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Dr. JBV Subrahmanyam

Editors:

Daniel James, Kokula Krishna Hari Kunasekaran & K Soundara Rajan

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PREFACE

The Third International Conference on "Systems, Science, Control, Communication, Engineering and Technology (ICSSCCET 2017)" held on 16 - 17th February 2017, in collaboration with Association of Scientists, Developers and Faculties (ASDF), an International body, at Teegala Krishna Reddy Engineering College, Hyderabad, India, Asia.

ICSSCCET 2017 provides a chance for academic and Industry professionals to discuss the recent progress in the area of Systems, Science, Control, Communication, Engineering and Technology. The outcome of the conference will trigger for the further related research and future technological improvement. This conference highlights the novel concepts and improvements related to the research and technology.

The technical committee consists of experts in the various course subfields helped to scrutinize the technical papers in various fields, support to maintain the quality level of the proceedings of conference which consist of the information of various advancements in the field of research and development globally and would act as a primary resource of researchers to gain knowledge in their relevant fields.

The constant support and encouragement from Dr. S. Prithiv Rajan, ASDF Global President, Dr. P. Anbuoli, ASDF International President and Dr. K. Kokula Krishna Hari, ASDF International General Secretary helped a lot to conduct the conference and to publish the proceedings within a short span. I would like to express my deep appreciation and heartfelt thanks to the ASDF team members. Without them, the proceedings could not have been completed in a successful manner. I would like to express my sincere thanks to our management, student friends and colleagues for their involvement, interest, enthusiasm to bring this proceeding of the conference in a successful way.

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Table of Content

Volume	01	ISBN	978-81-933235-0-2
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International Conference on Systems, Science, Control, Communication, Engineering and Technology 2017

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High Resolutions of Medical Images using Enhancement Technique

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Abstract: *The objective of this paper is to estimate a high resolution medical image from a single noisy low resolution image with the help of given database of high and low resolution image patch pairs. Initially a total variation (TV) method which helps in removing noise effectively while preserving edge information is adopted. Further de-noising and super resolution is performed on every image patch. For each TV denoised low-resolution patch, its high-resolution version is estimated based on finding a nonnegative sparse linear representation of the TV denoised patch over the low-resolution patches from the database, where the coefficients of the representation strongly depend on the similarity between the TV denoised patch and the sample patches in the database. The problem of finding the nonnegative sparse linear representation is modelled as a nonnegative quadratic programming problem. The proposed method is especially useful for the case of noise-corrupted and low-resolution image.*

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An Improved Micro Grid Load Demand Sharing Methodology

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[1,3]Professor, [2]Asst. Professor, [4]Assoc. Professor, Dept. of EEE, TKR Engineering College, Hyderabad, India

Abstract: *For the operation of standalone micro grids, an important task is to share the load demand using multiple distributed generation (DG) units. In order to realize satisfied power sharing without the communication between DG units, the voltage droop control and its different variations have been reported in the literature. However, in a low-voltage micro grid, due to the effects of nontrivial feeder impedance, the conventional droop control is subject to the real and reactive power coupling and steady-state reactive power sharing errors. Furthermore, complex micro grid configurations (looped or mesh networks) often make the reactive power sharing more challenging. To improve the reactive power sharing accuracy, this paper proposes an enhanced control strategy that estimates the reactive power control error through injecting small real power disturbances, which is activated by the low-bandwidth synchronization signals from the central controller. At the same time, a slow integration term for reactive power sharing error elimination is added to the conventional reactive power droop control. The proposed compensation method achieves accurate reactive power sharing at the steady state, just like the performance of real power sharing through frequency droop control. Simulation and experimental results validate the feasibility of the proposed method.*

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Wind Energy Based Adaptive Pi Controlled Statcom for Voltage Regulation

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[1]Professor, [2,3,4]Assistant Professor, TKR Engineering College, Hyderabad, India

Abstract: *Distributed Generation Resources are increasingly used in distribution systems due to their great advantages. The presence of DG, however, can cause various problems such as miss-coordination, false tripping, blinding and reduction of reach of protective devices. Using superconducting fault current limiters (SFCLs) is one of the best methods to minimize these problems comparing to the other conventional methods. The active SFCL can as well suppress the short-circuit current induced by a three-phase grounded fault effectively, and the power system's safety and reliability can be improved and it is composed of an air-core superconducting transformer and a PWM converter. The magnetic field in the air-core can be controlled by adjusting the converters output current, and then the active SFCLs equivalent impedance can be regulated for current limitation and possible overvoltage suppression. During the study process, in view of the changes in the locations of the DG units connected to the system, the DG units injection capacities and the fault positions, the active SFCLs current-limiting and over voltages suppressing characteristics are presented by using Matlab/Simulink software.*

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Comparative Analysis of 31 And 49 Level CHB MLI with Four Dc-Voltage Sources

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Abstract: *The exploit of MLIs in medium and high power applications are escalating due to compact voltage stress across the switches and lesser total harmonic distortion (THD) of the output waveform. In this paper, contrast of output voltage levels and total harmonic distortion of a new single phase CHB multilevel inverter of 31 and 49 levels with fewer number of power electronics switches is proposed. Compared to the predictable multilevel converter, the number of dc voltage sources, switches, installation area, and converter cost is appreciably reduced as the number of voltage steps increases. Then, the configuration of the proposed topology is optimized in order to employ a minimum number of switches and dc voltage sources, and produce a high number of output voltage steps. In order to generate all voltage levels (even and odd) at the output, different algorithms are proposed to determine the magnitudes of dc voltage sources. In addition, in the proposed cascaded multilevel inverter, not only the number of required power electronic devices is reduced but also the amount of barren voltage on switches and the number of different voltage amplitudes of the used sources is diminished. These features are obtained via the comparison of the proposed topology and its proposed algorithms with the conventional cascaded multilevel inverters that have been presented in the literatures. The operation and performances of the proposed topology with its presented algorithms in generation all voltage levels have been verified by using the simulation results of a 31 and 49-level single-phase inverter.*

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An Adaptive Hysteresis Band Current Controlled Shunt Active Power Filter

Waseem Sultana[1], K R Sree Jyothi[2], P Sahana[3]
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Abstract: *This paper presents a shunt single phase Active Power Filter (APF) for harmonic and reactive power compensation. A simple method, using sampling and integration has been proposed for APF reference current generation. This method simplifies the calculation algorithm. A high performance adaptive hysteresis band current controller tracks the reference current. It changes the hysteresis bandwidth according to the modulation frequency, supply voltage, DC bus voltage and slope of reference current. MATLAB / SIMULINK model has been presented. Responses of the simulated model show that harmonic and reactive components of load current are completely eliminated from supply current.*

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PV Connected High Power Bidirectional DCDC Converter for Induction Motor Drive

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Abstract: *This paper contributes to the steady state analysis of the bidirectional dual active bridge (DAB) dc–dc converter by proposing a model that produces equations for rms and average device currents, and RMS and peak inductor/transformer currents. These equations are useful in predicting losses that occur in the devices and passive components and aid in the converter design. An analysis of zero voltage Switching (ZVS) boundaries for buck and boost modes while considering the effect of snubbed capacitors on the Dual Active Bridge converter is also presented. The PV Connected High Power Bidirectional DC-DC Converter for Induction Motor Drive model can be used to predict the converter efficiency at any desired operating point. This model can serve as an important teaching cum research tool for DAB hardware design (devices and passive components selection), soft switching operating range estimation, and performance prediction at the design stage. The operation of the DAB dc–dc converter has been verified through extensive simulations. A DAB converter prototype was designed on the basis of the proposed model and was built for an aerospace energy storage application. Experimental results are Presented to validate the new model for a 7 kW, 390/180 V, 20 kHz converter operation and the ZVS boundary operation.*

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Adaptive DC Link Voltage for CPI Voltage Variations using Adaptive Methods

