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Authors: Vaibhav S. Kale, Prashant R. Patil, Ravi Khatri

Paper Title: Unified Power Flow Controller for Power Quality Improvement

Abstract: The Unified Power Flow Controller (UPFC) is a typical FACTS (Flexible AC Transmission Systems) device that is the most sophisticated and complex power electronic equipment and has emerged for the control and optimization of power flow and also to regulate the voltage in electrical power transmission system. This project propose the real, reactive power and voltage control through a transmission line by placing UPFC at the sending end using computer simulation. The control scheme has the fast dynamic response and hence is adequate for improving transient behavior of power system after transient conditions. When no UPFC is installed, real and reactive power through the transmission line cannot be controlled. A control system which enables the UPFC to follow the changes in reference values like AC voltage, DC voltage and angle order of the series voltage source converter is simulated. In this control system, a generalized pulse width modulation technique is used to generate firing pulses for both the converters. Simulations will be carried out using MATLAB/PSCAD software to check the performance of UPFC.

Keywords: UPFC, FACTS, Power Quality, Transient, Control.

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2.

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Paper Title: Short Term Load Forecasting Using ANN Considering Weather Information and Price

Abstract: Short-term load forecast is an essential part of electric power system planning and operation. Forecasted values of system load affect the decisions made for unit commitment and security assessment, which have a direct impact on operational costs and system security. Conventional regression methods are used by most power companies for load forecasting. However, due to the nonlinear relationship between load and factors affecting it, conventional methods are not sufficient enough to provide accurate load forecast or to consider the seasonal variations of load. In recent years multilayered feed forward (MLFF) networks with back propagation learning algorithm have been extensively applied to short term load forecasting (STLF) in electric power systems with very good results. This paper presents an artificial neural network based approach for short-term load forecasting that uses temperature, humidity, wind speed and price as inputs. The results are compared by calculating mean Absolute percentage error (MAPE). The suitability of the proposed approach is illustrated through an application to the actual load data of the Kerala System for regulated system and Lanco Kondapilli for deregulated system.

Keywords: Artificial neural network, back propagation algorithm, deregulated system and short term load forecasting.

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3.

Authors: **Shailendra Kumar Singh, Narinder Kumar**

Paper Title: **Optimizing the EDM Parameters to Improve the Surface Roughness of Titanium Alloy (Ti-6AL-4V)**

Abstract: The purpose of this paper is to optimize the EDM parameters to get the better surface finish on the Titanium alloys Ti- 6AL- 4V. The continuous advancement of the alloy is fulfilling the demand of the industry but for advance material like Titanium alloys Ti- 6AL- 4V partially adopted by industries cause of the difficulties in machining. Non Conventional machining process like Spark Erosion Electrical Discharge Machining (EDM) is the process of machining these hard alloys. The designs of experiment for machining process control parameter are Pulse Time (Ton), Pulse off (Toff) and Current (I), while tool used for machining alloy Ti- 6AL- 4V was Copper (Cu) electrode. The experimental results have given optimal combination of input parameters which give the optimum surface finish of the EDM machined surface.

Keywords: Surface Roughness, Taguchi, ANOVA, Current, EDM.

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4.

Authors: **E. K. Vellingiriraj, P. Balasubramanie**

Paper Title: **A Novel Approach for Recognition of Tamil Characters in Vehicle Number Plate based on Region Pixel through Surveillance Camera**

Abstract: Character segmentation is an important step in License Plate Recognition (LPR) system. There are many difficulties in this step, such as the influence of image noise, plate frame, rivet, the space mark, and so on. In natural language Number plate, there are additional problems faced to recognize the characters including Tamil characters. This work proposes a novel algorithm for character segmentation of degraded license plate based on Region pixel. Firstly, this algorithm performs preprocessing on the license plate, such as size normalization, uneven illumination correction, contrast enhancement, incline correction and edge enhancement; then, locates the character segments according to the vertical projection and merges the character segments that belong to the same character or splits the wider character segment according to the prior knowledge; finally, segments the characters according to the number and the width of the character segments. And last step convert the Tamil characters to equivalent English alphabets. This process is performed by the algorithm which takes the digital image as an input and gives textual form of license plate characters as an output. There are several methods used to perform this process.

Keywords: (LPR).

