

Abstracts of Published Papers 2012

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East West University
CENTER FOR RESEARCH AND TRAINING

PREFACE

It is my pleasure to write this introductory note for the seventh volume of the *Abstract of Published Papers*. The Abstract of Published Papers is an annual production of the East West University Center for Research and Training (EWUCRT) with an objective to keep an official log of academic publications of the faculty members of East West University. It includes the abstract of published research articles, book chapters, books, and also conference papers of our colleagues.

It is indeed a matter of great satisfaction for the East West University Center for Research and Training (EWUCRT) to publish the Seventh Volume of the Abstracts of published papers in 2012. This publication is a collective effort of all the faculty members of the university. Our scholars have enthusiastically and immensely contributed in areas of business, economics, social sciences, engineering, telecommunications, liberal arts and literature, population health, computer science, pharmacy, and technology. This volume contains abstracts of 44 research articles, of which 39 were published in international journals, one co-edited book and two book chapters, both of which were published abroad and 8 international conference papers. Considering their academic achievements, we profoundly extend our congratulation to all of them.

The Center expresses its sincere thanks to Dr. Rafiqul Huda Chaudhury, Chairperson of the EWUCRT and Member, Board of Trustees, and all the Members of the Research Committee (RC) for their support and encouragement.

September 15, 2013



Dr. Muhammad Sirajul haque
Executive Director
EWUCRT

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Business and Economics

Asian Business Review, Volume 1, Issue 1, September 2012. ISSN 2304-2613

Performance Evaluation of Selected Ceramic Companies of Bangladesh

Abdullah Al Masum*, **Fatema-Tuz-Johora****

ABSTRACT

This paper applies performance evaluation of ceramic industry of Bangladesh and to test its financial soundness. The main aim is achieved through ratio analysis of four selected ceramic (Fu Wang, Monno, Shinepukur and Standard) companies in Bangladesh. Measurement of financial performance by ratio analysis helps identify organizational strengths and weaknesses by detecting financial anomalies and focusing attention on issues of organizational importance. The financial performance of this industry is measured in terms of profitability, solvency, efficiency and liquidity analysis and to test the financial soundness, Multivariate Discriminate Analysis (MDA) is used, which was developed by Prof. Altman. The study covers four public sector ceramic companies listed on Dhaka Stock Exchange. The study has been undertaken for the period of five years from 2006-7 to 2010-2011 and the necessary data has been obtained from the audited annual report of the selected companies. The liquidity position was very weak in all the cases of the selected companies and thereby reflecting the difficulties in paying short-term obligation on due date. Financial stability of the selected companies has shown an upward trend. This study will help investors to identify the nature of financial performance of the ceramic industry of Bangladesh and will also help to take investment decision.

Keywords: Ratio Analysis, Financial Distress, Altman Z Score, MDA, Bankruptcy.

JEL Classification Code: M00; M13

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The Impact of CSR practices on Employee Job Satisfaction and Organizational Commitment: An Internal Marketing Case Study from Export-oriented SMEs in Bangladesh

Saadia Shabnam*, Md. Atiqur Rahman Sarker**

Abstract

The growing awareness of Corporate Social Responsibility (CSR) has become one of the important tools in Human Resource Management (HRM). One of the major issues in corporate accountability is how firms are careful and responsible for employee's well being. The practice helps to develop a distinguished corporate culture and social consciousness which certainly influence employee attitude and behavior. The purpose of this study is to find out an empirical effect of CSR on employee job satisfaction and organizational commitment. Based on the interviews taken both from employers and employees in export oriented SMEs of Bangladesh, it has been found that CSR practices are positively associated with job satisfaction which in result makes the workers more motivated and committed towards the organization. This paper also recommends that corporate responsibility practices, satisfied and committed employees together can create competitive advantage for a business with growth and profitability. Furthermore, the information summarized in this paper also provides the suggestions to utilize the CSR strategies that will improve the employee morale, job satisfaction and organizational commitment thus create an opportunity to capitalize on internal marketing for the organization.

Keywords: Job satisfaction, Commitment, Internal Marketing, HRM, Corporate Social Responsibility, SMEs and Bangladesh.

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The Recruitment and Selection Process of Pharmaceutical Companies in Bangladesh: A Case on GlaxoSmithKline Bangladesh Limited

Laila Zaman*

Abstract

GlaxoSmithKline (GSK) Bangladesh Limited, a subsidiary of GlaxoSmithKline plc is world's one of the leading research-based pharmaceutical companies that commits to improve the quality of human life with an immense status and brand image all through Bangladesh over last 60 years. It is the human resource who has maximized the success of the company. Recruitment and selection practices are the key factors to the entry point of human resources which ensures the success and growth of an organization. In this study the detail chain and sequence of activities pertaining to recruitment and selection of different level of management and non-management employable candidates has identified through interviewing the HR employees of GlaxoSmithKline Bangladesh Limited. Findings show that the case study organization is doing a very good practice in recruitment and selection process that could help many other employers in Bangladesh and around the world to get suitable candidate and also helpful for researcher to do more research on recruitment and selection process.

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Sustainability and Growth of Low Cost Airlines: An Industry Analysis in Global Perspective

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Abstract

The main objective of the study is to predict the sustainability of low cost airlines and to identify the future growth options. For the purpose of this research, a “split halves” technique of piloting was considered, whereby two small groups of respondents were asked to fill in the questionnaires and their results were compared in order to ensure if the questions were understood by them in the same manner. Eight in depth interviews were conducted both face to face and over telephone. Customer service analysis also was conducted through survey from the customers at London Stansted and Gatwick Airports traveling to numerous destinations on low cost carriers. As a large number of data has been collected through interview and questionnaire survey, data are also analyzed on a deductive manner based upon the importance and significance of achieving the research objectives. Low Cost Carriers (LCC) have developed their value chain and strategies with a focus on cost reduction in comparison to network carriers who also focused on excellent customer service. Industry specialists and consumers both believe that LCC have benefited the industry by providing low fares and made air travel affordable. However both set of respondents also agree on the need for focus on Client Relationship Management (CRM) as a means for being sustainable. Industry specialists believe that LCC should revolve around the LCC basic model rather than a complete transformation into Full Service Carrier (FCC). LCC need to select a need based outsourcing to reduce their unnecessary operational costs. The research concludes with recommendation that LCC’s should formulate cost differentiation strategy for future growth and sustainability.

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Abstracts of Published Papers 2012 *Business and Economics*

Far East Journal of Psychology and Business, Vol. 9 No. 1 Oct 2012

A Comparative Analysis of Human Resource Management Practices between A Local And Foreign Bank Of Bangladesh

Laila Zaman*, Md. Sajjad Hossain**

Abstract

This paper has analyzed and compared the human resource management practice in banking industry of Bangladesh and has considered a local and a foreign bank in this regard. As a sample it has taken Dhaka Bank Limited which is a local bank and Standard Chartered bank a foreign bank of Bangladesh that are well known in their respective field. From the analysis it has been found that though there are some differences in HR practice but both of the banks are careful and concerned about their employees and practicing a good HR system.

