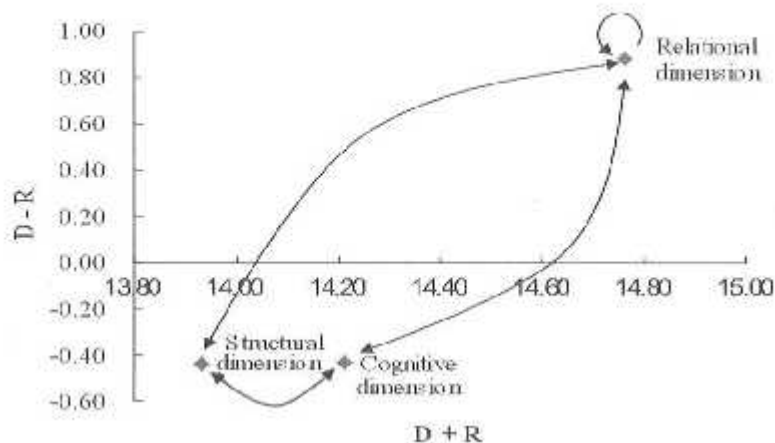


CONTENTS

Management & Information Technology

- 73 **Visualizing the Influence of Corporate Social Capital on IC Spin-offs** Social capital of a large parent company is a key enabler for corporate spin offs. However, few studies have been conducted on the interactions between high-technology industries and social capital. A number of new integrated circuit (IC) spin-offs have been established worldwide over the past decade, but the success rate remains low. Hence, the purpose of this paper was to visualize the influence relationship between the dimensions of social capital, and to investigate the importance of social capital factors upon successful IC spin offs. Data were collected on the number of Taiwanese IC design companies in which the spin-offs must have been operating for at least 5 years and analyzed using the decision-making trial and evaluation laboratory (DEMATEL) and analytic network process (ANP) methods. The results of DEMATEL analysis revealed that the "relational dimension", as the causal dimension, strongly influences all other dimensions, including itself.



Yen-Chun Lee, Grace T R Lin,
Sheng-Hung Chang, C.J Chou &
Pang-Hsiang Hsi



77 **Cloud Computing Integrated with Testing to Ensure Quality**

Cloud data is growing popular day by day. Cloud data is one of the continuous explosions of large volume of data that are generated, processed, stored and accessed by applications that handle instantaneously, several concurrent transactions of data. The transition from structured relational data to voluminous unstructured, non-semantic and highly complex data remains a great challenge to data managers, data workers, data analysts to hold and organize cloud data. Creators and analytics are working with it using several upcoming frameworks and technological supports. Test designers and testing squads are also included in this development. Testing big data is one of the biggest challenges faced by organizations because of lack of knowledge on what is to be tested and how much data is to be tested.

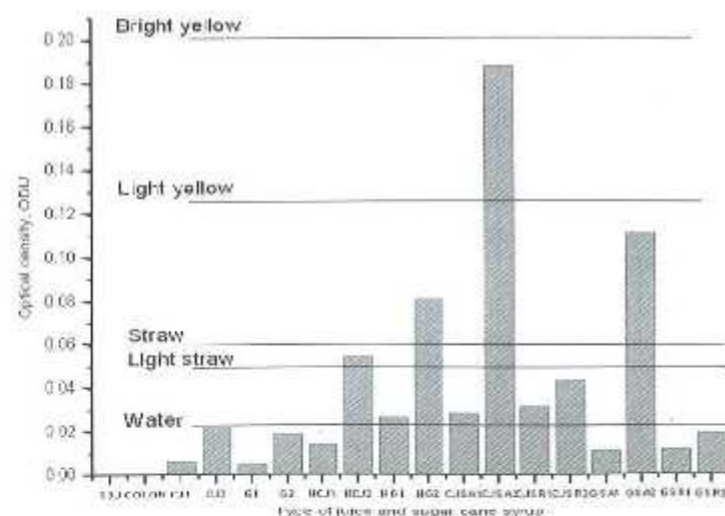


R Kavitha, N Kannan, R Nazneen & H A Zubair

S & T and Industrial Research

82 **Thermal and storage stability of color in juice and fructose syrup from sugar cane**

