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1.

Authors: Vinod Kumar Rajpurohit, N.G. Gore, V. G. Sayagavi

Paper Title: Analysis of Structure Supported on Elastic Foundation

Abstract: This study presents an analysis of beams, columns and raft, in a multistoried building structure, supported by elastic foundation. The structure is analyzed using E-Tab and Safe software for three different values of modulus of subgrade reaction 'K' pertaining to different soil types, and it has been compared with the structure having fixed supports representing rigid base. The analysis highlights the fact that significant alteration of displacements, design forces and moments occur in the beams, columns and raft. The analysis also brings out the fact that settlement in a raft foundation depends on the stiffness of the soil. The settlement of raft at different values of modulus of subgrade reactions were analysed and compare with rigid support raft. The objective of this research is to develop a workable approach for the analysis of plates on elastic foundations that will provide the designer with realistic stress values for use in The design of the plate or, more specifically, reinforced concrete raft slabs.

Keywords: Soil - structure interaction, modulus of subgrade, Winkler model , raft slab.

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2.

Authors: Achuthanunni V, Baiju B

Paper Title: Experimental Investigation of a Diesel-Biodiesel Fuelled Compression Ignition Engine with Exhaust Gas Recirculation (EGR)

Abstract: Biodiesel is derived from vegetable oils or animal fats through transesterification process. There are many advantages of biodiesel but it is not so popular because of high NOx emission. In order to reduce NOx emission from the engine, it is necessary to keep peak combustion temperature under control. EGR technique is one of the method to reduce NOx emission as it enables lower flame temperature and oxygen concentration in combustion chamber. The main objective of this paper is to fabricate an exhaust gas recirculation (EGR) set up for the CI engine and produce biodiesel from sunflower oil then investigates the usage of biodiesel in the diesel engine without any engine modification. Experiments are conducted in a single cylinder, four-stroke diesel engine with 10 % EGR and without EGR. The result shows that 40% NOx emission is reduced by using EGR and the performance of biodiesel was found to be comparable with diesel at all loads.

Keywords: Biodiesel, EGR, Emission, NOX. Nomenclature— MEGR mass of gas re circulated (kg/s) MTOTAL mass of air intake (kg/s)

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3.

Authors: **P. Sathia prathap, V. S. K. Vengatachalapathy, K. Planiradja**

Paper Title: **Machining of Hybrid Metal Matrix Composites and its Further Improvement-A Review**

Abstract: In the present study based on the literature review, the machining of hybrid aluminium metal matrix composite (Al/SiC/B4C) is discussed. These hybrid MMCs can easily be machined by CNC milling and a good surface quality can be obtained by controlling the machining parameters. These hybrid metal matrix composites (hybrid MMCS) are finding increased applications because of improved mechanical and tribological properties than the single reinforced composites. These materials are developed for engine blocks, bearing for steering system, propeller vanes, drive shafts in aircraft. The machining of hybrid MMCs and their improvements by use of CNC milling are discussed.

Keywords: Metal matrix composites (MMCs), Ceramics particulates, Hybrid metal matrix composites (HMMCs), Computer numerical control (CNC) milling machine.

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4.

Authors: **Rajagopal D, Varun S, Manikanth M, Bysani Somasai Sriram Kumar**

Paper Title: **Automobile Leaf Spring from Composite Materials**

Abstract: Automobiles today are over 63% iron and steel by weight .With rising energy and environmental concerns, as well as increases in electronics and other on-board vehicle systems. Vehicle light-weighting continues to be a prominent concern for vehicle manufacturers. New structural materials - metals, ceramics, polymers or hybrid materials derived from these, called composites – open a promising avenue in automobile industries. This paper describes design and experimental analysis of composite leaf spring made of glass fiber reinforced polymer. The objective is to compare the load carrying capacity, stiffness and weight savings of composite leaf spring with that of steel leaf spring and describes the significant economic potential of polymer composite and to replace automobile components (leaf Spring) against the steel.

Keywords: polymers, ceramics, composites, leaf spring.

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5.

Authors:	**Zar Khitab, Farooq Ahmed Bhatti**
Paper Title:	**5 GHz Voltage Controlled Oscillations for Frequency Agile RADAR, with Initial Frequency Tuning Capacitor**

Abstract: This Paper presents voltage controlled oscillator at 5GHz, 300 MHz bandwidth, and up to 50 kHz wide pulse repetition frequency, for pulse to pulse frequency agile radar. Negative-resistance method with initial frequency tuning capacitor is used in design. The frequency tuning is based on resonant capacitance for varying controlled voltage. The oscillator peak out power is 7.7 dBm, minimum output power in 300 MHz range is 6.997 dBm. First harmonic have power -7.793 dBm. Peak voltage deviation of 12249mV occurs for 34.025 MHz band. The proposed oscillator satisfies standard requirements to generate oscillation frequency for wide band radar systems. Suppressed harmonics and lesser variation in output power throughout 300MHz chip enhances the receive sensitivity of RADAR.

Keywords: frequency agile radar, Harmonics, output power variation, Voltage Controlled Oscillator.

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6.

Authors:	**P. Roseline, B. Ramesh, Ch. V. V. Manga Lakshmi**
Paper Title:	**Performance Analysis of Twenty Seven Level Asymmetrical Cascaded H-Bridge Multi Level Inverter Fed Three Phase Induction Motor Drive**

Abstract: Multilevel inverters are suitable of high power handling capacity, associated with lower output harmonics and lower commutation losses. But the main disadvantages of multi level inverters are complexity, requiring a more number of power devices and passive components, and complex control circuitry. Hence a Twenty Seven Level Cascaded H-Bridge multi level inverter (CHBMLI) topology is proposed which requires only twelve switches and those switches are controlled by using of New PWM technique i.e., POD (Phase Opposition Disposition) modulation method whereas Twenty switches are required in the cascaded H- bridge multi level inverter (CHBMLI) for Eleven Level by using of Repeating sequence method. The proposed cascaded H- bridge multi level inverter topology offers strong advantages such as improved output waveforms, smaller filter size, and lower electromagnetic interference. Here an asymmetrical configuration of Twenty Seven-level inverter (TSLI) based Cascaded H-Bridge Multi Level topology fed Three Phase Induction Motor Drive performance is analyzed and compared with CHBMLI with Repeating sequence as switching technique. The performance factors are obtained at both transient and steady state operating conditions with usage of minimum number of switches so that switching losses can be reduced effectively with cascaded H- bridge multi level approach.

