Abstract of Published Papers 2009

EAST WEST UNIVERSITY
excellence in education

East West University
CENTER FOR RESEARCH AND TRAINING
2010

PREFEACE

The East West University Center for Research and Training (EWUCRT) is pleased to publish the fourth volume of the Abstract of Published Papers 2009. This annual publication of the Center is a collective achievement of all the faculty members of this university. Most importantly, the faculty members of the University have greatly contributed in the areas of business, economics, social science, technology, liberal arts, science and engineering. In this noble endeavor, a total of 106 research articles, scholarly books and book chapters, and conference presentations have been included.

Most remarkably, forty-eight research articles in international journals, six articles in national journals, six book chapters, and a book were published. In addition, our scholars presented a total of forty-five papers both at national and international conferences. We are very much proud and delighted as a large number of research papers were published by our esteemed faculty which they have pertinently been demonstrating in their scholarly writings over the years. Considering their contributions, we extend our warm congratulations to all of them on their academic attainments and research accomplishments.

We express our sincere thanks to Dr. Rafiqul Huda Chaudhury, Chairperson of EWUCRT and Member, Board of Directors of East West University for his constant encouragement and guidance. We are also thankful to Professor Mohammad Sharif, Vice-Chancellor and Professor Muniruddin Ahmed Ahmed, Pro-Vice Chancellor of the University for their cooperation in accomplishing this work.

Finally, we acknowledge the assistance of Professor Mozammel Huq Azad Khan, Professor Humayan Kabir Chowdhury, Professor Ehsanul Haque, Dr. S.K. Roy, and Mr. Rayyan Hassan for their cooperation. Last, but not the least, Ms. Farha Naz, Secretary, EWUCRT deserves appreciation for her work.

June 3, 2010

Bijoy P. Barua, PhD (Toronto)
Executive Director
EWUCRT

TABLE OF CONTENTS

Faculty of Business and Economics

International Journals

BUSINESS AND ECONOMICS

International Business Research (Canadian Center of Science and Education), Vol. 2, No. 4, pp.109, October, 2009, , ISSN 1913-9004 (Print), ISSN 1913-9012 (Online), www.ccsnet.org

Communication Skill for the Business Executives: An Emperical Study on Some Local Private Business concerns in Bangladesh

Nargis Akhter*, Sardana Islam Khan*, Kamrul Hassan*

Abstract

The study which is mainly based on primary data attempts to focus on the facts relating to the communication skill of the different levels of business executives of local private business concerns in Bangladesh and their levels of awareness regarding the importance of communication skill in their professional career. The study reveals that majority of the executives have positive opinions regarding the importance of communication course designed for executives. Most of the respondents have completed communication course, but majority of them are dissatisfied with it. The study also discloses that many of the executives have received training on communication skill; however majority of them are dissatisfied with course content and quality. Although majority of the executives think that there should be compulsory training program on communication skills in business organizations, still compulsory training programs on communication skill do not exist in any of the respondents' business organizations. Academicians should design and conduct communication course keeping their application perspectives in view. Moreover employers should arrange compulsory training program on communication skill for their own executives.

Keywords: Communication Skill, Training, Communication Course, Business Executive, Local Private Business Concerns

* Department of Business Administration, East West University, 43 Mohakhali, C/A, Dhaka-1212. *Email address*: nargis@ewubd.edu

International Journal of Business and Management, Vol. 4, No. 4, May, 2009.
www.ccsenet.org/journal.html

A Test of Association between Working Hour and Work Family Conflict: A Glimpse on Dhaka's Female White Collar Professionals

M. Sayeed Alam *, Kohinoor Biswas*, Kamrul Hassan*

Abstract

As there has been an increasing influx of white collar woman professionals in Dhaka, maintaining work- family balance is becoming more critical day by day. This study particularly attempts to explore the correlation between working hour and work family imbalance. Three FGDs, each with 10 female managers, were conducted, to make a total sample size of 30. Findings report extensive working hours, per se 9-10 hours a day, as a lethal contributor to work family conflict, whereas shorter working hours (average 5-7 hours) have little or no affect. This study is based on Dhaka city and concentrated on private commercial organizations only. So an extended sample with more coverage is suggested.

Keywords: Working hour, Work family conflict, Dhaka

* Department of Business Administration, East West University 43, Mohakhali C/A, Dhaka-1212 Bangladesh. *Email address*: sbl@ewubd.edu, kohinoor@ewubd.edu

Indian Journal of Marketing Vol. 14, No.7, July, 2009

Export Marketing in Bangladesh: Problems and Prospects

M. Sayeed Alam*, Monowar Hossain Mahmood*

Abstract

Exports from developing countries has increased substantially in recent years. Bangladesh, as a developing country, also tried to access to international markets through following the export marketing strategies. However, business organizations in Bangladesh are facing dearth of knowledge about export marketing problems and remedies in this regard. The present study tried to accumulate the existing scattered information and literature to provide some guidelines for the export marketers and the policy makers. Future research incorporating on more empirical data and facts were suggested for helping the business organizations to improve the export performance of in Bangladesh.

* Department of Business Administration, East West University 43, Mohakhali C/A, Dhaka-1212 Bangladesh. *Email address*: sbl@ewubd.edu

Indian Journal of Marketing, Vol. 34, No. 11, November, 2009
www.indianjournalofmarketing.com

The Effect of Management Styles and Employee Behaviour On Customer Satisfaction In The Electronic Manufacturing Industry In Malaysia

Md. Aminul Islam*, **M. Sayeed Alam****

Abstract

The objective of this study was to identify the effect of Management Styles and Employee Behaviours on Customer Satisfaction in the Electronic Manufacturing Industry in Malaysia. The study examined three Management styles namely Authoritarian, Participative and laissez-faire management styles and four Employee Behaviour factors namely patience and acceptance, team player, employees' self perception of themselves and interpersonal relationships. The theoretical framework has been drawn out and questionnaire was designed based on the factors chosen. The data collected were analyzed by using SPSS program which provide relevant analysis such as reliability analysis, frequency analysis, and regression analysis. Ten hypotheses were developed to study the relationships between management styles and employee behaviour on the customer satisfaction in the Electronic Manufacturing Industry in Malaysia. The entire hypotheses were successfully tested with SPSS and three hypotheses were accepted. The regression analysis result shown that the most significant factors affecting employee behaviour is the authoritarian management styles. Participative management styles and the laissez-faire management styles found to have no significant effect on employee behaviour. In contrary to this, participative management styles found to be the most significant factor affecting customer satisfaction. Authoritarian and laissez-faire management styles found to have no significant effect on customer satisfaction. However among four identified employee behaviours namely; patience and level of acceptance, work as a team player, perception of self, and interpersonal skills; only self perception found to be the significant factor affecting customer satisfaction.

* Research Fellow, School of Management, Universiti Sains Malaysia Penang, Malaysia. *Email address:* amin_shanto@yahoo.com
** Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: sbl@ewubd.edu

International Journal of Quality and Innovation (IJQI), Vol. 1, No. 1, pp. 53-64, 2009
DOI: 10.1504/IJQI. 2009.026463

Quality Control by Information Technology in RMG Industry in Bangladesh

A.K.M. Masud*, Abdullah Al-Khaled*, Farhana Abedin*, A.F.M. Nasir Uddin**,
M. Sayeed Alam***

Abstract

The ready-made garment (RMG) industry in Bangladesh is now enjoying the status of being the largest garment exporter and the largest exporter of knit garment to the European Union. The competition with other countries like China and India in Asia is not only on the basis of productivity but also on the basis of quality. That is why it needs continuous monitoring and improvement for mass production. In this paper, a research has been made for identifying the dominating cause of quality problem in grey fabrics and the quantitative measure of its influence on quality also has been studied. An informative simulation-software model has been established for the continuous monitoring of grey quality and for eliminating the dominating cause of the quality loss.

Keywords: gram per square metre; GSM; ready-made garment; RMG; process stability; simulation; quality; Bangladesh.

* Department of Industrial & Production Engineering, Bangladesh University of Engineering &Technology, Dhaka-1000, Bangladesh. *Email address*: masud1@ipe.buet.ac.bd.
** Planning Department, OTOBI Limited, Gulshan – 1, Dhaka – 1212, Bangladesh.
Email address: afmnasiruddin01@gmail.com.
*** Department of Business Administration, East West University, 43 Mohakhali C/A Dhaka-1212.*Email addresses:* hkabir@ewubd.edu.