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Abstracts of Published Papers 2012

Business and Economics

Energy, Volume 43, Issue 1, July 2012, Pages 293–300. www.elsevier.com/locate/energy

Energy productivity and efficiency of the ‘gher’ (prawn-fish-rice) farming system in Bangladesh

Sanzidur Rahman*, Basanta K. Barmon**

Abstract

‘Gher’ farming is a unique system that incorporates the joint operation of three enterprises: freshwater prawn, fish and HYV rice, and is expanding rapidly in the coastal regions of Bangladesh because of its proven high income earning potential. In this paper, the sustainability of this system is evaluated by analysing its performance in terms of energy use by applying a stochastic distance function approach which revealed interesting and unexpected results. The prawn enterprise which is the key income earning component is found to be technically inefficient while the rice enterprise is found to be efficient. The net energy balance and the energy use efficiency of the ‘gher’ farming system is estimated at 18,510 MJ ha⁻¹ and 1.72 respectively. The ‘gher’ farmers are operating at a very high level of technical (energy) efficiency (92%). Diversification amongst enterprises is associated with technical (energy) inefficiency. However, larger operation size enhances efficiency. The key policy implication is that the ‘gher’ farming system can be sustained in the long run provided that productivity from the rice enterprise remains high. Also, policies to support the expansion of ‘gher’ farm sizes will improve efficiency.

Highlights ► Sustainability of gher farming system is evaluated in terms of energy use. ► The prawn enterprise is technically inefficient while rice enterprise is efficient. ► The net energy balance is 18,510 MJ ha⁻¹ and energy use efficiency is 1.72. ► The overall technical (energy) efficiency is very high (92%). ► The gher farming system can be sustained if rice productivity remains high.

JELS classification O33; Q18; C21

Keywords: Energy productivity; Energy efficiency; ‘gher’ farming system; Bangladesh

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Abstracts of Published Papers 2012

Business and Economics

Agricultural Policies: New Developments (edited by Contreras, Laura. M.) pp. 143-169, 2012

Gher Farming System of Bangladesh: A Win-Win Strategy for Agricultural Development?

Basanta Kumar Barmon*, Sanzidur Rahman**

Abstract

The present chapter provides a detailed examination of the present status of ‘gher’ farming system, i.e., an integrated prawn-fish-rice joint culture, which is practiced widely in southwest region of Bangladesh. It is an efficient and diversified farming system that produces a staple food crop (rice and fish) in conjunction with a high value cash crop (prawn) and provides a range of social, economic and environmental benefits. Gher farming is already playing an important role in Bangladesh economy by earning valuable foreign exchange, increasing food production and providing employment opportunities. The system is potentially a win-win agricultural development strategy that positively contributes towards food security as well as promotes livelihoods of farmers associated with this farming system. However, to date, the diffusion of this system remains marginal in other parts of the country. This is because, a number of challenges, including climate change (flood, drought and cyclone), prawn diseases, constraints related to prawn marketing, and social conflicts are inhibiting its expansion to other regions of the economy. In light of this comparative analysis of present status, we judge the future prospect of this farming system that can serve as a desirable strategy for agricultural growth and development in Bangladesh.

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Abstracts of Published Papers 2012

Business and Economics

Education and Social Sector: Issues and Challenges, 2012, Page No: 559-569, 1st Ed. New Delhi, Regal Publications. ISSN-

Do family and experience matter to access finance? A test on women entrepreneurs of Dhaka

M Sayeed Alam*, Sabina Sharmin**, **Omar Faruq*****

Abstract

Research on women entrepreneurs is mostly available from developed world. The picture of women entrepreneurs from the developing world perspective is scanty. Research on women entrepreneurs is at an exploratory stage in Bangladesh. According to BWCC (Bangladesh Women Chamber of Commerce and Industry) there is lack of field based data as well as finished information on women entrepreneurs of Bangladesh. A stratified sampling based on three business category strata(boutique, food and others) is used for this study to test relation of two variables (family support and experience) to get institutional support. From this study of thirty samples it is found that family support will be helpful to get institutional support whereas experience matter little. This study is concentrated only within Dhaka city and one limited sample so extended areas and more sample size are suggested to generalized the findings .

Key words: Women entrepreneur, Family support, Experience, Institution support

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Business and Economics

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Impact of Price and Price Variability on Acreage Allocation in Rice and Wheat Production in Bangladesh

Basanta Kumar Barmon*, Muntasir Chaudhury*

Abstract

The present study was conducted to estimate the impacts of price and price variability on acreage allocation of rice and wheat production in Bangladesh. Time series data of price and acreage allocation of rice and wheat production during 1983-84 to 2007-08, collected from Bangladesh Bureau of Statistics (BBS) were used in this study. Compound growth rate and Nerlovian models were used. The study indicated that the wholesale price of rice and wheat had significant impact on the allocation of land for rice and wheat production. Significant price variability was found both in case of rice and wheat crop in short-run (SR) and long-run (LR). The values of Nerlovian coefficients of adjustment were found low, which means that although the farmers were adjusting to the changing levels of price, price variability, yield, etc the adjustment was not rapid. Therefore, it may be concluded that the price of rice and wheat should be adjusted rapidly along with allocation of rice and wheat production in Bangladesh.

Keywords: Price variability, acreage allocation, rice and wheat production, Bangladesh

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Economics of Mushroom (*Agaricus bisporus*) Production in a Selected Upazila of Bangladesh

Basanta K. Barmon*, Imrana Sharmin, Parvez K. Abbasi*** , Al Mamum******

Abstract

A study was conducted during 2011 to estimate profit, benefit cost ratio (BCR) and household income of mushroom production and also to explore the problems of producing mushroom and its marketing channels in Bangladesh. Thirty samples were randomly selected and information on mushroom production was collected using comprehensive questionnaire from Savar Upazila in Dhaka district. Mushroom was found to be a profitable agricultural enterprise (22,888 taka per farm). The benefit cost ratio (BCR) was 1.55. The average family household income was about Tk. 43,731. Usually, three intermediaries (mushroom office, wholesalers and retailers) are involved in the marketing channels of mushroom. The marketing margin of mushroom for farm-gate to wholesalers and wholesalers to retailers were taka 50 and 70 per kg, respectively. It was revealed that rich and middle income group people were the main mushroom customers. Even though mushroom is a profitable enterprise, the producers faced numerous problems regarding mushroom production and marketing.

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Abstracts of Published Papers 2012

Business and Economics

The Jahangirnagar Economic Review, Vol. 23, pp. 101-116.

Import Demand Function and Elasticities of Crude Oil for Bangladesh

Muntasir Chaudhury*

Abstract

The aims to estimate an aggregate import demand function and import elasticities of crude oil for Bangladesh. Annual data of 24 years, collected form secondary sources, were applied in econometric estimations of both linear and log-linear models that used real per capita income, international crude oil price as explanatory variable to model the quantity of import of crude oil in Bangladesh. Findings of the study shows estimated models had economic robustness and crude oil is to be found income inelastic and price inelastic.