Keywords: Cascaded H-Bridge Multi Level Inverter, Phase opposition disposition, Twenty seven level inverter, Total harmonic distortion.

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7.

Authors: **Hashim Hanif, Yasar Saleem, Zuhaib Aslam Shahid, Abdullah Hanif, Anwar Zeb**

Paper Title: **Assessment of Extension of Time Claims in Hydropower Projects of Pakistan**

Abstract: The occurrence of delay in construction industry is a regular trend all over the world which is caused by number of factors. The Hydropower projects are no exception to such delays. It is difficult to find a Hydropower project in Pakistan not experiencing delay. Construction Industry in Pakistan is transforming itself into a very well organized and scientifically managed industry over the past one decade. It is observed that Construction Management issues related to mega projects such as Hydropower Projects, still need to be addressed. First step in finding out the causes of Extension of Time Claims in Hydropower Projects is to identify the factors that significantly contribute towards the deformation of triple constraint (Cost, Scope and Time) of Construction Projects. This research has been carried out on nine (15) Hydropower Projects in Pakistan, which have been completed in last 10 years or are in execution phase of construction. Survey questionnaires were created to collect data from all project stakeholders comprising of clients, consultants and contractors. In addition, these projects were physically visited and Project Management Documents related to all phases were reviewed. The causes leading to delays have been identified and ranked with the help of these questionnaires and reviews. A variety of Techniques have been employed for the assessment of Extension of Time Claims, main purpose of this study was therefore to analyze different Techniques which are used in Pakistan and to probe the reasons for delay in the assessment and submission of EOT. The demographic data of the respondents have also been collected in order to ensure the responses were not biased and to point out the phase that is more prone to delays. They were ranked using the relative importance index (RII) as well as Pareto Analysis. Research revealed that the delay in interim payment certificates, land acquisition problems, delay in issuance of construction drawings, lack of baseline schedule and poor design were among the leading contributing factors leading to Extension of Time Claims. Based on the lessons learnt after conclusion of such projects around the world and experience of managers at all levels associated to Hydropower Projects, this study also recommends measures to curb the causes of delays so that the construction process can be optimized.

Keywords: Extension of Time, (EOT), Delay Causes, Construction Industry and Hydropower Projects

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8.

Authors: **Tejas G. Gaikwad, N. G. Gore, V. G. Sayagavi, Kiran Madhavi, Sandeep Pattiwar**

Paper Title: **Effect of Wind Loading on Analysis of Natural Draught Hyperbolic Cooling Tower**

Abstract: Natural draught cooling towers are very common in modern days thermal and nuclear power stations. These towers with very small shell thickness are exceptional structures by their sheer size and sensitivity to horizontal loads. These are the hyperbolic shells of revolution in form and are supported on closely spaced inclined columns. Wind loading on NDCT governs critical cases and requires research. This paper emphasize on effect of wind on Natural draught hyperbolic cooling tower. The slenderness of the columns and the large dimensions of the shell make these structures vulnerable to earthquake and wind disturbances. In this work efficient Analysis & design of cooling tower is presented with V- shape configuration of Raker column. Finite element modeling of cooling tower shell is done which divide shell into number of plates to apply wind loading on each plate. Gust method and Peak wind Methods are adopted to apply wind load. For this purpose models are workout on Staad Pro V8i to give comparative results of analysis, design and constructability. Effective wind analysis can be done with the help of this methodology.

Keywords: hyperbolic cooling tower, nonlinear inelastic behavior, principal stresses on shell, dynamic Stresses, finite element analysis

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9.

Authors: **Akanksha Singh, Sini Shibu, Shatendra Dubey**

Paper Title: **Recent Image Enhancement Techniques: A Review**

Abstract: This paper reviews various image enhancement techniques both in spatial and frequency domains and compared them to suggest a method for a high SNR, enhanced and perceptually clearer images while preserving the image`s original colour. Histogram equalisation, low pass filter, fuzzy based image enhancement, Stochastic Resonance in different domains and colour enhancement techniques are being discussed and their effectiveness is gauged and to compare them with various available image enhancement techniques using well defined performance matrices and performance parameters.

Keywords: Image enhancement, DCT, DWT, Noise, Stochastic Resonance

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10.

Authors: **A. Ramezani, M. R. Noroozi, M. Aghababaee**

Paper Title: **Analyzing Free Space Optical Communication Performance**

Abstract: Over the last three decades free-space optical communication (FSO) has become more and more

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interesting as an adjunct to radio frequency communication. In spite of the very great technical advancement of available components, the major limitation of free-space communication performance is due to the atmosphere, because a portion of the atmospheric path always includes turbulence and multiple scattering effects. Starting from a fundamental understanding of the optical communications system under different weather conditions, this paper provides a treatment of the evaluation of parameters needed for analyzing and simulation of system performance. Finally the advent of the new technology of wavelength division multiplexing (WDM) and a new compact laser communication terminal that increase the data rate and enhancing performance are explained.

Keywords: Free Space Optical Communication (FSOC), wavelength division multiplexing (WDM), Link Budget, Turbulence, Fading.