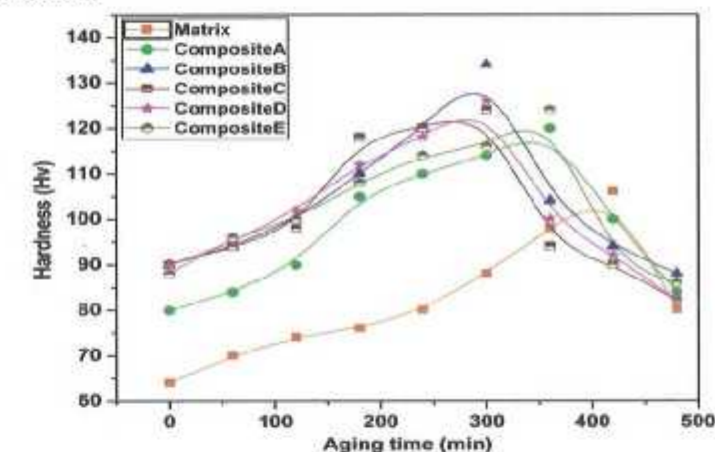
In this paper the thermal stability of the color of purified, *guarapo* and clarified, sugar cane juices after treatment with activated carbon and ultrafiltration was studied, and the color stability during the storage of fructose syrup made from them with *S. cerevisiae* invertase treatment, were evaluated. The results showed that the purification treatments removed up to 99% of the color juices. The remnant color of these purified juices increased with heat treatment at 100°C and 1 h duration, this increment being dependent on the type of purification treatment, the invertase treatment of the sucrose contained in them, and the pH of the juice.



J A Solís-Fuentes, R C Ayala-Tirado & M C Durán-de-Bazúa

89 **Age hardening behaviour of Al-Si-Mg alloy matrix/zircon and alumina hybrid composite**

In the present study Al-Si-Mg alloy matrix/hybrid composite reinforced with zircon and alumina particles were produced by stir casting technique. The composites were synthesized with varying wt % of zircon and alumina particles, limiting the total wt % to 15. Cast samples were solution treated at a temperature of 540°C for 3 hours in an electrical resistance furnace. The aging behaviour of age hardenable Al-Si-Mg alloy and the composites were examined by optical microscopy and X-ray diffraction (XRD). Microhardness measurement was carried out on both the unreinforced alloy and as well as the composites.



T Satish Kumar, R Subramanian, S Shalini & P C Angelo

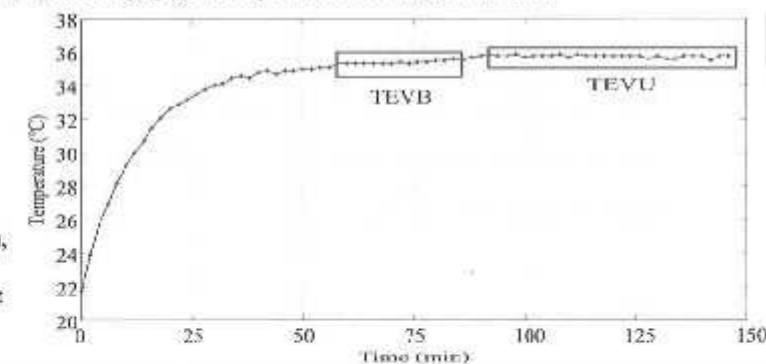
95 **Improving Decoding of the Mental Activities in BCI Systems using Overlapping FBCSP**

Brain Computer Interface (BCI) is an external channel from brain to the human organs. Therefore, BCI facilitate the disabled people to move their limbs. Electroencephalogram (EEG) is one of BCI recording signals which has high temporal resolution with low spatial resolution. Some researchers proposed common spatial filters to overcome the spatial resolution deficiency. However, these filters are highly sensitive to the CSP frequency band and, may decline the BCI performance. Many researchers increased the BCI performance by using filter bank CSP. They utilized a bank of band-pass filters to separate CSP in each band. However selecting of the number and the range of each frequency band becomes troublesome. In this research work we utilized FBCSP with flexible overlapping frequency bands to enhance the decoding mental activities performance.

