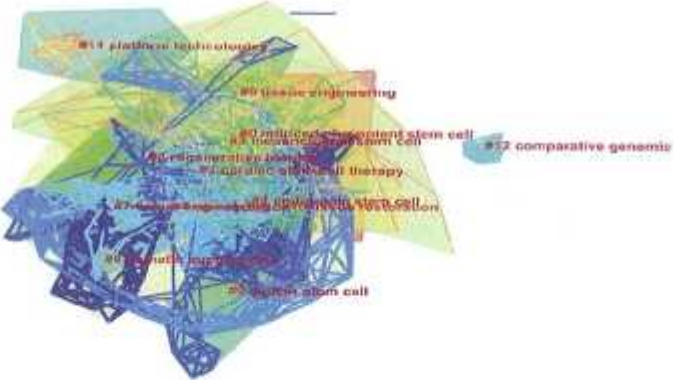


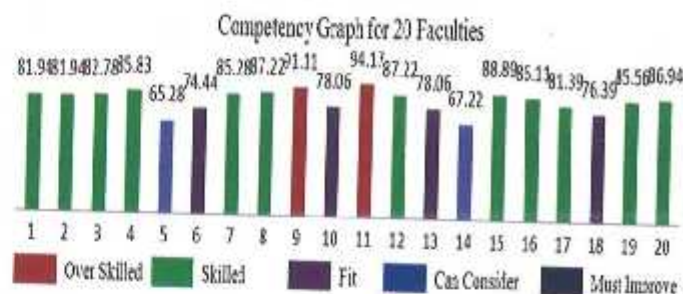
CONTENTS

Management & Information Technology

- 653 **Observing the Intellectual Landscape and New Developments of Drugs**
- Drug development is a broad research field involving biological therapies, stem cell treatments and tissue engineering. As research in these areas advances rapidly, this study aimed to investigate the thematic patterns, landmark articles and emerging trends in drug development for observing its intellectual landscape through a scientometric analysis. Five critical articles, representative clusters and three pivotal references were explored. Burst detections of citations also provided insightful guidance for navigating the fast-changing intellectual landscape of the relevant literature. This study not only elucidates research themes in the drug development community, but also helps demonstrate how research interests and trends evolve over time.
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- Yen-Chun Lee, Grace T R Lin and Pang-Hsiang Hsi
- 657 **Comprehensive Estimation of Industrial Security of High Technology Industry**
- High technology industry has been a significant part of national economy, thus its development and industrial security is related to national economic security. This study elaborates on evaluation indicator system of industrial security of high technology industry and adopts the entropy method to assess the industrial security situation of China's high technology industry during the period of 2005 to 2014. The research results show that security state of China's high technology industry gradually improved during the observed years, and that it has kept the state of safe since 2011. Market control of foreign funded enterprises, labor quality and investment control of foreign funded enterprises are key indicators affecting industrial security of China's high technology industry.
- Weida He, Zhifeng Lin and Rong Hao

662 **A Competency Framework Model to Assess Success Pattern For Indian Faculties A NLP Based Data Mining Approach**

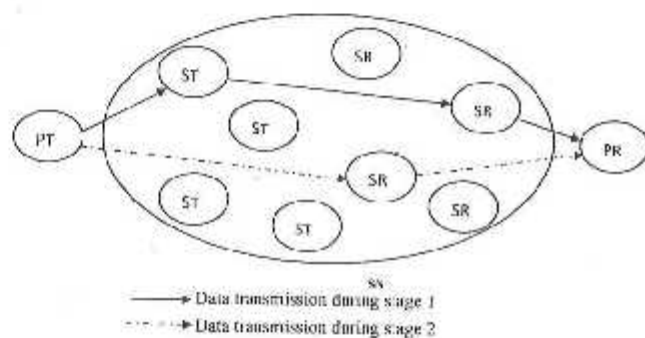
Faculties who help us grow as people are responsible for imparting some of life's most important lessons. We learn through them, through their commitment to excellence and through their ability to make us realize our own personal growth. The researchers look at the effectiveness by number of ways of assessing faculties. In our research work we analyzed and assessed the success pattern of college faculties based on Neuro-Linguistic Programming (NLP), a branch of Behavioral Psychology of the modern day. Using NLP Tools we pick up Behavior and Response Patterns in people in different life situations. The response patterns may vary in different contexts. Hence the patterns are checked in various contexts. The reports generated out of this assessment helps to identify their core competencies and the areas of improvement for their professional growth.



