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1.	**Authors:** Joseph Zacharias, Vijayakumar Narayanan **Paper Title:** Full Duplex Radio over Fiber System with Carrier Recovery and Reuse in Base Station and in Mobile Unit	

Abstract: A novel full duplex Radio over Fiber (RoF) system extending from the central office (CO) to the mobile unit using a single continuous wave laser in the central station is proposed. Mobile unit is designed without a high frequency local oscillator. An optical frequency comb is generated in which one frequency is used as carrier for modulating data. The frequency for uplink is obtained from other comb signal. A large number of comb lines can be utilized along with the data comb line. Thus the frequency of operation of the base station can be selected by switching to different comb lines. The modulation scheme QAM accounts for greater spectral efficiency for the system. The proposed system is viable for high bandwidth communication and cost effective.

Keywords: Full duplex, Optical comb, RoF

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2.	**Authors:** Durgam Kumaraswamy, B.V. Sanker Ram **Paper Title:** Appliance of Soft Switching Scheme over Fuel-Cell based Power Conversion Improvement via Fuzzy Nature	

Abstract: In PV based Solar and Tele-Communication industries power efficient DC-to-DC converters are required to manage the Fuel Cell Systems. These DC-DC converters should be high in power and efficiency as well as it should have low Electro Magnetic Induction [EMI]. The main motto of this systems are to raise the power by using Step-Up Conversion and improving the soft switching ratio. The usage of Coupled inductor and Isolated Transformers are satisfying the needs of higher voltage supply and soft switching scenario. For transforming the electro chemical energy into electrical energy fuell cells are needed, as well as this fuel cells are used to attain high efficiency, lower emitting ratio and speeder operating power while conversion. Several approaches have been already realized to these kind of DC-to-DC power conversion scenarios but failure free scenario of fuel cell systems needs the elimination of bad voltage switchings, requiring higher inputting power as well as large ranging of outputs with higher energy efficiency. For getting out from these faults we need a special Soft Switching nature of MOSFETs and resulting rectifiers. The proposed methodology combines the scenario of Fuzzy logical controllers [FLC] with Soft Swtching to attain higher efficiency over fuel cells and its performance improvements over anycase of output strategies. This nature will eliminates the losses os power occurred in switching strategies and reducing the back recovering losses and its nature as well as providing the trustworthy conditions in circuit nature and this kind of design eliminates the large circulations over initial stages. The proposed results will be experimentally proven by using MATLAB SIMULINK and Hardware Circuit Scenarios.

Keywords: Fuzzy Logic, DC-to-DC, Fuel Cell [FC], Electro Magnetic Induction [EMI], Soft Switching.

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3.

Authors: **Vinay Agrawal, Rajesh Gupta, Manish Goyal**

Paper Title: **A Study on Seismic Analysis of High Rise Irregular Floor Plan Building with Different Position of Shear Walls**

Abstract: The primary objective of any structural system is to support various types of loads acting either vertically or Horizontal or acting jointly with adequate safety. Any structural system should be designed in such a way that each and every element of the system should have ample rigidity, stiffness and strength against the anticipated loads. Any structural frame system with a provision of RC shear wall shows a desirable safety and stability up to 30 stories building height in lateral loads resistance. A RC framed shear wall is a combination of beams, columns interacting with reinforced concrete shear wall. Shear wall provide lateral stiffness to the building by cantilever action. In this study a G+19 story unsymmetrical [Floor plans] commercial building [L>3.6 least lateral dimension of building], H> 3.3 least lateral dimension of building and is modeled with different position of shear walls and analysis conducted for joint displacement, Storey drift, Storey stiffness and Base shear force. These models are modeled with ETABS for static analysis as per IS 1893 -2002. The analysis results for different models are plotted to compare and to know the behavior of RCC frame structure with different position of shear walls.

Keywords: Shear Wall, Core Wall, Bare Structure frame, static analysis, lateral loads.

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4.

Authors: **M. Nagaraju Naik, P. Raveendrababu**

Paper Title: **Low Resolution to High Resolution Image Projection with Spectral, Noise Removal and Edge Preservation Coding Techniques**

Abstract: Many technical papers were presented in the improvement of accuracy and visual quality. Image coding is developed over a long period with various enhancement techniques. In the area of digital image processing resources required in optimized methods for better representation of higher resolutions for progressive image processing. More research work required towards high-resolution representation in real time applications and focused more optimization methods for efficient system representation. But available resources are limited due to noise, due to the noisy overall system accuracy and efficiency will decrease. Fourier transform represents less accuracy and visual quality because projecting energy with noise in all the directions. Hence we propose a lower dimensional coding system with higher accuracy with spectral band interpolation; inter-frame correlative for noise removal and finally adaptive edge preservation for smooth representation. The proposed technique gives more accuracy and projected in the higher grid and hence the obtained system is robust.

Keywords: Accuracy, Interpolation, Image Coding, Spectral Band, Edge Preserving.

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5.