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Authors:	**M. R. Noroozi, A. Ramezani, M. Aghababaee**
Paper Title:	**Automatic Ship Types Classification in Silhouette Images**

Abstract: Object identification or object classification is an important task in computer vision and pattern recognition. Silhouette image comprises many features which can be used for these demands. In this paper Discrete Hartley Transform (DHT) and Discrete Cosine Transform (DCT) are used for feature extraction from silhouette image. These features are then applied to the neural network for ship type classification. Ship features from different view (only 4 features in each image) were trained with feed forward back propagation neural network and accuracy was satisfied for testing over 50 images, also this algorithm is stands up robustly against the noise and can be used for classification another things such as animals, people , vehicles,etc.

Keywords: Pattern recognition, object classification silhouette image, DHT (Discrete Hartley Transform), DCT, ship type classification.

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Authors:	**V. Veera Nagireddy, D. V. Ashok Kumar, K. Venkata Reddy**
Paper Title:	**Optimal Placement and Sizing of Multiple Distributed Generation using Combined Differential Evaluation - HPSO Method**

Abstract: Integration of renewable energy based Distributed Generation (DG) units in modern days of conventional radial distribution systems provides potential benefits in terms service continuity and makes more reliable. The power injections from renewable sources are located close to the load centers which provide system voltage support, reduction in system losses and performance improvement. This paper presents an enhanced approach for DG placement in radial distribution feeders to reduce the real power loss and to improve the voltage profile. The DG placement approach involves the identification of location for DG placement and the size of the DG to be installed at the identified location. The location of the nodes where the DG should be placed is decided by a

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hybrid Particle Swam Optimization and Differential Evaluation method. A case study with an IEEE 34 bus distribution feeder is presented. A comparison is made between the proposed HPSO approach and the classical Particle Swarm Optimization (PSO). The proposed hybrid Differential Evaluation Particle Swarm Optimization (DEPSO) method is proven to give better results in terms of loss reduction and better voltage profile.

Keywords: particle swarm optimization, PSO, Differential evolution, DEPSO, distributed generation, voltage profile improvement, loss reduction, Load flows.

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Authors: **Malini S, Moni R. S**

Paper Title: **A Combined Spatial and Frequency Domain Approach for Removal of Impulse Noise from Images**

Abstract: Visual quality of any natural image is lost when it is corrupted by noise, especially by impulse noise. Further, essential features of the image cannot be retrieved from noisy image. Considering the reality that noise is ubiquitous, image denoising is an unavoidable prerequisite for any type of higher level image processing. A variant of the existing method of impulse noise removal is proposed in this paper. The method has two stages. Detection of noisy pixels and then replacing the noisy pixels by one of its non-noisy neighbour is the first stage. In the second stage, a multiresolution technique of image denoising is employed. The proposed method is found to be very effective in image denoising of grey as well as color images, as is evidenced by the given experimental results. Also the method is shown to be effective in reducing mixed noise from images.

Keywords: Denoising frequency domain,impulse noise, multiresolution, spatial method, stationary wavelet.

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14.

Authors: **Yatheesha R. B, Anarghya A, Ranjith B. S, Nitish Rao**

Paper Title: **Extended Range Electric Vehicle (EREV)**

Abstract: This paper describes the range extension of an electric vehicle. In this project, an Internal Combustion(IC) Engine is coupled to a Permanent Magnet Direct Current (PMDC) Motor and the generated electricity is used to charge the battery when the charge of the battery is very less through a charging circuit. It results in improved range, as the overall distance travelled per charge of the vehicle will increase and thus make it a viable proposition for daily commuting. Increased energy security, as the vehicle will not run on IC engine directly. This leads to lower consumption of fuel.

Keywords: Electric vehicle, Generator, Hybrid vehicle, PMDC motor, Range extension.

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15.

Authors: **V. Bhavani Sankar, K. Durga Rani, S.S.S.V. Gopala Raju**

Paper Title: **Parking Study at Simhachalam Temple Hill Top in Visakhapatnam - Case Study**

Abstract: The Historic Varaha Narasimha Swami's temple is located on Simhachalam hill at an elevation of 244 mats, built in the 11th century by the King Sri Krishnadevarayam. Thousands of pilgrims visit the temple from various parts of Andhra Pradesh and Odisha daily. There is no proper parking place or parking slots available for two and four wheelers. In the present work, the parking demand on Simhachalam hill top is studied and proposed a place for two wheeler, four wheeler and bus parking slots based on the analysis. As per the demand about 100 two wheeler slots, 320 four wheelers slots and 20 bus parking slots have been proposed.

Keywords: Parking, Traffic, Road Geometry, Parking Demand

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16.

Authors: **S. K Sharishma Datla, T. Aditya Kumar**

Paper Title: **An Adaptive Technique for Restoration of Real Blurred Images under Unknown Conditions**

Abstract: Recently, a normalized image prior was proposed so that the global minimum would not correspond to the blurred image. Multi-resolution approaches, which avoid some local minima, were recently proposed. Good local minima can also be found by using continuation schemes, where the regularizing parameter is gradually decreased. A recent come within reach of although not requiring previous in arrange on the blurring sift achieves high-tech recital for a wide range of real-world BID tribulations. In this paper, we improve upon the method of. We fully embrace the UBC, without an increase in computational cost, due to the way in which we use the alternating direction method of multipliers (ADMM) to solve the minimizations required by that method. We propose a new version of that technique in which both the optimization tribulations with respect to the unknown image and with respect to the anonymous blur are solved by the irregular direction technique of multipliers(ADMM) – an optimization tool that has recently sparked much interest for solving inverse problems, namely owing to its modularity and state-of-the-art speed. Furthermore, the convolution operator is itself typically ill-conditioned, making the inverse problem extremely sensitive to inaccurate filter estimates and to the presence of noise. The results are shown in MATLB Platform effectively.

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Keywords: Deblurring, multipliers, image, restoration quality

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17.