R K Banu and R Ravanaan

667 **Priority Based Resource Allocation for MIMO-Cooperative Cognitive Radio Networks**

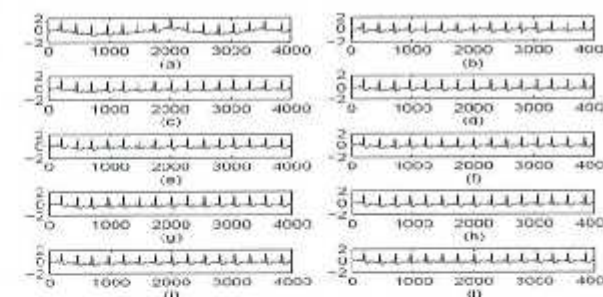
Cognitive radio technology is an emerging technology which is very promising and hence is being developed at a rapid rate. In Multi Input Multi Output Cooperative Cognitive Radio Networks (MIMO-CCRN) primary users (PUs) recruit some secondary users (SUs) to cooperatively relay the primary traffic. Considering networks with heterogeneous services, it will be difficult to allocate the resources and assign the channel. The selection of secondary users (SU) as relay nodes should satisfy the rate and delay constraints of respective SUs. To overcome these issues, in this paper we develop an efficient resource allocation technique which uses very reliable nodes for data transmission. The resources are allocated only after ensuring that the nodes satisfy the specified constraints. This leads to successful data transmission and hence good network performance.



A Ch Sudhir and B Prabhakara Rao

671 **An Innovative Adaptive Noise Canceller Family for Cardiac Signal Filtering: Application to Wireless Body Sensor Networks**

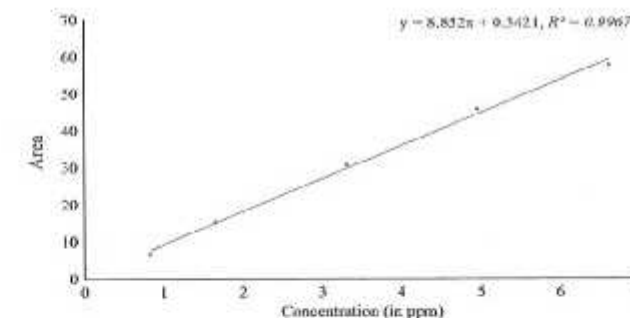
In clinical scenario, during acquisition through a sensing system the cardiac signal (CS) encounters both physiological and non-physiological contaminations. These components mask the tiny features of the cardiac activity and affects diagnosis. To avoid gradient noise amplification problem in gaussian environment, we used normalization with higher order algorithm. This results in variants of least mean fourth (LMF) algorithms. The excess mean-square error of the LMS algorithm is depends only on the second order moment of the noise but excess mean-square error of the LMF algorithm depends on fourth moments of the noise that results in lower steady-state error as compared to the LMS algorithm. Based on normalization quantity, data and error normalized LMF algorithms facilitate adaptive noise cancellers (ANC) for CS de-noising. Finally, we tested the proposed implementations on original cardiac signals acquired from the MIT-BIH database and analyzed their performance with the basic LMF based ANC. The results show that the performances of the proposed normalized higher order algorithms are superior to the LMF counterparts in gaussian environment.



T Gowri and P R Kumar

676 **Nanoformulations of Pretilachlor Herbicide: Preparation, Characterization and Activity**

In the present study, two nanoformulations of pretilachlor: microemulsion (ME) and encapsulated monolithic dispersion (MD) have been developed. Both the formulations were tested for their stability and found to be stable at different temperature regimes. Characterization of these nanoformulations was performed by using Dynamic Light Scattering (DLS) technique. The average particle size of both nano formulations was in the nano range (1-100 nm). Bio-efficacy of nano formulations as weed control agents was studied at the field level against the weed *Echinochloa crus-galli* in rice fields where weed control was evaluated at 30, 60 and 90 days after transplantation (DAT). Both the tested nano formulations were found to perform better than that of the commercially available formulation of pretilachlor (Rifit[®] 50 EC). Harvest time residues of pretilachlor in rice grain and soil were also determined in the present study.

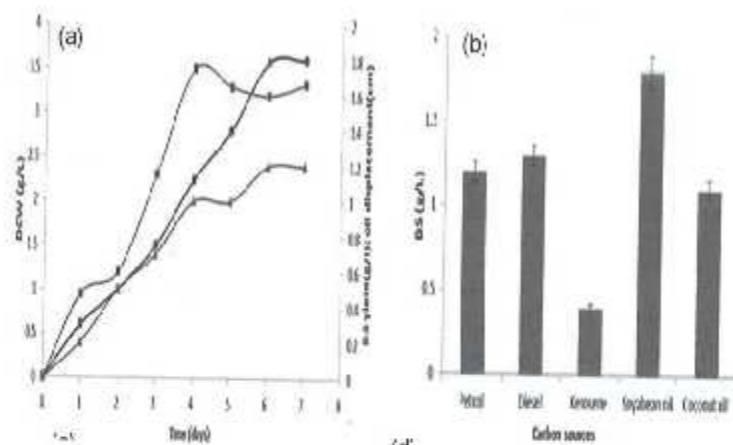


N Kumar, R Kumar, N A Shakil and T K Das

S & T and Industrial Research

681 Isolation and Characterization of a Biosurfactant Producing Strain *Pseudomonas Aeruginosa* SMVIT 1 from Oil Contaminated Soil

