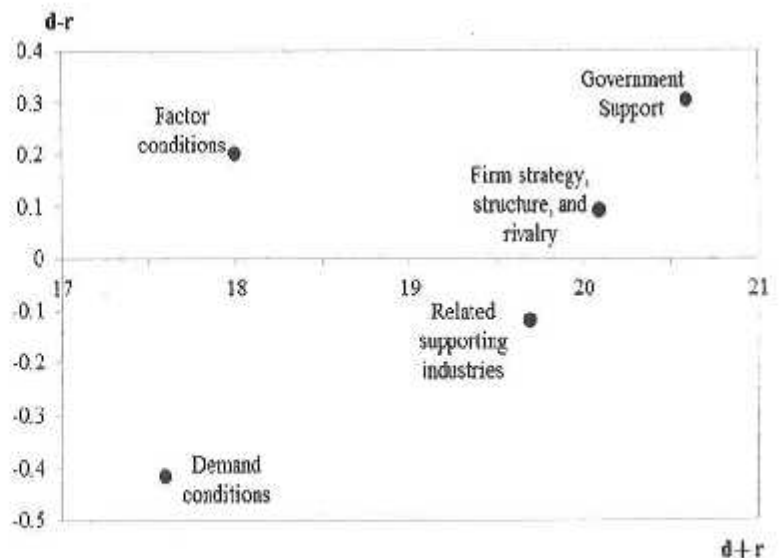


## CONTENTS

### Management & Information Technology

**605 Development of a Cause-and-Effect Model for Analyzing National Competitiveness of the Electric Vehicle Industry**

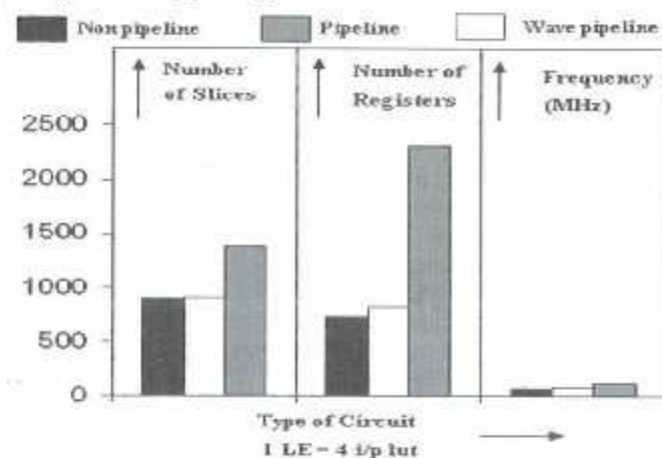
In a world where energy conservation and environmental protection are growing concerns, the development of electric vehicles (EVs) has taken on an accelerated pace and drawn high levels of interest across many developed and developing countries. The purpose of this study is to explore what constitutes national competitiveness in EVs development and how one nation can efficiently achieve that development in its EV industry. We used Porter's Diamond model as an underlying theory to describe the sources of national competitiveness. The DEMATEL method was employed to analyze the structural model and reveal the cause-and-effect relationships of the sources of competitiveness.



N Hwang, Grace T R Lin, P S Hsieh & P H Hsi

609 ASIC Implementation of one level 2D DWT and 2D DWT in Hybrid Wave-Pipelining & Pipelining

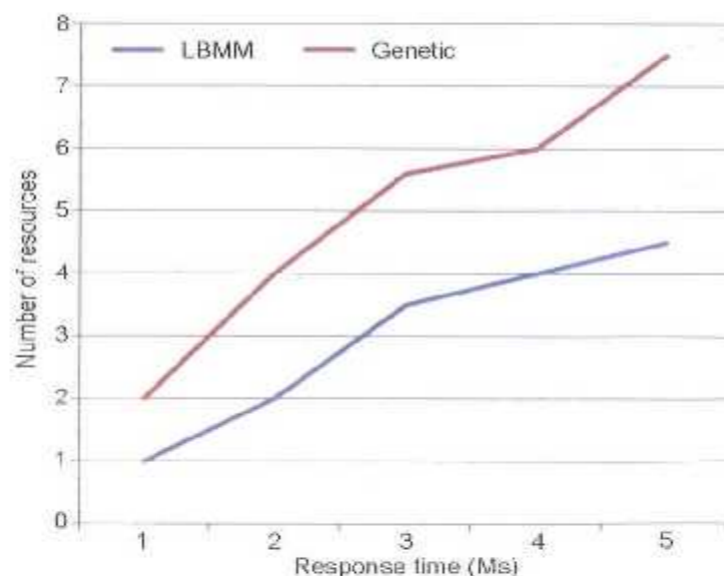
Pipeline system requires clock routine complexity and clock skews between different parts of the system. Higher operating frequencies may be obtained in digital system using wave pipelining which permits clock frequencies. This requires proper selection of clock periods and clock skews for latched output of combinational logic circuit at the stable periods. Hybrid scheme is aimed at combination of advantage of pipelining and wave pipelining. Hence, we propose the design and implementation of hybrid wave 2D DWT pipelining using lifting scheme and system computational of one level 2D DWT implemented using the following techniques pipelining, non pipelining and wave pipelining.



