blueeyes@gmail.com
Cell #: +91-9669981618, **WhatsApp #:** +91-9669981618, **Viber #:** +91-9669981618
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1.

Authors: V. Saranya, M. Rekha, N. Gokulnath

Paper Title: Performance of Bidirectional Chopper and Multi- Operational Inverter with Hybrid Energy System

Abstract: In this paper a power electronic interface circuit is proposed for application of battery electric vehicle, the battery is been charged by using a Photovoltaic cell and a Wind Energy Conversion System. The power flow in the battery vehicles is managed by implementing the power electronic interfaces. The interface comprises of the integration of Bidirectional Chopper, DC link, and Multi Operational Inverter for the conversion of AC to the system. The overall performance of the system is enhanced with the help of the Power Flow controller. The simulation has been analyzed by using MATLAB/SIMULINK and a hardware prototype is implemented.

Keywords: Bidirectional Chopper, Battery, Multi-operation Inverter, Motor, PV, Wind.

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2.

Authors: Dibya Jyoti Bora, Anil Kumar Gupta

Paper Title: A Novel Approach Towards Clustering Based Image Segmentation

Abstract: In computer vision, image segmentation is always selected as a major research topic by researchers. Due to its vital rule in image processing, there always arises the need of a better image segmentation method. Clustering is an unsupervised study with its application in almost every field of science and engineering. Many researchers used clustering in image segmentation process. But still there requires improvement of such approaches. In this paper, a novel approach for clustering based image segmentation is proposed. Here, we give importance on color space and choose l*a*b* for this task. The famous hard clustering algorithm K-means is used, but as its performance is dependent on choosing a proper distance measure, so, we go for "cosine" distance measure. Then the segmented image is filtered with sobel filter. The filtered image is analyzed with marker watershed algorithm to have the final segmented result of our original image. The MSE and PSNR values are evaluated to observe the performance.

Keywords: Computer vision, Image processing, Color Image segmentation, K-Means, Watershed

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3.

Authors:	**Parveen Goyal**
Paper Title:	**Effect of EDM Process Parameters on Composite Material Electrode Wear**

Abstract: Electric Discharge Machining has been established as standard process for machining of electrically conducting hard materials. The intrinsic nature of the EDM process results in electrode wear while machining the workpiece. The electrode wear rate as response parameter is required to be studied for maximum performance of the electrode while machining the work piece. Therefore it is desired to find the effect of EDM process parameters on the Electrode wear. The experiments have been performed with Cu-Mn composite material electrodes on hardened EN-31 die steel as work piece. The composite material electrodes were made through the process of powder metallurgy with different ratio of Cu-Mn metallic powders. It has been observed that Copper-Manganese composite material electrode made with 80-20 weight ratio gives less electrode wear rate as compared to copper-manganese (weight ratio 70-30) composite material electrodes for machining of work piece.

Keywords: Electric Discharge Machining, Electrode wear, Copper, Manganese

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4.

Authors: **Vindhya, Sunil Kumar, Madhuraj**

Paper Title: **Statistical Methods Application for Estimation of Unit Costs in a Cogeneration Plant Sugar Industry**

Abstract: India is currently largest producer of Cane-Sugar in the world accounting for 10% of the world production. Most Cane –Sugar factories have been designed to be energy self-sufficient with sugar as the Primary product. With the recent trend toward diversification in the Cane-Sugar Industry, a growing no. of factories are manufacturing one or more byproducts (such as alcohol or cogenerated electricity for export to the utility grid) in addition to Sugar and Mollases. Co-generation is the concept of producing two forms of energy from one fuel. One of the forms of energy must always be the heat and the other may be electricity or mechanical energy. A method for establishing unit costs of delivered steam and electrical energy is presented. This method employs the use of least squares, based on a linear model of electrical energy generation and delivered steam as functions of generated boiler steam. A discussion of the accuracy of the method is presented as well as an example of the use of the method using four months of actual plant production. An excel program is discussed for solving the solution of simultaneous equation generated after least squares approximations. Accordingly comparision among all the adopted methods are carried out. This helps in betterapproximation for evaluation of per unit cost for a cogeneration system , which is further used for determining the correct pay-back period of the plant.

