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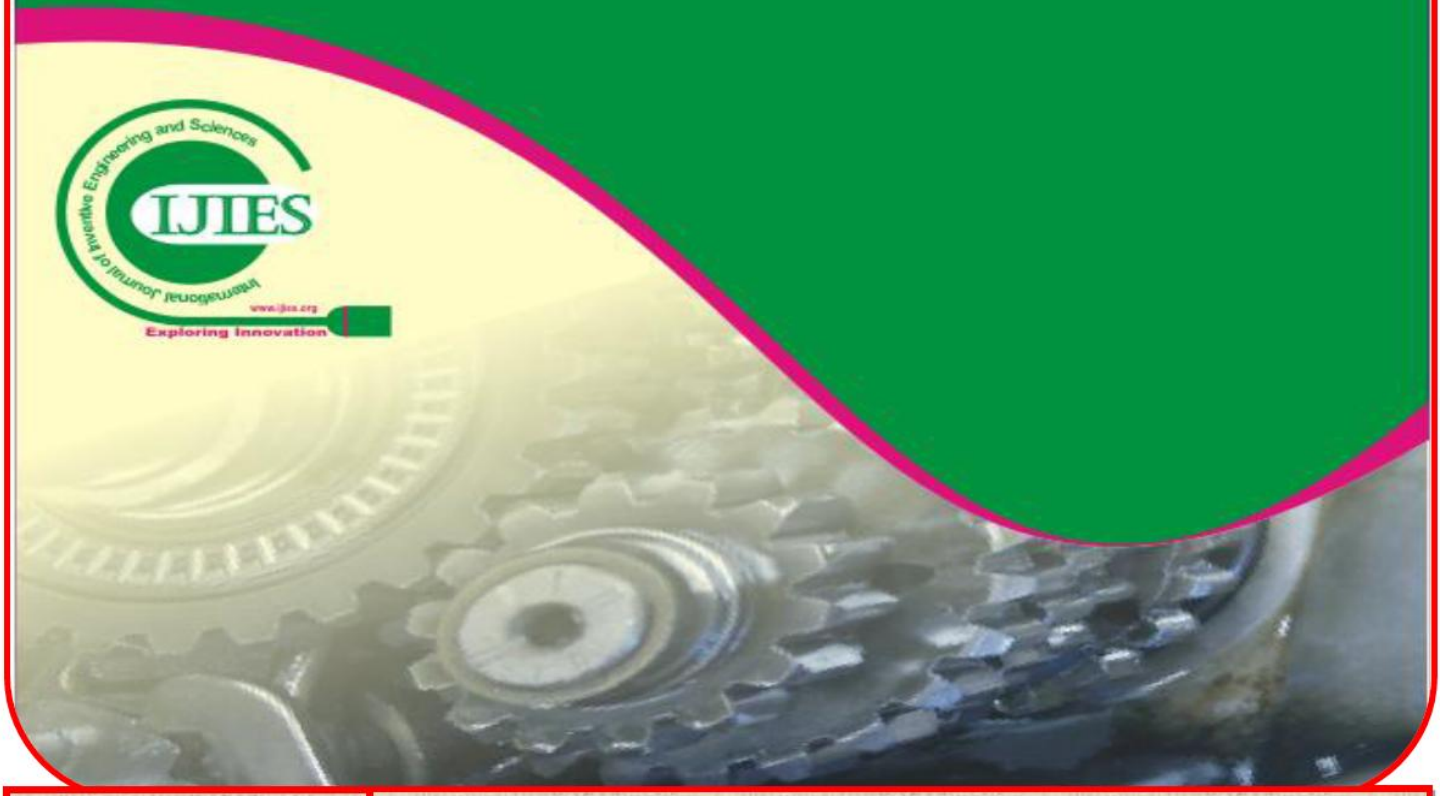

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**1.**

**Authors:** Wasim Akram Mandal, Sahidul Islam

**Paper Title:** Fuzzy Inventory Model for Power Demand Pattern with Shortages, Inflation under Permissible Delay in Payment


**Abstract:** In this paper fuzzy inventory model for non deteriorating item with power demand pattern, shortage under partially backlogged, inflation and consideration of permissible delay in payment is formulated and solved. Fuzziness is applying by allowing the cost components (holding cost, shortage cost, etc) and inflation. In fuzzy environment it considered all required parameter to be pentagonal fuzzy numbers. The purpose of the model is to minimize total cost function.