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Abstract: *This proposed model manages a three- stage two-organize grid tied SPV (sunlight based photograph voltaic) framework. The main stage is a help converter, which fills the need of MPPT (most extreme power point following) and sustaining the removed sunlight based vitality to the DC connection of the PV inverter, while the second stage is a two-level VSC (voltage source converter) serving as PV inverter which bolsters control from a support converter into the matrix. The point of this controller is to accomplish an ideal MPP operation without the need of barometrical conditions estimations and to improve the productivity of the PV control framework. This model likewise utilizes a versatile DC connect voltage which is made versatile by modifying reference DC interface voltage as per CPI (regular purpose of interconnection) voltage. The versatile DC connects voltage control helps in the decrease of exchanging force misfortunes. A sustain forward term for sun oriented commitment is utilized to enhance the dynamic reaction. A photovoltaic (PV) framework can create wide scopes of voltage and current at terminal yield. Be that as it may, a PV cell is required to practically keep up a consistent direct present (DC) voltage at a craved level amid constant varieties. To get this objective, a DC/DC converter together with control plot topology is utilized. A versatile PI control plan is proposed to settle the yield voltage of the DC/DC converter, with a specific end goal to keep up and balance out the Adaptive DC-connect voltage in like manner to the progressions of voltage at the Common Point of Interconnection before the framework. The Point of Common Coupling is a point in the electrical framework where various clients or numerous electrical burdens might be associated. This ought to be a guide who is open toward both the utility and the client for direct estimation. Extensive quantities of little scale sunlight based photovoltaic (PV) frameworks are being associated with the appropriation level of the power lattice PV frameworks are incorporated to the power network by means of force electronic converters. The model is tried considering reasonable matrix voltage with growing power system, the attention is moving from centralized generation and radial distribution to distributed generation. The distributed generation can bring in several advantages such as reduction in losses, better utilization of distribution resources, load profile flattering etc. [10]–[12]. The SPV systems provide a good choice for distributed generation system considering small scale generation from rooftop varieties for under voltage varieties. This model is profitable not just in instances of incessant and managed under voltage (as in the instances of far outspread closures of Indian framework) additionally in the event of ordinary voltages at CPI. The THD (add up to music bending) of lattice current has been discovered well under the farthest point of an IEEE-519 standard. The approval of the proposed MPPT controller is appeared by MATLAB/SIMULINK reproduction.*

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Characteristics of Isotone Lattice Measurable Functions

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[1]Asst. Professor, [2]Professor, Dept. of Mathematics, TKR Engineering College, Hyderabad, India

Abstract: *In this paper we defined Isotone lattice measurable function, join σ – function (δ – function), meet σ – function (δ – function), and proved that If f and g are isotone join(meet) irreducible lattice measurable functions such that f(x) $\leq$ g(x) then their join(meet) is also isotone join(meet) irreducible, also Every join σ – function(δ – function) is isotone join irreducible and Every meet σ – function (δ – function) is isotone meet irreducible.*

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Optimization of Time-Cost Analysis by Fast Track Method

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Abstract: *Optimization of time and cost in construction projects has been subjected to extensive research since the development of the Critical Path Method (CPM). Time and cost as two critical objectives of construction project management, are not independent but intricately related. In reality due to different uncertainties, the actual cost and time of each option is not certainly known for the manager in advance. The methods for optimizing time and cost of construction projects range from mathematical methods to evolutionary based methods. Nowadays, more and more the awareness is growing that fast tracking also has evidential consequences for the earlier design phases. The existing methods of time and cost optimization the fast track method is one of the most recognized methodologies for reducing construction time and project schedules. The fast track method is applied to a selected case study using Microsoft project professional. The works at each stage of the project are overlapped to reduce the total project duration and deliver the project earlier than the time estimated by the conventional method of project planning and scheduling. The overlapping of the design phase and the construction phase in each stage of work has been crucial in reducing the total duration of the project. The case study considered for this study is a commercial project named Hyatt regency which is located at Gachibowli in Hyderabad. The total duration of the project is reduced from 940 days to 766 days which is 18.51%. The project is delivered to the client 6 months earlier. The earlier delivery of the project benefit to both client as well as contractor.*

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Effect of Electrical Resistivity in Copper Thin Films

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Abstract: *Copper is one of the most employed metals in the manufacturing industries for a variety of applications due to its high electrical and thermal conductivities. This metal has also attracted much interest as a thin and ultrathin film material, which was driven by the increasing demand for Nano ranged downscaled electrical, electronic, and magnetic devices. Cu thin films with different thicknesses from 50–220 nm have been deposited on glass substrate by DC magnetron sputtering technique at room temperature in pure AR gas. The thickness effect on the structural, morphological and electrical properties were studied by X-ray diffraction (XRD), atomic force microscope (AFM) and four point probe (FPP) measurements, respectively. By varying the films thickness the significant changes were observed in the films surface morphology due to the mechanism of films growth. Finally, the relationship between film resistivity and Cu film thickness are investigated in this paper.*

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Shear Behaviour of Hybrid Fibre Reinforced Geo Polymer Concrete Beams

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Abstract: *The aim of the paper is to find the shear behaviour of hybrid fibre reinforced geo polymer concrete beams under two point loading. Subsequently it involves the preparation of fly ash and GGBS based geo polymer concrete. For geo polymer concrete trial and error process is used to determine the mix proportion which will have strength in range of 40-50 MPa. This concrete is used for the casting of fly ash and GGBS-based hybrid fibre reinforced geo polymer concrete beams (F&GHGPC) specimen which will be tested to find ultimate load and behaviour under two point monotonic loading. For the purpose of comparison, fly ash based hybrid fibre reinforced geo polymer concrete beams (FHGPC) casted and also tested less than two point monotonic loading. The main objective of the study is to look into the shear behaviour of hybrid fibre reinforced geo polymer concrete beams.*

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English Teaching and Learning in the Digital Age

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Abstract: *The word 'innovation' is derived from Latin word 'innovare', which means to change something new. In other words it can be said that 'innovation' involves the practical implementation of new ideas. Due to tremendous progress in information and communication technology, the scenario of contemporary teaching techniques is entirely changed. And the teacher of 21st century should shed traditional concepts and techniques of classroom teaching and should adopt the recent and innovative teaching techniques. Teaching English depends on the potential excellence, skills and update knowledge of English teachers. The role of English teacher in present context has remarkably changed because of various factors such as social, cultural, economic and technology developments across the globe. The subject of teaching English at this level is very wide and the difficulties the teacher faces are at large. Due to globalization the world is changing rapidly, hence a teacher has to improve and update knowledge of innovative techniques to meet the demand of changing era. English language teachers must be innovative, imaginative, and resourceful and have thorough knowledge of the subject and adopt new techniques to change socio, economic status of the country.*

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Sewage Treatment by Using Cyclic Activated Sludge Technology

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Abstract: *This thesis studies a sewage treatment plant (STP) of capacity 51 MLD using Cyclic activated sludge technology (C-Tech technology). The Cyclic activated sludge process has gained increasing importance in sewage treatment, especially on account of the design flexibility to handle varying daily flow and load fluctuations along with operation simplicity. The practice of manipulating activated sludge reaction environments to obtain maximum nitrogen and biological phosphorous removal has been optimized using cyclic activated sludge technology. In its simplest form, the sequences of fill-aeration, settle and decant are continuously operated in a compartment reactor. Low Nitrogen concentrations less than 5 gm/lit by co-current nitrification, de-nitrification mechanism; and phosphorus less than 5 gm/lit without any chemical addition is achievable with this technology. A detailed technical description, salient features & advantages of the C-Tech technology are presented in this work. By operating the sequence of fill aeration-settle-decant all in a same tank, about 30 to 40% of space is saved. STP is so designed as, the flow from one chamber to another is due to gravity. All operations can take place within a single basin which provides for easy extension through modular construction. There is no wastage in the plant as the sludge waste can be used for agriculture purpose.*

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Power Management in Isolated AC Microgrids using Wind Energy Conversion System and Battery Energy Storage System

K Santhosh[1], M Harika Reddy[2], I Haritha[3], Aqib Javed[4]
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Abstract: *This paper is the possibility of controlling the power generated inside an isolated micro grid, assuring the control of the voltage at the energy storage systems terminals, without using dump loads to dissipate the surplus of energy or a physical communication between converters. a new methodology to control the generated power by the wind turbine, a new design and tuning of the terminal voltage controller of the battery bank and by the presentation of experimental results, including variable wind speed operation. With energy storage systems based on battery it is not necessary to measure or estimate the state of charge of the batteries, only measuring the terminal voltage of them is sufficient. The proposed method allows for a continuous and smooth reduction of the power generated by the existing sources in the micro grid and therefore a charging procedure where the batteries can be charged up to 100% of their capacity. In this project, the power system consists of a power electronic converter supplied by a battery bank, which is used to form the AC grid (grid former converter), an energy source based on a wind turbine with its respective power electronic converter (grid supplier converter), and the power consumers (loads).*