Keywords: Cogeneration, costs, least squares methods, steam generation, steam turbines, surface fitting.

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5.

Authors: **Victor Legbo YISA, Meshach BABA**

Paper Title: **Evaluation of Business Continuity and Information Disaster Recovery Mechanism in Top Universities in North Cyprus**

Abstract: the importance of a business continuity and disaster recovery plan to an organization cannnot be over-emphasised. Business continuity in an organization serve as a lifeline to organizations when a disasteer event occurs. This study emphasises on the need for effective business continuity and disaster recovery plan in higher education institutions by evaluating universities in north cyprus' disaster recovery mechanism.Deming circle approach was used in evaluation with questions asked to respondents based on the four different stages of the Deming circle.

Keywords: Business Continuity, Deming Circle, Disaster, Disaster Recovery.

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6.

Authors: **Vidya.S, Manju Rani**

Paper Title: **Performance Analysis Using Time Reversal Division Multiple Access**

Abstract: Inter-symbol-Interference (ISI) caused by multipath propagation has made high speed broadband communication a backbreaking task. Time reversal transmission method makes use of the behaviour of multipath environment by converging energy in the temporal and spatial domains. In this paper, a wireless channel access method named time reversal division multiple access (TRDMA) is being proposed. The system performances with multiple-transmit-antenna scheme using TRDMA is investigated in terms of the bit-error-rate, the effective signal-to-interference-plus-noise-ratio, the achievable sum rate and the outage probability. Also, the bit error rate improvement over code division multiple access method (CDMA) is also evaluated. Satisfying simulation results are obtained using the multiuser downlink systems of the proposed method which makes it a high speed broadband wireless communication method in the future.

Keywords: Time reversal, TRDMA, temporal focussing, spatial focusing

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7.

Authors: **Chivukula L Gayitri**

Paper Title: **Identification and Molecular Characterization of Micro Organisms from Petroleum Soil**

Abstract: The main objective of this study was experimentally to analyse the micro organisms isolated from soil samples from various areas and to find the isolated species by subjected them to polymerase chain reaction (PCR) and then elute the amplified product again using PCR. Then the eluted sample sent to sequencing to identify the bacteria which was present in the sample.

Keywords: micro organisms, polymerase, bacteria.

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8.

Authors: **Nirmit Desai, Chitesh Tewani, Karl Elavia, Omkar Gawde, Kiran Joshi**

Paper Title: **File Security using Homomorphic Hashing in Peer to Peer Networks**

Abstract: This paper focuses primarily with homomorphic hashing and the quality of peer-to-peer content distribution. Some systems using simple block-by-block downloading can verify blocks with traditional cryptographic signatures and hashes, but these techniques do not apply well to more elegant systems that use rate less erasure codes for efficient multicast transfers. This paper presents a practical scheme, based on homomorphic hashing, that enables a downloader to perform on-the-fly verification of erasure-encoded blocks. Peer-to-peer content distribution networks can suffer from malicious participants that intentionally corrupt content. Traditional systems

verify blocks with traditional cryptographic signatures and hashes. However, these techniques do not apply well to more elegant schemes that use network coding techniques for efficient content distribution. Problems that occur with these techniques are that peers have no way of knowing which block was bad if a piece they download fails hash check, and if they're streaming data they can't display it until a full piece is downloaded for hash verification purposes. Also there is a huge waste of bandwidth when a piece does not pass hash check, in fact, the peer must discard all the blocks (even all the correct ones) and then re-download all the blocks within the piece. It is better to discard only bad blocks, and re-download only them which will save bandwidth. Identifying such bogus blocks is difficult and requires the use of homomorphic hashing functions. This paper deals with reducing the bogus blocks by implementing homomorphic hashes on the blocks and using Luby Transform Codes on peer to peer networks.

Keywords: Homomorphic Hashing, Peer-to-peer (P2P), Luby Transform Codes (LT codes), Erasure Codes, File security

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