**Keywords:** Inventory, Power demand, Fuzzy number, Shortages, Inflation, Pentagonal fuzzy number.


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**1-7**


**2.**

**Authors:** Mrunal Pathak, N. Srinivasu

**Paper Title:** Analysis of Multimodal Biometric System Based on Level of Fusion


**Abstract:** User authentication is essential to provide security that restricts access to system and data resources. Biometric system refers to an recognition of legitimate user based on a feature vector(s) derived from their distinguishing behavioral and/or physiological traits like face, finger, speech iris, gait, etc., Research on biometrics has distinctly increased for solving identification and authentication issues in forensics, physical and computer security , custom and immigration, However, unimodal biometric system is not able to satisfy acceptability, speed, and reliability constraints of authentication in real applications due to noise in sensed data, spoof attacks, data quality, lack of distinctiveness, restricted degree of freedom, non-universality and other factors. Therefore multimodal biometric systems are used to increase security as well as better performance. This paper presents overview of different multimodal biometric (multibiometric) systems and their fusion techniques with respective their performance.



**Keywords:** Biometrics, Unimodal, Multimodal, Fusion, Multibiometric Systems.


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**8-11**


**Authors:** S. Seenivasan, S. Singaravelu

**Paper Title:** Transient Performance of a Multi-Terminal HVDC Transmission System Feeding Very Weak AC Networks

**3.**

**Abstract:** This paper analyses transient performances of a line commutated converter (LCC)-multi-terminal HVDC transmission system (MTDC) feeding very weak AC networks with firefly algorithm based optimal proportional-integral (PI) controller for rectifiers and inverters control and hybrid reactive power compensators (RPC's) at inverters AC side. The hybrid compensator is attained by equally mixing the fixed capacitor (FC) with any one of the following compensators: synchronous compensator (SC); static var compensator (SVC); static synchronous compensator (STATCOM). The MTDC transmission system model is simulated using Matlab. The transient performances of hybrid RPC's (FC+SC, FC+SVC and FC+STATCOM) are investigated during various fault conditions and the results are compared with the performance of the SC, SVC and STATCOM to focus the supremacy of the hybrid compensators. The simulation results authorize that the equal combination of FC and STATCOM has a steady and fastest response. The outcomes also demonstrate the superiority of the firefly algorithm based optimal PI controller over the conventional PI controller. The harmonic existing in the inverter AC side is also observed under steady state operation to assure the quality of power supply.

**Keywords:** Firefly algorithm, Hybrid RPC, MTDC, PI controller, Very weak AC system.

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**4.**

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| **Authors:** | **Dushyant Bansal** |
| **Paper Title:** | **Automated Measurement of Dielectric Constant at Microwave Frequencies** |

**Abstract:** Techniques based on the perturbation of cavity resonators are commonly used to measure the permittivity and loss tangent of samples of dielectric and ferrite materials at microwave frequencies. This paper presents an automated cavity perturbation technique at X-band using VNA and LabVIEW software. Being an automated procedure, the method is repeatable and avoids any uncertainties of manual measurements. The computer algorithm for automation of data acquisition and the overall experimental setup is presented. This paper overcome the assumptions error made in the theory of these techniques and provides estimates of the errors of measurement arising from them. And implement an empirical formula based on practical experiments to correct the relative difference.

**Keywords:** Cavity perturbation, Dielectric constant, loss tangent, LabVIEW.

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**5.**

**Authors:** **Abdul-Wahid A. Saif, Abdallah AL-Shihri, Moustafa Elshafei**

**Paper Title:** **Design of Robust Nonlinear Control for Nonlinear Networked Control Systems**

**Abstract:** In this paper, the design of nonlinear observer-based dynamic controller for Nonlinear Networked Control Systems (NNCS) will be presented on the assumption that there exist packet loss between the sensor and the controller and between the controller and the actuator. The existence of the packet loss will be presented by different linear function of a stochastic variable satisfying a Bernoulli random binary distribution. The formulation of NNCS problem will be reduced to solving Linear Matrix Inequality (LMI). Finally, a simulation example will be presented to demonstrate the effectiveness of the proposed LMI approach.

