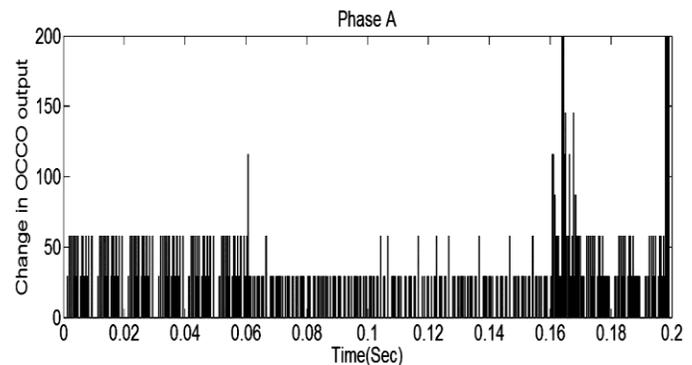


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Management & Information Technology

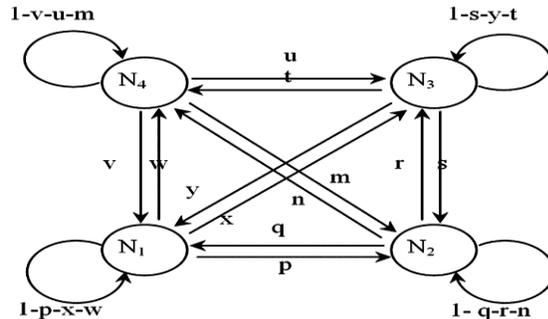
- 681 The Strategic Analysis of Driving Forces Determining Success for a Console Manufacturer in the Console Market – the Positioning Strategy of Nintendo** Though the console market is steadily growing, the competition is very fierce. A variety of key factors get involved in the successful survival in the console market, including branding, cost, exclusive games, innovation, online feature, price, reliability, third parties support, technology, and timing. However, it is not easy to sustain the competitive advantages in an extremely fierce console market with other strong competitors for a long time, if there is not any change to console manufacturers. In addition to keep the original strength, Nintendo applies the most appropriate strategy to sustain its competitive advantages in the next generation.
- S J Lee, Grace T R Lin & W H Yu

- 685 Comparison of Signal Processing Techniques for Power Quality Disturbances** This paper presents the comparison of the signal processing techniques for detecting the power quality disturbances using wavelet transform and Mathematical Morphology Transform (MMT). Different power system events such as voltage sag and voltage swell are simulated and processed to the signal processing techniques, thereby generating wavelet coefficients from wavelet transform for db5 mother wavelet, and by using Structural Element (SE) from the MMT. The power system events are classified based on the value of energy and standard deviation for the samples of power system events. This paper also deals with the merits and demerits of the signal processing techniques. The classified output showed that the MMT had more compatibility for identifying the events than the wavelet transform.



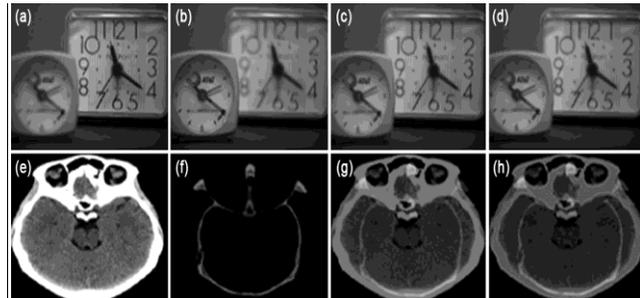
P Hariramakrishnan & S Sendilkumar

- 690 **Bandwidth Based Handover Probability Analysis For Beyond 4G Heterogeneous Wireless Networks** Global information access to the users which is an important role is provided by Wireless communications. Particular handoff algorithm considering Bandwidth is the main challenge for movement of mobile nodes among heterogeneous wireless networks which happens in Beyond 4G (B4G) wireless networks. Bandwidth based handover algorithm for four heterogeneous wireless networks is presented in this paper. Handover probability is evaluated. The handover probability in B4G wireless networks depends on the traffic load, threshold and networks bandwidth. It is observed that handover probability is reduced with increasing threshold at constant traffic load. Also it is observed that under equal bandwidth case handover probability does not vary much even traffic load increases.