Authors: **Ekta Ahuja, Karan Kashyap**

Paper Title: **Language Translator**

Abstract: The aim of this project is to find out the problem areas in the translation done by Bing, suggest a method to improve the language translation and build a translator that supports accurate English to Hindi translation. The English input can be of textual, voice or image form and the Hindi output will be in the textual format.. With our research we aim to suggest a way to improve the already available popular translation engines. For this purpose we have used the method of hybrid machine translation. Hybrid machine translation is a method of machine translation that is characterized by the use of multiple machine translation approaches within a single machine translation system. The motivation for developing hybrid machine translation systems stems from the failure of any single technique to achieve a satisfactory level of accuracy.

Keywords: translator, Bing, textual, hybrid.

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18.

Authors: **Ali Shamel, Reza Alayi, Leila Abbaszadeh**

Paper Title: **The Assessing and Prediction of Biogas Production and Dissemination Rate in Ardebil City Landfills and Chemical Analysis of Obtained Biogas**

Abstract: the main purpose of making municipal landfills and produced biogas collecting is to prevent the emission of greenhouse gases such as Methane and also using the heating value involved in this gas. A propose to bury Ardabil's wastes and the analysis of produced gases in terms of quality and quantity is presented in this research. In recent years, Landfill projects include equipments to control, gas transmission and also using the biogas energy. Landfill gases that are called LFG are obtained from performing a series of biochemical reactions, in anaerobic conditions, on organic dissoluble matters available in the waste; these gases are Methane, Carbon Dioxide and Hydrogen gases, Hydrogen Sulfide and volatile organic compounds. The assessing and prediction of biogas production and dissemination rate is important in Landfill designing and successful using of produced gases as renewable energy sources. Produced gases in landfills, after extraction and filtration can directly supply energy needed for industry such as lighting, fuel needed for gas turbines and electricity producing generators and even they can be used to set up simultaneous production units of heat and power. In the first part of this study, the explanation of the methods, equations and used assumptions are explained. In the second part, Ardabil city's landfill conditions have been introduced and in addition to that, the amount of waste and other information contained on this site has been evaluated. In this research, the waste of Ardabil city is studied and the gases resulting from landfill are analyzed carefully, using LANDGEM software. After running the LANDGEM software concluded. During operation of the project the emissions gases about 50% is the methane gas.

Keywords: Biogas, Landfill, waste, LFG, Methane, Renewable energy

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19.

Authors: **P. Bala Krishna, K. Satyanarayana, V. Sowjanya**

Paper Title: **Analysis of Advanced PWM Algorithms Based on Simplified Sequence for Reduced CMV in Induction Motor Drive**

Abstract: This paper presents a simplified advanced Pulse width Modulation algorithms for reduced common mode voltage variations. These algorithms have been developed by using the concept of imaginary switching times and hence did not use angle and sector information. Thus, the proposed algorithms reduce the complexity involved in the existing PWM algorithms. In the conventional SVPWM method, two adjacent states with two zero voltage vectors are utilized to program the output voltage. Every 600 degrees the active voltage vectors change, but the zero state locations are retained. In the AZSPWM methods, the choice and the sequence of active voltage vectors are the same as in conventional SVPWM. However, instead of the real zero voltage vectors (V0 and V7), two active opposite voltage vectors with equal duration are utilized. In the NSPWM algorithm, in each sector any one of the phases is clamped to either positive or negative DC bus for a total of 120o over a fundamental cycle. Hence, it reduces the switching losses of the inverter and switching frequency of the inverter by 33.33%. Among the proposed algorithms, the NSPWM algorithm gives superior performance with reduced switching losses of the inverter.

Keywords: Common mode voltage, induction motor drive, SVPWM, AZSPWM and NSPWM

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20.

Authors: **Shahid, S. H. Farooq, S. Maqbool, S. Haseeb**

Paper Title: **Structural Fire Safety Measures in Developing Countries: Pakistan - A Case Study**

Abstract: In developing countries like Pakistan, provisions of inadequate fire safety measuresresult into occurrence of many fires that cause lot of deaths and economic loss. Here, fire is not taken as a serious threat and fire safety measures are considered as a waste of money. Thus, there is a need to educate building owners and government agencies about the damaging effects of fire and importance of fire safety measures. In this study, three main components of fire safety i.e. prevention, controlling the spread and severity of fire, and structural fire safety have been included. Data on fire incidents was collected from three sample cities of Pakistan (i.e., Islamabad, Rawalpindi and Lahore)to determine the frequency of fires, causes of ignition and relative vulnerability of buildings. 12 multi-story buildings (six each in Lahore and Rawalpindi) were surveyed to check the adequacy of provided fire safety measures. Fire incident of Ghakar Plaza, Rawalpindi has been analyzed to highlight the economic implications of fires.Analysis of fire incidents of these three cities shows that on average there are 3 fires per day, and every 8th fire is severe enough to cause deaths, injuries, property damage and economic losses. Three main causes of fire are short circuiting, gas leakage and cylinder blasts and the most vulnerable buildings are commercial and residential buildings. Most of the common buildings have no fire safety measures at all, and Pakistan does not have any fire

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safety code to follow. In case of 12 multi-story buildings, the level of compliance with the code requirements is around 60 percent, and, the automatic sprinklers, one of the most effective fire safety measures, have been provided in two buildings only. From the cost analysis of Ghakar Plaza and a model building, it is found that the cost of fire design is around 3% of the overall cost of the building.

Keywords: Fire safety, Data collection and analysis, causes of fire ignition, Fire safety Measures

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21.	**Authors:**	**Sachchida Nand Shukla, Naresh Kumar Chaudhary**
	Paper Title:	**Small-Signal Amplifiers with BJT, FET and MOSFET in Triple Darlington Topology**

Abstract: Circuit models of two discretely developed small-signal amplifiers are proposed and qualitatively analyzed perhaps for the first time. Design of first amplifier uses Triple Darlington topology based hybrid unit of BJT-JFET-MOSFET in RC coupled voltage divided biasing network with two additional biasing resistances. However the second amplifier uses JFET-BJT-MOSFET hybrid unit in the similar circuit design. Both the amplifiers successfully amplify small-signals swinging in 1-10mV range at 1KHz frequency. These circuits simultaneously produce high voltage gain (≈ 291 and 345 respectively) and current gain (≈ 719 and 27K respectively) in narrow bandwidth region (≈ 8KHz and 13KHz respectively). Variations of maximum voltage gain with different biasing resistances and DC supply voltage, temperature sensitivity of performance parameters, THDs, small-signal AC equivalent circuit analysis and noise performance of the circuits are elaborately studied and discussed. The proposed amplifiers may be useful for those applications where high voltage and current gain would be the prime requirement of amplification in narrow band frequency region. Moreover, the proposed circuits may also useful for radio and TV receiver stages and low-frequency power sources.