H Rastgoo & S Azadi

100 **Methodology for Overheating Identification on Induction Motors under Voltage Unbalance Conditions in Industrial Processes**

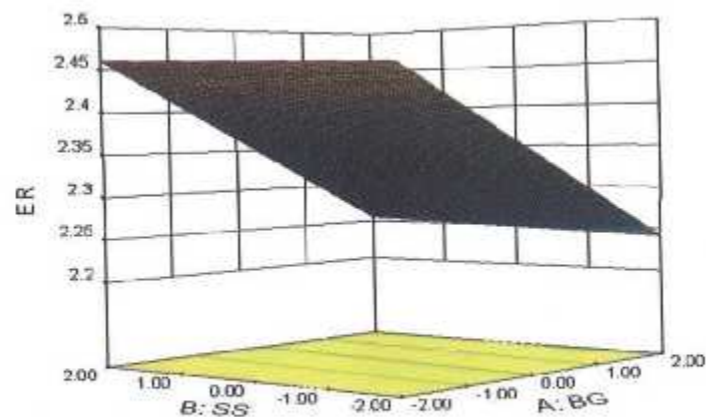
This paper presents a new methodology to assist the preventive maintenance through the identification and diagnosis of undesired overheating conditions in multiple induction motors installed in industrial facilities. The identification is performed by monitoring the voltage in the electrical system and the temperature characteristic curve of the motor obtained through infrared (IR) thermography in the presence of voltage unbalance.



J L Gonzalez-Cordoba, D Granados-Lieberman, R A Osornio-Rios, R J Romero-Troncoso, J J De Santiago-Pérez & M Valtierra-Rodríguez

108 Optimization of Process Variables for Extrusion of Rice – Bengal Gram Blends

Extrusion-cooking is advantageous for vulnerable foods and offers a chance to use raw materials which have not previously displayed great economic importance or have even been regarded as waste. Rice and pulse milling by-products due to the low price and easy conversion to processed products result in increasing demand for conversion of these by-products into useful products. It delivers good profit for the processors and in turn providing the consumer a healthy pulse based product to choose from, which is now lacking in the market. This study focuses on optimizing the process variables and to study the extrudate characteristics from blends of bengal gram and rice using single screw extruder.