**Keywords:** Nonlinear Control, Nonlinear Networked Control Systems, Robust Design, LMI, Communication Networks.

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**6.**

**Authors:** **Jaswant Singh**

**Paper Title:** **Conversion of into Liquid Hydrocarbons**

**Abstract:** Various methods of degradation of polymeric material polyolefin waste, polystyrene, waste wax, PVC, rubbers, PET bottles etc are reported in the literature. There are two types of catalytic degradation of plastics, one is liquid phase catalytic degradation and other method is where hydrocarbon vapours are passed over catalyst bed to decompose the long chain hydrocarbons into small ones. We have done both type of work but in the present paper catalytic plastic degradation was done in the liquid phase only. The purpose of our research was to catalytic degradation of waste plastics .We found that polyolefins gave the maximum yields of the fuel oil. Aluminosilicates with different cations were used as catalysts and were activated before putting them in the reactor and then waste plastics was added. In some cases combination of the two or more catalysts was used for degradation of the plastics. In most of the cases the conversion of waste plastic to fuel oil remained between 95 – 100 % ml liquid / 100 gm of plastic waste. We carried out repeated experiments using the same quantity of waste plastic and the catalyst and found that similar quantities of the oil was obtained. In case of waste plastic containing paper stickers and heated to 300 to 460oC, very low quantity of liquid oil collected which was blackish in colour .Non condensable gases were formed in good quantity. Black carbonaceous residue was also obtained. Carbonaceous residue was pressed into pellets The pellets when ignited by flame burned till completely turned into ash. Calorific value, ASTM Distillation and complete

GC-MS analysis of liquid obtained from product carried out. We used the oil to run the scooter as well as house generator. No problem was arised in running both of them.

**Keywords:** Catalysts, liquid hydrocarbons, waste Plastics.

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**7.**

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| **Authors:** | **Amruta D. Aphale, P. M. Kamde** |
| **Paper Title:** | **Feature Extraction from Video for Cricket Highlight Generation** |

**Abstract:** The most rapidly increasing component in various sectors is Internet Technology. Where the information is being searched based on images, texts, videos. There exists various methods to extract the required information from the raw data which is in the form of text and images. There are multiple information engines where a detailed information could be searched, one of popularly being used is Goggle. However those uses text based retrieval techniques. Being a critical aspect of Information technology Video has become most synergistic channel of communication in day to day life. The steep volume of video makes it enormously hard to browse through and get the interned information. Its difficult to search a video without knowing the content. Performing manual analysis on the contents and then indexing the same is pretty time consuming task. The apparent alternative is to detect such events in the video automatically. The initial step in automating the system is event detection which breaks the massive volume of video into smaller chunks called shots. Our work aims in identifying such events. Although attempts have been made to detect shot boundaries having smooth transitions in between the results are not as successful as for detecting shots separated by hard cuts. Performing a detailed analysis on Video database is most complex task as it involves number of variables and having the analysis done on larger number of such requires larger amount of memory with huge computation power. A video database describes what actually happens in a video and its perception by a human which is termed as Semantic Information. These days we have number of national and international broadcasting news, sports channels, which continuously broadcasts the sport events happening around the globe. There are many of them who have got a special devoted segment for sports. Even having these facilities one cannot remain stuck to watch the complete event due to certain time constraints. With this as an encouragement to find a technique that could provide desired results, this report discusses various algorithms and sketches out the main features that have been so far used for event detection. Here an systematic approach has been attempted to extract prominent features and events in Cricket sport videos. This system also classifies every event sequence into a concept by sequential association mining.

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**Keywords:** Browsing, event detection, multimedia, retrieval, semantic gap, video database.

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| **Authors:** | **V. Harish, R. Srinivas Rao** |
| **Paper Title:** | **Simulation of SRF Control Based Shunt Active Power Filter and Application to BLDC Drive** |

**Abstract:** With the widespread use of harmonic generating devices, the control of harmonic currents to maintain a high level of power quality is becoming increasingly important. An effective way for harmonic suppression is the harmonic compensation by using active power filter. This paper presents a comprehensive survey of active power filter (APF) control strategies put forward recently. It is aimed at providing a broad perspective on the status of APF control methods to researchers and application engineers dealing with harmonic suppression issues. Many control techniques have been designed, developed, and realized for active filters in recent years. This paper presents different types of Synchronous reference frame methods for real time generation of compensating current for harmonic mitigation and reactive power compensation. All the techniques are analyzed mathematically and simulation results are obtained which are being compared in terms of its compensation performance with different parameters under steady state condition. The three techniques analyzed are the Synchronous Reference Frame Theory (SRF), SRF theory without synchronizing circuit like phase lock loop (PLL) also called instantaneous current component theory and finally modified SRF theory. Simulation results are obtained under sinusoidal balanced voltage source balanced load condition. The comparison and effectiveness of all the methods is based on the theoretical analysis and simulation results obtained with MATLAB employing a three phase three wire shunt active filter test system. Finally shunt active power filter is applied to BLDC drive application. THD plots with and without APF is presented.

**Keywords:** Component; Synchronous Reference Frame, instantaneous current component theory, Modified SRF, Active Filter, Harmonics. BLDC Drive.

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