The IUP Journal of Public Finance (published by ICFAI University press), Vol. 7, No. 3 & 4, pp. 65, August -November, 2009

An Assessment of Non-Tax Revenue Sources in Bangladesh

Mohammad Faridul Alam*, Nikhil Chandra Shil*

Abstract

In Bangladesh, the fundamental problem behind arresting the revenue deficit is the rising expenditure unmatched by corresponding means of finance. Of total revenue, the revenue from non-tax sources is nearly one-fifth and its share in GDP has shown a stable trend over the years. This paper mainly focuses on the study of non-tax revenue performance in Bangladesh. The contribution of non-tax revenue, although erratic in terms of growth rate, has shown substantial increase in terms of absolute amount over the period, 1997-98 to 2006-07. Although, various reform initiatives have been taken to improve the tax performance, the initiatives are highly insignificant in case of non-tax revenue. The performance of non-tax revenue can significantly be improved through effective and efficient policy measures, which may help the country to cope with the fiscal imbalance in resource mobilization.

* Department of Business Administration, East West University, 43 Mohakhali, C/A Dhaka-1212. *Email address:* nikhil@ewubd.edu

International VAT Monitor (Journal published by International Bureau of Fiscal Documentation (IBFD), Vol. 20, No. 2, pp. 124-130, March-April, 2009

VAT in Bangladesh

Mohammed Faridul Alam*, Nikhil Chandra Shil*

Abstract

VAT was introduced in Bangladesh in 1991 and replaced the outdated excise duty and sales tax. This shift was motivated by the arguments that, as compared to sales tax, VAT has a higher revenue-raising potential and that its collection and administration are more economic, efficient and expedient. Despite its limitations, VAT has become the single largest source of government revenue in Bangladesh. In this article, the authors describe the key features of the VAT system, including some of the most important problems and possible solutions to overcome them.

* Department of Business Administration, East West University, 43 Mohakhali, C/A Dhaka-1212. *Email address:* nikhil@ewubd.edu

International Journal of Business and Management, (Canadian Center of Science and Education), Vol. 4, No. 4, April, 2009, (ISSN 1833-3850). www.ccsenet.org /journal.html

Performance Evaluation of Selected Private Commercial Banks in Bangladesh

Tanbir Ahmed Chowdhury*, Kashfia Ahmed*

Abstract

In a developing country like Bangladesh the banking system as a whole play a vital role in the progress of economic development. In this paper we have tried to analyze the development and growth of Selected Private Commercial Banks of Bangladesh. It is observed that all the selected private commercial banks are able to achieve a stable growth of branches, employees, deposits, loans and advances, net income, earnings per share during the period of 2002-2006. Seven trend equations have been tested for different activities of the private commercial banks. Among them the trend value of branches, employees, deposits and net income are positive incase of all the selected banks. Square of correlation coefficient (r^2) has also been tested for all trend equations. The r^2 of branches, deposits and net income is more than 0.5. It indicates the prospect of private commercial banks in Bangladesh is very bright.

Keywords: Bank, Commercial Bank, Loans, Deposit, Net Income

* Department of Business Administration, East West University, 43 Mohakhali, C/A, Dhaka-1212. *Email address*: tanbir@ewubd.edu, kashfia@ewubd.edu

International Journal of Business and Management (Canadian Center of Science and Education), Vol. 4, No. 7, July, 2009, (ISSN 1833-3850) (Print), (ISSN 1833-8119) (Online) www.ccsenet.org /journal.html

Performance Evaluation of SMEs of Bangladesh

Kashfia Ahmed*, Tanbir Ahmed Chowdhury*

Abstract

In the context of Bangladesh, the development of Small and Medium Enterprises (SMEs) can be considered as a vital instrument for poverty alleviation and ensure the rapid industrialization. In this paper the authors have tried to identify the problems of SMEs of Bangladesh. The performance of SMEs of Bangladesh especially in terms of employee turnover rate, quality assurance, allocation of funds, marketing activities have been found significantly below the international standard. The sector gets negligible support from government. The rate of development of SME is not up to the expectation. In order to overcome the problems a few suggestions for the development of SMEs are given by the authors.

Keywords: SME, Finance, Employee, Capital

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: tanbir@ewubd.edu, kashfia@ewubd.edu

International Journal of Business and Management (Canadian Center of Science and Education), Vol. 4, No. 9, September 2009. www.csenet.org/journal.html

An Investigation of Manufacturing Performance Improvement through Lean Production: A Study on Bangladeshi Garment Firms

Farhana Ferdousi*, Amir Ahmed**

Abstract

The benefits of lean manufacturing are evident in factories across the world. With a view to achieve performance improvement both the developed and developing countries are practicing lean. In this study nine garment manufacturing companies were selected as sample. A field survey with a semi-structured questionnaire, interviews and site visits were conducted to get necessary lean information from the respondent. These companies were selected purposively to ensure the best possible scenario of lean practices in Bangladesh.

The focus of this study is to investigate the improvement of manufacturing performance through lean practice in the Bangladeshi garment industry. The findings indicate that the selected companies have adopted a wide variety of lean tools and techniques and gained many performance improvements. Findings also identified the business challenges that drive the companies to practice lean as well as the areas where changes have been made. It concludes with suggestions for further work.

Keywords: Lean production, Bangladesh, ready made garments, Manufacturing, performance, Improvement

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: farhana@ewubd.edu

** Department of Business Administration, South East University, Bangladesh. *Email address*: aaff73@yahoo.com

Asian Journal of Business Management (Maxwell Scientific Organization), Vol. 1, No. 1, pp. 32-36, September 05, 2009. (ISSN: 2041-8752)

Lean Production Practice: the Differences and Similarities in Performance between the Companies of Bangladesh and other Countries of the World

Farhana Ferdousi*, Amir Ahmed**

Abstract

This paper discussed the practice of lean production in Bangladeshi garment firms to see the extent of use and the performance improvement. Then the result of the study has been compared to the other similar global studies to see the differences and similarities in the performance. The findings indicate that the result of Bangladeshi garment firms is positively related with the result of other global firms.

* Department of Business Administration, East West University, 43 Mohakhali, Dhaka-1212.
Email address: farhana@ewubd.edu
** Department of Business Administration, South East University, Bangladesh.
Email address: aaff73@yahoo.com

Malaysian Accounting Review (Journal published by the Faculty of Accountancy, Universiti Teknologi MARA, Malaysia, and the Malaysian Accountancy Research & Education Foundation (MAREF) of the Malaysian Institute of Accountant (MIA), Vol. 8, No. 2, pp. 67-83, 2009, (ISSN 1675-4077)

A Look into the Disclosure Improvements of CSR Reporting In Bangladesh

Nikhil Chandra Shil*, Alok Kumar Pramanik**

Abstract

Corporate social responsibility (CSR) reporting is an embracing issue today that becomes the social perspective of accounting and reporting. Still, the international standard setters are lagging behind to bring this issue within the legal framework of accounting and reporting. As there is a huge demand from the stakeholders for such information, it becomes a common area of voluntary disclosure at the time of reporting. The paper targets to highlight the improvement of CSR reporting in Bangladesh over a period of 6 years through the content analysis of financial statements of DSE 20 companies. Content analysis has helped us to identify a couple of common categories where most of the firms do social reporting. The analysis is based on secondary sources of information; i.e., published financial statements of DSE 20 companies for the year 2000 and 2006. Different descriptive statistics are used to organize and analyze the findings of the study. It concludes that the pattern of such reporting is far away from expectation; still, there is a positive indication that the volume and quality of reporting is increasing.

Keywords: Corporate Social Reporting, DSE 20, Disclosures, Content Analysis, Bangladesh.

* Department of Business Administration, East West University, 43 Mohakhali, C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

** Department of Commerce Bhatter College, India

Journal of Transport and Supply Chain Management (published by the department of Transport and Supply Chain Management, University of Johannesburg), pp. 80-95, South Africa, November, 2009

A Case on Vendor Selection Methodology: An Integrated Approach

Nikhil Chandra Shil*

Abstract

Vendor selection methodology is a highly researched area in supply chain management literature and a very significant decision taken by supply chain managers due to technological advances in the manufacturing process. Such research has two basic dimensions: one is related to the identification of variables affecting the performance of the vendors and the other deals with the methodology to be applied. Most of the research conducted in this area deal with the upfront selection of vendors. However, it is very common to have a list of dedicated vendors due to the development of sophisticated production technologies like just in time (JIT), a lean or agile manufacturing process where continuous flow of materials is a requirement. This paper addresses the issue of selecting the optimal vendor from the internal database of a company. Factor analysis, analytical hierarchy process and regression analysis is used in an integrated way to supplement the vendor selection process. The methodology presented here is simply a proposal where every possible room for adjustment is available.