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Business and Economics

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A Comparative Study on the Cost of Higher Education in Private and Public Universities in Bangladesh

Basanta Kumar Barmon*, Imrana Sharmin, Debashish Dey*****

Abstract

The present study aims to attempt a comparative study on the reasons for enrolment in private universities and to estimate the cost of education for higher education in both private and public universities in Bangladesh. Primary and secondary data are used in this study. The findings of the study indicated that the monthly average cost of education of a student in a private university is significantly higher than in a public university. The main reasons are that the students of private universities spend more money on tuition fees, accommodation costs and better living expenses than public universities, and the costs also largely vary (both private and public university) among the students within the same university. On an average, the parents' monthly income of students who are enrolled in private universities is significantly higher than those of public university and most of the parents are engaged in business or good government services. The cost of education also depends on parents' income, family size, and number of students in the same family. The study also indicates that on an average, monthly expenditures of male students are significantly higher than female students.

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Business and Economics

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Marketing Strategy of cell Bazaar.com: An analysis in the light of consumer behavior

Md. Anamul Hoque*, Mahmudul Hasan Fouji**, S. M. Jobaer***

ABSTRACT

The globalization of technology has influenced the lifestyle and attitude of consumers around the world. Bangladeshi culture has not been any different. People are getting more self oriented and conscious in terms of saving time, acquiring high status, influencing image & holding powerful position in the society. Marketers are always concerned about these factors and are continuously trying to establish their marketing strategies based on customers' demand. Grameenphone is one of those marketers. Grameenphone has launched Cellbazaar not very long ago with the motive to meet today's marketing challenges. This is a unique phenomenon considering the Bangladeshi context. Hence, this paper tries to examine the marketing strategy of cell bazaar on consumer behavior perspective. And in doing so both primary and secondary data have been collected. Secondary data have been collected from books and articles that deal with marketing in general. Primary data have been collected through personal interviews. The study revealed that the customers of the cell bazaar are young, tech-savvy, villagers, middleclass price sensitive people who believe cellbazaar is a good alternative for first and second hand products with fair service, adequate information and tremendously user friendly virtual market.

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Abstracts of Published Papers 2012

Business and Economics

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Towards Knowledge Economy: A Study of Fashionable Management Concepts Awareness among Bangladeshi Managers

Md. Al Mamun*, Laila Zaman**

Abstract

Over the last two decades especially from the start of adventurous growth of free market enterprise in the early 1990s, the growth of business activities has been phenomenal. There have been various engines for such growth in business. However, in today's knowledge economy the emergence of new and disappearance of old management concepts has been one of the most important intellectual capital to fuel such business growth. The evolution of new knowhow i.e. fashion management concepts, defined as the transitory collection of managerial techniques and perceptions for harnessing competitive edge of the business, are at the forefront of all strategic core competencies for an organization. As Bangladesh wishes to enter into era of knowledge economy corporate success will significantly depend on respective managers' awareness about the new and sophisticated management concepts. Therefore this study, first of its kind in Bangladesh, has tried to identify the awareness level of 130 managers about 96 fashionable management concepts in various functional areas amongst Bangladeshi managers working in various companies listed in Dhaka Stock Exchange (DSE). The statistical analysis show that most managers "can describe these concepts somehow" with higher degree of homogeneous response irrespective of their difference classified under various profile variables.

Keywords: Fashionable management concepts, knowledge economy, homogeneous awareness, functional areas of management.

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Sciences and Engineering

UNL Based Bangla Natural Text Conversion – Predicate Preserving Parser Approach

Md. Nawab Yousuf Ali*, Shamim Ripon, Shaikh Muhammad Allayear*****

Abstract

Universal Networking Language (UNL) is a declarative formal language that is used to represent semantic data extracted from natural language texts. This paper presents a novel approach to converting Bangla natural language text into UNL using a method known as *Predicate Preserving Parser (PPP)* technique. *PPP* performs morphological, syntactic and semantic, and lexical analysis of text synchronously. This analysis produces a semantic-net like structure represented using UNL. We demonstrate how Bangla texts are analyzed following the *PPP* technique to produce UNL documents which can then be translated into any other suitable natural language facilitating the opportunity to develop a universal language translation method via UNL.

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Development of Dictionary Entries for the Bangla Vowel Ended Roots for Universal Networking Language

Mohammad Zakir Hossain Sarker*, **Md. Nawab Yousuf Ali****, Jugal Krishna Das***

Abstract

Conversion from another language to native language is highly demanding due to increasing the usage of web based application. Firstly, the respective sentence of a native language is converted to Universal Networking Language (UNL) expressions and then UNL expressions can be converted to any native language. UNL system is developed for most of the languages already but a very little effort has been made to convert Bangla language to UNL expressions. In this paper, we have described Bangla verb, Verb root, Verbal Inflections and the finally developed the dictionary entries for the vowel ended roots and their respective verbal inflections.

Keywords: Universal Networking Language, Bangla Verb, Verb Root, Verbal Inflections, Vowel Ended Group (VEG), Consonant Ended Group.

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Dictionary Entries for Bangla Consonant Ended Roots in Universal Networking Language

Mohammad Zakir Hossain Sarker*, **Md. Nawab Yousuf Ali****, Jugal Krishna Das***

Abstract

The Universal Networking Language (UNL) deals with the communication across nations of different languages and involves with many different related discipline such as linguistics, epistemology, computer science etc. It helps to overcome the language barrier among people of different nations to solve problems emerging from current globalization trends and geopolitical interdependence. We are working to include Bangla language in the UNL system so that Banglalanguage can be converted to UNL expressions. As a part of this process currently we are working on Bangla Consonant Ended Verb Roots and trying to develop lexical or dictionary entries for the Consonant Ended Verb Roots. In this paper, we have presented our work by describing Bangla verb, Verb root, Verbal Inflections and then finally showed the dictionary entries for the consonant ended roots.

Keywords: Universal Networking Language, Verb Root, Consonant Ended Verb Root, Vowel Ended Verb Root, Verbal Inflections, Dictionary Entry

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Outlining Bangla Word Dictionary for Universal Networking Language

Mohammad Zakir Hossain Sarker*, **Md. Nawab Yousuf Ali****, Jugal Krishna Das***

Abstract

Universal Networking Language (UNL) is a computer language that enables computers to process information and knowledge across the language barriers. It is an artificial language that replicates the functions of natural languages in human communication. The main goal of the UNL system, which allows users to visualize websites in their native languages, is to provide a common representation for accessing Internet of multilingual. For this common representation, lexical knowledge is a critical issue in natural language processing systems. We have been working to include Bangla in the UNL system and in this paper we have discussed about the Bangla Word Dictionary that we have designed to include in the system.

Keywords: Universal Word, Head Word, Grammatical Attributes, Universal Networking Language

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Effects of non-thermal ions on dust-ion-acoustic shock waves in a dusty plasma with heavy negative ions in non-planar geometry

Anindita Paul*, **Gurudas Mandal****, M. M. Mamun***, **M. R. Amin******

Abstract

Dust negative ion acoustic (DNIA) shock wave in a dusty multi-ion plasma consisting of electrons, light positive ions, heavy negative ions and extremely massive charge fluctuating negative dust in a non-planar geometry has been investigated by employing reductive perturbation technique. For this, a modified Burger's equation is derived and numerically

solved it to get the envelope of the DNIA shock wave. The effect of the non-thermal ions on

the DNIA shock waves is included in the dusty plasma with heavy negative ions. It is shown how the basic features of the nonlinear DNIA shock waves are modified by the presence of the charge fluctuating dust and the nonlinear nature of the positively charged light ions in the non-planar geometry. It has been observed that the developed shock heights are different for different geometries, and in the case of spherical geometry the shock wave has higher height compared to that of the cylindrical geometry. The results of the present work would be useful in understanding laboratory and space dusty plasmas.

