

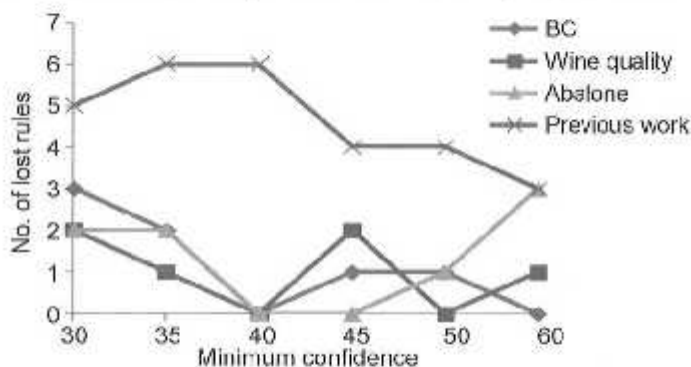
CONTENTS

Management & Information Technology

399 Hybrid Evolutionary Algorithm for Preserving Privacy of Sensitive Data in Quantitative Databases

K Sathiyapriya & G S Sadasivam

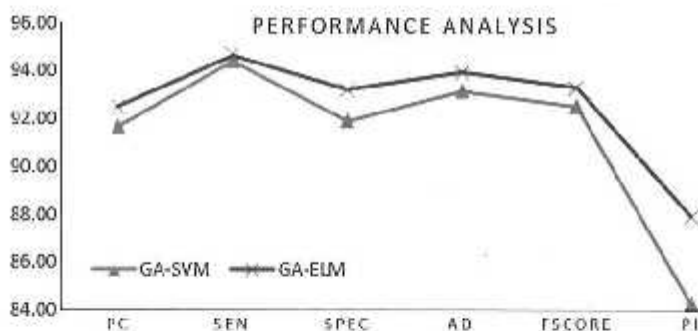
Association mining technique has been widely used in various applications. However, the abuse of this technique may lead to the discovery of sensitive information. Researchers in recent times have made effort for hiding sensitive association rules. But most of the techniques proposed are generally applied in binary dataset. It suffers from side effects of lost and ghost rule. Most business, medical and scientific domains has quantitative value for its attributes. Limited research is available for hiding sensitive information in quantitative data.



404 A Performance Analysis of GA-ELM Classifier in Classification of Abnormality Detection in Electrical Impedance Tomography (EIT) Lung Images

R Prabu & R Harikumar

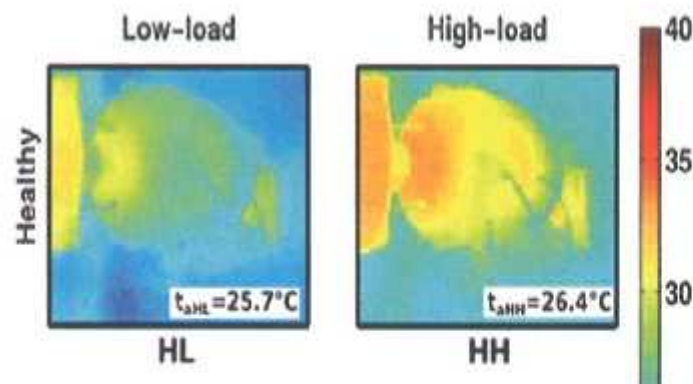
This article presents the performance analysis of Genetic Algorithm (GA) - Extreme Learning Machine (ELM) classifier by comparing with Genetic Algorithm (GA)-Support Vector Machine (SVM) classifier for detecting the abnormalities from Electrical impedance tomography images. The machine learning algorithms, Extreme Learning Machine (ELM), and Support Vector Machine (SVM) are used for classification and a Genetic Algorithm (GA) is used as feature selector to reduce the high dimensional features needed for classification. The Gray Level Co-occurrence Matrix (GLCM) and intensity histogram are used for texture feature extraction from the EIT images.