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Seismic Analysis of High-raised Building under Floating Foundation

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Abstract: *Primary objective of an earthquake resistant design is to prevent the building from collapse during earthquake thus, minimizing the risk of death or injury. Earthquake forces are generated by the inertia of buildings as they dynamically respond to ground motion. Many earthquake resistant techniques were introduced by various researchers but, they were not concentrated to eliminate wave action that entering at foundation level during earthquake that leads to failure of the structures. This paper proposes a technique in which the effect of the wave action intended to reduce /neglect at foundation level itself by constructing a ball and socket type of joints between column and footing intersections. To recognize the technique, a dynamically responded high-raised building model was developed with pinned supports using STAAD. Pro software and the results were compared with the similar model having conventional (fixed) supports. Both longitudinal and transverse ground motions to the structure were considered independently to study the behaviour of the structures. The study parameters included displacement, base shear, spectral acceleration, time-period, and mode shape. It was found from the analysis that the flexibility of the structure increased substantially in the pinned type of supports which is more appreciated in the point of any seismic resistant structure.*

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Secure Message Transmission in Wireless Networks using HMAC Algorithm

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Abstract: *A message is to be transferred from one network to another across some sort of internet. To do this a logical information channel should established by defining a route through the internet from source to destination with the help of some protocols. A security-related transformation on the information to be sent, with some secret information as secret key will be shared by the two networks and, it is hoped, unknown to the opponent. Wireless networks are increasingly being used in the network with limited cost and low equipment requirement. However, the growing popularity and widespread applications of wireless networks are directly proportionate to their security exploitation. The strength of its infrastructure also becomes the point of its greatest availability in the network. Thus decreasing the confidence level of the system as it pertains to availability, reliability, data integrity and privacy concerns. Message authentication is used to protecting the integrity of a message and validating identity of originator. The algorithm used in this paper for authenticating messages is Hash Message Authentication Codes (HMAC) with stream ciphering.*

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A Novel Approach On Wide Range Soft Switching PWM Multi Level DC-DC Converter Used In High Power Applications

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Abstract: *Power electronic converters, especially DC/AC Sinusoidal Pulse Width Modulation inverters have been extending their range of use in industry because of their numerous advantages. They typically synthesize the stair –case voltage waveform (from several dc sources) which has reduced harmonic content. This paper aims to extend the knowledge about the performance of Five level Cascaded H-Bridge MLI topology with DC/DC Boost Converter using SPWM for fixed DC Source. The output voltage is the sum of the voltage that is generated by each bridge. The switching angles can be chosen in such a way that the total harmonic distortion is minimized. This topology incorporates Boost Converter in the input side which magnifies the fundamental output voltage with reduction in total harmonic distortion. It also incorporates LC filter and hence output is drawn near the sine wave because of more levels. Results of experiments proved. The performance of the proposed SPWM strategy in terms of output voltage and THD has studied successfully and shown using MATLAB/Simulink.*

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Crystalline Silicon and CDZNTE Tandem Junction Solar Cells

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Abstract: *A photovoltaic tandem system consisting of crystalline silicon / cadmium zinc telluride (c-Si /CZT) combines the successful technologies of silicon and cadmium telluride into a single proposal and offers the potential efficiencies up to 46% in theory. However, the highest efficiency made-up c-Si / CZT tandem cell is only 16.8% today. In this paper, we grow a thorough model for single-junction tandem c-Si / CZT PV cells and CZT, which is verified with experimental data. Based on this model, we propose three hypotheses to explain the anomalously low Voc observed in tandem cells: a low-quality tunnel junction, a Schottky barrier, and through-thickness shunting path. We then propose a simple experiment to make a distinction between these hypotheses. After that, we provide a physics-based study of the magnitude of all the loss mechanisms present in the cell and an experimental approach to alleviate each one. Ultimately, we expect that the ideal efficiency of c-Si /CZT tandem cell could reach 34.1%, if all these loss mechanisms were mitigated, and the CZT bandgap were adjusted to 1.8 eV, without requiring any development in bulk or surface recombination rates.*

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Skills Landscape of India: Initiatives and Issues

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Abstract: *Skills and Knowledge are the driving forces of economic growth and social development for any country. Countries with higher and better levels of skills adjust more effectively the challenges and opportunities of world of work. As India moves progressively towards becoming a 'Knowledge Economy' it becomes increasingly important that the country should focus on advancement of skills and these skills have to be relevant to the emerging economic environment. In order to achieve the twin targets of economic growth and inclusive development, India's GDP has to grow consistently at 8% to 9% per annum. The current workforce of about 450 million, only about 8% to 9% is engaged in the organized/formal sector. India, only about 5% of the workforce has marketable skills, as compared to 50% to 60% in other advanced countries. The magnitude of the challenge is further evident from the fact that about 12 million persons are expected to join the workforce every year. This emerging scenario is poised to drive the demand for skilling India.*

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Improving Network Coverage and Data Rates for Mobile Communication Systems using Adaptive Array Antenna and MB-MIMO

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Abstract: *In contemporary years a substantial increase in the development of broadband wireless technologies for evolving wireless internet services and improved cellular system has been observed for mobile communication system which mainly uses Adaptive Array Antenna. This antenna system is the main technology for future generation mobile networks to improve the network coverage and increasing data rates for the second-generation systems as well as third-generation systems. MB-MIMO is one of the enabling technologies for mobile communication systems; it uses multiple transmitters and multiple receivers for providing better network coverage to the mobile users and to achieve high speed data rates. This paper presents detailed analysis of Adaptive Array Antenna Systems and MB-MIMO to improve the network capacity.*

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Audio Water Marking Using DCT & EMD

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Abstract: *In this paper a new adaptive audio watermarking algorithm based on Empirical Mode Decomposition (EMD) is introduced. The audio signal is divided into frames and each one is decomposed adaptively, by EMD, into intrinsic oscillatory components called Intrinsic Mode Func-tions (IMFs). The watermark and the synchronization codes are embedded into the extrema of the last IMF, a low frequency mode stable under dif-ferent attacks and preserving audio perceptual quality of the host signal. The data embedding rate of the proposed algorithm is 46.9–50.3 b/s. Re-lying on exhaustive simulations, we show the robustness of the hidden wa-termark for additive noise, MP3 compression, re- quantization, filtering, cropping and resampling. The comparison analysis shows that our method has better performance than watermarking schemes reported recently.*

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Application of Differential Equations of First Order

Smrati Rai[1], N Sri Lakshmi Sudha Rani[2], G Vedavathi[3], K Kavitha[4]
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Abstract: *Mathematical concepts and various techniques are presented in a clear, concise manner. Various visual features are used to highlight dirrerent areas. Complete illustrative diagrams are used to facilitate mathematical modeling of application problems. Readers are motivated by a focus on the relevance of differential equations through their applications in various engineering disciplines. Studies of various types of differential equations are determined by engineering applications. Theory and techniques for solving differential equations are then applied to solve practical engineering problems. Detailed step-by-step analysis is presented to model the engineering problems using differential equations from physical principles and to solve the differential equations using the easiest possible method. Such a detailed, step-by-step approach, especially when applied to practical engineering problems, helps the readers to develop problem-solving skills.*

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An Intelligent Threat Recognition for Electronic Warfare Counter Measures