Keywords: Small-signal amplifiers, Darlington amplifiers, Compound Darlington configurations, Triple Darlington topology.

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22.	**Authors:**	**Chao Yang, Ze Zhang**
	Paper Title:	**Research on Rapid Image Recognition Method of Foreign Fibers in Lint**

Abstract: An efficient online method of detecting the foreign fibers in lint is proposed. In this method, Look Up Table is used to reduce the time consumption of transformation from RGB color space to HSI color space effectively. Using the improved two-dimensional Otsu algorithm to segment and recognize the image of foreign fibers in Hue and Saturation of HSI color space. Experimental results show that, compared with the original two-dimensional Otsu algorithm and the fast two-dimensional Otsu algorithm, the proposed method meets the requirement of real-time and improves the accuracy effectively.

Keywords: Foreign Fibers, Look Up Table, HSI color space, Otsu.

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23.

Authors: **Chethan G, Sanjith J, Ranjith A, Kiran B. M**

Paper Title: **Shear Strength Capacity of Normal and High Strength Concrete Beams Bonded by CFRP Wraps**

Abstract: The usage of fiber reinforced polymer (FRP) is becoming a widely accepted repairing and strengthening aspect in the field of civil engineering in recent years. By the application of polymers of carbon, glass and aramid in the shear zone of the beam, the shear strength can be increased extensively. The present study investigates the enhancement of shear capacity of RC beams using carbon reinforced polymers. Total of 24 beams were casted in the laboratory, out of which, 12 M30 and 12 M70 concrete beam specimens of 150mm width, 200mm depth and 1300mm length. The geometry of all kept constant, but only shear reinforcement was varied. Out of 12 beams of M30, 6 were control beams and 6 were strengthened by using CFRP. Out of 12 beams of M70, 6 were control beams and 6 were strengthened by using CFRP. The strengthened beams showed 34% to 58% increase in shear capacity with respect control beam in normal strength i.e. M30 beams and 28% to 44% in high strength i.e. M70 beams.

Keywords: Fiber reinforced polymer (FRP), carbon fiber reinforced polymer (CFRP), glass fiber reinforced polymer (GFRP) and aramid fiber reinforced polymer (AFRP), shear capacity.

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24.

Authors: **Bharti Vijay Nikose, Gaurav Shrivastav, Ravindra Gupta**

Paper Title: **Enhanced Preventation of Password Stealing using Biometric Factor**

Abstract: Wording password is typically the most popular form involving user authentication on websites car without any convenience in addition to simplicity. On the other hand, users' passwords are inclined to be ripped off and sacrificed under various threats in addition to vulnerabilities. To begin with, users usually select vulnerable passwords in addition to reuse exactly the same passwords all over different web sites. Routinely reusing accounts causes a domino effect; when the adversary compromises one password, she may exploit the item to gain access to more web sites. Second, keying in passwords in untrusted personal computers suffers pass word thief risk. An adversary can start several pass word stealing attacks to snatch passwords, including phishing, keyloggers in addition to malware. Within this paper, we design a user authentication process named oPass which usually leverages a user's cellular and limited message support to thwart password thieving and pass word reuse attacks. oPass simply requires each and every participating site possesses an original phone variety, and requires a telecommunication service agency in signing up and recovery phases. However, users' passwords are prone to be stolen and compromised under different threats and vulnerabilities. Firstly, users often select weak passwords and reuse the same passwords across different websites. Routinely reusing passwords causes a domino effect; when an adversary compromises one password, she will exploit it to gain access to more websites. Second, typing passwords into untrusted computers suffers password thief threat. An adversary can launch several password stealing attacks to snatch passwords, such as phishing, keyloggers and malware. In this paper, we design a user authentication protocol named oPass which leverages a user's cellphone and short message service to thwart password stealing and password reuse attacks. oPass only requires each participating website possesses a unique phone number, and involves a telecommunication service provider in registration and recovery phases.

Keywords: Network Security, Password Attacks, Authentication.

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25.

Authors: **Swati A. Patil, Leena N. Patil, Vaishali V. Ahire, Mosin A. Khatik, Rahul V. Thorat**

Paper Title: **Study of Solid Waste Management for Nashik City**

Abstract: Rising population, technological advancement, economical , industrial revolution and changing life style has lead to various types of environmental problems. In this context sold waste is one of the major problame. It causes different type of pollution,spreaiding of various disease and due to dumping of solid waste soil also loose it's fertility .Solid wastes are those organic and inorganic waste materials produced by various activities of the society. Improper solid waste management affects on public health, causes environmental pollution, accelerates natural resources degradation, climate change and greatly impacts the quality of life of human beings. The purpose of this study is to describe the application and progress of the Reduce-Reuse-Recycle initiative and its gradual implementation and development in solid waste management in Nashik(MH) India through the study of the municipal solid waste management (MSWM) systems.

Keywords: Sources, Clasiification, Collection, Processing of waste ,Disposal

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26.

Authors: **V. H. Patil, Gaurav Gupta, Harsh Kapil**

Paper Title: **The Global Toll Booth System**

Abstract: The global toll booth system is been stimulated here. That means that the user can pay the prepaid toll using the RF card. The money is automatically paid from the user's bank as soon as the vehicle approaches the toll. For this the user bank PC is been connected with toll booth server via local area network(LAN).The main concept of the project is to enable the toll booth user to pay his prepaid either from the users bank or the toll booth.