Authors: **Shubhangi D. C, Vijeta V Chature**

Paper Title: **Utility of RFID, Virtual Agent for Supervising the Individuals with Dementia**

Abstract: Various update frameworks have been created to help elderly individuals with dementia. The current update frameworks do not have the attention to human setting, the thoughtful human-machine communication, and the adaptability of individual adjustment. To adapt to the constraints, we are as of now concentrate on another update benefit for individuals with dementia. In particular, we misuse a BLE-based indoor situating framework to catch the present area and setting of the patient, instead we use RFID Tags for Indoor position system . We then utilize a virtual operator framework for rich co-operations. we build up a timetable administration framework for customized updates. To coordinate these heterogeneous frameworks, we re-plan and convey the frameworks as three administrations with Web-API: Location Service, Agent Service, and Schedule Service. These administrations are approximately incorporated by Coordinator Service, in view of the administration arranged design, In this paper, we initially show the framework engineering, and after that we talk about the key thought to actualize the administrations. We likewise illustrate "update at the passage" as a handy situation of the proposed administrations.

Keywords: Dementia, IPS, GPS, Virtual Agent, Wi-Fi, RFID, Android.

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6.

Authors: **Prahlad Kumar Rahul, Garima Tiwari**

Paper Title: **Extraction of Material Parameters of Z-Shaped Split Resonator Metamaterial Atom**

Abstract: In today’s scenario an artificially constructed meta-materials have become the topic of significant interest, because these material shows the electromagnetic characteristics. In order to achieve negative electrical permittivity and negative magnetic permeability NRW method is presented. The propagation of electromagnetic waves is determined by a two fundamental characteristic quantities such as the electrical permittivity ε and the magnetic permeability μ. In this paper, by the use of CST simulator which is based on Finite element method, S

parameters are extracted. By the use of MATLAB script, the permittivity and permeability curves are calculated. Perfect electric and perfect magnetic (PE-PM) boundary conditions methods are employed in CST to extract the S parameters. To excite the structure, wave ports are used.

Keywords: permeability, permittivity, S11 parameter, S21 parameter.

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7.

Authors: **Ajinkya B. Kashmire, H. V. Shete, N. D. Jadhav**

Paper Title: **A Study of Surface Roughness in Drilling of EN-9 Steel using Taguchi Approach**

Abstract: Drilling is one of the most common and fundamental machining processes. In machining, Carbide twist drills with diameter of 10 mm are used. Most of automotive components are manufactured using a conventional machining process, such as turning, drilling, milling, shaping and planning, etc.. These focus on producing high quality products in time at minimum cost. The surface roughness is considered to be a measure of the quality of a product. The aim of the present work is to optimize cutting conditions (Cutting speed, feed and cutting fluid pressure) parameters for minimum Surface Roughness in drilling of EN-9 using Taguchi Approach. Experiments were conducted based on the design of experiments (DOE) and followed by optimization of the results using Analysis of Variance (ANOVA) to find the minimum surface roughness.

Keywords: Surface Roughness, Analysis of Variance (ANOVA), Design of Experiments (DOE), Taguchi.

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8.

Authors: **Simma Ranjitha, Pasumarthy Srikanth**

Paper Title: **Design of Decoders using Mixed Logic for Various Applications**

Abstract: In this paper, a mixed-logic design of decoders, combining modified GDI logic, transmission gate logic, and pass transistor logic has been proposed. A novel topology is presented for the 2-4 decoders: a 15- transistor topology on the intension of achieving low power and low delay. Further, three decoders 3-8, 4-16 and 5-32 are implemented by using mixed-logic 2-4 decoders. MGDI technique uses same number of transistors present in CMOS the main difference is the providing input signals to the source and gate terminals. These all proposed decoders reduce the power and delay compared to conventional CMOS decoders. The proposed 2x4 decoder is implemented to decrease power; increase the performance is used in full adder and 4×4 bit SRAM array. Finally simulations are done by using CMOS 130nm mentor graphics tool to give a significant improvement in power and

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delay.

Keywords: Decoders; sense amplifier; SRAM cell; high speed; mixed logic; MGDI logic.

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9.

Authors: **K. Kiran Kumar, S. Suresh Kumar**

Paper Title: **Effect of Friction on Extrusion of Non-Ferrous Alloys- Modelling and Simulation**

Abstract: Extrusion is a process used to create jobs of a fixed cross sectional profile. A material is pushed or drawn through a die of the desired cross section in this particular problem the radius of an Aluminum cylindrical bar is reduced 33% by an extrusion process. The generation of heat due to plastic dissipation in side the bar and the frictional heart generation at the work piece/die inter face are considered. This analysis has been performed in ABACUS/standard. A fully coupled temperature- displacement analysis is performed with the die kept at a constant temperature. In ABAQUS/standard the die is modeled with CAX4T elements made into an iso thermal rigid body using the *RIGID BODY, ISO THERMAL option are made with an analytical rigid surface. The results obtained with ABAQUS/standard. After analyzing and simulating on two different materials ALUMINIUM & COPPER it is observed that copper offers better extrusion capabilities as compared to aluminum.

Keywords: ABAQUS, CAX4T, ISO, RIGID BODY, ISO THERMAL, ALUMINIUM & COPPER, ABAQUS

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10.