* Department of Business Administration, East West University, 43 Mohakhali, C/A Dhaka-1212. *Email address*: nikhil@ewubd.edu

AIMA Journal of Management and Research (published by All India Management Association (AIMA)), Vol. 3, No. 3/4, August 2009, (ISSN: 0974-9497)

Impact of Global Financial Crisis in South Asian Economy: With Special Emphasis to India

Nikhil Chandra Shil*, Sathya Swaroop Debasish**, **Mohammad Faridul Alam***

Abstract

Global Financial Crisis is not a sudden and recent development. It is the darkest chapter of extreme capitalism that the whole world witnessed and permitted throughout the last couple of years. It becomes urgent refinement of the concept but the way it is heading was unexpected. The turmoil in the international financial markets of advanced economies that started around mid-2007 has exacerbated substantially since August 2008. The financial market crisis has led to the collapse of major financial institutions and is now beginning to impact the real economy in the advanced economies. As this crisis is unfolding, credit markets appear to be drying up in the developed world. With the substantive increase in financial globalization and deregulation, how much will these developments affect India and other Asian emerging market economies is really matters for the policy makers today. This paper addresses this issue explicitly to look at the impact of global financial crisis on different sectors of South Asian countries with special focus on India and Bangladesh. It also considers the policy makers attitude towards the measures taken combating the financial crisis. Globalization exerts a significant threat due to the requirement of selective measures taken across different sectors depending on the extent of damage. The conceptualization stage of the paper is originated from the facts as prevailed in the market and finalization comes from the critical reasoning though in economics it is believed that every explanation may be true.

Keywords: Global Financial Crisis (GFC), Sub-Prime Mortgage Effect, South Asia.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

** P.G. Department of Business Management, Fakir Mohan University, Orissa.

AIMA Journal of Management and Research (published by All India Management Association (AIMA)), Vol. 3, No. 1/4, February 2009

Corporate Governance Reporting Style and Status by the Listed Companies in Dhaka Stock Exchange

Nikhil Chandra Shil*, Mohammed Faridul Alam*

Abstract

Corporate governance becomes a sensitive issue in recent days due to its perceived importance amid of bad governance. This decade witnessed a couple of corporate scandals that raises the necessity of more stringent code of corporate governance. In Bangladesh, the SEC requires every listed company to report their corporate governance status through a prescribed form. This paper targets to study the degree of compliance. In this regard, financial statement of all listed companies in Dhaka Stock Exchange for the year 2005 has been collected and a content analysis is done. The paper concludes a worrying result as the degree of compliance is very poor. Regulators need to rethink on this issue so that both quantity and quality of compliance can be improved.

Keywords: Corporate Governance, Corporate Governance Reporting, Dhaka Stock Exchange, Listed Companies, Comply or Explain.

* Department of Business Administration, East West University, 43 Mohakhali, C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Journal of Accounting and Finance, (published by The Research Development Association Jaipur (India), Vol. 23, No. 1, pp. 90-108, October – March 2009. (ISSN-0970-9029)

Implications and Applications of IFRS 4: Insurance Contracts – A Review of Asian Countries

Bhagaban Das*, **Nikhil Chandra Shil****, Alok Kumar Pramanik*****

Abstract

IFRS 4 is the first international guidelines for insurance industry issued by the International Accounting Standards Board (IASB) on 31 March 2004 as the first step in the IASB's project to achieve convergence of widely varying accounting practices in insurance industries around the world. It applies to contracts in which an entity takes on insurance risk either as an insurer or a reinsurer. While the IASB has set the direction, companies do have considerable room for maneuver in key areas ranging from the adoption of new accounting bases for insurance contracts to the use of shadow accounting and floating discount rates to achieve some level of matching of assets and liabilities. The paper put focuses on the implications and application of IFRS 4 and revealed a worrying lack of preparedness on part of different countries in Asia.

Keywords: Insurance contracts, insurance risk, international accounting standards.

* P.G. Department of Business Management, Fakir Mohan University, Orissa, India,
** Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu
*** Department of Commerce, Bhatter College, Dantan, Paschim Medinipur, West Bengal

Indian Management Research Journal (published by MIT School of Management (MIT-SOM), Pune, India), Vol. 1, No. 1, January-April 2009, (ISSN: 0975-2285)

Management of Optimum Supplier Selection Process

Nikhil Chandra Shil*

Abstract

Sophisticated manufacturing process demands a strong supplier base for satisfying customers with quality product at a cheaper price. Thus, supplier selection has got significance in supply chain management literature and a lot of research studies are conducted in this single area. Technology leaded sophisticated production process and bitter competition may be the reason that attracts practitioners for selecting a dedicated list of promising suppliers. Most of the previous studies concentrate on the selection of either criteria or methods used to select right supplier(s). The paper also caters to these two issues. It focuses on the methodology of selecting the right supplier(s) from the list of suppliers. Criteria have been selected in line with the requirements and some methods have been used to choose the right supplier(s). Here, criteria have been translated into three different indexes from different perspectives and ultimately supplier selection is based on the index values and their interrelationships tested through multiple regression analysis. This is the addition to the current state of knowledge where suppliers' perspective is also considered strategically at the time of selecting the right suppliers. Finally, the paper concludes that suppliers' performance largely depends on experience and satisfaction. And buyers should give sufficient importance on these two factors at the time of selecting the right supplier. The paper considers these two factors through the development of two different indexes comprising relevant criteria under each of the factors where the practitioners enjoy enough flexibility of making its customized.

Keywords: Supplier selection, supply chain management, vendor performance index, vendor experience index, vendor satisfaction index, quota allocation, regression analysis.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Interdisciplinary Journal of Contemporary Research in Business (IJCRB) (published by Institute of Interdisciplinary Business Research, International Research Center) Vol. 1, No. 2, pp. 78-96, June 2009. (ISSN: 2073-7122)

Extended Fuzzy Front End in New Product Development Process

Nikhil Chandra Shil*

Abstract

Fuzzy Front End (FFE) is an intra-organizational process that supplements innovation in product or project development due to enhanced global competition and pressure on reducing product prices keeping the quality either intact or improved. With the increasing complexity in business processes, a successful product development process becomes rare and is more important than ever before. Thus, sophisticated methodologies have been developed and used to address such situation. The paper focuses on the basic methodology of FFE, its scope, technicality attached to it and its application with the rationalities. Readers are expected to be benefited as a first timer in the FFE implementation process.

Keywords: Fuzzy Front End, New Product Development, Commercialization, Innovation, Incremental Product, Platform Product and Break through Product

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Interdisciplinary Journal of Contemporary Research in Business (published by Institute of Interdisciplinary Business Research, International Research Center), Vol. 1, No. 2 pp. 97-110, June 2009, (ISSN: 2073-7122)

Key Discriminators of Bank Profitability

Sathya Swaroop Debasish*, **Nikhil Chandra Shil****

Abstract

The precise analysis and measurement of bank profitability has long been a concern of researchers, bankers and analysts. However, the number of parameters on profitability abounds that gave the analysis a critical look. There is therefore, an urgent need to identify the key determinants of bank profitability which may provide a scientific and empirically tested framework of measurement. The objective is pursued with the help of data on selected independent variables applied on the data of 93 commercial banks for a period stretching about 8 years from 2001 to 2009. The technique of multiple discriminant analysis (MDA) is used as an important methodology to identify the most critical profitability ratios and a model is proposed which may be effectively used for financial decision-making relating to bank profitability.

Keywords: bank, profitability, multiple discriminant analysis

* P.G. Department of Business Management, Fakir Mohan University, Balasore, Orissa 756019, India

** Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Interdisciplinary Journal of Contemporary Research in Business (published by Institute of Interdisciplinary Business Research, International Research Center, Vol. 1, No. 6, pp. 33-47, October, 2009. (ISSN: 2073-7122)

Explicating 5S: Make you Productive

Nikhil Chandra Shil*

Abstract

5S is the first step towards Total Quality Management (TQM) and Business Excellence (BE). During the later half of the last century, the Japanese have formalized the technique and name it as 5S Practice. The modern industrial environment is rapidly evolving and thus giving it a dynamic cum complex shape. As markets globalize, competitive rivalry intensifies, and stakeholders become more demanding, it is no longer sufficient to change the way the organization functions. In order to adapt and grow in the changing business world, radical change must occur at all levels in the organization. The implementation of a 5S strategic plan will create a culture of continuous improvement across any organization. To remain competitive in the future, manufacturers must adopt lean techniques like 5S to reduce the wastage that will ultimately enhance productivity. The purpose of this paper is to introduce the basic concepts of this lean technique. The supply chain will act as a common thread throughout the paper.