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14-17

Authors: **S. Suresh, S. Anbuarasan, M. Balachandhar**

Paper Title: **Structural Analysis and Modeling of Tonpilz MEMS Acoustic Transmitter for High Power Imaging System**

5.

Abstract: Imaging System requires High Power Transmitter with reduced weight. We carry out the design of Acoustic Transmitter. Since miniaturization in the field of sensors and transducer is rapid, a MEMS acoustic transmitter is designed. The transmitter along with the structural analysis and modeling has done by Intellisuite for the tonpilz type design, where PZT Sol gel is used as active material. The simulation studies are done by varying the head mass, tail mass and length of the active material. This transmitter is suitable for the underwater target detection, object classification and localization, sub bottom profiling and ocean topography applications. The proof of concept of Tonpilz type acoustic transmitter is achieved in this work.

Keywords: Intellisuite, PSPICE, Piezoceramic transducer, Tonpilz, Equivalentcircuit, Radial vibration.

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3. On identification and analysis of fundamental issues in Terfenol-D transducer modeling.Marcelo J. Dapino_, Frederick T. Calkins,yand Alison B. Flatauz AEEM Department, Iowa State University, Ames, IA 50011
4. Analyses and measurements of acoustically matched, air-coupled tonpilz transducers Charles Desilets2, Greg Wojcik1, Lisa Nikodym1, Kai Mesterton3
5. Terfenol-D sensor design and optimization Frederick T. Calkins and Alison B. Flatau Aerospace Engineering and Engineering Mechanics Department, Iowa State University, Ames, IA 50011
6. Analysis and computation of smart material for intelligent transduction. R.Satishkumar, A.Vimalajuliet. International journal of emerging technology and application in engineering, technology and sciences (IJ-ETA-ETS)date: July ’09-dec ‘09

6.

Authors:	**Sruti V. S, Bobin K. Mathew**
Paper Title:	**Classification of Transmission Line Faults Using Discrete Wavelet Transform**

Abstract: This paper proposes a method for classifying Transmission Line faults using Discrete Wavelet Transformation. The method utilizes current travelling wave generated during the fault conditions. Wavelet Transform is used for extracting these transient signals. An algorithm for classification of Transmission line faults is presented which utilizes the modulous maxima of current travelling waves as threshold values. The method is more efficient and accurate for classifying and phase selection of Transmission Line faults.

Keywords: Transmission line, DWT, Daubechies6 wavelet (Db4), Modulous maxima.

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Authors:	**Gagandeep Singh, Er. Rupinder Singh, Gurpreet Singh Batth**
Paper Title:	**Utilization of Rice Bran Oil and Ethanol blend in a Single Cylinder DI Diesel Engine**

Abstract: The two alarming situations in front of the engineers worldwide are to reduce the load on conventional fuels and to reduce the ever increasing environmental pollution. This study is aimed to investigate experimentally the performance and exhaust emission characteristics of a diesel engine when fuelled with blends of rice bran oil and ethanol, over the entire range of load on the engine. The experiments were conducted on widely used diesel engine without major modifications. Experiment results shows that at full load condition, the RBO, RBO90, RBO80and RBO70 blends produce 1.9%, 4.1%, 7.8% and 6.2% higher brake thermal efficiency than sole Diesel respectively. The level of CO decreases with 26% at full load conditions with RBO80. The % of hydrocarbons and carbon dioxide emissions increases with the increase of ethanol in blends but the hydrocarbon emissions were still lower than that of diesel fuel. The use of rice bran oil as fuel in diesel engine is recommended for the use in diesel engine with ethanol blends on the basis of the results obtained from the study.

Keywords: Biodiesel, Rice Bran Oil, Transesterification, Ethanol, Performance, Emissions.

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Authors:	**N. P. Sonaje, M. B. Chougule**
Paper Title:	**Experimental Analysis of Washing and Rubbing Fastness of Cotton Fabric Processed With Recycled Wastewater Using Different Dyes**

Abstract: Water is essential natural resource for sustaining life and environment, which is always thought to be available in abundance and free gift of nature. Textile industries are one of the major consumers of water and disposing large volumes of effluent to the environment. The textile industry utilizes abundant water in dyeing and finishing processes. There is need to adopt economical practices for the use of water in textile industries. It has been estimated that 3.5 % of the total cost of running the industry is required for water utilization in textile industry. In India textile units are developed all over the country in the form of small industrial estates. Textiles are manufactured to perform a multitude of functions. They are produced to a range of specifications using a variety of fibers, resulting in a complex waste or effluent. Textile waste occurs in a variety of forms throughout production process. Therefore, the cost of water is rising steeply and the textile mills, which need a large quantity of water, have started taking measures to conserve and recycling. Wastewater can be recycled and used in textile wet processing. This paper focuses on Experimental analysis of Washing and Rubbing fastness of cotton fabric processed with recycled municipal wastewater using different dyes. Fastness values of fabric are compared with fabric processed with recycled water, ground water and municipal tap water.