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Abstract: *This paper is studied on the aspects of the intelligent electronic warfare in any action involving the use of EM spectrum to control the spectrum attack of an enemy or impede enemy assaults via the spectrum. The purpose of EW is to deny the opponent the advantage of and ensure friendly unimpeded access to the EM spectrum The principal EW activities have been developed over time to exploit the opportunities and vulnerabilities that are inherent in the physics of EM energy and now it is taking its new dimensions in the era of applying AI techniques and algorithms to make system intelligent .The EW is subdivided into EA, EP and EWS .The study of this paper is mainly focused on EWS measures to counter the electronic attack by the enemy to recognize the threat, targeting, planning and conduct of future operation. Basically these measures are taken out by the designed systems and trained operator to make electronic intercepts (ELINT) and then classify based known Signal Intelligence, to detect the return information to identify the unique characteristics of specific radar by the signals by the human operator can be susceptible to different natural, environmental and conscience of the present human operator. In this context estimation of the radar Antenna Scan Period (ASP) and recognition of the Antenna Scan Type (AST) is important measure in analysing level of threat from the radar.*

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High-Efficiency of CDS/CDTE Thin Film Solar Cell Using Step Doping Grading and Thickness of the Absorption Layer

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Abstract: *In this paper, the influence of stepped doping of the absorber layer on performance of Cadmium Sulphide/Cadmium Telluride (CdS/CdTe) solar cell has been investigated. At first, the electrical characteristics of conventional CdS/CdTe solar cell is validated with fabricated CdS/CdTe solar cell. To improve the maximum efficiency of CdS/CdTe solar cell, the doping and thickness of the absorption layer are optimized. By step doping concentration within the absorber layer using buffer layer back contact and the increase in stepping gradient of the doping of CdTe layer, improved the conversion efficiency about 2.4% were obtained. The open-circuit voltage, short-circuit current density, fill factor and total area conversion efficiency of optimized solar cell structure are 952 mV, 25.97 mA/cm2, 78.5% and 18.7% under global AM 1.5 conditions, respectively.*

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A Novel Approach on Research challenges in Green Computing

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Abstract: *Technology is not a reactive observer, but it is an active contributor in achieving the goals of Green Computing. Today IT sector covers several things for achieving green computing such as cloud computing, reduction of paper usage, hardware equipment recycling, green manufacturing, low power management, etc. Green computing includes the execution of energy efficiency central processing units (CPUs), hardware, software and servers. In the series of power saving arrangement, power saving software plays an important role to reduce power consumption and achieve better performance. Energy saving is part of green use which is one of the green computing components. The impulse behind this change comes from the ever increasing business computing demand, ever growing cost of energy, rising awareness of global warming issues. This paper presents some green initiatives under way in the IT industry and in brief covers the main research challenges which are still open in the race to meet green computing requirements. Green computing can facilitate us to secure place and healthy environment all over in the world.*

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Scheduling the Resource Allocation to Multiple Systems in an Optimal Way

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Abstract: *In a multiprogramming system there are one or more programs loaded in main memory which are ready to execute. Only one program at a time is able to get the cpu for executing its instructions while all the others are waiting their turn. Process scheduling is an essential part of multiprogramming operating systems. The process scheduling is the activity of the process manager that handles the removal of the running process from the cpu and the selection of another process on the basis of a particular strategy. In this paper we propose -. Algorithms are either non-pre-emptive or pre-emptive. the pre-emptive scheduling is based on priority where a scheduler may pre-empt a low priority running process anytime when a high priority process enters into a ready state. Non-pre-emptive algorithms are designed so that once a process enters the running state; it cannot be pre-empted until it completes its allotted time. There are four popular process scheduling algorithms we are implementing here among those algorithms we specify which algorithm optimal way to select the process.*

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QoS (Quality of Service) Analysis of On-Demand Routing Protocols under Multiple Black Hole Nodes

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Abstract: *Mobile Ad hoc Network (MANET) is an infrastructure less wireless network consisting of one or more mobile nodes connected by wireless links with rapid improvement in technology may affect the security concerns of the MANET. So it is a challenge for researchers to improve or enhance security mechanisms already developed or design &develop efficient security mechanism. Black hole attack is a kind of Denial of Service (DoS) attack that degrades the performance by dropping the packets or forwarding the packets to some unknown locations in the network. This results that for intended nodes unable to communicate with one another. In this work, we implemented multiple black hole attack nodes to test the performance of various On-demand routing protocols. Various performance metrics are available such as Delay, PDR, Energy, Throughput, Network lifetime, Routing overhead, PDF &so on. We analysed the efficiency of on-demand routing protocols using the network simulator NS2.*

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Approaches of Keyword Query Routing Engines

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Abstract: *Keyword search is an intuitive paradigm for searching linked data sources on the web. We propose to route keywords only to relevant sources to reduce the high cost of processing keyword search queries over all sources. We propose a novel method for computing top-k routing plans based on their potentials to contain results for a given keyword query. We employ a keyword-element relationship summary that compactly represents relationships between keywords and the data elements mentioning them. A multilevel scoring mechanism is proposed for computing the relevance of routing plans based on scores at the level of keywords, data elements, element sets, and sub graphs that connect these elements. Experiments carried out using 150 publicly available sources on the web showed that valid plans (precision@1 of 0.92) that are highly relevant (mean reciprocal rank of 0.89) can be computed in 1 second on average on a single PC. Further, we show routing greatly helps to improve the performance of keyword search, without compromising its result quality.*

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Survey on IOT Using Big Data

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[1]Assoc. Professor, [2,3,4,5,6,7]Asst. Professor, Dept. of CSE, TKR Engineering College Hyderabad, India

Abstract: *Internet of Things (IoT) consists of billions of devices that can sense, communicate, compute and potentially activate. Data streams challenge the traditional approaches to data management and contribute to the emerging paradigm of big data. In particular, we pay attention to a new dimension that IoT adds to Big Data and Analytics: a massively distributed number of sources at the edge. The Internet of Things (IoT) relies on physical objects interconnected between each other's. In this context, sensors are used to detect the surroundings of the environment (e.g., cars, buildings, smart phones) to collect the data. Thus, the IoT is a prototypical example of Big Data which supports user for research effort to collect data from the IoT for experimental or production purposes. The IoT is recognized as one of the most important areas of future technology and is gaining vast attention from different aspects. This paper focuses on the survey in internet of things with the help of Big Data.*

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Automatic Water Theft Spotting System Using Plc and Scada

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Abstract: *The rapid growing of the wide urban the global online supervision of the water distribution network residential areas imposes the expansion as well as the modernization of the existing water supply facilities. Along with this one more problem is identified in the water supply channels, some people use ½ HP to 1 HP pump to suck the water directly from the channel of their home street. Process automation system based upon utilization of an industrial PLC and PC systems including all the network components represents the best way to improve the water distribution technological process. The water theft can be best monitored by the flow variations given by the flow sensors mounted on the channels. The system includes Remote Terminal Units, specific transducers and actuators distributed on a wide geographical area and control and power panels for the pump stations. The complete SCADA system for water distribution enable the user to get a high operation safety of the network, a cost effective use of equipment, energy efficiency and Optimize the daily operation and maintenance procedures.*

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A New Approach to Video Compression using 3D-DCT

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Abstract: *The paper presents an adaptive three dimensional discrete cosine transform based cube selection algorithm which finds the optimal cube for 3D-DCT based compression technique by analysing the motion content of the video sequence. The proposed algorithm will adaptively choose the cube size in relation to the motion level of video sequence. The strength of the algorithm can be examined by performing Rate Vs distortion comparison with different motion level sequences. Peak signal to noise Ratio has been taken as a measure of distortion. Without any motion compensation technique, the proposed algorithm adaptively selects the cube size relative to the motion content of video sequence gives better performance in terms of reduction in the data rate and improves the encoding process.*

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Development of Adaptive Beam Forming Algorithm for Wireless Communication System Using Windowing Techniques

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Abstract: *To set up an efficient wireless and mobile communication system, requires characterization of its environments and its components. Smart Antenna technology has numerous advantages such as interference rejection, capacity and range increases, and the ability to track both stationary and mobile users that improve performance of wireless communications systems. One approach to implement smart antennas is based on array beam forming, where a narrow main beam is directed towards the desired user direction, while the nulls or the side lobes with very low levels are adjusted towards other users. In this work different windows are used to study the main beam width and side-lobe suppression and the results are presented. The antenna array is combined with digital signal processing to give a narrow beam pattern in response to the received signal by the smart antenna. The weights of the beam former are calculated by using the adaptive approach which uses reference signal and the direction of the user based on the received signal. The main beam is then directed toward the specific user, while the nulls are adjusted toward the interferers.*