A L Narayana, V B S S I Dutt & G S Rao

- 694 **Multimodal Image Fusion Using Curvelet and Genetic Algorithm** Fusion of medical images of different modalities always have the advantages in efficient medical diagnosis. Magnetic resonance image (MRI) and Computed tomography (CT) are two such modalities which are generally fused. The existing fusion techniques like wavelet transformation have proved to be good in medical image fusion. However, they have failed to retain certain quality with respect to the original. In this paper, one such attempt is made by combining the popular Curvelet transformation (CTr) with Genetic Algorithm (GA). The performance of the proposed method is evaluated in terms of PSNR and MSE while fusing MRI and CT of brain. The results clearly mentioned that the Curvelet and the GA-CTr combination have better fusion characteristics than the WT.



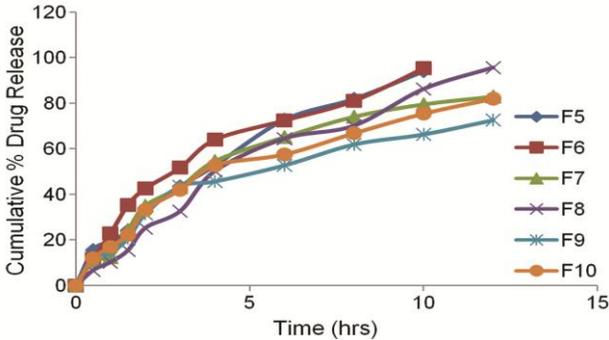
N K Gattim, V Rajesh, R Partheepan, S Karunakaran & K N Reddy

S & T and Industrial Research

- 697 **Small Area Implementation for Optically Reconfigurable Gate Array VLSI: FFT Case** Optically reconfigurable gate array (ORGA) is a type of multi-context field programmable gate array (FPGA) that has achieved a nanosecond-order reconfiguration capability as well as attaining numerous reconfiguration contexts. Its high-speed dynamic reconfiguration capability is suitable for dynamically changing the function of multi-core processor. ORGA system has high dependability in a radiation rich environment and the development is progressing towards better radiation tolerance. In this paper, size minimization of the ORGA-VLSI is the main concern to maintain its high dependability; hence wire complexity needs special consideration during floor planning. A case of Fast Fourier Transform (FFT) is shown to demonstrate the effectiveness of circuit modification by implementing dynamic reconfiguration for area optimization. Results show that, compared with a normal FFT configuration, the minimum wirelength is reduced 5.5% for a 32-point FFT implementation.

Ili Shairah Abdul Halim, Fuminori Kobayashi, Minoru Watanabe, Koichiro Mashiko & Ooi Chia Yee