Keywords: Washing fastness, rubbing fastness, cotton fabric, recycled municipal wastewater.

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8. **29-37**

	Authors:	**A. Sasirekha, P. Ganesh Kumar**
	Paper Title:	**Support Vector Machine for Classification of Heartbeat Time Series Data**

Abstract: Support vector machine (SVM) is a relatively new machine learning tool and has emerged as a powerful technique for learning from data and in particular, for solving binary classification problems. In the literature several statistical-learning paradigms have been proposed for developing a heart rate variability analysis. SVM classification decision which is based on the feature extraction of Heart rate variability (HRV) analysis. Results on a real-life long-term ECG recordings of young and elderly healthy dataset show that understandable SVMs provide a anticipating tool for the prediction of heart rate signals, where as a feature of heart have been generated. Feature extraction describes a pattern or relationships between input features and output class labels directly from the data. This paper proposes several different techniques for Feature extraction. The accuracy is obtained by using the comparison of HRV features.

Keywords: QRS detection algorithm, heart rate variability (HRV), support vector machine (SVM).

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9. **38-41**

	Authors:	**Subramanian Anbazhagan, K. Somasundaram**
	Paper Title:	**Cloud Security through Key Agreement**

Abstract: Cloud computing refers to applications and services that run on a distributed network using virtualized and accessed by common internet protocols and networking standards. It is distinguished by the notion that resources are virtual and limitless and that details of the physical systems on which software runs are abstracted from the user. Cloud Computing is a style of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet. Users need not have knowledge of, expertise in, or control over the technology infrastructure in the "cloud" that supports them. The concept incorporates technologies that have the common theme of reliance on the Internet for satisfying the computing needs of the users. Cloud Computing services usually provide applications online that are accessed from a web browser, while the software and data are stored on the servers. As the users deal their sensitive data to clouds i.e. public domains, the major hurdles for cloud adoption are lack of

security and access control. The main setback is that the insecure information flows as service provider can access multiple virtual machines in clouds. So it is necessary to build up proper security for cloud implementation. Therefore the main aim of this paper is to provide cloud computing security through secret key using a public-key scheme. This article proposes a protocol which enables two users to establish a secret key using a public-key scheme based on discrete logarithms. The protocol is secure only if the authenticity of the two participants can be established.

10.

Keywords: Cloud computing, cloud security, cloud services, domains, public-key scheme secret key ,virtualized resources, virtual machines.

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Authors:	**M. S. M. Aras, M. F. Basar, S. S. Abdullah, F. A. Azis, F. A. Ali**
Paper Title:	**Analysis Movement of Unmanned Underwater Vehicle using the Inertial Measurement Unit**

Abstract: In an Unmanned Underwater Vehicle (UUV), the craft's orientation, velocity, and gravitational forces are the important measurements to make sure the UUV's navigation system can be fully operated. Most of the current UUV system uses pressure sensor to control the navigation of the craft. But the pressure sensor is not suitable to use in getting UUV's navigation data or information. Without the information on UUV's navigation, there are difficult to monitor the movement of UUV. This project introduces a methodology to analyze the position, velocity vector and the rotation of UUV, using a combination of accelerometer and gyroscope. This sensing unit is a combination of Accelerometer ADXL-345 sensor and Gyroscope ITG-3200 sensor called as an Inertial Measurement Unit (IMU). The measurement unit will be programmed by an Atmel microcontroller (Arduino UNO) to get the important data of the UUV's navigation system. The real-time data of sensing unit communicated with Serial Chart and Processing software to get output graph and real-time 3D animation of UUV. From this project outcome, the movement of UUV is monitored in processing software. Hence, the navigation system of a UUV such as auto depth control, left-right movement and obstacle avoidance purpose can be improved.