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Robust Image Transmission Technique on Data Hiding and Secure Transmission Using Secret Fragment Visible Mosaic Image Creation

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Abstract: *Information security is becoming increasingly important in the modern world. Secure Image Transmission has a potential of being adopted for mass communication. Several stenographic techniques for transmitting information without raising suspicion are found in [8]-[12]. However A new secure image Transmission technique is proposed, known as secret fragment visible mosaic image which allows the user to securely transmit an image under the cover of another image of same size, This paper presents an approach where mosaic image generation has done by dividing the secret image into fragments and transforming their respective colour characteristics into corresponding blocks of the target image. Usage of the Pixel colour transformations helps to yield the lossless recovered image based on the untransformed colour space values. Generation of the key plays an important role to recover the secret image from the mosaic image in lossless manner. Finally the same approach can be performed on videos also which helps to eliminate the flickering artefact to achieve the lossless data recovery in motion related videos. The experimental results show good robust behaviour against all incidental and accidental attacks and compare to the conventional algorithms.*

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Developments in 4G/5G GSM System Performance over Multipath Effect

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Abstract: *This paper investigate the procedures to reduce the effects of multipath effect in wireless communication systems in 4G/5G using the ratio of maximum combine and receiver diversity technique and also improve the performance of bit error rate (BER), PSNR, of wireless communication systems in the presence of multipath Channel. Diversity techniques has a significant role to play in wireless communications systems for a host of applications such as digital cellular networks, mobile radio, wireless LAN's, wireless local loops, digital audio, television broadcasting systems, indoor wireless and personal communication systems.*

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Unit Commitment with Lagrange Relaxation Using Particle Swarm Optimization

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Abstract: *Unit commitment has been solved with many techniques viz., genetic algorithms evolution ary programming, simulated annealing, optimization and tab along with the combination of dynamic programming. This paper proposes Particle swarm Optimization combined with Lagrange Relaxation method (LR) for solving Unit Commitment (UC). The results from the test samples are compared with those obtained by Particle swarm optimization for solving unit commitment, Genetic algorithm and LR. The shortcoming of branch-and-bound is the exponential growth in the execution time with the size of UC problem. The integer and mixed integer methods adopt linear programming technique to solve and check for an integer solution. These methods have only been applied to small UC problems and have required major assumptions which limit the solution space. Lagrange relaxation for UC problem was superior to dynamic programming due to its faster computational time. However, it suffers from numerical convergence and solution quality problems. Furthermore, solution quality of LR depends on the method to update Lagrange multipliers. This paper proposes a new hybrid method for solving UC problem. The proposed method is developed in such way that a particle swarm optimization technique is applied to update Lagrange multipliers and improves the performance of LR method. To illustrate the effective of the proposed method, it is tested and compared to the conventional LR [69], GA [69], and HPSO [79] on 4 units test system and 10 units test system, respectively.*

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Performance Analysis of Multi-walled Carbon Nanotube Bundle Interconnects

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Abstract: *In this paper frequency and stability responses have been acquired at longer interconnect lengths for multi-walled carbon nanotube bundle (MCB). The performance of MCB interconnect is analysed using driver interconnect load while interconnect length increases stability increased. In order to illustrate the modelling of MCB interconnect to analyse frequency, ABCD matrix has been implemented. Further, it is noticed that the cut-off frequency of MCB interconnects is 20.1GHz for an interconnect length of 2mm. The results are validated with HSPICE simulations.*

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Case Study on Indian Power Transformer down Time Calculations and Oil Sample Testing with Furan Analysis

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Abstract: *The details of various interruptions occurred on the Power Transformers in Indian substations for a period of one year (2015-2016) is collected and a cause-wise analysis of the Power Transformers down time and availability calculations is carried out and presented in this paper. The various diagnostic tests to be conducted on the power transformer as per periodicity including transformer oil sample tests using furan analysis are also discussed. The periodic condition monitoring and maintenance schedules/preventive maintenance schedules being carried out on power transformers (PTR) by an electric power utility are discussed in this paper. The state of the art diagnostic tests such as FURAN Analysis and oil sample reports are presented, discussed and a typical oil sample test report and a FURAN analysis test report are also included. The data on failures of Power Transformers of an electric power utility for a period of 3-5 years is compiled and failure analysis is carried out which is very useful for the practicing engineers of electric power utilities to reduce the down time and enhance the life of Power Transformers, improving the revenue to a great extent.*

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A Novel Design Control and Simulation of Dc-Dc Power Buck Converter

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Abstract: *This research paper focuses especially the design and simulation of dc-dc converters. It contains the theoretical derivations and parameters equations with design and examples. Simulation results for buck, boost and buck-boost converters are shown with the chance of different input parameters. In this work we have analysed the equation of a buck, boost and buck-boost converters and proposed the design components and simulation of these converters. Changing the input parameters like inductance, capacitance and switching frequency in order to observe the changes in output voltage has been added with simulation graph. These parameters and their equations should be well understood before designing buck or boost or buck-boost converters. Simulation procedures in Orcad are also added in this paper. We have achieved performance parameter equations for these three regulators. It was completed the design and investigation of these three converters through mathematical examples and have generated the circuits for simulating buck, boost and buck boost converters. And also have attained different output voltage curve with the change of input parameters. The output graphs for all the converters are well fitted.*

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Hybrid Wind Generator PS Coordination and Control

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Abstract: *It is observed that wind energy is one of the world's fastest growing and emerging energy sources. The amount of power generated by wind energy usually depends on the wind speed. Because of the intermittent and fluctuating wind speed they are not suitable to micro grid applications unless proper power and energy management strategies are available in place. Hence a suitable and acceptable method of providing stable active, reactive power is necessary. Hybrid power systems are proposed basically to overcome the problems with various energy storage and power management strategies. Electrolysers (ELs) and Fuel cells (FCs) have high energy storage density that makes them suitable for long term energy storage systems. A closed loop control system is presented in this paper, which is well adapted to integrate the power management strategies. Two power management strategies are presented and simulated under normal and abnormal conditions. In this paper it has been observed that the "source following strategy" has better performance on the grid regulation than the "grid following strategy". With the long term energy storage systems under abnormal conditions, power is absorbed or compensated as per the system requirements.*

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Detection of Fluoride Content In Various Sources of Drinking Water at Marriguda Mandal of Nalgonda District, Telengana State by using Akvo Caddisfly Device

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Abstract: *Pure drinking water which is the world's best medicine is lacking in the lives of many residents at Marriguda Mandal of Nalgonda District, Telengana state. The presence of important trace element in drinking water has significant impact on human wellbeing. It is beneficial at low concentration and in excess causes dental and skeletal fluorosis. Mostly fluorosis is limited to rural areas and most of the inhabitants are least educated and are unaware of its adverse effects. The objective of the present study is to determine the suitability of drinking water in a region prone to high fluoride levels. Samples of drinking water from different sources i.e. hand pump, bore well, RO water, surface water etc. from different villages and its fluoride content are determined by the Akvo caddishly device. This device is cost effective, accessible, mobile phone – coupled technology that measures fluoride levels in water with in a short span of time using a mobile phone's camera sensor.*

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Transient Lightning and Switching over Voltages Mitigation in Indian Gas Insulated Substations Case Study

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Abstract: *This paper describes the case study of 500 kV and 750 kV GIS in India. The variations of VFTO magnitudes at different points in 500 kV and 750 kV GIS during different switching operations have been calculated and compared by using Mat lab / Simulink. The problem is the voltage magnifications due to reflections of fast switching and lightning surges at various junctions within the Gas Insulated substations (GIS). Thereby over voltages in GIS are more important than air-insulated substation. GIS have different specifications in proportion to air-insulated substations. Transformer failures related to lightning and switching are often reported. There are methods to suppress the stresses created by lightning and switching in the GIS. Due to the opening or closing of circuit breakers and disconnect switches in Gas Insulated Substations (GIS), especially in the pumped storage power stations, Very Fast Transient Over-voltages (VFTO) are generated. In this paper the effective factors on the level of VFTO is investigated and the beneficial approaches for the industry to find the optimum approaches for VFT mitigation is presented. These factors are include residual charges, resistance, spark resistance and entrance capacitance of transformer. This paper presents feasible methods for mitigation of the overvoltage magnitude. The advantages of the proposed methods are their simplicity and low cost for implantation along with producing minimal changes in the installed GIS in India.*