CONTENTS

- 701 **Formulation and In-vitro Evaluation of Famciclovir Floating Tablets by Melt Granulation Technique**
- Famciclovir is an antiviral drug agent which undergoes rapid biotransformation to the active antiviral compound penciclovir, which has inhibitory activity against herpes simplex virus. Famciclovir has shorter half life, having maximum absorption in stomach and upper part of the small intestine. Due to low gastric retention time, the bioavailability of drug is low as the large portion of drug misses the absorption window. The purpose of this study was to develop a gastroretentive floating drug delivery system to prolong the gastric residence time after oral administration, at a particular site and controlling the release of drug especially useful for achieving controlled plasma level as well as improving bioavailability. Formulations were designed using Gelucire 43/0, Geleol, and Compritol 888 ATO, hydroxypropyl methylcellulose (HPMC K100M) as release-retarding polymer. Sodium bicarbonate and Citric acid as a gas former. Swelling ability, floating behavior and drug release studies were conducted in simulated gastric fluid. The tablets showed acceptable physicochemical properties. Drug release from the tablets was dependant on the ratio and type of the polymer used in the formulation. The *in-vitro* drug release pattern of Famciclovir floating tablets was fitted to different kinetic models which showed highest regression for Zero order kinetics with Erosion mechanism.
- 
- | Time (hrs) | F5 (%) | F6 (%) | F7 (%) | F8 (%) | F9 (%) | F10 (%) |
|------------|--------|--------|--------|--------|--------|---------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 10 | 25 | 15 | 10 | 10 | 10 |
| 4 | 20 | 50 | 35 | 30 | 25 | 25 |
| 6 | 30 | 65 | 50 | 55 | 45 | 45 |
| 8 | 40 | 75 | 65 | 70 | 55 | 55 |
| 10 | 50 | 85 | 75 | 80 | 65 | 65 |
| 12 | 60 | 95 | 85 | 90 | 70 | 70 |
- S Velivela, K Abbulu, M Vinyas & N B Pati
-
- 707 **Isolation and Characterization of Neutral Proteases Producing Soil fungus *Cladosporium* sp PAB2014 Strain FGCC/BLS2: Process Optimization for Improved Enzyme Production**
- Proteases account for nearly 60% of the industrial enzyme market and have wide applications. Present study has been designed to isolate and screen protease producing fungi from various soil samples of Jaipur region and optimum physico-cultural conditions for enhanced protease production from selected isolate was also investigated. Isolate fungi were screened by growing them onto skim milk agar plates and the zone of proteolysis was noted. Isolate FGCC/BLS2 showed maximum hydrolysis capacity when compared to wild type positive reference strain *Aspergillus flavus*. Molecular Characterization of the FGCC/BLS 2 isolate confirmed it as *Cladosporium* sp. PAB 2014 strain FGCC/BLS 2 (Submitted to Gen Bank: Accession Number KU 752193)The highest enzyme activity was obtained with production media at 120 hour (60.9 ± 2.17 U/mg protein) with 2% inoculums (63.19 ± 0.59 U/mg protein), pH 7 (63.77 ± 2.45 U/mg protein), dextrose as the carbon source (63.9 ± 1.63 U/mg protein) and tryptone as a nitrogen source (66.9 ± 2.34 U/mg protein). The optimum conditions for protease assay was found to be 40°C temperature, 1.5% substrate concentration and at pH 7.0 respectively.
- J Saxena, N Choudhary, P Gupta, M M Sharma & A Singh
-
- 714 **Optimization of Process Parameters for Gossypol Detoxification in Chemical Disinfected Cottonseed Cake by Mixed Fungal Culture during Solid State Fermentation**
- A solid state fermentation process was optimized for gossypol detoxification in cottonseed cake using mixed fungal culture, *Candida tropicalis* with *Saccharomyces cerevisiae*. The effect of fermentation conditions such as initial moisture content, inoculum level, incubation temperature and period were tested for gossypol reduction in chemical disinfected cottonseed cake. The results showed optimized parameters for gossypol detoxification in chemical disinfected cottonseed cake were 70% moisture content, 15% inoculum level, 30° C incubation temperature and 48 h incubation period. The detoxification rates of free gossypol and bound gossypol were 79.5 and 59.5 percentage respectively. The increase in crude protein (13.4 %) and decrease in crude fibre (11.4 %) was recorded in fermented cottonseed cake. This is the first report on solid state fermentation for bound gossypol and crude fibre reduction in cottonseed cake.
- V Mageshwaran , A Shaikh & A A Kathe

720 **Optimal and Novel Hybrid Feature Selector for Accurate Prediction of Heart Disease**