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Abstracts of Published Papers 2012

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Journal of Science and Technology in the Tropics (JOSTT), Vol. 8, No. 1, pp. 29-40, Malaysia, June, 2012

Dust acoustic dressed solitons in a four component dusty plasma with superthermal electrons

Prasanta Chatterjee^{*}, Ganesh Mondal^{**}, **Gurudas Mandal**^{***} and C S Wong^{****}

Abstract

Nonlinear dust acoustic dressed soliton is studied in a four component dusty plasma. Superthermal distributions for electrons are considered. The Korteweg-de Vries (KdV) equations is derived by using reductive perturbation technique. A higher order inhomogeneous differential equation is obtained for the higher order correction. The expression for dressed soliton is obtained by the renormalization method. The expression for higher order corrections are determined by using a truncated series solution technique.

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Abstracts of Published Papers 2012

Sciences and Engineering

Physics Letters B, Vol. 714, No. 2-5, pp. 131-135, USA, July, 2012

Quark matter as dark matter in modeling galactic halos

Farook Rahman^{*}, P.K.F. Kuhfittig^{**}, **Ruhul Amin^{***}**, **Gurudas Mandal^{****}**, Saibal Ray^{*****}, Nasarul Islam^{*****}

Abstract

Considering the flat rotation curves as input and treating the matter content in the galactic halo region as quark matter, we have found out a background spacetime metric for the region of the galactic halo. We obtain fairly general conditions that ensure that gravity in the halo region is attractive. We also investigate the stability of circular orbits, along with a different role for quark matter. Bag-model quark matter meeting these conditions therefore provides a suitable model for dark matter.

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Abstracts of Published Papers 2012

Sciences and Engineering

International Journal of Engineering and Technology (UK), vol. 2, no. 1, pp. 22-27, 2012

Performance Evaluation of Two-Hop Wireless Link under Rayleigh and Nakagami- m Fading

Himadri S. Saha^{*}, Md. Imdadul Islam^{**}, **M. R. Amin**^{***}

Abstract

One of the major challenges in wireless communications, especially in urban areas, is to detect the digital information under different fading environments. In a two-hop wireless link, each hop is affected by fading and noise which degrades the overall performance of the communication system. In this paper, performance of a two-hop link is analyzed under Rayleigh and Nakagami- m fading environments taking maximal ratio combining (MRC) at the first hop and Alamouti coding at the second hop. The objective of the paper is to observe the impact of fading effect on the bit error rate (BER) on the performance of the two-hop wireless link for 8-PSK and QPSK modulation schemes.

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Abstracts of Published Papers 2012

Sciences and Engineering

Astrophysics and Space Science (Germany), vol. 337, no. 1, pp. 177-184, 2012

Growing electrostatic modes in the isothermal pair plasma of the pulsar magnetosphere

U. A. Mofiz^{*}, and **M. R. Amin**^{**}

Abstract

It is shown that a strongly magnetized isothermal pair plasma near the surface of a pulsar supports lowfrequency (in comparison to electron cyclotron frequency) toroidal electrostatic plasma modes in the equatorial region. Physically, the thermal pressure coupled with the magnetic pressure creates the low frequency oscillations which may grow for particular case of inhomogeneities of the equilibrium magnetic field and the pair plasma density.

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Abstracts of Published Papers 2012

Sciences and Engineering

International Journal of Engineering and Technology (IJET), (Singapore), vol. 4, no. 4, pp. 495-499, Aug. 2012

Enhancement of Performance of Cognitive Radio Network with Incorporation of MRC Scheme at Secondary Receiver

Risala T. Khan^{*}, Tanzilah Noor Shabnam^{**}, Md. Imdadul Islam^{***}, **M. R. Amin^{****}**

Abstract

The faithful detection of presence of a primary user (PU) is the most essential requirement of a cognitive radio network. Otherwise the PU will experience jamming from secondary user (SU) which will eventually lead to reduction in throughput of the PU. Similarly, the false detection of a PU will abstain a SU from its transmission opportunity hence reduce the throughput of the SU. Under this situation we propose a cognitive receiver equipped with multiple antenna and maxima ratio combining scheme (MRC) to detect the presence of a PU. The rest of the communication links like PU to PU or SU to PU uses single antenna. In this paper the concept of test statistics of fusion center from a previous literature is applied in derivation of probability of false alarm, probability of detection, channel capacity and symbol error rate of the network. The performance of a cognitive radio network under MRC scheme at receiving mode of SU is found better than the case of single antenna.

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Abstracts of Published Papers 2012

Sciences and Engineering

Phys. Lett. B (Elsevier, Netherland), vol. 714, no. 2-5, pp. 131-135, Aug. 2012

Quark matter as dark matter in modeling galactic halo

Farrok Rahaman^{*}, P.K.F. Kuhfittig^{**}, **Ruhul Amin^{***}**, **Gurudas Mandal^{****}**, Saibal Ray^{*****},
Nasarul Islam^{*****}

Abstract

Considering the flat rotation curves as input and treating the matter content in the galactic halo region as quark matter, we have found out a background spacetime metric for the region of the galactic halo. We obtain fairly general conditions that ensure that gravity in the halo region is attractive. We also investigate the stability of circular orbits, along with a different role for quark matter. Bag-model quark matter meeting these conditions therefore provides a suitable model for dark matter.

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Abstracts of Published Papers 2012

Sciences and Engineering

Journal of Science and Technology in the Tropics (Malaysia), vol. 8, no. 1, pp. 41-51, June 2012.

Effects of Nonthermal Ions on Dust Ion-Acoustic Shock Waves in a Dusty Plasma with Heavy Negative Ions in Nonplanar Geometry

A. Paul^{*}, G. Mandal^{}, A. A. Mamun^{***}, and M. R. Amin^{****}**

Abstract

Dust negative ion acoustic wave in a dusty multi-ion plasma consisting of electrons, light positive ions, heavy negative ions and extremely massive charge fluctuating negative dust in a non-planar geometry has been investigated by employing reductive perturbation technique. Recently, the propagation of dust negative ion-acoustic shock waves in a dusty multi-ion plasma, has been studied earlier by us by considering the distribution of light positive ions as nonthermal in a planar geometry. The present study is performed to show the effects of the non-thermal ions on dust-ion-acoustic shock waves in a dusty plasma with heavy negative ions in non-planar geometry. The results of the present work would be useful in understanding laboratory and space dusty plasmas.

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Sciences and Engineering

Journal of Information Processing Systems (Korea), vol. 8, no. 3, pp. 421-436, 2012.

Fingerprint Detection Using Combination of Minutiae Points and Invariant Moments Parameters, a New Approach

Sarnali Basak*, Md. Imdadul Islam**, and **M. R. Amin*****

Abstract

Different types of fingerprint detection algorithms that are based on extraction of minutiae points are prevalent in recent literature. In this paper, we propose a new algorithm to locate the virtual core point/centroid of an image. The Euclidean distance between the virtual core point and the minutiae points is taken as a random variable. The mean, variance, skewness, and kurtosis of the random variable are taken as the statistical parameters of the image to observe the similarities or dissimilarities among fingerprints from the same or different persons. Finally, we verified our observations with a moment parameter-based analysis of some previous works.