Keywords: Unmanned underwater vehicle, navigation system, auto depth control, inertial measurement unit.

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Authors: **P. Sandhya, S. Poovizhi, R. Varun**

Paper Title: **SHA-Based Mutual Authentication in Long Term Evolution Using Hyper Elliptic Curve Cryptography**

Abstract: Elliptic Curve Cryptography is used in Long Term Evolution (LTE) which uses large key size which fails to provide security against Denial of Services (DOS). In this paper, SHA-based mutual authentication is proposed for Long Term Evolution using Hyper Elliptic Curve Cryptography which is public key cryptography which helps in secure communication for exchanging the data. This reduces the communication complexity and computation cost using smaller key size which results in less processing time and provides security against DOS. Finally, simulation result shows the processing time between the ECC and HECC using MATLAB.

Keywords: LTE, ECC, HECC, DOS.

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Authors: **Jagadeesh Patil, M. S. Aspalli**

Paper Title: **Universal Integrated Smart Power Supply**

Abstract: This paper presents an integrated power system, in order to supply the energy demand of a low power residence, using photovoltaic modules and wind turbines. The main functions of the proposed system are the management of the load and the energy stored, in order to increase the autonomy and the integration of all equipment necessary for the system operation, reducing the complexity and cost. The system contains well defined concepts for continuous energy supply providing a good balance between various energy sources and their capabilities and load requirements. This system fulfills the small power ratings cover local demands, e.g. one house or a small village in remote location. Multiple inputs for renewable energy are proposed in combination with high-efficiency power electronic circuits. The proposed system uses both the on grid and off grid technologies and effectively managed

among them.

Keywords: DC-DC converter, H bridge Inverter, MOSFETs, SCR.

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Authors:	**Milind K. Wagh, Nilesh R. Jagtap, Sagar S. Jadhav, Pritamsing J. Salunkhe**
Paper Title:	**Passport Authentication System Using Visual Secret Sharing Scheme**

Abstract: Passport is the most important document while travelling from one country to another. It is the proof of citizenship of the country. Hence, it needs to keep it secure from unauthorized use. Authentication and security of passport and checking integrity of a person on the airport is a challenging task. In order to face this challenge of security and privacy, we propose a method based on Visual Secret Sharing (VSS) for black and white passport number. In our proposed method we have a new approach in VSS with improved contrast. Two shares of a passport number image are formed by applying 2-out-of-2 VSS. Shares generated will contain only black and white pixels, which make it difficult to retrieve any information about the image by viewing only one share. However, when the two shares are overlaid the secret image is retrieved.

Keywords: VSS.

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14. **60-64**

Authors:	**Neelam Mehala, Anand**
Paper Title:	**IIR Multiple Notch Filter Design for Power Line Interference Removal**

Abstract: Digital IIR notch filter has been employed in various practical applications i.e in communication systems, medical science and many more to eliminate unwanted narrowband interference with known frequency. It is difficult to filter noise from these signals, and errors resulting from filtering can distort a biomedical signal. This paper presents the design technique and implementation of IIR multiple notch filter by the application of suitable pole placement technique. This technique gives the fixed value of parameters used to design of multiple IIR notch filter for removal this harmonically distributed kind of interference.

15.

Keywords: Digital IIR multiple notch filters, mathematical modeling, Pole Re-position.

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Authors: **Neelam Mehala**

Paper Title: **Online Condition Monitoring to Diagnose Bearing Faults of Induction Motor**

Abstract: With advances in digital technology over the last years, adequate data processing capabilities is now available on cost effective hardware platforms, to monitor motors for variety of abnormalities on a real time basis. For this reasons, this paper is devoted to investigate the application of advanced signal processing techniques for detection of bearing fault of induction motor. In this study, bearing faults are successfully diagnosed by monitoring the stator current of motor. The experiments were conducted 0.5 hp, 415V induction motor. Virtual instrument was developed with help of programming in software 'LabVIEW'. This instrument was used to obtain the current spectrum of stator current. The different spectrums of healthy motor and faulty motor were than compared to diagnose the bearing faults. The experimental results show that FFT based spectral analysis may be adequate to indicate the presence of bearing faults of induction motors. This may be achieved at a relatively low cost, eliminating need for expensive spectrum analyzers.