Authors: **S. Mohan Kumar, K. Kiran Kumar**

Paper Title: **Optimization Techniques in Turning Operation by using Taguchi Method**

Abstract: Manufacturing of any product requires different machining processes to get desired finished component. This project refers to the optimization of process parameters in turning process using Taguchi method (L9) in order to obtain efficient Material Removal Rate (MRR). EN 24 is used as work-piece for carrying out experiment to optimize Material Removal Rate which is influenced by three machining parameters namely spindle speed, feed rate and depth of cut. Different experiments are done by varying one parameter and keeping other two fixed so that optimized value of each parameter can be obtained. In this project dry turning operation of EN 24 graded steel is performed using HSS tool. The range of cutting parameters at three levels are spindle speed (200, 350 and 500 rpm), feed rate (0.1, 0.15 and 0.2 mm/rev), depth of cut (1.0, 1.5 and 2.0 mm) respectively. Taguchi method is a good method for optimization of various machining parameters as it reduces number of experiments. Taguchi

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orthogonal array is designed with three levels of process parameters and ANOVA is applied to know the influence of each parameter on Material Removal Rate. For the given set of conditions, spindle speed influences more on Material Removal Rate followed by feed rate and depth of cut.

Keywords: (L9), (MRR), (1.0, 1.5 and 2.0 mm), ANOVA, (200, 350 and 500 rpm), rate (0.1, 0.15 and 0.2 mm/rev),

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11.

Authors:	**Lalita Gupta**
Paper Title:	**Microwave Based Moisture Measurement System for Granular Materials: A Review**

Abstract: In the recent years, development of a non-destructive and non-contacting type moisture measurement system has attracted considerable interest. Because of their inherent nature of being nondestructive, non-conductive medium and having deep penetrative properties, Microwaves have been the traditional choice in this kind of research. This paper is a comprehensive review of Microwave Based Measurement System used for grains and pulses. In this paper, moisture measurement and calibration techniques for the system are presented. The objective of the paper is to provide the readers a broad perspective of microwave based techniques for measurement of moisture in bulk in silos or in sacks.

Keywords: Bulk density, Complex Permittivity, Moisture Measurement, Temperature Compensation

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12.

Authors:	**Manish Shrivastava**
Paper Title:	**Glimpses of Smart Cities using Internet of Things**

Abstract: IoT will solve main problems faced by the people living in cities like pollution, traffic congestion and shortage of energy supplies etc. Products like cellular communication enabled Smart Belly trash will send alerts to municipal services when a bin needs to be emptied. Smart city is another powerful application of IoT generating curiosity among world's population. Smart surveillance, automated transportation, smarter energy management systems, water distribution, urban security and environmental monitoring all are examples of internet of things

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applications for smart cities. We know IoT applications cover wide range of domain but in this paper we cover IoT application related to smart city like Smart Parking, Smart Lighting, Smart Roads, Structural Health Monitoring etc.

Keywords: About four key words or phrases in alphabetical order, separated by commas.

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13.	**Authors:**	**Allam Srivani, M. Lakshmi Prasanna Rani**
	Paper Title:	**Low Power and High Performance ALU using Dual Mode Transmission Gate Diffusion Input (DMTGDI)**

Abstract: Using Dual Mode Transmission Gate Diffusion Input Logic (DMTGDI), a four bit ALU has been designed. The ALU can perform four arithmetic and four logical operations. Dual Mode Transmission Gate Diffusion Input (DMTGDI) logic has been promising in realizing increased functionality on a chip. The main advantage of this new logic called DMTGDI is low power and high performance. For low power applications there are so many conventional techniques are available. For reducing power consumption, sub-threshold circuit design is the one of the most important techniques. But the circuit in sub-threshold region operates with so many sensitivities and constraints. Mostly the performance of the circuit which is operated in sub-threshold region is degraded. To increase the performance of the circuit in sub-threshold region one of the most effective logic used is called as Dual Mode Logic (DML). So DML is the one of the techniques used for high speed. Another important technique is established for reducing power consumption is called Transmission Gate Diffusion Input (TGDI). In the next step, we propose to use Transmission Gate Diffusion Input (TGDI) as a foundation for new Dual Mode logic called "DMTGDI or Dual Mode Transmission Gate Diffusion Input" logic. So DMTGDI combines the advantages of both DML and TGDI. Simulations have been performed in mentor graphics tool using 130nm. Pre-layout simulation results reveal that ALU design using DMTGDI logic is more advantageous than ALU design using conventional CMOS logic.

Keywords: ALU, TGDI, DML, DMTGDI, CMOS.

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14.	**Authors:**	**P. Manimekalai, P. Selvarajan**
	Paper Title:	**Studies of Unodped Glycine, Cesium Chloride Doped Glycine and Rubidium Chloride Doped Glycine Crystals**

Abstract: Glycine is one of the simplest amino acid that has no asymmetric carbon atom and is optically inactive. It is mixed with other organic or inorganic salts and acids to obtain new complexes and these complexes have improved chemical stability, thermal, optical, mechanical, electrical, linear and nonlinear optical properties. Many glycine based crystals are known to be having interesting properties and in this work, cesium chloride and rubidium chloride are separately added in small amounts into the lattice of glycine crystals to get the doped samples for the research work. Single crystals of undoped, cesium chloride doped and rubidium chloride doped glycine were grown by solution method and grown crystals were analyzed by various characterization techniques. Solubility was measured for the samples. XRD study was carried out to find the crystal structure and hardness study was done on the crystals to find the mechanical strength. Second harmonic generation studies were carried out to find SHG efficiency. Density and structural characterization was performed for the samples. Photoconductivity studies were carried out for the samples and the results are discussed.