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Abstracts of Published Papers 2012

Sciences and Engineering

International Journal of Soft Computing and Engineering (India), vol. 2, no. 3, pp. 459-463, July 2012.

Determination of Medium Access Probability of Cognitive Radio under Different Fading Channels

Rezwan Ahmad^{*}, Md. Imdadul Islam^{}, and M. R. Amin^{***}**

Abstract

The correct decision in detecting the presence of the primary users is a vital requirement in cognitive radio network. Incorporation of spatial false alarm makes the derivation of probability of correct decision a difficult task. The previous literature performs the task only for the case of the received signal under Normal distribution of the fading channel. In this paper, we enhance the work for three small scale fading channels: Rayleigh, Rician and Nakagami-m Fading Channels to get the real scenario of a cognitive radio network in an urban area. The impact of fading parameters and sensing range on the profile of probability of correct decision is also investigated to optimize the performance of the network.

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Abstracts of Published Papers 2012

Sciences and Engineering

International Journal of Engineering and Innovative Technology (USA), vol. 1, no. 4, pp. 163-170, April 2012.

Cost Based Performance Evaluation of $H_2/D/1$ and $E_2/D/1$ Traffic Model

Jesmin Akhter^{*}, Md. Imdadul Islam^{*}, **Himadri Saha^{**}**, **M.R. Amin^{***}**

Abstract

Wireless Cost based performance of a network is very much essential for a network planner prior implementation of a network. In this paper we propose a cost based analysis of $H_2/D/1$ and $E_2/D/1$ traffic models based on the concept of a previous analysis of $M/G/1$ model. Here, the arrival rate of packets follows hyper-exponential and Erlangian distribution and the service time of both traffic are deterministic. It has been found that distinct minima of the cost profile of $H_2/D/1$ but that of $E_2/D/1$ is almost hyperbolic which gives the opportunity to a network planner to select exact traffic parameters to attain the service of minimum cost.

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Abstracts of Published Papers 2012

Sciences and Engineering

International Journal of Soft Computing and Engineering (India), vol. 2, no. 2, pp. 236-239, May 2012.

Detection of Virtual Core Point of a Fingerprint; a New Approach

Sarnali Basak^{*}, Md. Imdadul Islam^{**}, **M. R. Amin**^{***}

Abstract

In a fingerprint the profile of ridges are flowed by ridge orientation curves. The slope of each point of a ridge orientation curve varies with the radius of curvature of the line. The change in gradient will attain its maximum value when the curve changes its slope from positive to negative or vice versa which occurs on immediate left and right of maxima or minima point. Every ridge on a fingerprint will provide such point of maximum gradient and the mean value of those points is considered as the virtual core point. This paper presents a new model to determine the virtual core point based on changed in gradient of maxima and minima points, so that this core point is considered to be the reference point to select the region of interest (ROI) of a fingerprint for further processing. The results of the paper show that, the proposed method can provide the virtual core point from different types of fingerprint very efficiently and consequently simplifies the fingerprint recognition system.

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Abstracts of Published Papers 2012

Sciences and Engineering

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Some Characterizations of 0-distributive Nearlattice

A.S.A.Noor^{*}, Md. Zaidur Rahman^{**}, Md. Bazlar Rahman^{**}

Abstract

In this paper we studied different properties of 0-distributive nearlattices. Here we prove that for a filter A of S , $A^0 = \{x \in S : x \wedge a = 0, \text{ for some } a \in A\}$ is an ideal if and only if S is 0-distributive. Then we include several characterizations of a 0-distributive nearlattice using A^0 where A is a filter. Finally we show that S is 0-distributive if and only if for all $a, b, c \in S$, $(a \wedge (b \vee c))^{\perp} = (a \wedge b)^{\perp} \cap (a \wedge c)^{\perp}$ provided $b \vee c$ exists.

Keywords : 0-distributive nearlattice, Maximal filter, Prime filter, Minimal prime down set, Minimal prime ideal.

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Sciences and Engineering

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On Semi Prime Ideals in Nearlattices

Md. Zaidur Rahman^{*}, Md. Bazlar Rahman^{*}, **A.S.A.Noor^{**}**

Abstract

Recently Yehuda Rav has given the concept of Semi prime ideals in a general lattice by generalizing the notion of 0-distributive lattices. In this paper we study several properties of these ideals in a general nearlattice and include some of their characterizations. We give some results regarding maximal filters and include a number of Separation properties in a general nearlattice with respect to the annihilator ideals. We also include a Separation property for a filter disjoint to the semi prime ideal $\{x\}^{\perp J}$.

Keywords : 0-distributive nearlattice, Prime ideal, Semi prime ideal, Annihilator ideal

0Maximal filter.

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0-distributive Nearlattice

Md. Zaidur Rahman^{*}, Md. Bazlar Rahman^{*}, **A.S.A.Noor^{**}**

Abstract

J.C.Varlet gave the notion of 0-distributive lattices to generalize the concept of pseudocomplemented lattices. In this paper, the authors extended the concept for nearlattices. They include several characterizations of these nearlattices. They provide a separation theorem in a 0-distributive nearlattice S for a filter F and an annihilator $\{x\}^\perp (x \in S)$. At the end they include a result on minimal prime ideals.

Keywords: 0-distributive nearlattice, Maximal filter, Prime filter, Minimal Prime ideal.

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Some Properties of 0-distributive Nearlattice

Md. Zaidur Rahman*, Md. Bazlar Rahman*, A.S.A.Noor**

Abstract

In this paper we studied different properties of 0-distributive nearlattice. Here we prove that a filter A of S , $A^0 = \{x \in S : x \wedge a = 0, \text{ for some } a \in A\}$ is an ideal if and only if S is 0-distributive. Then we include several characterizations of 0-distributive nearlattice using A^0 where A is a filter. Finally we show that S is 0-distributive if and only if for all $a, b, c \in S$, $(a \wedge (b \vee c))^0 = (a \wedge b)^0 \cap (a \wedge c)^0$, provided $b \vee c$ exists.

Keywords : 0-distributive nearlattice, Maximal filter, Prime filter, Minimal prime down set, Minimal Prime ideal,

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Sciences and Engineering

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Semi Prime Ideals in Meet Semilattices

Momtaz Begum^{*}, A.S.A.Noor^{**}

Abstract

The Concept of semi prime ideals was given by Y. Rav by generalizing the notion the notion of 0-distributive lattices. An ideal I of a lattice L is called a semi-prime ideal if for all $x, y, z \in L$, $x \wedge y \in I$ and $x \wedge z \in I$ imply $x \wedge (y \vee z) \in I$. In this paper, we extend the concept for meet semi lattices. Here we include several characterizations of these ideals in directed above meet semi lattices and provided a result related to prime separation theorem. We also include some results on minimal prime ideals.

Keywords : Semi prime ideal, Maximal filter, Minimal prime ideal, Pseudo complemented meet semi lattice.