Keywords: RF card, global, LAN, PC.

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27.

Authors: **Muhammad Habib, M. Raheel Zafar, Saima Javed, Shafaq Ara**

Paper Title: **A Sector Analysis for RFID Implantation: Technical Analysis for Integrated Security Enhancement Techniques**

Abstract: Radio Frequency Identification (RFID) is a microchip technology which produces a lot of attention of scientists toward innovative and future oriented bionics and a most promising and anticipated technologies in recent years. This interdisciplinary research aims to undertake a scoping study of emerged technology serving the security purposes of devices, infrastructures and human utilization. The study aims to address the key areas of widespread RFID implementation, its control over the applied widgets and the effective improvement in the protection measures like owner tracking and cloning. As a part of research an attempt will be taken toward discussion on security framework to improve the model of smart environment eliminating the privacy loopholes. To enhance the real time security structure the Origins of RFID microchips are essential to be discussed for the application in several sectors like logistics and health care industries. The study will contribute to develop methods and procedures to re-plane the RFID control system, as well as mark other privacy issues which arise in operations when a futuristic society concept is originated where all citizens wear embedded RFID tags and are subject to constant surveillance.

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Keywords: Bionics, Implantation, Widgets, Origins of RFID, Control system, Surveillance

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28.

Authors: **Anwar Ahsan**

Paper Title: **Crime Detection using Voice Behavior on the Basis of Collected Evidence**

Abstract: Human intelligence is the key to stopping terrorism, and therefore it isessential to know when the information obtained is false. This article briefly outlinesthe research on voice clueto find fraud, cheating and other crime.Voice analysis technology is most power full to find pattern of voice during the human behavior changes when he or she is true or lying. Voice pattern which is retrieve from database and relate with current situation. System is accommodating to detect deception.

Keywords: behavior; cognition; deception; detection; emotion; judgment; lying; Malfeasance; memory: voice, amplitude.

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29.

Authors: **K. M. S. Sagar Madan, D. S. Samba Siva Rao**

Paper Title: **Prediction of Performance: Practicality between MIMO and Collocated MIMO Radar**

Abstract: We recommend a novel method for multiple-input multiple-output (MIMO) radar with colocated antennas which we call phased-MIMO radar. The core of the projected method is to panel the broadcast array into a number of sub arrays that are permissible to overlie. Then, each subarray is worn to articulately put on the air a waveform which is orthogonal to the waveforms transmitted by additional subarrays. Articulate processing gain can be achieved by designing a weight vector for each subarray to form a beam towards a certain direction in space. Moreover, the subarrays are shared in cooperation to form a MIMO radar ensuing in elevated lanky oath capabilities. Substantial improvements offered by the proposed phased-MIMO radar technique as compared to the phasedarray and MIMO radar techniques are verified systematically and by simulations from beginning to end analyzing the analogous grin patterns and the practicable output signal-to-noise-plus-interference ratios. Both analytical and simulation results validated and shown in MATLAB platform about the effectiveness of the proposed phased-MIMO radar.

Keywords: MIMO, Radar, Phase, subarrays.

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30.

Authors: **M. Ashok Kumar, T. Aditya Kumar**

Paper Title: **A Message-Fleeting Receiver for BICM-OFDM over Anonymous Crowded - Meagre Channels**

Abstract: In disparity to surviving designs, ours is proficient of manipulating not onlymeagrely in sampled channel taps but also crowding among the bulky taps, performances which are notorious to evident at larger communication bandwidths. We intend a factor-graph-based tactic to united channel - approximation and decrypting of bit-interleaved coded orthogonal frequency division multiplexing (BICM-OFDM). In order to exploit these channel-tap structures, we espouse a two-state Gaussian mixture prior in conjunction with a Markov model on the concealed state. For impractical credence promulgation, we exploit a "generalized approximate message passing" algorithm recently developed in the context of compressed sensing, and show that it can be successfully coupled with soft-input soft-output decrypting, as well as hidden Markov inference. For N subcarriers and M bits per subcarrier (and any channel length L < N), our scheme has a computational complexity of only O (N log2 N+N2M). Statistical trials using IEEE 802.15.4a channels show that our scheme yields BER performance within 1 dB of the known-channel bound and 5 dB better than decoupled channel-estimation-and-decoding via LASSO..

Keywords: OFDM, LASSO, Markov inference

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31.

Authors: **Mohammad Faizan**

Paper Title: **Assessment of Turbulence RANS Models for Conical Diffuser with Tailpipe**

Abstract: In this paper, four common turbulence models were selected to assess the predictions of the velocity profiles and static pressure coefficient in an experiment-studied conical diffuser. The four models chosen were the standard k–□ model, the standard k–□ model, the shear-stress transport k–□ SST, and the Reynolds stress model. The steady RANS equations for turbulent incompressible fluid flow and turbulence closure were solved using the commercial code of ANSYS Fluent 14.0. It was found that the standard k–□ model and the shear-stress transport k–□ SST model failed to predict accurate velocity profiles and the static pressure recovery in the tailpipe. The model results were compared with the published experimental data. The standard k–□ model presented the same capability of as Reynolds stress model to capture flow pattern in the diffuser and tailpipe. Numerical results also revealed that the standard k–□ model succeeded to predict an accurate static pressure recovery in the diffuser but failed to predict accurate velocity profiles.

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Keywords: Conical diffuser, diffuser performance, pressure recovery, RANS, turbulence models.

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32.