Keywords: Doping, glycine, crystal growth, characterization, XRD, hardness

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15.

Authors: **Ngoc-Hien Tran, Van-Cuong Nguyen, Van-Nghia Nguyen**

Paper Title: **Study on Design and Manufacture of 3D Printer based on Fused Deposition Modeling Technique**

Abstract: Additive manufacturing (AM) known as 3D printing has been applied for applications in different fields such as aerospace, automotive, biomedical, and energy industries. Currently, with the rapid growth of this technology, there are a large number of 3D printing methods in the market. Each method has its own advantages, applications, and limitations. Materials used for printing also are classified into groups such as polymers, metals, ceramics, and cermets. Along with research on new materials, new printing technologies, 3D printers are more widely applied. For education field in universities, rapid prototyping from 3D printing enables to build 3D models for graphic design and rapid prototyping courses. On the basis of inheriting the available research for training in universities, the authors propose the design and manufacture of 3D printers using FDM printing method. This paper presents the results of design and fabricating 3D printer. The printing test results have demonstrated the functionalities of the designed machine.

Keywords: 3D printer, FDM, additive manufacturing, rapid prototyping, ABS, PLA.

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16.

Authors: **Ehsan Amini, Setareh Oruji**

Paper Title: **Assess and Challenges of Vehicle Parking Scenario in the Central Core of Mysore City**

Abstract: Transportation is the engine of growth and the bedrock to the rapid development of every country or economy. In Mysore automobile has various impacts on people's lifestyle, on the other hands motor vehicles are cause to many problems in city like spaces for parking requirement and road traffic congestion. Lack of enough space in urban area has caused urban planners face challenges for vehicular problems management. While local government in Mysore has made efforts to solve vehicle parking problem in the old core of city, the absence of

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appropriate vehicle parking facilities has stroked up unexpected levels of parking demand. This paper highlights the parking problems in the central business district and proposes justified measures and strategies for meeting the traffic congestion challenges in central business district of Mysore city.

Keywords: Central Core of City, Mysore city, Vehicle Parking, Vehicle Traffic Congestion.

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7. Mysore Regional Traffic Office (RTO)

17.

Authors: **A. Ranichitra, D. Seethalakshmi**

Paper Title: **A Comparative Analysis of Segmentation Techniques to Extract Skin Lesion Regions**

Abstract: Skin diseases are the most common health problems in worldwide. Diagnosis of the skin disease depends on the extraction of the abnormal skin region. In this paper, Segmentation techniques to extract the skin lesion regions are proposed and their results are compared based on the statistical and texture properties. The acquired skin images are preprocessed by median filter and segmented by Edge-based segmentation, Morphological segmentation and K-means clustering techniques. The statistical features mean and standard deviation and the texture features contrast and energy are calculated for all the segmented skin lesion images. The performance of the three segmentation techniques are compared and found that the K-Means algorithm yields better results without any over and under segmentation.

Keywords: Edge Based Segmentation, energy, contrast, K-Means Clustering, Morphological segmentation, mean, standard deviation, skin lesion,

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18.

Authors: **A. Mercy Rani, R. Durgadevi**

Paper Title: **Image Processing Techniques To Recognize Facial Emotions**

Abstract: Recognize the human face emotions by computer is an interesting and challenging problem. Face

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recognition is used in security system effectively compared to other biometric such as fingerprint or iris recognition systems. Face emotion recognition is one of the crucial roles in face recognition system. It is used to recognize the muscle behaviors of the face. The goal of the proposed work is to build an emotion recognition system. It includes face detection, non-skin region extraction and morphological processing finally, emotion recognition. In this article, it begins with frame based detection. The image quality is analyzed. Face location is detected using viola-jones algorithm. Extract non-skin region, Morphological operations are applied to the extracted image to extract the facial feature for recognition of facial emotions. The experiment has shown that the proposed strategy is effective.

Keywords: Image Quality Metrics, Face Detection, Segmentation, Morphological Processing, Emotion Recognition, Mat lab.

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Authors:	**Naeem Javed, Muhammad Aamir Shafi, Nasrullah Khan, Mohsin Khan**	
Paper Title:	**Design of a Smart Energy Meter with Overload Trip Facilities**	

19.