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Sciences and Engineering

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Some Properties of 0-distributive Meet Semilattices

A.S.A.Noor^{*}, Momtaz Begum^{**}

Abstract

J.C.Varlet introduced the concept of 0-distributive lattices to generalize the notion of pseudo complemented lattices. A lattice L with 0 is called a 0-distributive lattice if for all $a, b, c \in L$, $a \wedge b = 0 = a \wedge c$ imply $a \wedge (b \vee c) = 0$. Of course every distributive lattice with 0 is 0-distributive. Also every pseudo complemented lattice is 0-distributive. Recently, Chakorborty and Talukder extended this concept for directed above meet semi lattices. A meet semi lattice S is called directed above if for all $a, b \in S$, there exists $c \in S$ such that $c \geq a, b$. Again Y.Rav has extended the concept of 0-distributivity of 0-distributivity by introducing the notion of semi prime ideals in a lattice. Recently, Noor and Begum have studied the semi prime ideals in a directed above meet semi lattice. In this paper we have included several characterizations and properties of 0-distributive meet semi lattices. We proved that for a meet sub semi lattice A of S , $A^0 = \{x \in S : x \wedge a = 0\}$ for some $a \in A$ is a semi prime ideal of S is 0-distributive. Using different equivalent conditions of 0-distributive meet semi lattices we have given a separation theorem for α – ideals.

Keywords : 0-distributive meet semi lattice, Semi prime ideal, Prime ideal , Maximal ideal, α – ideal.

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Some Properties of 0-distributive and 1-distributive lattices

Razia Sultana^{*}, Md. Ayub Ali^{**}, **A.S.A.Noor^{***}**

Abstract

In this paper we have included several properties of 0-distributive and 1 distributive lattices. We have provided many characterizations of 1-distributive lattices. We also studied the 1-distributive lattices by using a prime Separation theorem. We prove that a lattice L which is both 0 and 1-distributive, is complemented if and only if its prime ideals are unordered. We also show that a 0-distributive complemented lattice is 0-modular if and only if it is weakly complemented. Finally we include some results on semi prime filters.

Keywords: 0-distributive lattice, 1-distributive lattice, Annihilator ideal, Dual annihilator ideal.

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Sciences and Engineering

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Some Properties of Semi prime Ideals in Lattices

Md. Ayub Ali^{*}, R.M.Hafizur Rahman,^{**} **A.S.A.Noor**^{***}

Abstract

Recently Yehuda Rav has given the concept of Semi prime ideals in a general lattice by generalizing the notion of 0-distributive lattices. In this paper we have included several characterizations of Semi prime ideals. Here we give a simpler proof of a prime separation theorem in a general lattice by using semi prime ideals. We also studied different properties of minimal prime ideals containing a semi prime ideal in proving some interesting results. By defining a p-algebra L relative to a principal semi prime ideal J, we have proved that when L is 1-distributive, then L is a relative S-algebra if and only if every prime ideal containing J contains a unique minimal prime ideal containing J, which is also equivalent to the condition that for any $x, y \in L$, $x \wedge y \in J$ implies $x^+ \vee y^+ = 1$. Finally, we have proved that every relative S- algebra is a relative D- algebra if L is 1-distributive and modular with respect to J.

Keywords : Semi prime ideal, 0-distributive lattice, Annihilator ideal, Maximal filter, Minimal prime ideal.

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Finitely Generated n-Ideals of a NearLattices

Mizanur Rahman*, A.S.A.Noor**

Abstract

BY a near lattice we mean a meet semi lattice with the property that any two elements possessing a common upper bound, have a supremum. For a near lattice S , if n is neutral and upper then the set of all finitely generated n -ideals $F_n(S)$ is a lattice and the set of all principal n -ideals $P_n(S)$ is again a near lattice. In this paper we have proved that when n is an upper element of a distributive near lattice S , then $F_n(S)$ is generalized Boolean if and only if $P_n(S)$ is semi Boolean. Moreover, we have also shown that $F_n(S)$ is generalized Boolean if and only if the set of all prime n -ideals $P(S)$ is unordered by set inclusion, when n is upper and S is distributive.

Keywords : Near lattice, Finitely generated n -ideal, Principal n -ideal, Semi Boolean near lattice, Prime n -ideal.

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Some Characterizations of Semi Prime n-Ideals in Lattices

Md. Ayub Ali^{*}, A.S.A.Noor^{**}, S. R. Podder^{***}

Abstract

The concept of semi prime ideals in lattices was given by Y.Rav by generalizing the concept of 0-distributive lattices given by J.C.Varlet. For a neutral element $n \in L$, recently Ayub,Noor and Podder have introduced the concept of n-distributive lattices which is a generalization of both 0-distributive and 1-distributive lattices. In a very recent paper, M. Ayub Ali and others have generalized the concept of n-distributive lattices and given the notion of semi prime n-ideals. For an element n in a latticeL, any convex sublattice containing n is called an n-ideal. In this paper, we have included several characterizations of semi prime n-ideals in lattices. We have given a characterization of minimal prime n-ideals containing $\{a\}^{\perp n}$ for $a \in L$. Finally we have included a prime separation theorem with the help of annihilator n-ideals.

Keywords: Neutral element, Semi prime n-ideal, Maximal convex sublattice, Minimal prime n-ideal..

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Sciences and Engineering

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Annulets in a Distributive Nearlattice

Md. Ayub Ali^{*}, **A.S.A.Noor^{**}**, A.K.M.S.Islam^{***}

Abstract

Here the authors show that in a distributive nearlattice S with 0 , set of all ideals of the form $(x]^{*}$, denoted by $A_0(S)$ is a join semi lattice with lower bound property. It is a sub semi lattice of lattice of ideals if and only if S is normal. We show that $A_0(S)$ is relatively complemented if and only if S is sectionally quasi- complemented. Moreover, $A_0(S)$ is Boolean when S is quasi- complemented.

Keywords :Relatively complemented, Sectionally Quasi-complemented, Annihilator ideal.

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On Semiprime n -ideals in Lattices

Md. Ayub Ali^{*}, R.M.Hafizur Rahman^{**}, **A.S.A.Noor^{***}**, M.M.Rahman^{****}

Abstract

Yehuda Rav has given the concept of Semi prime ideals in a general lattice by generalizing the notion of 0-distributive lattices. In this paper we introduce the concept of semi prime n -ideals when n is a neutral element. For a fixed element n in a lattice L , any convex sub lattice containing n is called an n -ideal. Here we give several characterizations of semi prime n -ideals of lattices. We include a prime separation theorem in a general lattice with respect to annihilator n -ideal containing a semi prime n -ideal.

Keywords: n -distributive lattice, Semi prime n -ideal, Annihilator n -ideal, Maximal convex sublattice, Prime convex sublattice.

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α – Ideals in a Distributive Nearlattice

A.S.A.Noor*, Md. Ayub Ali**, A.K.M.S.Islam***

Abstract

In this paper the authors give the concept of α -ideals in a distributive nearlattice. They provide a number of characterizations of α -ideals in a nearlattice. They prove that a nearlattice S with 0 is disjunctive if and only if its every ideal is an α -ideal. They also show that S is sectionally quasi-complemented if and only if each prime α -ideal is a minimal prime ideal. Finally S is generalized Stone if and only if each prime ideal contains a unique prime α -ideal.