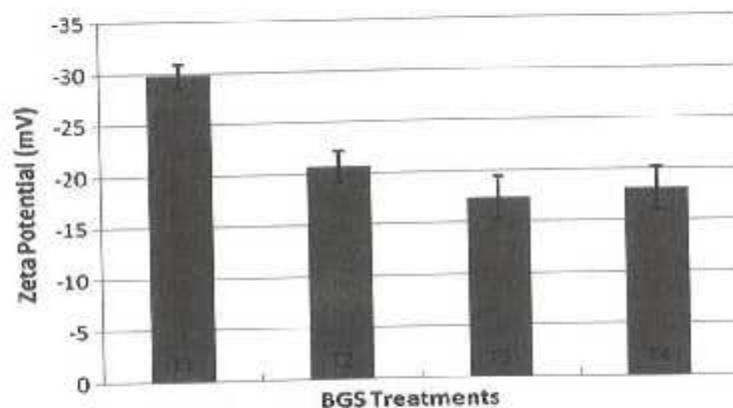


D J Nithya, K A S Bosco, M Saravanan, R J Mohan & K Alagusundaram

Energy and Environment

115 Comparative Evaluation of Chemicals and Botanicals based Dehydration of Biogas Slurry

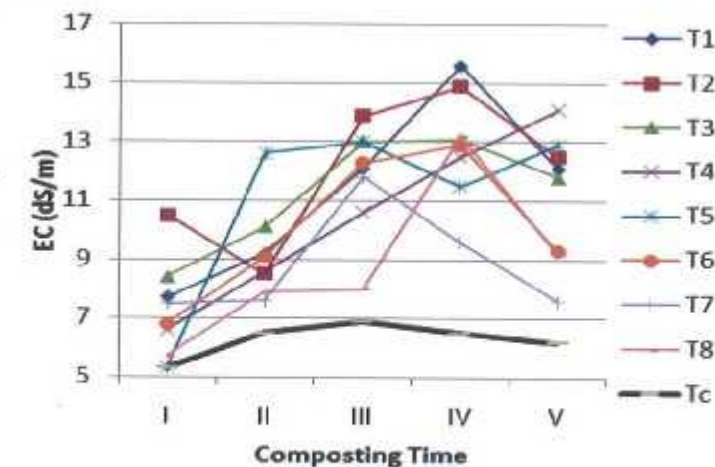
Spent slurry from cattle dung based biogas plant was characterized and dehydrated by coagulation methods. Various chemical and botanical coagulants were tested at their different concentration levels. Alum at 3.6 % (w/v) produced maximum dehydration (40 %) and its dose was further reduced to 2% (w/v) by adding polyelectrolyte dimethylamine ultimately causing 44 % dehydration of fresh biogas slurry. Regarding botanicals, *Moringa* seed powder showed 30 % dehydration, better results than cactus mucilage (with only 5 % water removal). In case of *Moringa*, although the water separation was less than alum, the quality of separated water (in terms of EC, pH, N, P, K, TOC) was found better.



S Sharma, K Arora & A Sharma

120 Preparation of Phosphate Mine Tailings and Low Grade Rock Phosphate enriched bio-fertilizer

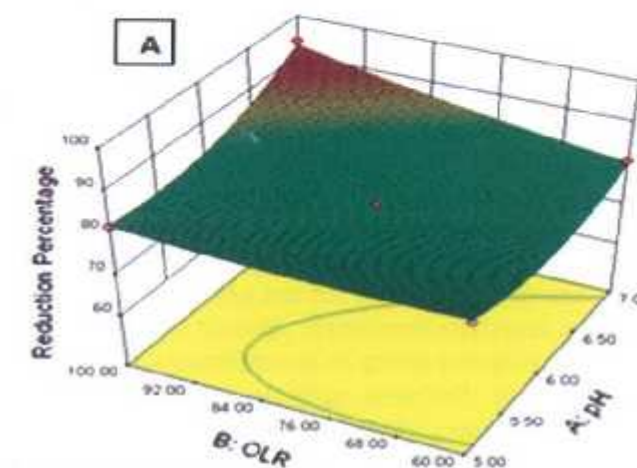
Phosphate tailings pose significant risk to the environment as point sources of basic, carbonate-rich effluents. This waste may be judiciously used for the biofertilizer preparation. The enrichment of compost by adding low grade rock phosphate also offers a potential proposition for the effective utilization of insoluble P. Experimentally, the compostable material (Biogas spent slurry) is mixed well with 2.5, 5, 7.5 and 10% of rock phosphate & tailings were added on wet weight basis. A phosphate solubilizing bacteria *Pseudomonas putida* and a sulphur oxidizing bacteria *Acidithiobacillus thiooxidans* were used for inoculation.



S Babel, R S Chauhan, N Ali & V Yadav

124 Bioremediation of Azo Dye Containing Textile Effluent using Adapted Bacterial Strains under Subsequent Microaerophilic - Aerobic Conditions

Textile effluents are causing a wholesome of trouble in our vicinity, which needs to be taken good care of before being discharged in to the natural surroundings. In our present study, we have isolated about 5 different bacterial strains from azo dye containing textile effluent sample. The bacterial strains were allowed to act on the textile effluent under subsequent microaerophilic and aerobic conditions. In the treatment under microaerophilic condition the bacterial strains were allowed to form a biofilm on inert polyurethane foam as individual cultures and as a consortium, in a glass column.



R Rajendran, S K Sundaram, P Prabhavathi, B V Sridevi, S D Kumar & P Santhanam

Author-Reader Platform

131 Instructions to contributors