Abstract: Nowadays for running the domestic electric appliances like lamp, Motor and Air Conditioner, one of the most commonly used energy source is Electric energy. This is the reason that electric energy has become quite important in the daily life of people. In Pakistan, WAPDA (Water and Power Development Authority) is the main company whose sole purpose is the generation and distribution of electrical energy throughout the country and the consumer will have to pay according to the use of electrical energy. There are other companies that also generate electrical energy and distribute it to some of the area like K-electric and IPPS. So, a consumer knows how much energy has been consumed by the domestic electrical appliances when an employee of WAPDA checks the energy meter once a month and charged according to the units consumed in a month. In such a manner, a consumer does not get any information that how much energy has been consumed and he will have to pay a large amount of bill as he is unaware of his energy consumption. This way he is unable to manage his load according to his requirements. In this project, we are going to design a prototype of Three Phase smart energy meter. In order to make a conventional energy meter smart we are going to interface a microcontroller and GSM module with the energy meter. The purpose of microcontroller is that through this we are going to measure current and voltage for all the three phases and from these readings power will be calculated because we need to know the consumption before its management. For each phase, a user can set a predefined value of load, whenever this limit exceeds the user will get a message for that phase that the "system is overload". This will inform him about his load and after that he will manage his load accordingly. So, our designed prototype has got two advantages, first one is that user can set a threshold value of energy and the other one is that consumer will be informed whenever the threshold value of energy is exceeded. This will be beneficial for the user and also for the electric energy providing company. The meter will be trip on high usage of energy and WAPDA will be informed whenever there is short circuit. So, this can also provide safety for the domestic users. In the designed project, we have proposed different ways of reclosing the relay for each and every Phase as we have three Phases. User can reclose the first Phase just by pressing a touch button while the second phase will reclose automatically after a delay of one minute. A user can change this delay. The third Phase will reclose after a delay of two minutes in a condition that the user has managed his load otherwise it will remain open.

Keywords: Energy Meter, GSM modem, Arduino Microcontroller, Smart Grid.

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20.

Authors: **Arch. Shaimaa Abou Shousha, Tarek Farghaly, Ibrahem Maarof**

Paper Title: **Preservation of Historic City Centers**

Abstract: The historic city center is the most important node in the city. It is the place which carries the original character of the city no matter how modern it become. There are many problems that face the heritage of the city center, which cause huge losses in city character. Cairo is one of the most important examples of historic city centers which worldwide organizations like UNISCO has put programs to protect and preserve its heritage. In this paper we discuss how to study the historic center of the city and how to define its characteristics, and factors affecting them. Then we study how to preserve heritage in historic city centers and to stop destroying it.

Keywords: UNISCO, Cairo, destroying, city character

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21.

Authors: **Sahil, Naresh Kumar**

Paper Title: **Design and Implementation of Topology Adaptive Distributed Clustering Protocol for MANET**

Abstract: In this research work, simulation based survey has been made to study the strengths and weaknesses of

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existing algorithms that motivated for the design of energy efficient clustering in MANET. Neighbour Recognising Protocol (NRP) has been designed to help the nodes to probe their immediate neighbours. Topology adaptive distributed clustering protocol (TADCP) has been proposed, that uses the node mobility and its available battery power for calculating the node weights. A node having the highest weight among its immediate neighbours declares itself as the volunteer cluster head. As the current head consumes its battery power beyond a threshold, non-volunteer cluster heads are selected. The algorithm aims to utilise the battery power in a fairly distributed manner so that the total network life time is enhanced. Validation for the base protocol NRP and algorithm TADCP are made through simulation by using the MATLAB. Each of the proposed work is evaluated separately to analyze their performances and compared with the competent results.

Keywords: (TADCP), MANET. Neighbour Recognising Protocol (NRP), Each

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Authors:	**Sunkari Sridhar, R. P. Singh**	
Paper Title:	**Hybrid Tone Reservation Approach for Reduction of PAPR in MIMO-OFDM System**	

22.

Abstract: OFDM is a system in which information stream at high rates are separated into many low information streams for synchronous transmission of information in a channel. It is one of the powerful methods utilized for fast transmission of information over a correspondence channel. It is a modulation method. The primary constraint of OFDM system is high Peak-to-Average Power Ratio (PAPR). So keeping in mind the end goal to accomplish low complexity PAPR, there is a need to apply a successful method on these systems. In this research paper, a hybrid approach is connected for the lessening of PAPR in OFDM systems. The techniques connected are Tone Reservation-clipping based and Partial Transmit Sequence.

Keywords: Peak-to-Average Power Ratio, Partial Transmit Sequence, OFDM system, Tone Reservation-clipping.

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23.	**Authors:**	**Roopesh Kumar Kurmi, Sumit Gupta**
	Paper Title:	**A Review of Lossless and Lossy Based Image Compression Techniques**

Abstract: Image compression aims to reduce the data size of images and to store or transmit these images efficiently. Therefore, it offers the promise of image/video transmission under limited bandwidth. The past few decades have witnessed an extensive body of literature on both lossless and lossy image compression. This paper presents a literature review of different number of lossy and lossless based image compression technique that have been developed by researchers to perform various application which are based on the various types of images such as medical images, standard images, or with all digital images. This review helps in analyzing the existing lossy and lossless based image compression technique and it discuss the image quality, image compression ratio, image compression rate, PSNR value etc.

Keywords: image compression ratio, image compression rate, PSNR value etc.