Authors: **D. Devi Sirisha, Satya Naresh**

Paper Title: **Prediction of LSE via Reaction Dispersion**

Abstract: A dispersion term is hosted into LSE, resulting in a RD-LSE equation, to which a piecewise constant solution can be derived. This project presents an innovative reaction-dispersion (RD) method for implicit active outlines, which is completely free of the costly re-initialization procedure in level set evolution (LSE). In order to have a balanced statistical result of the RD based LSE, we recommend a two-step splitting method (TSSM) to iteratively crack the RD-LSE equation: first iterating the LSE equation, and then solving the dispersion equation. The second step regularizes the level set function obtained in the first step to ensure stability, and thus the complex and costly re-initialization procedure is completely eliminated from LSE. By successfully applying dispersion to LSE, the RD-LSE model is stable by means of the simple finite difference method, which is very easy to implement. The proposed RD method can be generalized to solve the LSE for both variation level set method and PDE-based level set method. The RD-LSE method shows appropriate noble concert on boundary anti-leakage, and it can be voluntarily prolonged to high dimensional level set method. The extensive and promising experimental results on synthetic and real images validate the effectiveness of the proposed RD-LSE approach.

Keywords: RD-LSE, PDE, TSSM.

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33.

Authors: **S. Murali, B. Srinivas**

Paper Title: **Design and Implementation of IEEE-754 Decimal Floating Point Adder, Subtractor and Multiplier**

Abstract: This paper describes the development of a Decimal Floating Point adder/subtractor multiplier and division for ALU in verilog with the help of ModelSim and will be synthesized by using Xilinx tools. These are available in single cycle and pipeline architectures and fully synthesizable with performance comparable to other available high speed implementations. The design is described as graphical schematics and code. This representation is very valuable as allows for easy navigation over all the components of the units, which allows for a faster understanding of their inter relationships and the different aspects of a Floating Point operation. The presented DFP adder/subtractor supports operations on the decimal 64 format and our extension is decimal floating point multiplier.

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The fixed-point design is extended to support floating-point multiplication by adding several components including exponent generation, rounding, shifting, and exception handling. And DFP multiplier is compared with the booth multiplier technique.

Keywords: DFP, Booth multiplier, IEEE 754-1985 standard, Floating point multiplication.

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34.

Authors: **K. Chandra Sekhar, K. Saritha Raj**

Paper Title: **An Efficient Pseudo Random Number Generator for Cryptographic Applications**

Abstract: LFSR based Pseudo Random Sequence Generator (PRSG) technique is used for various cryptography applications such as Data Encryption keys, Bank Security communication channels etc. The total number of Random States generated using LFSR are 2n-1 and depends on the Feedback Polynomial used in the design. Linear Feedback Shift Register(LFSR) counter is very effective when compared to other counters used in cryptographic applications especially in terms of Hardware, speed of operation and it is also less prone to Glitches. In this paper we implemented LFSR counter and it is compared with Binary and Gray counters to observe the performance of the counter in terms of Hardware and Speed. The analysis is conceded out to find number of gates, Memory and Speed requirement as the number of bits gets increased.

Keywords: LFSR, Pseudo Random Sequence Generator, Feedback Polynomial.

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35.

Authors: **Mehdi Ameur, Ahmed Essadki, Tamou Nasser**

Paper Title: **Evaluation of Photovoltaic System with Different Research Methods of Maximum Power Point Tracking**

Abstract: The objective of this paper is to evaluate the photovoltaic system with different techniques of MPPT system by modeling the whole system which is constituted of the photovoltaic generator connected to a DC-DC converter and commanded by three algorithms of MPPT :Perturb an Observe (P&O), Incremental Conductance (INC) and Fuzzy Logic Controller (FLC). The PV system will be simulated at different parameters such as the irradiation, the temperature to determine the influences of these conditions on the power, the voltage and the current generated by the PV system and also on the performance of each methods of the MPPT system. From the various tests and the results of the simulations the PV system can provide a maximum power with rapidity and precision using the MPPT algorithms discussed in this paper.

Keywords: Fuzzy logic controller (FLC), Hill Climbing (HC), Incremental Conductance (INC), Perturb and Observe (P&O)

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36.

Authors: **Stanislav Simeonov, Neli Simeonova**

Paper Title: **Modeling an Aggregate of Interfaces in a Discrete Space and Time**

Abstract: Visually impaired people need improvement of their communicability to contact with other people. Different solutions of the improvement of the man-computer interaction could help the visually impaired people use their abilities to full extent. The Human-Computer Interaction (HCI) is a basic term described as the way a user communicates or interacts with computers. To guarantee the ability to acquire information, the computer interface should include software and hardware elements to facilitate this perception. The development of computer technology provides possibilities to combine multiple performing devices into an integrated system aimed to give or facilitate certain services. In somewhat narrower context, the present work is related to the problems in the design of complex interface and performing devices for the people with reduced sight or totally blind ones. This is a prerequisite for the realization not only of interface devices but also of systems capable of partial or full processing of information. In the presented study is shown a model of a single system. The study is the result of research project funded by Bulgarian National Science Fund – NSF Grant No D-ID-02/14 and Grant NHT-333/14.

Keywords: Automation, Blind people, Computer Interfaces, IT Architecture, Modeling, User support,

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37.

Authors: **Mahbubeh Mehrdost, Ehsan Kamrani, Fereridoon Owfi, Hodeis Abbasi GHadikolaei**

Paper Title: **Identification, Classification and Coding of Hengan Island Coastal Biotopes, using by CMECS / GIS Model**

Abstract: This study investigated Hengam Island coastline biotopes identification, classification and coding base on Coastal Marine Ecological Classification Standard (CMECS) model and using by GIS, in 8 stations during 2012-2013. Each ecological habitat biotopes, satellite figures analyzed and GIS cover placed divided to Surface Geology Component (SGC) and Biotic Cover Component (BCC) of different layers information. At last results showed 24 standard codes in Hengam island intertidal zone by CMECSIII and most of them obvious in western part of the area. So because of heterogeneous structure and various subhabitats in rocky coastline of the study area clarify a guideline for future Environmental planning, management and protected.

Keywords: Coastal biotopes, Ecological classification, CMECS, HENGAM Island, Persian Gulf.