Keywords : α -ideal, Annulets, Disjunctive nearlattice, Quasi-complemented nearlattice, Generalized Stone nearlattice.

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***n*-Distributive Lattice**

Md. Ayub Ali,^{*} Sompa Rani Podder^{*}, **A.S.A.Noor^{**}**

Abstract

J.C.Varlet has given the concept of 0-distributive and 1-distributive lattices. In this paper the authors have generalized the whole concept and introduced the notion of *n*-distributive lattices. They show that for a neutral element *n* of a lattice *L*, the *n*-annihilator of any subset of *L* is an *n*-ideal if and only if *L* is *n*-distributive. Then the authors study different properties of these lattices. Finally, using the *n*-annihilators they generalize the well known prime separation theorem of distributive lattices with respect to annihilator *n*-ideal in a general lattice and produce an interesting characterization of *n*-distributive lattice.

Keywords : Neutral element, 0-distributive lattice, *n*- annihilator, Annihilator *n*-ideal, Prime *n*-ideal, *n*-distributive lattice.

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On the enhancement of the drain current in Indium rich InGaAs surface channel MOSFETs

A. T. M. Golam Sarwar*, M. R. Siddiqui**, **Anisul Haque****

Abstract

Effects of interface trap states (D_{it}) and the shift of the charge neutrality level (CNL) on the enhancement of the drain current in In rich surface channel, enhancement-mode, n-type InGaAs MOSFETs are investigated. In addition to the increase in the bulk mobility, the shift of CNL towards the conduction band together with high densities of D_{it} are responsible for the experimentally observed remarkable enhancement of the on-state drain current with increasing In content in the channel. However, when D_{it} density is low, current enhancement is weak and the location of CNL has little effect on the current enhancement. Acceptor-type interface trap states above the conduction band minima (CBM) play an important role in determining the inversion layer electron mobility. Representing D_{it} distribution above the CBM by a constant equal to the D_{it} value at CNL causes an over-estimation of the drain current at higher gate voltages. It is also observed that the extraction of D_{it} from the low-frequency gate C-V data is independent of the location of CNL. We further show that the subthreshold slope (SS) is doubled due to D_{it} . However, the location of CNL or the density of D_{it} above CBM has little effect on SS.

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Sciences and Engineering

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Classical Arithmetic Logic Unit Embedded on Reversible/Quantum Circuit

Mozammel H A Khan*

Abstract

Reversible circuit dissipates less heat than irreversible circuit. A promising use of reversible circuit may be embedding of reversible circuits in irreversible general purpose computers to allow low-power design. In this paper, we embed an n -bit classical ALU on reversible circuit, which can perform addition, subtraction, EXOR, EXNOR, AND, NAND, OR, NOR, and NOT operations on n -bit data. The quantum realization of our n -bit ALU requires $27n - 10$ primitive quantum gates with quantum circuit width of $4n + 5$. The known reversible n -bit ALU capable of performing only mod 2^n addition, subtraction, negative subtraction, EXOR, and no-operation requires $22n - 10$ primitive quantum gates with quantum circuit width of $2n + 5$. With a marginal increase of quantum primitive gate count and nearly doubling the quantum circuit width, our ALU implements a larger set of operation needed for general purpose computing.

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Fundamental Properties and Applications of Carbon Nanotubes as Antennas

M. Mofazzal Hossain*, Md. Shantanu Islam**

Abstract

After the discovery of carbon nanotubes (CNs) by Iijima, CNs have found enormous importance for many applications in the field of nanotechnology, electronics, sensors and optics, due to their unique electrical and mechanical properties, and extremely high aspect ratio. Over the last two decades potential efforts have been dedicated to predict and measure the electrical properties (resistance, inductance and capacitance) of CNs (Carbon Nanotubes). CNs have been introduced as a new material for potential applications in inter-chip and intra-chip interconnections, antenna material for GHz to THz technology. Carbon nanotubes offer a combination of small size, high mobility, large current density (about 10^9 A/cm) and low intrinsic capacitance; moreover, their intrinsic cut-off frequency is expected to be high. Therefore they are among the candidates to eventually candidate for GHz to THz nano-antennas. In this work we mainly discuss the dependence of electrical conductivity on frequency and tube diameter. We also explore the radiation property and efficiency of the antenna. It is found that the real part of electrical conductivity of CN is almost independent of operating frequency and strongly dependent on tube radius. The radiation power and thus the efficiency of the antenna may be increased using long CNs and high current feeding to the antenna.

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Sciences and Engineering

4th International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials, ISPLASMA2012, March 4-8, 2012, Chubu University, Aichi, Japan

Thermal Treatment of Al₂O₃, MgO and CeO₂ Granulated Powders by Induction Thermal Plasma - a Numerical Approach

M. Mofazzal Hossain*, M. Rafiqul Alam*

Abstract

Nowadays induction thermal plasmas have been widely used in many fields due to their high enthalpy to enhance reaction kinetics high chemical activity, easy and rapid generation of high temperatures, large volume with a low velocity, oxidation and reduction atmospheres in accordance with the required chemical conditions. For the in-flight treatment of granulated microparticles by induction thermal plasma, it is essential to rigorously investigate the various effects of plasma discharge conditions and particle parameters. It is rare to have experimental records of thermal history of particles during in-flight treatment of particles, only some diagnosis of the quenched particles is possible for the characterization. Thus the numerical analysis is the only tool to have comprehensive characterization of the particle thermal history and energy exchange during in-flight treatment. A plasma-particle interaction flow model for the investigation of energy exchange dynamics during in-flight thermal treatment of granulated powders - Al₂O₃, MgO and CeO₂ in induction thermal plasma has been developed taking into account of plasma particle interaction and particle loading effects. Results show that the properties of powders are strongly dependent on the feed rate; among the three types of powders, particle size decrement is significant in case of MgO and less significant in case of Al₂O₃; and the effect of oxygen flow-rate on the particle size decrement is significant in case of MgO. Particles trajectories are wider for smaller particles than that of larger particles. Particle temperature is lowest for MgO and highest for Al₂O₃ particles.

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Abstracts of Published Papers 2012

Sciences and Engineering

The Proceedings of the Global Engineering, Science and Technology Conference 2012, 28-29 December 2012, Dhaka, Bangladesh

Development of Bangla Word Dictionary through Universal Networking Language Structure

Md. Nawab Yousuf Ali*, Khaled Bin Yousuf, Md.Fattah Ibne Shaheed*****

Abstract

The mission of the UNL project is to allow people across nations to access information in the Internet in their own languages. A good number of researchers in computational linguistic all over the world have already started developing UNL system for their respective native language. But the UNL system is not developed for Bangla. Researchers have been working on this issue. But so far no immense attempt has been made to develop Bangla word dictionary through universal networking language structure. In this paper, we particularly emphasizing of develop Bangla Words along with their grammatical attributes by the help of previous work done by English-UNL-Dictionary, UNL knowledge Base (KB), and morphological analysis in the framework of UNL with goal to produce a Bangla Word Dictionary which can be used for Enconverter and Deconverter (built by UNL center of UNDL Foundation) to convert Bangla natural language sentences to UNL expressions and vice versa.