Keywords: Fault detection, signal processing, motor current signature analysis.

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Authors: **Vairam T, Kalaiarasan C**

Paper Title: **Interference Aware Multi-path Routing in Wireless Sensor Networks**

Abstract: Routing in wireless sensor networks has been considered an important field of research over the past decade. Wireless sensor network essentially consists of data Sensor Nodes and Video Sensor Nodes, which senses both sound and motion of events. Single path routing protocol has been used for route discovery. Though this protocol reduces computation complexity and resource utilization, there are some disadvantages like reduced network throughput, network performance, increased traffic load and delay in data delivery. To overcome these drawbacks a new protocol called Interference Aware Multi-path Routing(IAMR) is proposed to improve the reliability of data transmission, fault-tolerance, Quality of Service. Here, the traffic intersection spread out among the multiple paths. This technique is applied between the sources and sink to reduce routing overhead and energy consumption. The proposed protocol is simulated using NS2.

Keywords: Wireless sensor network (WSN), Single path routing, Mulitipath routing , path cost.

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Authors: **Kashan Hussain, Aleem Ahmed, Muhammad Junaid Rabbani, Abdullah Ali, Muhammad Khawaja Kashif Masood**

Paper Title: **Application of Nanoelectronics in Medical Science: A Case Study**

Abstract: The recent advancements in the field of nanoelectronics have revolutionized the perfomance of electronic devices. Miniaturization of electronic components and as a result devices has reached the new world of single particle which is benefiting the human being in almost every walk of life. In this paper we present the brief introduction to nanoelectronics and majorly its application in the field of medical science.

Keywords: Nanorobotics, Nanobioelectronic, Quantum Capacitance limit, tunneling transistor.

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19.

Authors: **SaekaRahman, Mohammad Anwar Rahman**

Paper Title: **Assessment of Hamilton-Tompkins Algorithm in a Noise Contaminated ECG Signal Environment**

Abstract: Accurate parameter detection is an integral part of the use of electrocardiograms (ECGs) in the healthcare system. Advances in technology have resulted in a considerable increase in the number of portable, battery-operated ECG instruments including in developing countries. A growing concern is that algorithms that diagnose ECG signals should be tested at different noise circumstances to verify the reliability and efficiency of signal interpretation. This study investigates the accuracy and reliability of the Hamilton-Tompkins (H-T) algorithm using simulated ECG signals generated by MATLAB. In the test process, randomly generated noises are added to simulated input signals to represent high-level noise contaminated surroundings. Simulation results show that the H-T algorithm accurately detected peaks every time it has been tested. The algorithm's performance parameter diagnosis for the Q, R and S wave peak was 99.96%, 99.97% and 99.93% accuracy, respectively. Test results indicate the H-T algorithm is reliable in detecting accurate ECG signals even in aggravated noise surroundings.

Keywords: ECG, Hamilton-Tompkins algorithm, Noise, QRS complex.

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Authors: **Abdelelah Kidher Mahmood, Bassam Fadel Mohammed**

Paper Title: **Design Optimal Fractional Order PID Controller Utilizing Particle Swarm Optimization Algorithm and Discretization Method**

Abstract: In this paper particle swarm optimization algorithm has been applied todesign fractional order PID (FOPID)controllerwhich has five unknown parameters to be tuned anddetermined by minimizing a given integral of timeweightedabsolute error (ITAE) as a fitness function. The FOPIDcontroller is a special kind of PID controller