Keywords: 5-S, Lean Technique, Productivity, 5-S Audit, Total Quality Management Business Excellence.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

International Journal of Finance and Economics (IJFE) (published by Canadian Center for Science and Education), Vol. 1, No. 2, pp. 191-205, August 2009

Micro Finance for Poverty Alleviation: A Commercialized View

Nikhil Chandra Shil*

Abstract

The world is getting more matured in terms of level of sophistication. At the same time it becomes a threat due to the difficulty of having areas where further sophistication is possible. But, now, the most sensitive problem for all is the severe poverty. It is the darkest chapter of the world where more and more people are enlisting their names. If this process continued for unlimited time, once it will be suicidal for all of us irrespective of poor or rich. This paper put focus on the poor society, which concludes that if the poor are funded and focused, they can build their own fate. The poor need funds and suggestions to get rid of the curse of poverty. Grameen Model is outlined here with some replicated ideas so that it can be used in a more sophisticated and commercial way. Such commercialization will help to extend the scope of credit program from individuals to small businesses for which sometimes it may be difficult to get loan from regulated financial institutions. An earnest effort has been made to make the micro-credit programs and methodologies comprehendible with the process of diffusion and usability from a commercial perspective. Such perspective is important to give micro finance program an institutional modality that will ultimately ensure long-term existence.

Keywords: Micro Finance, Poverty Alleviation, Commercialization, Grameen Model

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

International Business Research (IBR) (published Canadian Center for Science and Education), Vol. 2, No. 2, pp. 194-201, April 2009

Harmonization of Accounting Standards through Internationalization

Nikhil Chandra Shil*, Bhagaban Das**, Alok Kumar Pramanik***

Abstract

The journey to have a common set of accounting standards started long before to give it a professional shape and essence. And accountants all over the world feel the necessity to shorten the gap among different streams of accounting practices through harmonization. Still, we have a couple of strong variants of accounting practices (say, for example, US GAAP, UK GAAP, IAS etc.) over the world existed and practiced simultaneously. These variants are working as threats towards harmonization of accounting practices. However, the profession has also witnessed some improvements in recent years in the process of global convergence putting some ray of hope. International and even local standard setting bodies have come up with projects of harmonization and in most of the cases became successful. The day is not far away when we will observe that accounting world is controlled and guided by a single set of standards giving it a status of legal discipline in true sense. The paper focuses on this harmonization issue, its current status, challenges with special reference to Indian perspective.

Keywords: Harmonization of Accounting Standards, International Accounting Standards International Financial Reporting Standards, Generally Accepted, Accounting Principles Securities and Exchange Commission, International Accounting Standards Committee Coverage of Accounting Standards.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

** P.G. Department of Business Management, Fakir Mohan University, P. O.: Balasore, Pin.: 756019, Orissa, India

*** Department of Commerce, Bhatter College, Dantan, Paschim Medinipur West Bengal, India

International Journal of Business and Management (IJBM) (published by Canadian Center for Science and Education), Vol. 4, No. 1, pp. 78-84, January 2009

Convergence of Accounting Standards: Internationalization of Accounting

Bhagaban Das*, **Nikhil Chandra Shil****, Alok Kumar Pramanik*****

Abstract

Accounting has no meaning without standards due to professionalism. The use and application of standards in accounting gets so importance that it will not go wrong if it is termed as a legal discipline. By the time, the world has given accounting the certification of international discipline. So, it is apt to say that as an international discipline, accounting should have a single set of standards for all for harmonizing the practice in a global scenario. But the reality is that we still have various streams of accounting standards like US GAAP, UK GAAP, IAS, and so on. These different streams are the threat for accounting against its harmonization of practices. Though the world has witnessed a lot of initiatives taken to reduce the streams into one in recent years, still we cannot ensure the final sophistication in this regard. The paper focuses on the convergence issue, its current status, challenges with special reference to Indian perspective.

Keywords: International Accounting Standards, International Financial Reporting Standards, Coverage of Accounting Standards, India.

* P.G. Department of Business Management, Fakir Mohan University, Balasore 756019, Orissa, India

** Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

*** Department of Commerce, Bhatter College, Dantan 721426, Paschim Medinipur, West Bengal, India

International Journal of Business and Management (IJBM) (published by Canadian Center for Science and Education), Vol. 4, No. 3, pp. 169-177, March 2009

Performance Measures: An Application of Economic Value Added

Nikhil Chandra Shil*

Abstract

Economic Value Added (EVA) is a value based performance measure that gives importance on value creation by the management for the owners. Profit maximization as a concept is age-old, wealth maximization is matured and value maximization is today's wisdom. Stern Stewart's EVA raises storm in corporate world and gives a new way to think about rewarding management. Usability of EVA largely depends on the quality of accounting information system, as traditional information system will not provide sufficient information to compute true EVA. Thus, EVA is required to be tailored in line with accounting system, management philosophy and the degree of demand of such a system. In this paper, an earnest effort has been made to explain theoretical foundation of EVA with its origination, definition, ways to make it tailored, adjustments required, scope and some other related issues. The methodology used is a type of theoretical mining of logics resulting a step-by-step process required for EVA implementation. As corporate house plans to move from traditional to value based performance measures, EVA would yield good result and the paper may become helpful to them to comprehend the methodology.

Keywords: Value Based performance Measure, Tailored, EVA, Residual Income(R1), Accounting Distortions, Shareholders' value, Value Based Measure, Market Value Added, True EVA

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Indian Journal of Marketing (IJM), Vol. 39, No. 6, June 2009

Analysis of Gap in Service Quality through SERVQUAL: A Case of Deposit Service Provided by a Bank in Bangladesh

Nikhil Chandra Shil*, Dr. Bhagaban Das**

Abstract

To remain profitable and strong in the market, retaining current customers and attracting potential customers has no alternative. This can only be done if the customers are kept satisfied and if the gap between expectation and perception of services are minimal. Thus, the analysis of gap on a regular basis and following the improvement, if any, is very important. In this paper, such analysis of gap is initiated on deposit service of a multinational bank operating in Bangladesh. For this gap analysis, SERVQUAL is used as a tool with five original dimensions and twenty two statements. A questionnaire survey is administered to calculate the gap score using SERVQUAL scale and thrust areas have been identified on the basis of the gap score where management should give more attention.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

** Department of Business Management, Fakir Mohan University Balasore, Orissa

International Research Journal of Finance and Economics (IRJEF) (Euro Journal Publication Inc.), No.33, November 2009, (ISSN: 1450-2887)

An Empirical Examination of Random Walk Hypothesis for Dhaka Stock Exchange: Evidence from Pharmaceutical Sector of Bangladesh

Md. Gazi Salah Uddin*, A.K. M. Nabiul Khoda**

Abstract

This paper investigates whether the stock price index in the Dhaka Securities Market meets the criterion of weak-form market efficiency. This study seeks evidence supporting the existence of market efficiency in the Dhaka Stock Exchange Ltd (DSE).In this paper; we have analyzed the behavior of daily return of Dhaka Stock Market indices. The sample includes the daily price indices of all securities listed on the DSE general, DSE top 20 indices, and Day wise indices listed in the Dhaka stock market. Again as a proxy of the of the movement of individual stock prices, daily closing prices of 23 companies operating in the Pharmaceutical sector has been analyzed. This industry is chosen as this sector is rapidly growing in Bangladesh stock markets. The results from the unit root test, the ADF test on DSE general price indices and DSE top 20 indices day wise indices and on individual stock prices of the proxy companies provide evidence that the Dhaka stock exchange (DSE) is not efficient even in weak form and DSE does not follow the random walk model.

Keywords: Efficient Market Hypothesis, Random walk model, Dhaka Stock Exchange
JEL Classification: G14, C22

* Department of Business Administration, East West University, 43, Mohakhali C/A Dhaka1212, Bangladesh. *Email address*: gsu@ewubd.edu
** Parkway Health Singapore Private Limited, Dhaka Liaison Office, Bangladesh. *Email address*: shovoninfo@gmail.com

Trade and Development Review (E-journal published by the department of Economics, Jadavpur University, India), Vol. 2, No. 2, pp. 79-92, 2009. http:// www.tdrju.net

Export, Imports, Remittance and Growth in Bangladesh: An Empirical Analysis

Haydory Akbar Ahmed*, **Md. Gazi Salah Uddin****

Abstract

This paper investigates the causal nexus between export, import, remittance and GDP growth for Bangladesh using annual data from 1976 to 2005. The paper uses time series econometrics tools to investigate the relationship adding import and remittance in the model. Study finds limited support in favor of export-led growth hypothesis for Bangladesh as exports, imports and remittance cause GDP growth only in the short run. The causal nexus is unidirectional.