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24.	**Authors:**	**R. B. Khebudkar, D. M. Nangare, M. M. Wagh**
	Paper Title:	**A Review on Energy Efficient Hybrid Distillation/Pervaporation Process for Separation of Isopropyl Alcohol Azeotrope**

Abstract: Hybrid separation process which basically pairs two processes together plays an important role in separation of azeotropic or constant boiling mixtures. A hybrid system can be defined as a process system consisting of different unit operations that are interlinked and optimized to achieve a predefined task. Therefore, if distillation is the basic separation system, a hybrid distillation system consists of a distillation column that is interlinked with another unit operation to achieve a better (cheaper, easier, enhanced) separation. A Hybrid separation process basically deeds the advantages of pervaporation and distillation, while the negative aspects are minimized. This also minimizes energy expenses. This review focusing to minimize 50-60 % energy saving in chemical industry. This review focus on the energy savings in industry using hybrid system (distillation and Pervaporation combination) for separation of isopropyl alcohol and water azeotrope.

Keywords: distillation, pervaporation, membrane separation process, hybrid separation process, energy efficient.

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25.

Authors: **Surbhi Sachdeva, Naresh Kumar**

Paper Title: **An Efficient Approach of Deployment and Target Coverage in Wireless Sensor Networks**

Abstract: Sensing a given particular zone is one of the main goals of wireless sensor networks. This consists of deploying the sensor nodes in order to detect any event occurring in a particular zone of interest and gives this information to the sink. It should also be energy efficient so as to maximize the network lifetime. The lifetime maximization in sensors network with target coverage can be considered as: To divide the sensors in set covers in such a way that each set cover can cover all the targets at a particular instant of time. We have to find maximal number of set covers which becomes active successively. This arrangement can maximize the lifetime of the network. In this paper, I have proposed an efficient SDSG algorithm that produces maximum number of disjoint sets of the sensors, such that each sensor set is a set-cover. I have also compared proposed algorithm with Simple Greedy and Greedy MSSC algorithm.

Keywords: SDSG, Greedy MSSC, Networks

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26.

Authors: **I. Lakshmi**

Paper Title: **A Study on Cyber Security and the Internet of Things with Intruders and Attacks**

Abstract: Internets of Things (IoT) devices are rapidly becoming ubiquitous while IoT services are becoming pervasive. Their success has not gone unnoticed and the number of threats and attacks against IoT devices and services are on the increase as well. Cyber-attacks are not new to IoT, but as IoT will be deeply interwoven in our lives and societies, it is becoming necessary to step up and take cyber defence seriously. Hence, there is a real need to secure IoT, which has consequently resulted in a need to comprehensively understand the threats and attacks on IoT infrastructure. This paper is an attempt to classify threat types, besides analyze and characterize intruders and attacks facing IoT devices and services.

Keywords: Internet of Things, Cyber-attack, Security threats.

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27.

Authors: **Dipan Deb, Sajag Poudel**

Paper Title: **Investigation of Heat Transfer Enhancement in Laminar Flow through Circular Tube by using Combined Wire Coil and Wavy Strip with Central Clearance**

Abstract: The experimental friction factor and Nusselt number data for a laminar flow in a circular pipe having wire coil and wavy strip insertion are presented. Thermal boundary layer is the primary hindrance to the heat transfer. That is why to destroy it or at least to disturb it the insertions are used. The thermohydraulic phenomenon has been analyzed. The objective of this work is to find out the combined effect of wire coil and wavy strip on the heat transfer and whether it can enhance it. Nusselt number and friction factor are measured for different Prandtl number and Reynolds number. The findings of this work are useful in automobile and air-conditioning industries to reduce the size of the heat exchanger.

Keywords: friction factor, heat transfer, Nusselt number, wavy strip, wire coil

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28.

Authors: **Mohit Kumar Mishra, Arun Kumar Shukla**

Paper Title: **A Survey Paper on Gender Identification System using Speech Signal**

Abstract: Gender is a critical statistic characteristic of individuals. This paper provides a survey of automatic human gender identification using speech signal characteristics and classifiers. A review of approaches exploiting information from human speech presented. Here, highlights of selection of speech features, their processing and different classifiers used for this purpose are discussed. Based on the results discussed in the papers it can be stated as, accuracy of automatic gender identification system with any classifiers is better if speech dataset used for training and testing is taken/ recorded in the same environments. Pitch is the basic feature of speech which distinguishes between adult man and woman. Other features like MFCC, LPC, RASTA-PLP also used for automatic gender identification. Neural Network, Support Vector Machine (SVM), Random Forest etc. are used for automatic gender identification through speech signal. Till now, many challenges are still available here to identify gender with acceptable accuracy in real life environmental speech where noise is acoustically added with human speech.

Keywords: Gender identification, MFCC, SVM.

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Authors: **Tarun George Maddila, Swetha Santhossi.C, Abhishek Muthukrishnan**

Paper Title: **Interfacing of Ammonia Gas Sensors using IoT Technology**

Abstract: There is high-risk factors involved in industries which use hazardous gases in large quantities for their various processes. People may not identify or monitor the leakage of these gases at a regular basis before it goes out of hand. There is a need for sensors to continuously monitor the leakages and alert the users on the possible hazard. This project gives the solution to reduce the risk factors in isolated areas having large gas installations by detecting and displaying the leakages on a continuous basis. Leakage of gas can occur at multiple points in the same installation. Hence, multiple sensors are interfaced to detect the leakage and transmit the signals to the base station located far away. Using microprocessors, multiple sensor values are received and processed. The processed data is encoded and transmitted to the base (using wired or wireless protocols) where another microprocessor decodes it and shows the respective sensor status. The system also gives an audio and visual warning when leakages are detected and the as the time taken to detect is very low due to high speed processing, the leakage situations are brought under control with minimum or no damage. This project gives an economical and efficient method to reduce leakage risk by using latest IoT technologies and monitoring anywhere in the web.