20.	whose derivative andintegral order are fractional rather than integer which has fivetuned parameters.The closed loop systemfor a plant cascadedwith the fractional order PID (PIλDμ) controller has been builtutilizing a MATLAB/Simulink with application of intelligentoptimization algorithm (PSO) asa sub program. The parameters of the PIλDμcontroller found and injected to the controller structure. Themain specification of this method is that the all five parameters of PIλDμcontroller have been found directly without spreading the steps ofcomputation. The results showperformance of the closed loopsystem with FOPID controller is much better than integer orderPID controller for the same system and with better robustness.ThePIλDμcontroller converted to z domain and programing toPIC microcontroller using new PIC Development Board. **Keywords:** Fractional calculus,fractional order controller, fractional order toolbox for MATLAB, MATLAB Simulink, PSO algorithm, continued fractionexpansion(CFE), programing in C,PIC microcontroller. **References:** 1. V. Shekher, P. Rai, and O. Prakash, "Tuning and Analysis of Fractional Order PID Controller," International Journal of Electronic and Electrical Engineering, vol. 5, no. 1, 2012, pp.11-21. 2. D. Xue, C. Zhao, and Y. Q. Chen, "Fractional Order PID Control of a DC Motor with Elastic Shaft: A Case Study," Proc. of the 2006 American Control Conference, Minneapolis, Minnesota,USA, June 14-16, 2006, pp. 3182–3187. 3. K. J. Åström and T. Hägglund, PID controllers: Theory, Design and Tuning, 2nd Edition, Instrument society of America,1995. 4. A. Oustaloup, F. Levron, B. Mathieu, and F. M. Nanot, "Frequency-Band Complex Non integer Differentiator: Characterization and Synthesis," IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications, vol. 47, no. 1, 2000, pp.25-39. 5. I. Podlubny, "Fractional-order systems and PIλDμ controllers," IEEE Transactions on Automatic Control, vol. 44, no. 1, 1999, pp.208-214. 6. B. M. Vingare, I. Podlubny, L. Dorcak, and V. Feliu, "On fractional PID controllers: A frequency domain approach," IFAC workshop on digital control. Past, present and future of PID control, 2000, pp.53-58. 7. Y. Q. Chen, and K. L. Moore, "Discritization schemes for fractional order differentiators and integrators," IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications, vol. 49, no. 3, 2002, pp.363-367. 8. C. A. Monje, B. M. Vingare, V. Feliu, and Y.Q. Chen, "Tuning and auto-tuning of fractional order controllers for industry applications," Control Engineering Practice, vol. 16, no. 7, 2008, pp.798-812. 9. C. A. Monje, A. J. Calderon, B. M. Vingare, Y. Q .Chen, and V.Feliu, "On Fractional PIλ Controllers: Some Tuning Rules for Robustness to Plant Uncertainties," Nonlinear Dynamics, vol. 38, 2004, pp.369-381. 10. R. Caponetto, G. Dongola, L. Fortuna, and I. Petráš, Fractional Order Systems: Modeling and Control Applications, Series A, vol. 72, Singapore: World Scientific Series on Nonlinear Science, 2010. 11. D. Baleanu, J. A. T. Machado, and A. C. J. Luo, Fractional Dynamics and Control, USA: Springer Science+Business Media, LLC, 2012. 12. C. A. Monje, Y. Q. Chen, B. M. Vinagre, D. Xue, and V. Feliu, Fractional-order Systems and Controls: Fundamentals and Applications, London: Springer-VerlagLondon Limited, 2010. 13. V. Gazi, and K. M. Passino, Swarm Stability and Optimization, German: Springer Science + Business Media, 2011. 14. D. Valério, Ninteger v. 2.3 Fractional control toolbox for MatLab, Lisboa: Instituto Superior Técnico da Universidade Técnica de Lisboa, 2005. Available: 15. M. A. Al-Alaoui, "Al-Alaoui Operator and □-Approximation for Discretization of Analog Systems," SER.: ELEC. ENERG. vol. 19, no. 1, 2006, pp.143-146. 16. M. A. Al-Alaoui, "Novel digital integrator and differentiator," IEE Electronics Letters, vol. 29, no. 4, 1993, pp.376-378. 17. H. Sheng, Y. Q. Chen, and T. S. Qiu, Fractional Processes and Fractional-Order Signal Processing, London: Springer-Verlag London Limited, 2012. 18. PIC Development Board (EasyPIC v7 Development System). Available:http://www.mikroe.com.	**87-92**
21.	**Authors:** **Gayathri Vijayachandran, Bobin K. Mthew** **Paper Title:** **Arcing Fault Detection in Feeder Networks Using Discrete Wavelet Transform and Artificial Neural Networks** **Abstract:** Arcing faults in transmission networks are caused when a current carrying conductor makes an unwanted electrical contact with ground or is temporarily short circuited with another current carrying conductor through a high impedance medium. High impedance arcing faults restricts the flow of current below the detection level of the protective devices and hence cannot be detected by conventional relays. In this paper a new method is proposed for the detection of arcing faults due to leaning trees in medium voltage (MV) networks. Firstly, an arc model is developed in order to reproduce the fault circumstances. Then based on a fault detection algorithm the fault features are extracted using a signal processing technique called Discrete Wavelet Transform (DWT).The proposed algorithm is implemented in a simple MV network to identify the faulty phase and in a feeder network to identify both the faulty phase and feeder. Further the results obtained using DWT is validated with the help of Artificial Neural Networks (ANN).The results obtained above validate the effectiveness of the proposed methodology. **Keywords:** Absolute sum, Arc model, Artificial Neural Networks, Back propagation algorithm, Discrete Wavelet Transform, High impedance fault, Universal Arc representation. **References:** 1. M.Sedighizadeh,A.Rezazadeh, Nagy I.Ekalashy,'Approaches in High Impedance fault detection–A chronological Review', Advances in Electrical and ComputerEngineering,10(3),114-128,2010. 2. Pieter H.Schavemaker and LouVanderSluis,'An improved Mayr-type model based on current–zero measurements', IEEE Transactions on Power Delivery, 15(2), 580-584, April 2000. 3. J.L.Guardado, S.G.Maximov, E.Melgoza, J.L.Naredo and P.Moreno, 'An improved arc model before current zero based on the combined Mayr and Cassie arc models', IEEE Transactions on Power Delivery,20(1),138-142,January2005. 4. Karel Jansen van Rensburg, 'Analysis of Arcing Faults on Distribution lines for Protection and Monitoring', Ph.D Thesis, School of Electrical and Electronic Systems Engineering, Queensland University of Technology, 2003. 5. Nagy Ibrahim Elkalashy, 'Modeling and Detection of High Impedance Arcing Fault in Medium Voltage Networks', Ph.D Thesis, Department of Electrical and Communications Engineering, Helsinki University of Technology, Finland,2007. 6. H. A. Darwish and N. I. Elkalashy, "Universal Arc Representation Using EMTP", IEEE Transactions on Power Delivery, 20(2), 772-779, April 2005. 7. Nagy. I. Elkalashy, M. Lehtonen, H. A. Darwish, A.M.I. Taalab and M. A.Izzularab,'A Novel Selectivity Technique for High Impedance Arcing Fault Detection in Compensated MV networks', European Transactions on Electrical Power, ETEP, in press, published online on 23	**93-102**