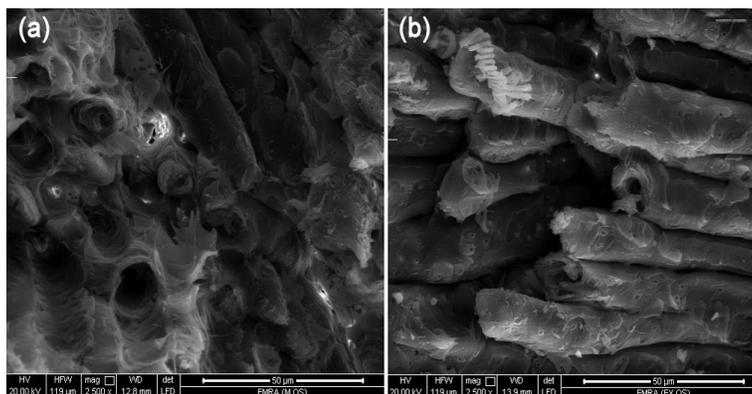
Heart disease prediction is designed to support clinicians in their diagnosis. We proposed a method for classifying the heart disease data. The patient's record is predicted to find if they have symptoms of heart disease through data mining. It is essential to find the best fit classification algorithm that has greater accuracy on classification in the case of heart disease prediction. Since the data is huge attribute selection method used for reducing the dataset. Then the reduced data is given to the classification. In the investigation, the hybrid attribute selection method combining CFS and Filter Subset Evaluation gives better accuracy for classification. We also propose a new feature selection method algorithm which is the hybrid method combining CFS and Bayes Theorem. The proposed algorithm provides better accuracy compared to the traditional algorithm and the hybrid algorithm CFS and Filter Subset Evaluation.

		True class	
		Positive(P)	Negative (N)
Predicted Class	Positive (+)	True Positive Count (TP)	False Positive Count (FP)
	Negative (-)	False Negative Count (FN)	True Negative Count (TN)

B Amarnath & S A A Balamurugan

Waste Utilization725 **Nanoporous Activated Carbon from Olive Stones Wastes**

Activated carbon was prepared from stones of olive stones (*Egazi olive cultivar sp.*) using chemical and physical activation methods. Olive stones wastes (OSW) were first charred at 275°C for different lengths of time (30 - 60 min) without or with different ratios of KOH, ZnCl₂, or H₃PO₄ followed by activation at different temperatures (600, 700 and 800°C) for different lengths of time. The effect of charring process on yield and iodine number (as a measure of surface area) of produced char was studied. The effect of the different parameters of the activation processes on yield, iodine number, and surface area was also studied. Microstructure of the obtained activated carbon was studied using scanning electron microscopy (SEM). Activated carbon with highly porous structure could be prepared using the different activation methods. The results showed chemical activation produced activated carbon with higher surface area than in case of using physical activation. Surface area values of 351, 464, 740, and 993 m²/g were recorded for physically activated carbon, KOH-, H₃PO₄-, and ZnCl₂-chemically activated carbon, respectively. Pore volume values were 0.28, 0.28, 0.4, and 0.61 cc/g for physically activated carbon, KOH-, H₃PO₄-, and ZnCl₂-Chemically activated carbon, respectively, while average pore diameter values of 31.5, 24.1, 21.6, and 24.6 Å were recorded for physically activated carbon, KOH-, H₃PO₄-, and ZnCl₂-chemically activated carbon, respectively.



Y M N Rwayhah, M L Hassan & M R Shehata

CONTENTS

Short Communication

- 733 **FPGA Lead-lag Compensator Design for Industrial Control Systems** This paper presents the design of Field-Programmable Gate Array (FPGA)-based lead-lag compensator for industrial applications. The compensator parameters have been tuned using a crossover frequency method and the digital design of the filter has been developed using bilinear transform. The responses obtained with the designed compensator show high performance in the industrial systems.



R A Osornio-Rios

Author-Reader Platform

- 737 **Instructions to contributors (Extended)**
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