Keywords: Exports, Imports, Remittances, Economic Growth and Time-Series Models
JEL Classifications: C32, F24, F43

* Department of Economics and Social Science, BRAC University, Dhaka. *Email address*: h.a.ahmed@bracuniversity.ac.bd
** Department of Business Administration, East West University, 43, Mohakhali C/A Dhaka1212, Bangladesh. *Email address*: gsu@ewubd.edu

Bangladesh Research Publications Journal, Vol. 2, No. 1 pp. 281-297, 2009, (ISSN: 1998-2003), http:// www. bdresearchpublications.com

Technological Progress and Modern Variety of (MV) Paddy Production: A Comparison of Rice-Prawn Farming and Year-Round Paddy Farming System in Bangladesh

Basanta Kumar Barmon*

Abstract

The present study attempts to examine the impacts of rice-prawn gher (RPG) farming system on soil fertility for modern variety (MV) paddy production of southwest Bangladesh. In this study, Bilpabla and Rayermahal village were selected for RPG farming and Lebubunia village for year-round modern variety (YRMV) of paddy farming from Khulna district and Chanchra village from Jessore district were selected for year-round modern variety (YRMV) paddy farming. The information of inputs and output related to prawn and MV paddy farming were collected. The findings of the study show that RPG farming system has significant positive impacts on soil fertility for MV paddy production. Farmers in YRMV paddy farming system used more chemical fertilizers for per hectare paddy production compared to RPG farming system. However, yield (ton/ha) of MV paddy under RPG farming system was higher than the YRMV paddy farming in neighboring Lebubunia village area and lower than YRMV paddy farming in Chanchra village area of Jessore district. Therefore, it can be concluded that the yield curve of MV paddy under RPG farming system can be shifted upward compared to other YRMV paddy farming system using less chemical fertilizers.

* Department of Economics, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: bkbarmon@ewubd.edu

Bangladesh Research Publications Journal, Vol. 2, No. 4, pp. 679-685, 2009
(ISSN: 1998-2003), http:// www.bdresearchpublications.com

Adoption of Hybrid and its Future Consequences in Bangladesh: An Economic Analysis

Basanta Kumar Barmon*, **A. Sattar***, M.Z. Rahman**

Abstract

The aims of present study are to attempt the adoption of hybrid paddy production and its future consequences in Bangladesh. Primary data were used in this study. The findings of the study indicate that the potential yield of hybrid paddy is comparatively higher than MV (Modern Variety) paddy that mainly influences the farmers to adopt hybrid paddy. The results of the tobit model indicate that education of the farmer, family size, land ownership and lack proper information of hybrid production have significant impacts on adoption decision of hybrid paddy in Chanchra village of Jessore district. Farmer faced various types of problems such as more chatty (Chitta) grain, leaf blight diseases, crisis of fertilizer, more infestation in leaves, more number of leaves, leaf dropping, and panicle become whiter (White Hade) disease found in hybrid paddy in Jessore district. As hybrid is F1 type generation of high yielding varieties (HYV) of paddy, the farmers could not be able to store the produced seed for next year for seedling again to cultivate. As a result, the total paddy cultivation will fully depend on the import in future.

* Department of Economics, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: bkbarmon@ewubd.edu
** Department of Economics, South East University, Banani Dhaka.

Independent Business Review, Vol. 2, No. 1, 2009

Lean Production Practices in Bangladesh: An Investigation into the Extent of Practices in the Bangladeshi Garment Companies

Farhana Ferdousi*

Abstract

Lean Production has overcome the perception of being another management fad. An increasing number of organizations in developing countries are implementing lean production in order to generate improvements in performance and remain competitive. A sample of nine garment companies (seven companies from the Export Processing Zone (EPZ) and two companies from outside of the EPZ) of Bangladesh was chosen to conduct the study. A field survey with a semi-structured questionnaire, interviews and site visits were conducted to get necessary lean information from the respondent. These companies were selected purposively to ensure the best possible scenario of lean practices in Bangladesh.

The main thrust of this research is to examine the extent of lean practices in the Bangladeshi garment industry and to see the benefits derived from it. The research findings indicate that the selected companies have adopted a wide variety of lean tools and techniques and gained many improvements. Findings also identified several supporting factors as well as factors that hindered the lean implementation initiatives. It concludes with suggestions for further work.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: farhana@ewubd.edu

The Cost and Management (Journal of the Institute of Cost and Management Accountants of Bangladesh), Vol. 37, No. 3, pp. 21-24, May-June 2009, (ISSN 1817-5090)

Trade-off between Waiting Cost and Service Cost: Application of Queuing Model

Nikhil Chandra Shil*, Mohammed Faridul Alam*

Abstract

Application of queuing model in business got significant importance due to its capacity to make a trade off between waiting cost and service cost. A long waiting line is unexpected that incurs cost in terms of dissatisfaction, lost customers etc. Again, reducing the length of the waiting line also incurs cost due to capacity extension for extra service facility. Thus, a trade-off is sought between these two costs to find an optimal solution. Queuing model is presented here with business applications so that the readers can use this model in their day to day life where there is waiting line to ensure value for money.

Keywords: Queuing Model, Waiting Line Analysis, Service Cost, Cost Server, Phase, Line

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Contemporary Issues In Management Research (ed. by P.David Jawahar) (Center for Contemporary Management Research, Bharatidasan Institute of Management, Trichi, Excel Books), pp. 169-79, India, 2009. (ISBN 978-81-7446-713-3)

Challenges in Women Owned Small and Medium Sized Retail Business: A Perspective of Globalization

M Sayeed Alam*, Kohinoor Biswas*

Abstract

The extensive research works on women entrepreneurs mostly available for the developed countries are not directly applicable to the context of developing countries as the former and latter are sea apart in terms of socio-cultural structure and work family relations. On the other hand, there have been insufficient studies done on entrepreneurs in this part of the world. Same holds true for Bangladesh. In the last decade Bangladesh (specially in Dhaka) has experienced a healthy growth of small and medium women entrepreneurs in retail business, namely handicraft and boutique, as well as in service business, like: private school and beauty saloon. Women entrepreneurs in retail business comprises a large segment of about 70%. Bangladesh Women Chamber of Commerce and Industry has studied to portray the women entrepreneurs in Bangladesh with primary focus on their demographic profile. Much yet to be researched in this arena on women industry and business characteristics, barriers to development and typologies of women entrepreneurs.

The objective of this study is to explore the challenges being faced by these SME women entrepreneurs in retail business in the backdrop of globalization as it is commonly experienced in many parts of the developing world that globalization has risked the survival and sustainability of local businesses SMEs being badly hit in particular. In-depth interviews of the women entrepreneurs having more than 10 years of retail business experience are conducted in pursuit of the objective. The limitation of our study is that the women entrepreneurs covered are only from Dhaka city engaged in the formal sector of the economy. This study revealed that intense competition from countries like: China, India, or Pakistan, has been the result of globalization. The small and medium women entrepreneurs are facing price competition in an increasingly competitive market, being threatened to lose their market shares to foreign competition. Therefore, achieving the scale economy is being difficult for them losing their competitiveness. While these women entrepreneurs are having difficulty in domestic market, many of them are seeing international opportunity to the NRBs. Lastly, the study includes a set of suggestions to address these challenges. Easier access to finance, technical assistance and training from Bangladesh Export Promotion Bureau to build professional business skills and market knowledge – are few suggestions to combat challenges of globalization.

Key words: Women entrepreneur, Dhaka, Retail business, Globalization, NRB

* Department of Business Administration, East West University, 43, Mohakhali C/A Dhaka1212 Bangladesh. *Email address*: sbl@ewubd.edu, kohinoor@ewubd.edu

Finance & Banking: A Collection of Contemporary Research (ed. by P.S. James, Roji George and Rosna Varghese, Saintgits Institute of Management, Excel India Publishers), New Delhi, pp. 148-155, India, 2009. (ISBN: 978-93-80043-38-8)

The Impact of Selected Macroeconomic Variables on Stock Returns: Empirical Evidence from Dhaka Stock Exchange

Tanbir Ahmed Chowdhury*, Md.Gazi Salah Uddin*

Abstract

The important aspect of contemporary financial analysis is the relationship between stock price movements and variations in macroeconomic aggregates. The paper examines the role of macroeconomic variables on Dhaka Stock Exchange (DSE) stock returns movement in Bangladesh. In this paper, the analysis is conducted by using monthly data for the period span from January 2000 to December 2006. All data are collected from International Financial Statistics (IFS-2007). We have selected five macroeconomic variables to assess the influence on stock return of Dhaka Stock Exchange. These are: industrial production index (IP) as a proxy for economic activity, change in consumer price index as a proxy for inflation (INF), growth rate of money supply (M2), change in exchange rate (ER), interest rate (IR) as a proxy for deposit rates. The objectives of the paper are to investigate the effect of macroeconomic factors on stock returns. In order to estimate the regression model, stationary of the series should be examined. Therefore, Augmented Dickey-Fuller (ADF) (Dickey and Fuller, 1979) test is used for check the stationary of the variables. A multiple regression model is designed to test the relationship between the DSE stock returns and selected macroeconomic variables.