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Authors:	**Kenneth Sorle Nwizege, Michael MacMammah, Godson Ivbuobe Ikhazuangbe**
Paper Title:	**Performance Evaluation of Path loss Exponents on Rate Algorithms in Vehicular Networks**

Abstract: One of The major drawbacks for mobile nodes in wireless networks is power management. Our goal is to proposed a power control scheme that will help minimize energy consumption by appropriate adjustment of vehicles transmitter power, reduce network congestion, improve quality of service and collision avoidance in vehicular networks. Some of the importance of power control (PC) is improving spatial reuse, and increasing network capacity in mobile wireless communications. In this simulation we have evaluated the performance of existing rate algorithms compared with ACARS. Results show that ACARS is able to minimize the total transmit power in presence of of propagation processes and mobility of vehicles, by adapting to the fast varying channels conditions more than the other algorithms, which has some applications in vehicular networks as mentioned above.

Keywords: DSRC; Wireless networks; Mobility;Vehicular communication; IEEE 802.11p;Rate adaptation ;Propagation, Power control, Fading.

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23.	**Authors:**	**Johevajile K. N. Mazima, Michael Kisangiri, Dina Machuve**
	Paper Title:	**Deign of Low Cost Blood Pressure and Body Temperature Interface**

Abstract: The objective of this work is to design a non-intrusive, accurate, and low cost biomedical sensor interface for processing blood pressure and body temperature vital signs. The work purposely deals with the signal conditioning of two vital signs: blood pressure, and body temperature. Blood pressure uses the methodology of Photoplethysmography to continuously monitor the systolic and diastolic blood pressure. Body temperature is dealt with a LM35 sensor. We design the signal conditioning interface based on the type of sensor such as pressure and temperature sensor. We simulate the circuits in proteus software to verify their accuracy. We also simulate the temperature simulated results in MATLAB to verify the linearity of the temperature against the output voltage. Therefore, the design will be useful for the patient monitoring systems which use microcontroller for interpretation before sending them to the doctor through mobile phone network assisted by GSM/GPRS modem.

Keywords: Blood pressure uses the methodology of Photoplethysmography.

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