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38.

Authors: **Manoj Kumar Gouda, D. Yugandhar**

Paper Title: **Design of Multicore Processor using Multithreading Technique**

Abstract: The multicore design has become a design philosophy in engineering applications. Speedup has been achieved by increasing clock speeds and, more recently, adding multiple processing cores to the same chip. Although chip speed has increased exponentially over the years, that time is ending and manufacturers have shifted toward multicore processing. However, by increasing the number of cores on a single chip challenges arise with memory and cache coherence as well as communication between the cores. A multi-core processor is a processing system composed of two or more independent cores. One can describe it as an integrated circuit to which two or more individual processors (called cores in this sense) have been attached. This paper discuss the advantage in the transition from non pipelined processor to single core pipelined processor, and the transition from single core pipelined processor to multicore pipelined processor and finally ends in with designing a quadcore processor. It begins with the discussion of implementation of a non pipelined processor. Secondly we discuss the process of converting it into a pipelined processor and the shared memory issues are discussed. Finally provides the design details of all the phases of a multicore processor with quad port memory design, including performance achievement achieved by this transition. The design is done on xilinx Spartan xc6slx45-csg324-4 FPGA and it performance characteristics are anlaysed . The designed Quad core performance issues like area, speed and power dissipation are also presented.

Keywords: Mulit-core processor, Pipelining, Quadcore,FPGA.

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39.

Authors: **J. Raja, R. Anitha**

Paper Title: **Power Allocation for Link Adaptive Relaying System with Energy Harvesting Nodes**

Abstract: In this paper, we consider optimal power allocation for link adaptive relaying systems with energy harvesting(EH) node. EH means source communicates with destination via EH Decode-and-Forward relay over the fading channels. We propose two types of relaying system. The first one is conventional relaying system, the source and relay transmit the signal in consecutive time slot and another one is buffer-aided link adaptive relaying system, the source-relay and relay-destination channels as well as amount of energy available at source and relay finding whether the source or relay is selected for transmission. Our main aim is to maximize the system throughput and to reduce the delay by using the technique is RSS. In both type of relaying system having offline and online power allocation method. Based upon this to analyses the performance gain and give the simulation result

Keywords: Buffer- aided link adaptive relaying, conventional relaying, energy harvesting, power allocation, RSS.

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40.

Authors: **J. Raja, M. Logeswari**

Paper Title: **Maximization of Throughput for Gaussian Relay Channel with Hybrid Relaying: Decode-Amplify and Forward**

Abstract: For the classic three node Gaussian relay channel with hybrid relaying of both decode and forward (DF) and amplify and forward (AF) relaying, the throughput maximization over a finite horizon of N transmission block is presented . Here we are assuming the deterministic energy harvesting model in which the parameters such as energy arrival time and harvested amount are known prior to the transmission. Consider the two types of data traffic based on different delays i.e., delay constraint (DC) and no delay constraint (NDC) traffic cases.

Keywords: amplify and forward, decode and forward, energy harvesting and Gaussian relay channel.

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41.

Authors: **Vijayashree C, Amuthini P, Preetha**

Paper Title: **Simulation and Experimental Performance Solar PV Water Pumping System using BI-Facial Concentrator**

Abstract: In present scenario has water pumps in every household of a city that are driven by electric motors connected to the utility network. The use of photovoltaic as the power source for pumping water is considered as one of the most promising area of PV application but initial cost of the system was high. In this paper, viable alternative to reduce the final cost of the pumped water volume is proposed by using low concentration cavities. Bi-facial concentrators are particularly appropriate for photovoltaic applications since, for certain combinations of the concentration ratio (C) and vertex vertex angle (ψ), they provide uniform illumination on the region where the modules are located. A model of solar PV water pumping system designed for water requirement of 1500 liters/day and maximum head of 5m. This pumping system model was simulated using PVSYST software and ray tracing model of concentrator was simulated using TracePro software. Results shows that, for the climate of the city of Chennai (India), 60 % improvement in annual pumped water volume and 28% of cost reduction for concentrator system when compared to fixed SPVWP system.

Keywords: Bifacial Concentrator, PVSYST, Concentrating Mirror

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42.

Authors: **R. Santosh, K. V. Lalitha Bhavani**

Paper Title: **Area Efficient Higher Order FIR Filter Design using Improved Distributed Arithmetic with Look up Tables**

Abstract: This paper describes the design and implementation of highly efficient LUT based circuit for the implementation of FIR filter using Distributed arithmetic algorithm. It is a multiplier less fir filter designed and designed based on distributed arithmetic algorithm. The DA based technique consists of Look Up Table (LUT), shift registers and scaling accumulator. Analysis on the performance of filter order with partition on different address

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length of partial tables are done using Xilinx 12.1 synthesis tool. The proposed architecture provides an efficient area-time-power implementation which improves latency and less area-delay complexity through pipelining technique when compared with existing structures for FIR Filter.

Keywords: Distributed Arithmetic (DA), FIR filter, Look up table (LUT), FPGA.

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43.

Authors: **B. Pullaiah, M. Sailaja**

Paper Title: **Efficient Communication in any Digital System using Convolutional Encoder and Viterbi Decoder for Constraint Length 9**

Abstract: Forward Error Correction (FEC) schemes are an essential component of wireless communication systems.Present wireless standards such as Third generation (3G) systems, GSM, 802.11A, 802.16 utilize some configuration of convolutional coding. Convolutional encoding with Viterbi decoding is a powerful method for forward error correction. The Viterbi algorithm is the most extensively employed decoding algorithm for convolutional codes which comprises of minimum path and value calculation and retracing the path. The efficiency of error detection and correction increases with constraint length. In this paper the convolutional encoder and viterbi decoder are implemented on FPGA for constraint length of 9 and bit rate ½.

Keywords: constraint length, convolutional encoder, forward error correction, FPGA and viterbi decoder.

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