Keywords: Stock Returns; Macroeconomic Variables, Dhaka Stock Exchange

* Department of Business Administration, East West University, 43, Mohakhali C/A Dhaka1212 Bangladesh. *Email address*: tanbir@ewubd.edu, gsu@ewubd.edu

Proc. of International Conference on Global Competition and Competitiveness of Indian Corporate (organized by Indian Institute of Management), May 21-23, Kozikode, 2009

Capitalizing on the Regional Potential: A Guide to Enhance Competitiveness of India Inc.

M. Sayeed Alam*, Kohinoor Biswas*

Abstract

India, being in a fierce competition to make her debut in the top twenty list of GCI (Global Competitiveness Index) is struggling with the 50th rank when only two years away from a target set by CII (Confederation of Indian Industry). This paper, qualitative and exploratory in nature, obtains help from literatures to explore a link between the potentials of SAARC region and competitiveness of India Inc. Unlike, in the global context India is ahead in the SAARC (South Asian Association of Regional Cooperation), especially in FDI and technology transfer, firm level technology absorption, control of international distribution, production process sophistication and availability of latest technology. In addition, India is in a favorable position with a strong positive COO (Country of Origin) which she can explore boost her competitiveness up further. The authors comprehend that SAARC region offers untapped potential for India.

Keywords: Competitiveness, South Asian Association of Regional Cooperation (SAARC), Country of Origin (Co O), India Inc.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: sbl@ewubd.edu, kohinoor@ewubd.edu

Economic Value Added (ed. by Bhagaban Das and Alok Kumar Pramanik, Deep and Deep Publications), New Delhi, pp. 175-193, India, 2009. (ISBN: 9788184502107)

EVA Basics

Nikhil Chandra Shil*

Abstract

Economic Value Added (EVA) is a value based performance measure that gives importance on value creation by the management for the owners. Profit maximization as a concept is age-old, wealth maximization is matured and value maximization is today's wisdom though somebody is prescribing cash economic value added and some other related ideas that are obviously offshoot of EVA. Stern Stewart's EVA raises storm in corporate world and gives a new way to think about rewarding management. But, using EVA is not so simple as traditional information system will not provide sufficient information to compute true EVA. For implementing EVA as a performance measurement tool, most of the organizations need their tailored (customized) EVA that is very much industry specific and for doing all of these accurately, an EVA team is required who has expertise over this rich value based measure. In this paper, I have tried to explain EVA theoretically; its origination, definition, ways to make it tailored, adjustments required, scope and some other related issues. The paper may be termed as EVA Manual where a layman will learn what he/she should have to do to install an EVA system in their organization in place of traditional systems.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: nikhil@ewubd.edu

Proc. of the 5th International Conference on Global Academy of Business and Economic Research (GABER), December 28-30, Grand Seasons Hotel, KL, Malaysia, 2009

The Role of Investment Corporation of Bangladesh: A Case Study of ICB Mutual Funds

Tanbir Ahmed Chowdhury*, Md. Gazi Salah Uddin*

Abstract

Mutual fund comprising of a wide range of securities allows the participants to obtain the benefit of lower transaction costs in purchasing securities enabling the shareholders to hold more diversified portfolios. In Bangladesh, there are only 17 mutual funds of which nine are managed by the Investment Corporation of Bangladesh (ICB). The establishment of ICB was one of the significant measures taken by the Government to accelerate the pace of industrialization and develop well-organized capital market. The ICB is the major institution player, performs a vital role in stability in the market, and perform the activities of creating demand for securities and on the other hand to ensure the supply of securities in the Bangladesh capital market. In the total market capitalization of Dhaka Stock Exchange (DSE), ICB contributes about 3 percent and in Chittagong Stock Exchange (CSE), it contributes about 10 percent.

Apart from ICB, other privately managed mutual funds are also performing well in the capital market mainly due to provision for reserve of 10 percent quota of each IPO for mutual funds. The demand for IPO is growing fast in the capital market. Small investor is always looking for the IPO in the market. The demand for mutual funds is also growing fast and persistent price rise in the market reflects the mismatch between demand and supply. This implies that the demand for mutual funds is higher than the supply of mutual funds in the market. This shows the need to float more mutual funds in the capital market to satisfy the demand. The ICB funds are good instruments of stabilizing savings and providing investment opportunities in small savers/investors. Because small investors are always looking for high and relatively, secure returns. The paper tries to examine the ICB mutual funds performance using the growth percentage, average growth; descriptive statistics and regression analysis and the paper also address the following question; Does the ICB Mutual fund Indices follow a random walk or is there a possibility of predicting ICB mutual fund prices changes from previous prices?

Keywords: Investment Corporation of Bangladesh, Capital Market, Mutual funds
JEL Classification: D53, G11, G14

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: tanbir@ewubd.edu, gsu@ewubd.edu

(IAMB) Proc. of International Conference on Management in the Global Economy January 28 - 30, New Orleans, Louisiana, USA, 2009. (ISSN 1949-9108)

A Multivariate Analysis of the Selection Factors of Carbonated Soft Drinks In Bangladesh

Nazrul Islam*, Md. Wahidul Habib**

Abstract

This paper aims at identifying the factors affecting the selection of soft drinks by the university students of Bangladesh. It only includes consumers of carbonated soft drinks of Bangladesh. To identify the factors, a questionnaire survey was conducted among 200 soft drinkers. The respondents were selected by adopting simple random sampling method. Only, the university students who are at the age of 20 to 35 years were surveyed. Multivariate analysis techniques such as, Factor Analysis and Multiple Regressions were run to analyze the data. Factor Analysis was used to identify the factors of soft drinks consumers while Multiple Regressions were conducted to identify the significant relationships of the factors with the overall attitude of the consumers towards the use of soft drinks. Results show that the factors are together significantly related to the overall consumption attitude of the consumers. Removal of tiredness, digestive, sweetness and coolness are the significant factors to the university students in selecting carbonated soft drinks in Bangladesh.

Keywords: Carbonated Soft Drinks, Removal of Tiredness, Digestive, Sweetness and Coolness

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: nazrulislam@ewubd.edu

** Department of Business Administration (Adjunct Faculty), East West University, 43 Mohakhali, Dhaka, Bangladesh. *Email address*: wh@ewubd.edu

10th South Asian Management Forum (SAMF) on Change and Continuity: Management Prospects and Challenges (jointly organized by Association of Management Institutions in South Asia (AMDISA) and Royal Institute of Management of Bhutan, April 9 -10, Thinpu, Bhutan, 2009.

Influence of Working Environment on Psychological Contract of the Employees of Citycell and Teletalk in Bangladesh

Nazrul Islam*, Md. Wahidul Habib**

Abstract

Telecom industry is a very high growing sector of Bangladesh. In this sector, five private mobile companies such as, Grameenphone, AkTel, Citycell. Banglalink, Waried Telecom, and one government owned company like TeleTalk have been operating since 1989 to till to-date. Grameenphone is a Joint venture (62%) with a Norwegian company - Telenor while Banglalink is a Joint venture with Orascom originated from Egypt. Aktel is also a Joint venture between Telecom Malaysia Berhad TM and A. K Khan & Company Limited. Waried Telecom is an investment of Dubai and Abu Dhabi Group of UAE while Citycell is a Joint venture with SingTel Asia Pacific Investment Pvt. Limited. TeleTalk is a Public limited company but 100% shares have been owned by the government of Bangladesh. Statistics show that there is a very high turnover in this sector. This can be attributed by the working environment of the companies along with other factors. This paper aims at identifying the differences between the psychological contract of the employees of Citycell and Teletalk in Bangladesh. Thirteen items were used to clarify working environment and sixteen items were used to clarify psychological contract of the employees. Factor analysis was conducted to identify the factors relating to working environment and the psychological contract. The relationships between working environment and the psychological contract were identified by Multiple Regression analysis. Results show that the overall psychological contract is significantly influenced by the overall working environment of the company. Specifically, there is a significant relationship between the job satisfaction as a factor of psychological contract and the working environment. However, individual encouragement is not significantly related to the working environment. Results also show that there are significant differences between the influence of working environment on the psychological contract of the employees of Citycell and Teletalk. There is an ample scope to conduct further study on the factors other than working environment and its impact on psychological contract of the employees in Bangladesh.