Keywords: Gas leakage, microcontroller, sensors, wireless. IoT (Internet of Things),

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30.

Authors: **A. Sudheer, S. Jose**

Paper Title: **Analysis of Seam Weld Strength and Micro Structural Properties of Welded Dual Phase Steel Tubes**

Abstract: Welded steel tubes of advanced high strength category are considered as candidate material for replacing the drive shafts in automobiles. Seam welded Dual phase steel tubes of various grades were tested to analyze their strength and compatibility to replace drive shaft in light motor vehicles. The tensional fatigue life was found to be varying for specimens with varying test conditions. In all cases, failure was found to occur at the welded region of tubes in longitudinal direction followed by circumferential branching. Failure patterns of each specimen are closely observed under SEM. Fractographs showed clear indications of crack initiation and crack propagation. Energy Dispersive Spectrometry (EDS) analysis were conducted which indicated the impurity concentrations at crack region. Micro structural analysis and hardness measurements of various specimens were carried out along the weld section which clearly showed in homogeneity between base metal and the weld section. Grain size measurements were also done for weld region and base metal.

Keywords: Welded, compatibility, (EDS), Energy, SEM.

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Authors: **H. Arul Devi, S. Padma**

Paper Title: **Optimal Location and Parameter Setting of FACTS Devices based on WIPSO and ITLBO for Power System Security Enhancement under Single Contingency**

Abstract: In electric power system, finding optimal location and setting of Flexible AC Transmission System (FACTS) devices have been proved to be complex system and it's under single contingency. This paper presents a new approach which is based on Improved Teaching Learning Based Optimization (ITLBO) and Weight Improved Partial Swarm Optimization (WIPSO) to find the optimal location and parameter setting of Unified Power Flow Controller (UPFC) and Static Var Compensator (SVC) to achieve optimal performance of power system network. The effectiveness of the proposed method is tested on IEEE 14-bus system .The results show that, based on ITLBO and WIPSO can significantly minimizing the Over Load Index and the Voltage Violations Index that can successfully achieve that proper setting and placement of FACTS devices.

Keywords: Improved Teaching Learning Based Optimization (ITLBO); Weight Improvement of Particle Swarm Optimization (WIPSO); Static Var Compensator (SVC); Unified Power Flow Controller (UPFC); Line Overload Sensitivity Index (LOSI); Over Load Index (OLI), Voltage Violation Index (VVI).

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32.

Authors: **Kaushik Sanganabhatla**

Paper Title: **Elastic Utility Computing Architecture for linking Your Programs to Useful Systems – Cloud Computing Implementation**

Abstract: Cloud computing is one of the hottest buzzword in the academia and as well as industry with services such as Infrastructure as a service, Platform as a service, Software as a service. Since, last decades open-source technology help people who do not wish to use commercial infrastructure for cloud. In the paper I shall discuss Overview of Elastic Utility Computing Architecture for Linking Programs to Useful Systems (Eucalyptus) –a private cloud computing implementation, Advantages and Over-view of various components of Eucalyptus cloud, Installation and configuration of Eucalyptus cloud. So, that it can be easily implemented by the students in the technical universities for their research project works.

Keywords: Eucalyptus, Linux, Cloud, Walrus, Open source software.