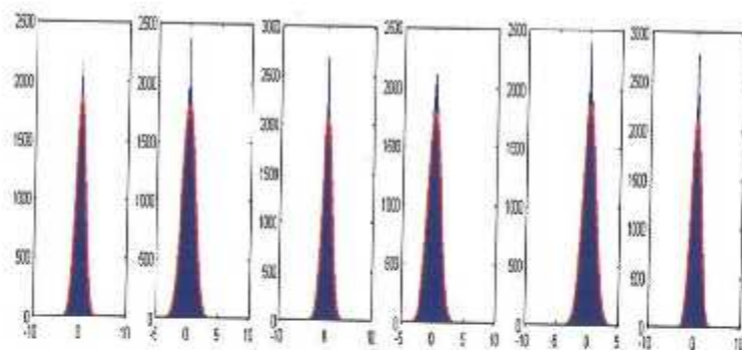
The increasing demand of surfactant derived products, typically those based on biosurfactant has led to wide research in this area. This paper aims at isolation, molecular characterization and potential applications of a novel biosurfactant producing strain from oil spilled sample of Sir MVIT petrol bunk. Five different carbon sources were studied and the isolated strain showed better biosurfactant production in soybean oil (1.8 g/l) and hence was used as the sole carbon source for the entire experiment. The isolate was identified as *Pseudomonas aeruginosa* SMVIT 1 and phylogenetic analysis was performed using Clustal W2. Biosurfactant activity assays were performed using emulsification measurement, drop collapsing and oil displacement test. Structural and functional analysis was done using FTIR and GC MS and indicated rhamnolipid nature of the biosurfactant. The isolated strain or the extracted biosurfactant can be used directly or as an immobilised system for bioremediation specifically in oil spill treatment.



K Rath, A B Singh, S Chandan and R S Vatsala

687 Image Denoising Using Dual-tree Complex Wavelet Transform and Wiener Filter with Modified Thresholding

This paper presents a new image denoising algorithm based on local variance estimation. In the process of denoising, the Wiener filter is used to remove the noise component of the dual-tree complex wavelet transform (DT-CWT) coefficients. The variances of noise-free coefficients are estimated by the DT-CWT coefficients transformed by modified thresholding. The tests show that the proposed method has better performance compared to the related algorithms.

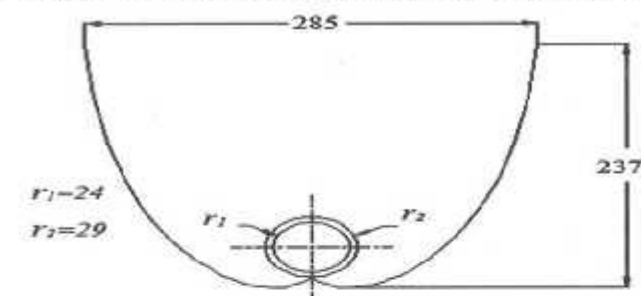


Xiaobo Zhang

Energy and Environment

691 Performance of a Solar Distillery of Essential Oils with Compound Parabolic Solar Collectors

The performances of a new solar distillery of essential oils with CPCs were determined for different ambient and working conditions. The essential distillation system was composed of seven compound parabolic solar collectors and a distillation unit. The heat transfer oil heated by CPCs was pumped to the distillation unit by a circulation pump. Eleven essential oil distillation trials were carried out in July, August and September. In some trials, compound parabolic reflectors were covered by a black fabric sheet to observe the effectiveness of solar concentration. CPC reflectors increased the total solar radiation coming onto the surface of absorber by 3.55 times on the average. When solar radiation was concentrated and the sky was without clouds, 78-80% of the total energy need of essential oil distillation was supplied from solar energy. The total solar radiation coming on the collector ranged from 23.20 kWh to 26.90 kWh in the trials. However, the occurrence of clouding during daytime required partly electrical heating to complete the distillation process. When the solar radiation was not concentrated, the distillation water could not boil without an electrical heater. 26 to 40 ml essential oils were extracted from 5 kg *Mentha piperita* L. plants per day.



Y Kulturel and S Tarhan

Author-Reader Platform

697 Instructions to contributors