Keywords: Psychological Contract, Telecom Industry, Working Environment

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *Email address*: nazrulislam@ewubd.edu

** Department of Business Administration (Adjunct Faculty), East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *Email address*: wh@ewubd.edu

2nd Annual International Conference on Energy, Logistics and the Environment (organized by Global Commerce Forum), October 23-24, Las Vegas, Nevada, USA, 2009

Socioeconomic Impact of Media on Middle Class People of Bangladesh

Durre Maknun*, Rasel Alam Chowdhury**, **Nazrul Islam*****

Abstract

In recent years media coverage has been increased substantially in Bangladesh. It includes audio media like radio, video media like TV Channels and print media like newspapers, magazines, research reports etc. This has significant impact on the socioeconomic lives of the people of Bangladesh. Hence, this study aims at identifying the socioeconomic impacts of media in Bangladesh. Social, economic and overall impacts were measured separately in this study. It only included the opinions of the middle class people living in Dhaka city in this regard. Three hundred ninety nine middle class people were interviewed with a structured questionnaire. Sample size was determined by using the sampling formula suggested by Yamane (1967). Purposive sampling method was used and subsequently by using random sampling method biasness was minimized. Data were analyzed by using descriptive and inferential statistics. Factor Analysis was used to reduce the socioeconomic variables and Multiple Regressions were used to identify the significant impact factors of socioeconomic lives of the people of Bangladesh. Results show that there is a significant impact of media on the socioeconomic lives of the middle class people. Specifically, social impacts of media are concerned with environmental degradation and natural disaster, politics and awareness about education, and corruption and drug campaign, etc. Economic impact factors are related to market demand and awareness about important places and investment decision. The overall socioeconomic variables are concerned with the forecasting of market demand and knowledge about the potentials, awareness in education in family, knowledge about product quality and benefit, and change in food habit of the middle class people. This study suggests that the more the expansion of the media the more the positive socioeconomic impact will likely be on the lives of middle class people of Bangladesh.

Keywords: Socioeconomic Impact, Media, Knowledge about Potentials, Market Demand

* MBA Student, Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *Email address:* no_bo_ni@yahoo.com

** MBA Student, Department of Business Administration, East West University, 43 Mohakhali, Dhaka, Bangladesh. *Email address*: alamrasel@hotmail.com

*** Department of Business Administration, East West University, 43 Mohakhali, Dhaka Bangladesh. *Email address*: nazrulislam@ewubd.edu

(IAMB) Proc. of International Conference on Global Recovery in Economic Crisis, October 12 - 14, Istanbul, Turkey, 2009. (ISSN 1949-9108)

Health Beliefs and Motivating Factors to Buy Bottled Water: A Case Study of University Students in Bangladesh

Nazrul Islam*, Md. Wahidul Habib**

Abstract

Majority people of Bangladesh are illiterate and hardly conscious about their health. They are unable to understand the importance of their physical fitness. They even do not know the benefits of health precautions which are primarily concerned with food and drinking water. It is identified from the research that these people have some general and specific beliefs on health benefits that are accrued primarily from the drinking water. The beliefs are bottled water is purer than tap water, health benefits of bottled water are not substantial, bottled water is not properly processed, etc. Therefore, these people are hardly enthusiastic to buy and consume bottled water in Bangladesh. On the other hand, there are some motivating factors for buying bottled water. These factors are concerned with health benefits, concerns about tap water, convenience, taste, preference over soft drinks, bottle itself, status symbol, luxury item, media, and advertising aspects. Given these observations in mind, this study concentrates only on the beliefs and motivating factors to buy bottled drinking water by the people of Bangladesh. This study is only confined among the university students who are studying at the private universities located in Dhaka. A total of 399 students were interviewed with a structured questionnaire. Both descriptive and inferential statistics were used in analyzing data. For identifying the factors relating to health beliefs and buying decision of bottled water, Factor Analysis was conducted. Results show that the students give most importance on safety and taste of the bottled water whenever they buy. The other factors include media exposure and reputation of the bottled water, chemical smell, hygienic, concerns about tap water, use as luxury item or status symbol, advertising by the producer, shape of the bottle (small or big) and convenience or readily availability of the water. This study suggests that the producers of bottled water should give importance on the health and hygiene aspects and the promotional factors for improving their sales in Bangladesh.

Keywords: Bottled Water, Health Beliefs, Motivating Factors, Safety and Taste

* Department of Business Administration, East West University, 43 Mohakhali C/A Dhaka1212, Bangladesh. *Email address*: nazrulislam@ewubd.edu

** Department of Business Administration (Adjunct Faculty), East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *Email address*: wh@ewubd.edu

AIB ANZ (Australia and New Zealand Association of International Business) Symposium, November 09, Melbourne, Australia, 2009

Impact of Globalisation and Global Financial Crisis on the Ready-made Garment Sector in Bangladesh

Sardana Islam Khan*

Abstract

This study tends to explore the positive effects of globalisation and possible reasons behind the resilience projected by the export oriented Ready-made Garment (RMG) sector in Bangladesh throughout the global financial crisis based on the theory of international trade and the empirical data from secondary sources. The case presented in this study can be used as interesting empirical evidence for or against some international trade theories related to the impact of globalisation and global financial crisis on developing economies, leaving scope for further analysis by economists.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka Bangladesh. *Email address*: sardana@ewubd.edu

Proc .of International Research Conference on Management and Finance, Faculty of Management and Finance, University of Colombo, December, pp. 388, Srilanka, 2009.

An Islamic Perspective of the Root Causes to Global Financial Crisis

Md. Al-Mamun*

Abstract

The meltdown of financial markets across the world is one of the most common characteristics of modern capitalist economy. From the time of stock market crash of 1901 through the great depression of 1930s to the Black Monday of 1987, the Asian financial crisis of 1997 and finally the latest tsunami of global credit crunch: the history of major stock market crashes is undoubtedly a testimony of its nature. According to IMF, the world has witnessed more than 100 stock market crisis in last 30 years. However, with the endeavors of so many talented academicians, policymakers, and researchers especially in the west; the reasons behind these crashes still remain unexplored. After almost 22 years no body has a solid answer regarding the reasons behind one of the spectacular stock market crash of black Monday in 1987. The recent credit crunch and subsequent stock market crashes across the globe, shows such madness has no remedy in capitalism. Meetings after meetings, summits after summits, conferences after conferences of the world leaders, thinkers and academicians either in the form of DAVOS summit, in the form of G-8 summit or in the form of EU summits, in the form of G-20 summits etc. have failed miserably to find the root causes behind the crisis; let alone finding a common solution! The expectations of finding a common approach to solve the problem from such high level summits have ended up with common blame-games with BBC headlining "Blame game starts at DAVOS". Moreover, due to the blessings of globalization (!) various economies of the world have quickly entered into much painful and long term recessions with lot many human stories of pain, sufferings, job lost and even suicide etc. Therefore, this article aims at uncovering the root causes of repeated form of global financial crisis by critically investigating the philosophical and functional foundations of capitalism. A detailed review of fundamentals, methods and facts about capitalism clearly highlights the inevitability of such problem to exist in capitalist economic mode in the light of Islamic economic system.

* Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: alm@ewubd.edu

IEE International Conference on Fuzzy Systems, August 20-24, ICC Jeju, Jeju Island, Korea, 2009

Vendor Selection Using Fuzzy C Mean Algorithm and Analytic Hierarchy Process

M. S. Q. Zulkar Nine*, Md. A. K. Khan*, Mahedi Hasanul Hoque*, **Mohammad Ameer Ali****, **Nikhil Chandra Shil****, Golam Sorwar*****

Abstract

Vendor selection is a strategic issue in supply chain management for any organization to identify the right supplier. Such selection in most cases is based on the analysis of some specific criteria. Most of the researches so far concentrate on multi-criteria decision making analysis. Though many approaches have been proposed, analytic hierarchy process (AHP) is the most well known as it can deal with a very complex criteria structure. In AHP, the selected criteria are ranked and organized in a hierarchical order from generic to specific to formulate the problem. Though this order of ranking is acceptably logical, it incurs a huge computational complexity when a large number of alternatives are considered as the selection criteria. Moreover, the AHP may generate wrong selection due to computational error. To address these limitations, a novel model namely vendor selection using fuzzy c-means algorithm and analytic hierarchy process (VFA) is presented in this paper by integrating the fuzzy c-means clustering (FCM) algorithm with analytic hierarchy process (AHP). The outcome of the proposed VFA algorithm is compared with the basic AHP algorithm and VFA outperforms the basic AHP and reduces the computational complexity of AHP by a factor of 7.

Keywords: FCM clustering algorithm, analytical hierarchy process, decision support system, Vendor selection problem

* Department of Computer Science and Engineering, MIST, Dhaka, Bangladesh.
** Department of Business Administration, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: nikhil@ewubd.edu
*** School of Commerce and Management Southern Cross University, NSW, Australia.

LIBERAL ARTS AND SOCIAL SCIENCES

Harvest: Jahangirnagar Studies in Language and Literature (Department of English, Jahangirnagar University), Vol. 24, pp. 53-74, Savar, Dhaka-1342, 2008-2009. (ISSN: 1729-8326)

Directions in CDA: "How Practical is one-size-fits-all CDA?"