S & T and Industrial Research

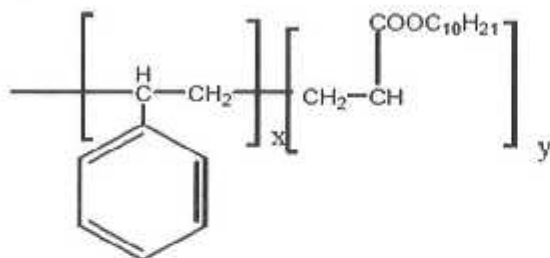
- 412 **Low-Cost Thermographic Analysis for Bearing Fault Detection on Induction Motors**
 This paper presents a low-cost thermography approach to detect faults in ball-bearings on induction motors under industrial operating conditions. The proposed methodology applies a thermal differential technique to make the failure detectable even in changing environmental conditions. The obtained results prove that around of the 5°C of thermal difference between the ball-bearing temperature and the surrounding environment is an indicative of a failure.
 J A R Nunez, L M Velazquez, I A M Hernandez, R J R Troncoso & R A O Rios

- 416 **Organoleptic Evaluation of *Tungrymbai* and *Bekang*, Naturally Fermented Soybean Foods, Produced by using Selected Species of *Bacillus***
Tungrymbai and *bekang* are naturally fermented soybean foods of Meghalaya and Mizoram, respectively. Three strains of *Bacillus* viz. *Bacillus subtilis*, *B. licheniformis* and *B. pumilus* previously isolated from naturally fermented products *tungrymbai* and *bekang*, and were used singly and/or in mixture as starter culture(s) for the production of *tungrymbai* and *bekang* under optimized laboratory conditions. None of the strains of *Bacillus* used singly as starter could produce organoleptically acceptable *tungrymbai* and *bekang*.



R Chettri & J P Tamang

- 420 **Multifunctional Additive Performance of Acrylate-Styrene Copolymers**
 Homo polymers (two homopolymers and six copolymers) of isodecyl acrylate and isoocetyl acrylate and their respective copolymers with styrene were synthesized using benzoyl peroxide as initiator and characterized by spectral analysis, gel permeation chromatography and thermogravimetric measurements. Pour point (PP), viscosity index (VI) and anti wear (AW) performance of the additive doped base oils were evaluated to check the efficiency of the polymers as pour point depressant (PPD), viscosity index improver (VII) also known as viscosity modifier (VM) and anti wear (AW) additives for lube oil. A comparison of the above performances between the respective homopolymers and the copolymers is also analysed and reported. Analysis of different properties indicates that the isodecyl acrylate polymers have better lube oil additive property than that of isoocetyl acrylate polymers. VI, PPD and AW values of the polymers doped in base oils depend on the nature of mineral base oils, polymer types and also on the concentration of the additives.



P Ghosh, S Talukder, M Upadhyay & T Das

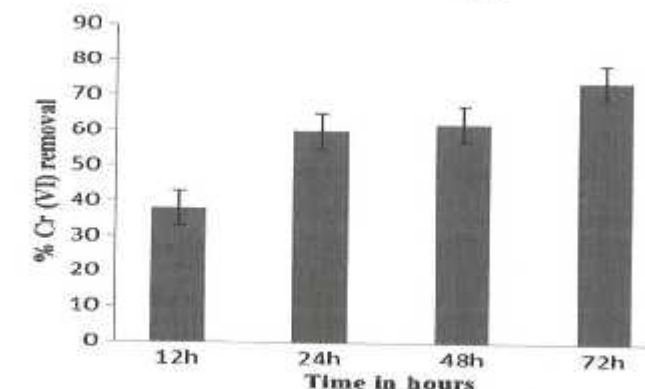
- 427 **A Low Power and Low Latency Inter Carrier Interference Cancellation Architecture in Multi User OFDM System**

The Inter carrier interference (ICI) and inter block interference (IBI) are the two signal degradations on multi user orthogonal frequency division multiplexing (OFDM) communication system. In this paper, a novel methodology is proposed for the detection and reduction of ICI in received OFDM symbols. The vector precoding technique is proposed to reduce the ICI and more bandwidth efficient than other precoding techniques to eliminate ICI. The precoding architecture is used to determine the level of interference in the received OFDM symbols. The proposed interference cancellation architecture is designed and implemented in VLSI for analyzing its low power, bit error rate and energy consumption with conventional methods.