Keywords: Universal Networking Language (UNL), Universal Words (UW), Bangla-UNL Dictionary, UNL Knowledge Base (UKB)

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Abstracts of Published Papers 2012

Sciences and Engineering

7th International Conference on Electrical and Computer Engineering (ICECE) 2012, 20-22 December 2012

Reduction of ICI in OFDM using Window Functions

Md. Al- Mahadi Hasan^{*}, Shoumik Das^{}, Md. Imdadul Islam^{***}, M. R. Amin^{****}**

Abstract

In Orthogonal Frequency Division Multiplexing (OFDM) carriers among users are orthogonally related. Hence no guard band is necessary like Frequency Division Multiplexing even spectrums of users can overlap, enhances the spectrum efficiency of the network. In this paper different window functions in frequency domain are considered in pulse shaping of OFDM data symbols which are considered uncorrelated. Under above considerations inter carrier interference (ICI) power becomes simply the square magnitude of window function. Here five different window functions are used for comparing performance of the wireless links in content of ICI power and desired received signal.

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Sciences and Engineering

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Optimizing Throughput of K-fold Multicast Network with Finite Queue using M/M/n/n+q/N Traffic Model

Md. Mahmudul Hasan^{*}, Most. Tajmary Mahfuz^{}, Mohamed Ruhul Amin^{***}**

Abstract

Multicast network is widely used for effective communication, transmission and performance optimizations of a network. In this paper, a new model has been developed to determine a suitable value of the fold k of a k -fold multicast network under different traffic loads under Poisson traffic with finite queue at each node. We have derived stationary distribution for the network states and then derived expressions for the network throughput and the blocking probability of the network. It has been found in this research work that the network throughput increases very fast as we increase the fold number. However, at a certain value of the fold, the blocking probability ceases to increase and it remains constant. We have also observed that as the offered traffic is increased, the throughput also increases. Moreover, the system parameter k is increased, the blocking probability decreases. However, after an optimum value of k , the blocking probability remains constant for a particular value of the offered traffic. In fact, in this paper, by evaluating the performance of a k -fold multicast network, our developed model improves the performance of a multicast network.

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Effects of Doping of Intermediate Band Region on Intermediate Band Solar Cell Characteristics

Urmita Sikder* Rifat-Ul-Ferdous* **Anisul Haque****

Abstract

Effects of doping density (N_I) of the intermediate band region on the short-circuit current, open-circuit voltage and fill factor of an intermediate band solar cell (IBSC) are analyzed. The individual contribution of each of these variables on the conversion efficiency is investigated. The short-circuit current exhibits the maximum variation with N_I . Open-circuit voltage shows negligible dependence on N_I . Contrary to a previously published result, the fill factor in our case is not sensitive to the changes in N_I . For our choice of IBSC parameters, it is found that the maximum generation, as well as the maximum efficiency, occurs at a value of IB occupation probability which is much smaller than the commonly accepted value of 0.5.

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Liberal Arts and Social Sciences

Globalization, Culture, and Education in South Asia: Critical Excursions (ISBN – 10:1137006870), Hardcover, 240 Pages, Palgrave Macmillan, New York, USA, 2012

Dip Kapoor^{*}, **Bijoy P. Barua**^{**}, Al-Karim Datto^{***}

Abstract

This collection brings together an experienced group of South Asian/diasporic scholars in higher education, schooling and adult education to develop a regional perspective on the multiple implications of globalization and its culture and educational imbrications in India, Pakistan, Bangladesh, Nepal, Sri Lanka and the Maldives. Relying on a blend of policy, critical-theoretical and practice-based perspectives, the contributors describe and critically analyze key trends in the region, while pointing out new directions pertaining to future developments in education and culture in South Asia in relation to the contradictory implications of globalization in both urban and rural contexts.

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Globalization, Culture, and Education in South Asia: Critical Excursions, New York: Palgarve Macmillan, (Ed. by Dip Kapoor, Bijoy P. Barua & Al- Karim Dato), pp.141 – 154, 2012.

The Barua Community, Globalization, and Colonial Education: The Quest for Sociocultural Identity in Bangladesh

Bijoy P. Barua*

Abstract

This chapter explored how the Barua community has perceived and sustained its social, cultural, political, and ethnic identity in the face of colonial education, westernization, and neoliberal globalization in rural Bangladesh. The community has been trapped in a process of assimilation in the country through the simulation of western-centric culture and materialism. However, despite the assimilation into the culture of the colonial past and the culture of the Bengali community, the Barua community has not been able to participate in or represent the politics in Bangladesh. Despite its acceptance of colonial education and the regeneration of Theravada Buddhism, it has failed to uphold its own community rights within the political space of the country. As a result, its ethnic/cultural/political identity is in an ambiguous position: members of the Barua community frequently shift between identifying themselves as Buddhist and Bengali. This is because inadequate attention is given to understanding notions of ethnicity/indigeneity and cultural heritage in learning processes in the country. This research used an anticolonial lens to examine issues of cultural/ethnic identity and social formation of the community within the processes of colonial education and globalization.

Key Words: Globalization, Colonial education, Socio-cultural identity, Cultural heritage and indigeneity.

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Globalization, Culture and Education in South Asia: Critical Excursions (ISBN 10:1137006870), Hardcover, Palgrave Macmillan, New York, USA, pp.53-69, 2012

Neoliberal Globalization and Higher Education in Bangladesh

Touhida Tasnima, Ehsanul Haque

Abstract

In the era of globalization, higher education encounters many new and critical challenges in its knowledge-producing and disseminating function. Indisputably, the forces of neoliberal globalization have brought immense changes and stresses in the educational philosophies, values, beliefs, goals, and practices worldwide. This paper, in particular, focuses on changes and transformations in higher education policies, operations, and institutions in Bangladesh that have been triggered by neoliberal globalization's imperatives, trajectories, and conditions. While conceptualizing a linkage between globalization and higher education from a neoliberal perspective, the study makes a case that higher education in the country has assumed a new dimension in terms of educational governance and delivery, structural reforms, policymaking, curriculum revision, and academic work. Recent developments and trends in higher education in Bangladesh suggest that educational liberalization policy has opened up unprecedented and diverse learning opportunities. The paper claims that tertiary education is a heavily globalized sector in Bangladesh where both public and private higher education institutions play a complementary role for each other. In a broad sense, educational globalization symbolizes the reproduction/triumph of capitalism that centers on consumerism. As a result, higher education in Bangladesh has, to some degree, been commercialized under the banner of human capital development. Given this scenario, the paper argues, neoliberal globalization-induced education in Bangladesh poses challenges to and raises legitimate questions about higher education and its serving public good and delivering social justice. The study critically examines the downsides of neoliberal globalization – the homogenization of educational systems and the uniformity of perspectives at the expense of local culture and tradition, and the use of knowledge as 'a purchasable and saleable good'. In this context, as agents of social transformation, justice, and development higher education institutions in the country need to ensure quality education tailored to local culture and norms, and tuned to learners' needs. The paper concludes covering some institutional responses from and strategies devised by both private and public higher education institutions in the country.

Key words: Neoliberalism, globalization, higher education and Bangladesh.

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