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Ensuring Interoperability in Generating and Integrating CDA for HIE based on Cloud Computing System

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Abstract: *Now-a-days effective Health Information Exchange (HIE) needs to be homogeneous for interoperable health information exchange between hospitals. In this paper, to ensure interoperability, CDA (Clinical Document Architecture) document generation and integration service has been provided. Interoperability between hospitals not only helps in improving patient safety and quality of care but also condense time and resources spent on data format conversion. The procedure to be carried for ensuring interoperability has enabled to generate CDA documents in open API service that is based on cloud computing in such a way that the hospitals are able to conveniently generate CDA documents. After CDA document generation, with respective to CDA document integration system integrates multiple CDA documents and make them to browse in chronological order. With the existence of this service, it becomes unnecessary for hospitals to train their personnel to generate, integrate, and view standard-compliant CDA documents.*

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Power Transfer Improvement without Any Alteration in Existing EHV AC Line with Parallel Composite AC-DC Transmission

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Abstract: *Enhancing power transfer capability of transmission lines without changing the line facilities is the need of the hour for practicing electrical engineers. As a solution to the problem, the possibility to load the EHV AC transmission lines very close to their thermal limits by transmitting usual ac along with dc super imposed on it is presented. The importance of proposed scheme is that the power transfer improvement is achieved without any alteration in the existing EHV ac line. The main goal is to gain the advantage of parallel ac–dc transmission and to load the line close to its thermal limit. The added dc power flow does not result in any transient instability. This gives the feasibility of converting a double circuit ac line into composite ac–dc power transmission line to get the advantages of parallel ac–dc transmission to improve stability and damping out oscillations. Simulation and experimental studies are carried out for the coordinated control as well as independent control of ac and dc power transmissions. No alterations of conductors, insulator strings, and towers of the original line are needed. The present situation demands the review of traditional power transmission theory and practice, on the basis of new concepts that allow full utilization of existing transmission facilities without decreasing system availability and security. Simultaneous ac–dc power transmission was first proposed through a single circuit ac transmission line. In these proposals Mono-polar dc transmission with ground as return path was used. There were certain limitations due to use of ground as return path. Moreover, the instantaneous value of each conductor voltage with respect to ground becomes higher by the amount of the dc voltage, and more discs are to be added in each insulator string to withstand this increased voltage. In this scheme, the dc power flow is point-to point bipolar transmission system. The proposed new methodology overcomes the problems and allows loading the line to its thermal limit, improving the revenue.*

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SVPWM Technique for Four-Pole Induction-Motor with Single Dc–Link Using a Quad Two-Level Inverter

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Abstract: *In this paper a new SVPWM technique is implemented along with multilevel inverter topology for a four-pole induction-motor drive; which is constructed using the induction-motor stator winding arrangement. In this process we are comparing with the conventional five-level inverter topologies so we are a single dc source with a less magnitude therefore, the power balancing problem are reduced. As this configuration uses a single dc source. And it also provides path for zero-sequence currents because of the zero-sequence voltages present at the output side, which will flow through the power electronic switches and motor phase winding. By using SVPWM Technique generates less harmonics distortion at output voltage and current and voltage utilization will more compare to other PWM technique. In this paper we are implementing SVPWM technique with the quad two level inverter topology is proposed and verified using the simulation results.*

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Big Data and the Internet of Things

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Abstract: *The Internet of Things is a growing network of everyday objects from industrial machines to consumer goods that can share information and complete tasks while you are busy with other activities, like work, sleep, or exercise. Soon, our cars, our homes, our major appliances, and even our city streets will be connected to the Internet–creating this network of objects that is IoT for short. Made up of millions of sensors and devices that generate incessant streams of data, the IoT can be used to improve our lives and our businesses in many ways. For healthcare, any device that generates data about a person's health and sends that data into the cloud will be part of this IoT. ACOs focus on managed care and want to keep people at home and out of the hospital. Sensors and wearable will collect health data on patients in their homes and push all of that data into the cloud. Electronic scales, BP monitors, SpO2 sensors, proximity sensors like beacon. Healthcare institutions and care managers, Big data Analytics tools, will monitor this massive data stream and the IoT to keep their patients healthy. And all of this disparate sensor data will come into healthcare organizations at an unprecedented volume and velocity. In a healthcare future predicated on keeping people out of the hospital, a health system's ability to manage all this data will be crucial. These volumes of data are best managed as streams coming into a big data cluster. As the data streams in, organizations will need to be able to identify any potential health issues and alert a care manager to intervene.*

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A Modified Genetic Algorithm based Scheduling for Time Triggered Systems

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Abstract: *Digital control systems usage in present day systems is increasing continuously, introducing additional functionality, reduced cost and weight, also allowing scalable reliability. Time triggered systems are highly reliable due its fault tolerant multiprocessor architecture. Schedulability in these systems requires optimization of processors and attached resources. Different optimization algorithms were investigated for better optimal solutions. After comparison it is proposed a modified approach called Adaptive dynamic genetic algorithm for the fault tolerant time triggered systems. From the simulation results it is observed that the proposed algorithm is suitable for multiprocessor architecture having time triggered approach.*

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Power Quality Improvement of Electrified Transportation by Using Fuzzy Control

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Abstract: *An electrical device such as transformer less hybrid series active filter is used to improve the power quality in single-phase systems with crucial loads. In this paper we are mostly going through energy management as well as power quality problems in the electric transportation. We also think about improving electric load connection to the grid. To overcome the drawbacks of the current harmonic distortions we implemented control strategy. This implementation is very crucial to avoid damages in sensitive loads from voltage disturbances, sags and swells due to the power system which is considerations in industrial implementation. This implementation on polyvalent hybrid topology will give permission to harmonic isolations as well as the compensation can absorb auxiliary power to grid. We are getting gains and delays for real time controller stability. This implementation is based on 2-kVA laboratory prototype and shows effectiveness of proposed implemented topology.*

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Analysis of Temporally Ordered Routing Algorithm (TORA) using NS2

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Abstract: *Mobile Ad hoc networks are of type infrastructure less wireless networks. MANETs are much useful in the application like disaster management, battle fields, rescue operations, virtual class rooms, and so on. Nodes in this type of network are kept on moving in any direction that is the reason why these networks are called Mobile Ad hoc Networks. MANETs are very easy to deploy where to there is no possibility to establish infrastructure networks. In this work, we analysed the efficiency of on-demand routing protocol TORA (Temporally Ordered Routing Algorithm). The key design concept of TORA is localization of control messages near the occurrence of topological change. We take network size 25 nodes, 50 nodes, 75 nodes and 100 nodes for evaluating QoS of TORA. We considered Quality of Services (QoS) metrics Delay, Energy, PDR (Packet Delivery Ratio) and throughput.*

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Multi Frequency Method of Fault Diagnosis Technique in Ana log Circuit to Avoid Ambiguity Set in Integer Coded Dictionary

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Abstract: *An efficient method to select an optimum set of test points for dictionary techniques in analog fault diagnosis is proposed. This is done by searching for the minimum of the entropy index based on the available test points. First, the two-dimensional integer-coded dictionary is constructed whose entries are measurements associated with faults and test points. The problem of optimum test point's selection is, thus, transformed to the selection of the columns that isolate the rows of the dictionary. Then, the likelihood for a column to be chosen based on the size of its ambiguity set is evaluated using the minimum entropy index of test points. Finally, the test point with the minimum entropy index is selected to construct the optimum set of test points. The comparison between the proposed method and other reported test points selection methods is carried out by statistical experiments. The main objective of this project is to show that he proposed method more efficiently and more accurately finds the locally optimum set of test points and is practical for multiple faults in large scale analog systems.*

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Video Watermarking Using DCT and DWT

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Abstract: *The main Objective of this paper is to develop digital watermarking system for authentication of video. Here we present implementation of a visible digital video watermarking system. The system is implemented using Discrete Cosine transform (DCT) and discrete wavelet transforms (DWT) and simulated using MATLAB/ Simulink.*