V Adhinarayanan, S Gopalakrishnan & H A Shabeer

614 Adequate Algorithm for Effectual Multi Service Load Balancing in Cloud based Data Storage

Now a day's cloud computing is that the most up-to-date advance paradigm promising to show the vision of computing utilities into reality. It provides a versatile and straightforward way to store and retrieve immense information without concern the hardware required. Cloud based Storage (CS) incorporates a resource manager, cluster head and server clusters, inside that resource manager assigns client's request for information service tasks to server clusters in line with the task features. And each cluster head distributes the assigned task to the servers inside its server cluster.



A Kanmani & R Sukanesh

618 New Receivers in Digital Communications; Performance Evaluation and Comparisons

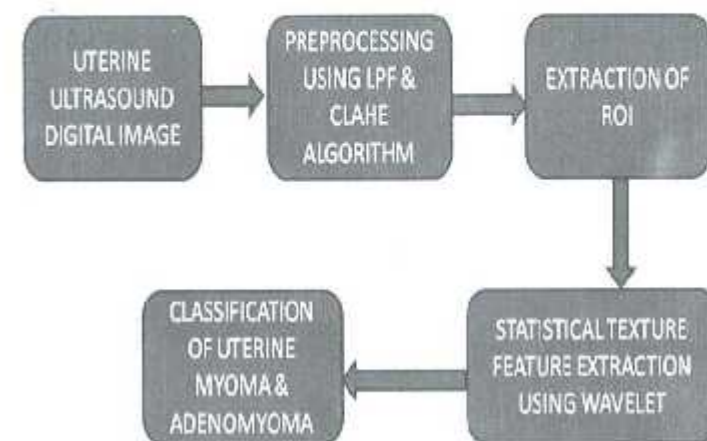
Recently developed STTS-MF receiver by the authors in<sup>1,2</sup> (referred as TTS-MF receiver in<sup>1,2</sup>) performs better than the traditional Matched Filter based receiver (referred as STS-MF receiver in<sup>1,2</sup>), but only when the SNR (expressed in dB) is positive. In this paper, we introduce a new receiver, the CTTS-MF receiver, and demonstrate that it performs better than both STTS-MF and STS-MF receivers, for both positive and negative SNR (expressed in dB) values, for the correlated digital signals known as, the p-q signals. Comparisons and relative advantages of the CTTS-MF and the STTS-MF receivers are illustrated by extensive simulation study with baseband communications as example domain.

R Chakka & A K Ahuja

S & T and Industrial Research

630 Classification of uterine fibroid from ultrasound images using wavelet transform

Uterine myoma and adenomyoma are the most common benign tumors of the uterus. Ultrasound imaging is the widely used method in the diagnosis of both the disease conditions; however the diagnosis strongly depends on the physician's expertise and ultrasound system quality. These drawbacks have motivated the development of computer aided applications for the quantitative analysis of ultrasound images to assist the physician in the accurate diagnosis. In this work, statistical texture based features of uterine myoma and adenomyoma of ultrasound images are extracted using wavelet transform and the effectiveness of the selected features are analysed using various classifiers.



Brindha, A Kandaswamy & C L Deepika

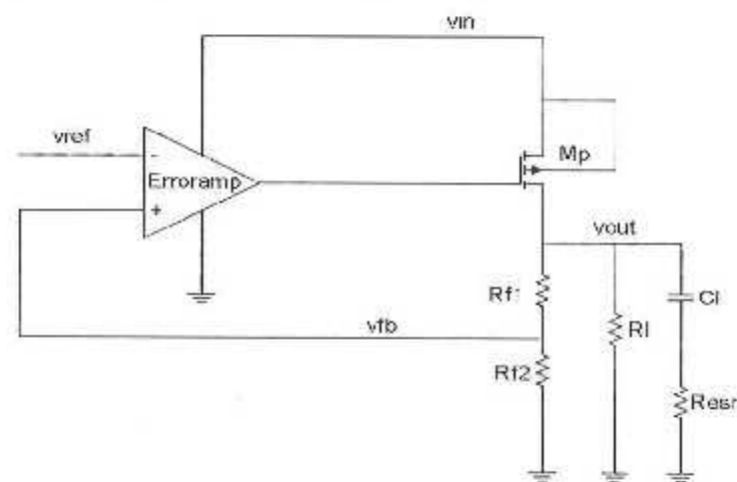
634 Condition assessment of a prestressed concrete girder and slab bridge for increased axle loadings

Our daily lives are becoming more dependent on civil infrastructure, including bridges, buildings, offshore structures, etc. Much of the existing infrastructure in India has been in service for many years. These structures continue to be in use, despite aging and associated damage. Hence, condition monitoring of these structures to provide necessary maintenance has become critical. The Indian Railway had requirement of increased freight haulage on the iron ore routes of various zonal railways. The Railway Board hence desired to undertake pilot project for operation of heavy axle freight wagons loaded upto 22.86 ton per axle. This proposed alteration may subject the bridges to higher tractive effort / tractive forces (due to high power locos) together with higher axle loads. This proposed increase in load is acceptable only based on the available load capacity of the existing railway bridges.