M N Kumar & G T Arasu

- 432 **Bioreduction of Cr (VI) by Biosurfactant Producing Marine Bacterium *Bacillus Subtilis* SHB 13**

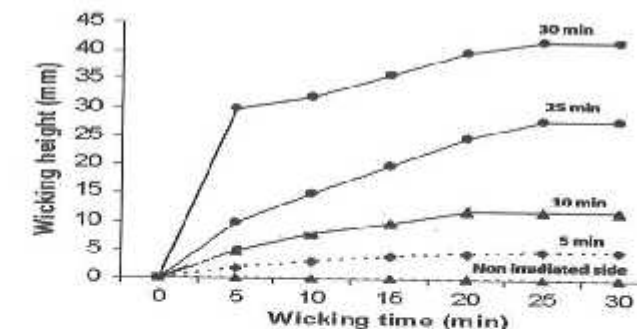
Heavy metal tolerant *Bacillus subtilis* SHB 13 was isolated from marine source and characterised for biosurfactant activity. Selected strain SHB 13 was able to tolerate 800 ppm nickel (Ni), 1000 ppm chromium (Cr), 3000 ppm lead (Pb). Biosurfactant produced by this strain was surfactin, as characterized by FT-IR spectrum and further confirmed by molecular characterization and gene length was found to be 675 base pairs. *B. subtilis* 13 was able to reduce 98% of 100 ppm Cr within 72h at optimized conditions of pH 7, temperature 37°C and 4% NaCl concentration. Surfactin (10mg/ml) produced by SHB 13 was efficient in removing 74 % Cr (VI) within 72h when analysed with AAS and its role in chelation was elucidated by FTIR, XRD and SEM equipped with EDS.



T H Swapna, N K Papatoti, M Y Khan, G Reddy & B Hameeda

- 439 **Development of Dual Hydrophilic/ Hydrophobic Wool Fabric by Q172 NM VUV Irradiation**

A functionalized dual hydrophilic/ hydrophobic wool fabric has been developed by a combination of fluorocarbon based chemical composition and the 172 nm VUV (Vacuum Ultraviolet) irradiation treatment. The fabric surfaces have been characterized by SEM (Scanning electron microscopy) and EDX (Energy dispersive X-ray), and the fabric performance properties by measurement of contact angle, wicking and comfort. It was found that the irradiation modifies only the side being irradiated, and not the opposite side of the fabric, possibly due to strong absorption of high energy photons of 172 nm light within the submicron structure of the surface.

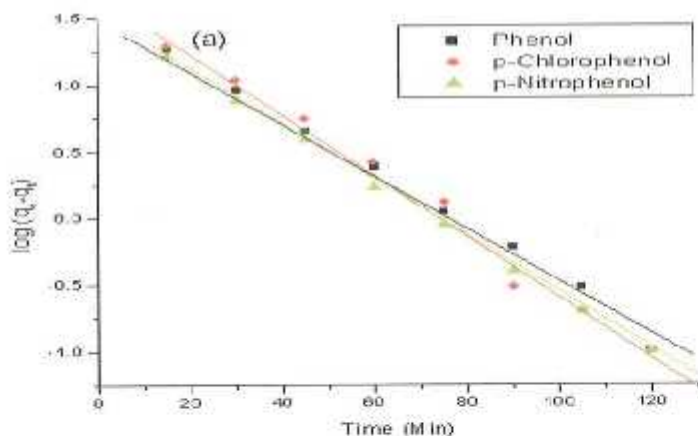


S Basak, K K Samanta, S K Chattopadhyay & R Narkar

Waste Utilization

444 Development of Inexpensive Adsorbent from Agro-Waste for Phenol Adsorption

Potential adsorption of phenols- major pollutants present in various industrial wastewaters onto adsorbent powdered activated mustard cake (PAMC) derived from (mustard cake MC) agriculture waste materials was evaluated. The PAMC had meso porous pore size distribution with surface area ($27 \text{ m}^2 \text{ g}^{-1}$). The adsorption characteristics of the PAMC primarily attributed to the presence of silica or mixed oxides of Ca, Mg, Al and Fe not by the carbon. The Langmuir, Freundlich, Redlich-Peterson and Temkin models were applied to evaluate the adsorption parameters. The adsorption decreased in the order of p-nitrophenol > p-chlorophenol > phenol. Adsorption kinetics was examined using different kinetics model (Lagergren first order, pseudo second order and intra particle diffusion model).



K Singh, B Chandra & M Gautam

Author-Reader Platform

452 Instructions to contributors