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Calculation and Comparison of Circuit Breaker Parameters for 132kv Bus Model Substation

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Abstract: *A circuit breaker has three ratings viz. breaking capacity, making capacity and short time capacity. These ratings define circuit breaker performance characteristics. A good understanding of ratings allows the electrical engineer to make a proper comparison of various circuit breaker designs. In this paper, the different ratings of circuit breaker were calculated. The other objective of this work was comparison between calculated ratings of existing circuit breaker and ratings in power world simulator. Further, the impact of time delay in circuit breaker was studied. These calculations were performed on 132kv transmission system. The results performed in power world simulator were shown better and information gained from the analysis can be used for proper relay selection.*

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Performance Evaluation of Concrete Blended with Rice Husk and Sugarcane Bagasse Ashes

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Abstract: *This paper presents the performance of concrete partially cement replaced with rice husk (RA) and bagasse ashes (BA) both in fresh and hardened state. The study the parameters included workability, compressive strength, and flexural strength of the concrete. The variables considered were of types of ash and its percentage replacement (0%, 10%, 20% 30% and 40%) by weight of cement content. Four different types of concrete specimens such as: concrete without replacement as reference, concrete replaced with RA, concrete replaced with BA, and concrete replaced with combination of RA and BA were cast. All the fresh and hardened properties of the concrete were obtained in accordance with Bureau of Indian Standards (BIS). The experimental results show that the workability of the concrete decreased with increase in percentage replacement. The strength properties of the combined RA and BA concrete were found to be increased up to 20% replacement because of different pozzolanic reactions when compared to the other specimens.*

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A Study on Bituminous Mix Properties Using Waste Polyethylene

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Abstract: *Bituminous mixes are most commonly used all over the world in flexible pavement construction. It consists of asphalt or bitumen (used as a binder) and mineral aggregate which are mixed together, laid down in layers and then compacted. Under normal circumstances, conventional bituminous pavements if designed and executed properly perform quite satisfactorily but the performance of bituminous mixes is very poor under various situations. Today's asphaltic concrete pavements are expected to perform better as they are experiencing increased volume of traffic, increased loads and increased variations in daily or seasonal temperature over what has been experienced in the past. In addition, the performance of bituminous pavements is found to be very poor in moisture induced situations. Plastics are everywhere in today's lifestyle and are growing rapidly throughout particularly in a developing country like India. As these are non-biodegradable there is a major problem posed to the society with regard to the management of these solid wastes. Low density polyethylene (LDPE) has been found to be a good modifier of bitumen. Even, the reclaimed polyethylene originally made of LDPE has been observed to modify bitumen. In the present study, an attempt has been made to use reclaimed polyethylene which has been obtained from plastic packets used in packaging of a very popular brand of milk named AMUL, in dry form with the aggregates like a fibre in a bituminous mix. Detailed study on the effects of these locally waste polyethylene on engineering properties of Bituminous concrete (BC), Dense Bituminous macadam (DBM) and Stone mastic asphalt (SMA) mixes, has been made in this study.*

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Experimental Investigation on Utilization of Recycled Materials in Stone Matrix Asphalt Mix

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Abstract: *SMA (stone matrix asphalt or stone mastic asphalt) was originally developed in European and German countries as impervious or highly durable wearing surface for bridge decks. But today, it is pavement surfacse of choice. Generally it consists of two parts, a coarse aggregate and a binder rich mortar. It is made by a mixture of crushed coarse and fine aggregates, stabilizer such as fibers or polymers, mineral filler, cement. In present research work, an attempt has been made to study the properties of SMA mixes with cellulose fiber and using recycled pavement material as well as slag in partial replacement of stone aggregates as coarse and fine aggregate grades. This research project was done to check the usage of recycled pavement material in SMA mixture by conducting Marshall test in the laboratory in which stability value and flow values was examined along with other properties of mixtures. Here IRC -SP-79 specification, aggregate gradation is taken for stone matrix asphalt. Binder used is 60/70 penetration grade bitumen. Binder content is varied as 4%, 5%, 5.5%, 6%, and 7% by weight of aggregates and fiber used is optimum fiber content at 0.3% by weight of aggregate.*

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Optimized Algorithm for Hiding Digital Text in a Colour Image Using FPGA

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Abstract: *In good olden days our predecessors have invented several ways of passing information in hidden form with other objects like papyrus scroll, cryptic etc. As generations crossed through earth's vein we are getting matured and invented several stenographic systems for message passing. The availability of internet in every corner of the universe forced the user of stenographic systems to invent and implement a better secured algorithm for encryption and decryption of text. Here framework will embed text string into digital colour images and the text that is embedded is perceptually invisible to Human Visual System (HVS). Many text stenographic systems are available that are passing the text with digital media as a form of message digest that can be hacked easily. Here this algorithm supplements the conventional algorithms. Instead of forming message digest first a 32-bit secret key will be provided by the encrypted and that is applied on the text with a hash function. On the other end if a snooper tries to perform the extraction of the text with a wrong secret key, he will not be succeeded. In the proposed framework the information of Red (R), Green (G) &Blue (B) values of the pixels of the host colour image are retrieved.*

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Virtualization Approach for Improving Elasticity of the Resources in Cloud Storage

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Abstract: *Cloud computing technology is one of the biggest milestones in leading us to next generation technology and Booming up business and IT field. It helps to overcome the problems of data loss, accessing data whenever needed and data security. Virtualization is the major technology that works with cloud computing. An actual cloud is implemented with the use of Virtualization technology. Virtualization in cloud computing is making a virtual image of the storage devices servers or network resources so that they can be used on multiple machines at the same time. The cloud infrastructure cost goes very high. Therefore, the concept of virtualization needs to be understood and implement in the cloud computing systems, which enables the user as well as the owners for the better and robust management and usage of the cloud. . In this paper the virtualization approach in the cloud computing environment are well presented with the concept of the cloud service models and how virtualization helps to improve elasticity of the resources such as network, server, storage, application and client in cloud computing environment. In addition to this, it gives a detailed review on open source virtualization techniques, challenges and future research directions.*

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Computer Networks Salvations and Defilements on WSN, Exasperate Contentions

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Abstract: *In the last decade, the amelioration of internet automation has led to the eloquent escalation in salvation and concealment contention for customers. This is the deliberation to how to impregnable computer network. In the network security, cybercrime automations have consort many good things by means of the internet: e-commerce, easy admittance to colossal stores of advertence perspective collaborative computing, e-mail and new approaches for broadcasting and enlightens dispensation to name a seldom. As with most automating advances, there is also another side: criminal hackers. Everyone around the world are anxious to be a part of this revolution, but they are afraid that some hacker will break into their web server and replace their logo with erotica scrutinize their e-mail purloin their credit card number from an on-line shopping site or lodge software that will secretly transmit their organizations enigma to the open internet. With these concerns and others, the ethical hacker can help. This paper describes conscientious computer jock: their adeptness, their persuasions and how they go about advocating their industries find and spigot up security holes. "Hacking" is the word that trembles everyone whenever it is said or heard by someone. Everyone born in this world with persuasions wants to be a hacker. But it is not a job of an infant or a matured person. A hacker needs an accomplished mind to hack contrivance. There are many rules that a person should learn to become a conscientious computer jock which is also called as insinuate testing. These rules comprehend acquaintance of HTML, Java Scripts, Computer equivocation, cleaving and crumbling, etc. In this paper we explain about the hacking capabilities and the operations of how it takes place in the check board and the disposition to be deciphered.*

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Design of High Speed Pipelined ADC with Digital Error Correction

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Abstract: *Analogue-to-digital converters (ADCs) are key design blocks in modern microelectronic digital communication systems. The increasing digitalization in all spheres of electronics applications, from telecommunications systems to consumer electronics appliances, requires analogue-to-digital converters (ADCs) with a higher sampling rate, higher resolution, and lower power consumption. Some of the important specifications of the ADCs include resolution and speed. There appears to be a need for designing an ADC with specifications of 10-bit resolution and 100M-Hz sampling rate. The pipeline ADC is a popular architecture for data conversion schemes which require a compromise between speed and accuracy. So the pipeline ADC with 2.5-bits/stage has been chosen as the architecture that meets the desired specifications. This paper deals with the design of the complete pipeline ADC with digital error correction. To obtain 10-bit output the circuit has been divided into 5 stages of each 2.5 bit stage except the last stage. Digital error correction circuit is used to relax the accuracy requirements on the later stages of a pipeline ADC. Specifications for every block used in the design are drawn from the overall specifications. The central block of the ADC is the gain stage used at the end of each 2.5-bit stage. To implement the gain stage we need an OTA. It implies the OTA must work at the required speed within the given accuracy. The gain boosted telescopic OTA with auxiliary amplifier as folded cascade architecture has been chosen, as it meets the desired specifications. Dynamic latched type comparators have been used in sub-ADC to decrease the power dissipation.*