B A Sundaram, S Parivallal, K Kesavan, A K F Ahmed, K Ravikiran, K Ramanjaneyulu & N R Iyer

## 641 Design of Low Drop-Out voltage regulator

An essential component of today's battery powered SoC's are power management systems which include Low Drop-Out (LDO) voltage regulators. LDO voltage regulators improve battery's power efficiency and life. In this paper design and analysis of an LDO voltage regulator is presented. The designed LDO voltage regulator is designed with self-compensated error amplifier. It provides 30mA load current with a stable 1.6V output voltage. It consumes 172 $\mu$ A quiescent current and has a power efficiency of 88.38 % with dropout voltage of 200mV.

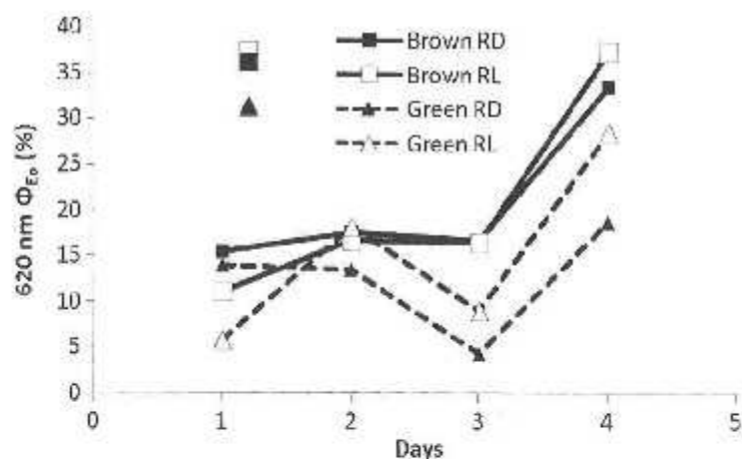


K J Naidu, H M Kittur &amp; P Avinash

## Energy and Environment

## 645 Fluorescence Transients as a Selection Tool for Marine Microalgal Consortia in a Raceway Pond Reactor for Biofuel Production

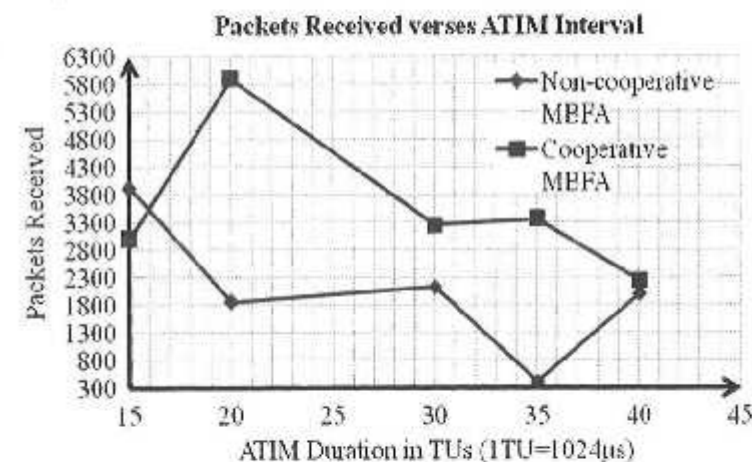
In the search for renewable fuels, microalgae are seen as a potential source of oil that can be cultivated at large scale without competing with terrestrial food agriculture. Among the unsolved problems in the large scale production of microalgae for biofuel, is a rapid selection process based on lipid productivity. The fluorescence transients of consortia can be used as a measure of its lipid yield, thereby providing faster selection criteria. In order to test this hypothesis, a continuous (part harvested daily) raceway pond reactor with perpetual flocs containing microalgae consortia was developed. It is possible to select the dominant microalgal strains in the consortium by changing the process conditions.



N Sreekumar, N Selvaraju, C Aneesh &amp; A Haridas

## 651 Optimal Energy Calculation for Cooperative Grid Networks

The Lifetime of Mobile Ad Hoc Network (MANET) depends on the battery capacity of nodes. IEEE 802.11 supports power saving mode (PSM) in which the station may be kept in awake mode or in a doze state. PSM is energy efficient, which improves the network lifetime and is suitable for MANETs. Node deployment in a network plays a vital role in its topology, routing and network lifetime. Node placement can be categorized into: Deterministic, Semi-deterministic and Non-deterministic types. In grid topology, nodes are placed in a uniform distance and gives better performance over random deployment for MANETs using PSM. Cooperative communication supports higher data rates and provides cooperative diversity. In this paper, the performance of the proposed Cooperative



B R Devi, M A Rani &amp; K K Rao

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## 655 Instructions to contributors