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33.	**Authors:**	**Ajai Kumar Rai, Brajesh Mishra**	
	Paper Title:	**A Prospective Study of Design and Development Issues of Various Shallow/Hybrid Foundation as Flood and Earthquake proof Foundation**	
	Abstract: In spite of severe , frequent occurrence and causing significant loss of life and property every year due to earthquake and flood ,a large proportion of total population lives in earthquake or/and flood prone areas at risk. As a result of ground shaking due to earthquake event the soil below ground water table loses its strength and stiffness and flows like liquid not only in the lateral direction but also eject to the surface ultimately causing the ground surface to deform /stresses on the buildings on top of the liquefied soil. This can be prevented either by ground improvement or designing heavy duty foundation .Every building stands on foundation but not all the buildings stand on same foundation. As the soils consist of different dominant soil layers in different areas, highly variable stratification and depth, the different requirements imposed on the foundation soils by buildings of different sizes/heights have led to a range of different types of foundations and individual design of building foundation is a must for a building based on total load imposed on foundation and soil characteristics of the area. This paper is not only the study of the different types of prospective foundations, review of ground improvement techniques and identification/determination of soil characteristics of critical area in context to earthquake/flood around Ramgarh lake in Gorakhpur but also it is an attempt to search / development of an optimized foundation for earthquake &flood prone areas. **Keywords:** Optimized foundation, flood prone areas, soil layers, ground improvement techniques. **References:** 1. Al-Karni, A.A. and Budhu, M.,(2001) "An Experimental Study of Seismic Bearing Capacity of Shallow Footings", Proc. 4th International Conference on Recent advances in Geotechnical Earthquake Engineering and Soil Dynamics and symposium in Honor of Professor W.D. Liam Finn, CD-ROM, San-Diego, CA, 2001. 2. Baidya, D.K. "Earthquake Resistant Design of Shallow Foundations" Department of Civil Engineering, I.I.T. Kharagpur. 3. Balakumar V., Kalaiarasi V. and Ilamparuthi K. 2005. Experimental and Analytical Study on The Behaviour of Circular Piled Raft on Sand, Proc. 16th Intl Conf. on Soil Mechanics and Geotechn 4. Cooke R.W. 1986. Piled Raft Foundation on Stiff Clays – A Contribution to Design Philosophy, Geotechnique, 36(2),169 -203 5. Caltrans. (2013). Caltrans Seismic Design Criteria, Version 1.7, California Department of Transportation, Sacramento, CA. 6. EUROCODE 8 (EUROPEAN PRE-STANDARD 1994). "Design Provisions for Earthquake Resistance of Structures-Part 5: Foundations, Retaining Structures and Geotechnical Aspects," The Commission of the European Communities. 7. Knappett, J.A. and Madabhushi, S.P.G. (2009). "Seismic Bearing Capacity of piles in liquefiable soils." Soils and Foundations, Japanese Geotechnical Society, 49(4), 525-535. 8. Kumar, J. and Kumar, N.(2003), " Seismic Bearing Capacity of Rough Footings on Slopes using Limit Equilibrium, Geotechnique, 53(3), (2003), 363–369. 9. Kumar, K. (2008). "Basic Geotechnical Earthquake Engineering". New Age International Publishers. 10. Liu, L., Dobry, R., (1997). "Seismic Response of Shallow Foundation on Liquefiable Sand". J. Geotech. Geoenviron. Engng., ASCE, 123(6), 557-567. 11. Liu, H. (1995)."An Empirical Formula for the Evaluation of Building Settlements due to Earthquake Liquefaction". Proc. 3rdInter. Conf. Rec. Adv. Geotech. EQ Engrg. & Soil DynamicsVol. 1, 289-293. 12. Marcuson, W.F. and Haynes, M.E., (1990), "Stability of Slopes and Embankments During Earthquakes", Proc. ASCE/Pennsylvania Department of Transportation Geotechnical Seminar, Hershey, Pennsylvania. 13. Mendoza, M.J. and Avunit,G. (1988) The Mexico Earthquake of September 19,1985-Behavior of Building Foundations in Mexico City", Earthquake Spectra, 4(4) 14. Poulos H.G. 2001. Piled Raft Foundation: Design and Application, Geotechnique, 51(2),111-113 15. Yamashita.K , Hamada.J, Yamada.T. 2010. Field Measurements On Piled Rafts with Grid-Form Deep Mixing Walls on Soft Ground, Geaotechnical Engineering-SEAGS .42(2) .		**190-198**
34.	**Authors:**	**Diouba Sacko, Hassana Ganamé**	
	Paper Title:	**Digital Transmission over Optical Fiber**	
	Abstract: Surrounded by the cladding of lower refractive index, the optical fiber is a guide of wave which exploits the refractive properties of the light. It is a physical transmission channel used for the propagation of luminous signals modulated in wavelengths. Compared with the other existing transmission channels, it presents an almost constant attenuation on an enormous interval of frequencies and thus offers the advantage of large band-widths. By allowing the communication on a long distance, the optical fibers constitute one of the key channels of the telecommunications. Information to be transmitted is either analogical or discrete; however the digital transmission by optical fiber constitutes the main use of optical fiber connections. Indeed, because of their limited performance, optoelectronic components such as LED, laser, photodiode or phototransistor are not the best ones in the analogical multiplexed transmissions. The development of the diode-pumped, erbium-doped fiber amplifier (EDFA) played a crucial role in enhancing the feasibility and performance of long-distance and WDM applications. The emission module of an optical link is made up of various components (laser, modulator, driver…). It provides to transmission channel a visible signal on which the data are been registered. The external technique of modulation to 40 Gbits/s was retained because beyond 5 Gbits/s, the external modulation is essential to maintain a quality of correct transmission. The principal element of the transmission channel is the optical fiber. It offers a very great transport capacity, larger than the opto-electronics converters and the electronic components. The reception module converts the information carried by the modulation of the luminous signal into pulses. It is composed of a photodiode, an electrical amplifier, a filter and a regenerator. In this study, simulation system was been used in order to optimize an optical link with 40 Gbits/s in temporal electronic multiplexing (ETDM) and to evaluate the drifts impact of the parameters of the components on the performances of the optical systems. In this paper, the simulator system COMSIS was retained, it allows the researchers and the engineers to model, simulate, analyze and design any module of treatment of the signal, from the most elementary device to the more complex communication		**190-198**

system . It is an interactive environment which combines numerical tools with graphic functionalities and a user interface.

Keywords: Terms: Digital transmission, Optical fiber, Modulation, Simulation.

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