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Big Data Analytics in Cloud Computing Environment

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Abstract: *This paper deals data processing in cloud computing environments using Big Data applications. It travels around some important areas of analytics and Big Data. One of the best qualities of cloud is sharing of resources and data into data centres on internet. At present various levels of services required to improve execution efficient-cy. In today's world Cloud is using big data processing technology to enhance application aggregation, data aggregation and data utilization. Cloud computing is best powerful technology for complex computing. It is used to eliminate expensive computing hardware, dedicated space, and software. Cloud computing is observed large growth in the scale of huge data. How to address big data is a great challenging and time- demanding task. It needs a large computational infrastructure for successful data processing &analysis. In this study the role of big data in cloud computing environment is reviewed. The definition, classification of big data with their characteristics and some discussions of cloud computing are expressed. The relationship between big data &cloud computing, storage systems, Hadoop technology are also elaborate-ed.*

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Comparative Analysis of Foundations in Black Cotton Soils

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Abstract: *The type of soil in Vidarba region, Maharastra (India) is mostly black cotton soil. Many structures constructed in such region are faced with sever cracks .It is observed that the subsoil consists of highly expansive soil (Black cotton soil)with high ground water table fluctuation ranging from 3m below ground level in rainy season to 8m deep below the ground level during the summer, making it one of the difficult subsoil condition. This subsoil condition causes formation of typical settlement cracks in the super structure. Hence it is top priority to evaluate proper foundation for any kind of structure for its long survival. The foundations to be laid in such type of soils are shallow foundation and deep foundation. Comparative analysis is conducted in view of economy for each type of foundation and economical one is recommended for a commercial building.*

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Experimental Investigation on Recon Fibre Reinforced Concrete in addition with Pozzolanic Materials

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Abstract: *From last many decades, usage of concrete has increased on large scale all over the world. Concrete ingredients used are becoming more costly day by day and also demand for the same is increasing widely all over. These ingredients are also extinguishing with time and some of them are also polluting the surrounding environment on large scale. One of the main ingredients is cement, while production of cement CO2 is emitted out. Replacement of cement by a pozzalanic material named Ground Granulated Blast Furnace Slag, which is by-product or waste product of steel manufacturing industries. Ground Granulated Blast Furnace Slag act as cost reducing ingredient and also increase many mechanical properties of concrete. Glass fibre of 12mm size was also added to increase both compressive and tensile strength of concrete. This concrete is more environments friendly and will give more life to concrete. To maintain workability for lower water/cement ratio and to maintain the effect of admixture added, Super plasticiser is added by trial and error method. Mechanical properties of pozzalanic concrete using silica fume show that this concrete gives better compressive strength and increases durability of concrete. Recon fibre also increases mechanical properties like compressive strength, flexural strength and split tensile strength of concrete. This page revives all details of the material, test to be conducted on concrete using the supplementary admixture and literature showing the advantages of using silica fume and recon Fibre in concrete in different proportion.*

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Enhancement of CDPSO Localization with Optimum References in WSN

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Abstract: *Localization is becoming an essential requisite for many applications in Wireless Sensor Networks. Finding precise node position is known as localization. Received signal measurements are used for the position estimation to perform localization. In this paper indoor localization of cooperative Wireless Sensor Networks, where nodes communicate through Ultra Wide Band signalling is considered. Distributed algorithms are scalable so appropriate for large cooperative networks. In cooperative networks information received from all nodes, some of the nodes give inaccurate information. Discarding the information from inaccurate nodes is known as censoring. The Cramer Rao bound is used to censor inaccurate nodes. Proposed method distributed PSO with CRB censoring better performs compared to other approaches.*

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A Survey on Clustering Concepts in Data Mining

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Abstract: *Clustering mechanism is the unsupervised classification of patterns observations data items or feature vectors into different clusters. This type of clustering problem has been addressed in many contexts and by researchers in different domains; this makes us to understand its broad appeal and usefulness as one of the steps analysing the whole data. As we all know that there will be huge assumptions in solving the clustering problems which makes it very complex and the clustering process became very slow. Here in this paper we are concentrating on overview of pattern clustering methods from a statistical pattern recognition perspective with a goal of providing useful advice and references to fundamental concepts accessible to the broad community of clustering practitioners. We also present the study of different clustering algorithms as well as the current development in these mechanisms.*

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Fault Detection in Under Ground Cables

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Abstract: *The objective of this paper is to determine the distance of underground cable fault from base station in kilometres. The underground cable system is a common practice followed in many urban areas. The proposed system is to find the exact location of the fault. This paper uses the standard concept of Ohms law i.e., when a low DC voltage is applied at the feeder end through a series resistor (Cable lines), then current would vary depending upon the location of fault in the cable. In case there is a short circuit (Line to Ground), the voltage across series resistors changes accordingly, which is then fed to an ADC to develop precise digital data which the programmed microcontroller of 8051 family would display in kilometres. This paper is assembled with a set of resistors representing cable length in kilometres and fault creation is made by a set of switches at every known kilometre to cross check the accuracy of the same. The fault occurring at a particular distance and the respective phase is displayed on a LCD interfaced to the microcontroller. Further this paper can be enhanced by using capacitor in an ace circuit to measure the impedance which can even locate the open circuited cable, unlike the short circuited fault only using resistors in DC circuit.*

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Structural Behaviour of Self Compacting Reinforced Concrete Beams Based on Various Transverse Reinforcement Ratio

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Abstract: *Nowadays, the use of Self–compacting Concrete (SCC) is spreading worldwide because of its very attractive properties in the fresh state as well as after hardening. Several attempts have been made in the recent years to study about the strength and behaviour of SCC. However, only few studies have been conducted on the strength and behaviour of structural elements made on Reinforced Self Compacting Concrete beam. Therefore, an attempt has been made in the present investigation to study the effect of the strength and behaviour of structural beam elements subjected to flexure. The strength of members in the design and behaviour of shear strength is an important issue in structural design. There are several modes of failure in concrete structural members like shear, flexure. Due to the fragility of concrete structures, shear failure is one of the most important and undesirable modes of failure. Hence, Reinforced Concrete (RC) members are used to resist shear failure. Because of the complexity of shear mechanisms of reinforced concrete beams and various influencing parameters, it is difficult to establish an overall model to provide accurate estimation of shear strength. Hence, exact values of shear strength are unknown. Several empirical formulas are proposed in the literature and concrete codes for the prediction of RC beams resistance. The American Concrete Institute (ACI) and Indian Standard (IS) code has been widely used in structural design. In the last decades, numerous works have been undertaken to improve the ability of empirical formula to predict the shear behaviour of concrete structural member. Shear reinforcement is used in concrete beam to preserve the overall integrity of the concrete contribution allowing the development of additional shear forces.*

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A Review of Soft Computing Technique in Smart Grid Using Phasor Measurement Unit

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Abstract: *To improve power system monitoring and performance, continued load growth without a corresponding increase in transmission resources has resulted in reduced operational margins. The conventional system is not able to satisfy the time-synchronized requirement of power system. In wide area protection the time scale in which the dynamics of the disturbances affect the power network. Time depends on the nature of the disturbances. . Phasor Measurement Unit is enabler of time–synchronized measurement, it communicate the synchronized local information to remote station. Introduce the computational intelligence in smart grid fault detection can be very useful due to the uncertainty of occurrence of fault in the power system. Fuzzy implementation for the fault detection in smart grid is considered as a base for the self-healing feature of the smart grid. It gives a complete simultaneous snapshot of the power system in this paper we discuss about advanced technology of Phasor Measurement Unit.*