Muhammed Shahriar Haque*

Abstract

The origin and spread of critical discourse analysis (CDA) is predominantly Western. Unlike discourse analysis (DA), which is said to be apolitical in its analysis of discourse, CDA takes an explicit position and tries to describe and explain 'how power abuse is enacted, reproduced or legitimised by the text and talk of dominant groups or institutions' (van Dijk, 1996: 84). Such CDA can be applied in societies where it is possible to be highly critical of people in positions of power and focus on issues that may be political in intent or sensitive in nature. However, in societies that are governed top down or are sensitive to various social concerns, it is challenging to take an explicit position and focus on various socio-cultural or socio-political issues, as well as issues that are considered taboo. The appropriacy and applicability of the one-size-fits-all CDA in Eastern societies may need to be reoriented in terms of the contextual social-cultural, socio-political and socio-economic milieu. This article takes a look at the appropriateness of applying the predominantly Western version of CDA in Eastern societies like Malaysia and Bangladesh.

* Department of English, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: shahriar@ewubd.edu

Western Education and Modernization in a Buddhist Village: A Case Study of the Barua Community in Bangladesh, Great Britain, Germany and USA: Lambert Academic Publishing, 268 pages, 2009. (ISBN: 978-3-8383-1768-7)

Western Education and Modernization in a Buddhist Village: A Case Study of the Barua Community in Bangladesh

Bijoy P. Barua*

Abstract

This research explores the issues of Western education and modernization in a Buddhist village of Bangladesh and it adopts the analytical model of discursive framework. The framework offers both theoretical and practical responses to the issues of education and modernization through an anti-colonial approach which acknowledges the value of local knowledge, cultural history and the daily life experiences of the people. The data are contextualized in applications of Buddhist knowledge and belief in Buddhist societies generally and in the Barua community of Bangladesh in particular for socio-political decolonization. The data were collected from October 2001 to January 2002.

The research findings reflect that the Buddhist educational values are different from the Western educational values. The study also reveals that the Western form of education pulled community members away from their own social environment and economy. This education created an image of Western materialistic ways of life as well as forced them to adopt the views of the hegemonic power in the name of modernization.

* Department of Social Sciences, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: bbarua@ewubd.edu

2nd International Conference (GBMF) on World Financial Crisis and Global Business Challenges (organized by Department of Finance, University of Dhaka), December 22-23, Senate Bhaban, University of Dhaka, Dhaka, 2009

Causality between Industrial Production and Exports in Bangladesh

Md. Gazi Salah Uddin*, Abdullah M Noman**

Abstract

This paper investigates the nexus between exports and industrial production - taken as a proxy for economic growth - in Bangladesh. It uses the Granger causality testing framework to examine this relationship. Using monthly data for the period from 1973 M7 to 2006 M8, we find that industrial production and exports are cointegrated. The causality tests are therefore done within an error correction model (ECM). The results obtained suggest that there exists long–run bidirectional causality between exports and industrial activities in Bangladesh.

Keywords: Export–led growth; Cointegration; Granger causality; Error–correction model (ECM)
JEL Classification: O1; F1

* Department of Business Administration at East West University, 43, Mohakhali C/A Dhaka-1212, Bangladesh. *Email address:* gsu@ewubd.edu
** Department of Finance, American International University, Bangladesh, Kemal Ataturk Avenue, Banani, Dhaka 1213, Bangladesh, *Email address*: amnoman@aiub.edu

Education, Participatory Action Research, and Social Change International Perspectives (ed. by Dip Kapoor and Steven Jordan), New York: Palgrave Macmillan, 2009. (ISBN: 978-0-230-61513-7)

Participatory Research, NGOs, and Grassroots Development: Challenges in Rural Bangladesh

Bijoy P. Barua*

Abstract

In development interventions, the terms participatory research, participation, and participatory appraisal are widely used for empowerment and mobilization of marginalized groups in rural Bangladesh. While using these terms, emphasis is generally centered on the active role of Nongovernmental Organizations (NGOs). Over the years, there has been a growing consensus that participatory process can only be attained by the NGOs in rural Bangladesh. Because of this, the NGOs received a total of US$ 379 million through foreign aid that account 34 percent of the total aid flows disbursed to Bangladesh in the financial year of 2003-2004 in order to mobilize the marginalized people in rural Bangladesh. In fact, with the acceptance of participatory grassroots development and foreign aid, the participatory research and grassroots development toward empowerment and liberation of disadvantaged people has been marginalized. This chapter critically examines the issue of participatory action research and grassroots development in rural Bangladesh. The study is based on field experience in program implementation and research involvement in grassroots development with the NGOs in Bangladesh from 1987 to 2007.

* Department of Social Sciences, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: bbarua@ewubd.edu

Global Perspectives on Adult Education (ed. by Ali Abdi and Dip Kapoor), New York: Palgrave Macmillan, 2009. (ISBN: 13:978-0-230-60975-8)

Non Formal Education, Economic Growth and Development: Challenges for Rural Buddhists in Bangladesh

Bijoy P. Barua*

Abstract

This chapter critically examines non-formal/extension education in the context of Buddhist society and culture. Over the years, agricultural development schemes have neglected the Buddhist vision of non-violent acts and interconnectedness in the name of growth. The case study demonstrated that nonformal education policies have pursued the path of the colonial approach that endorsed centralized control and serves the interests of urban traders, dealers and transnational companies. This centralized control has failed to address biodiversity, ecocentric development approaches, and ethical issues while implementing extension education and agricultural development in the country. The centralized policy has also undermined cultural knowledge for the sake of material growth and gain. Furthermore, the case study clearly indicates that the extension education process and agricultural modernization have not been able to apply a Buddhist reflective learning approach to understand local knowledge, wisdom, and economy. The Buddhist learning pedagogy does not allow any imposition. This learning process is creative and reflective and attempts to address the context and environment.

* Department of Social Sciences, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: bbarua@ewubd.edu

Education, Decolonization and Development: Perspectives from Asia, Africa and the Americas (ed. by Dip Kapoor), Rotterdam/Boston/Taipei: Sense Publishers, 2009. (ISBN: 978-908790-924-6)

Colonial Education and Non-Violent Activism of Rural Buddhist Communities in Bangladesh

Bijoy P. Barua*

Abstract

Colonial education in Bangladesh was introduced essentially for the purpose of training clerks and workers required for facilitating administration and gaining economic profit that can be traced back to the British colonial period. The colonial policies and practices of educational curriculum threatens existing socio-cultural capital and local economic resources for the sake of the global market economy and constructs artificial social fabric in the country. Such an agenda is a threat to cooperative living and learning environment. The centralized curriculum design policy has neglected the emotional, spiritual, cultural, and contemplative learning practices of ethnic communities. Historically, the British colonial form of education was designed to disempower the rural communities in Bangladesh. As this colonial education has persisted in creating the image of progress through industrialized society, the people in Buddhist villages have also been engaged in the processes of decolonization through non-violent means. For the Buddhist communities, it is a question of finding the middle path of education through the cultivation of peace, right action, and eco-centric development in society for the good of all. It rejects the notion of social discrimination and does not resort to imposition and domestication in the learning process. Most importantly, the Buddhist learning approach sensitizes learners to cultivate the notion of ahimsa (non-violence) and practices cultural diversity and democratic values in the learning process in order to develop healthy communities through a process of critical awareness (nama), contemplation of mind (citta sikkha), compassion (karuna), and loving kindness (metta). This approach certainly offers a unique perspective on the learning process, a process that nurtures collective living and seeks to develop mutual *respect* among diverse communities in the country.

* Department of Social Sciences, East West University, 43 Mohakhali C/A, Dhaka-1212.
Email address: bbarua@ewubd.edu

Proc. of the Asian Conference on Higher Education (ACE), October 24-25, Osaka, Japan pp. 1275- 1284, 2009

Determinants of Quality in Higher Education? Bangladesh Perspective through Private Universities

Touhida Tasnima*

Abstract

Private higher education in Bangladesh witnessed a rapid growth in the last decade in spite of facing various quality related challenges like financing, standards, qualified faculty and market demand for skilled workforce. This paper explores the issues that influence and determine quality and performance of private universities, analyses the internal and external quality assurance policies with focus on quality of teaching, quality intake, sources of revenue and makes policy recommendations to ensure quality in higher education.

Keywords: Private universities, quality, quality assurance, higher education, Bangladesh

* Department of Social Sciences, East West University, 43 Mohakhali C/A, Dhaka – 1212.
Email address: touhida@ewubd.edu

SCIENCES AND ENGINEERING

Zeitschrift fuer Naturforschung (Germany), Vol. 64a, No. 5, pp. 370-376, 2009.
http:// znaturforsch.com

Nonlinear Ion Acoustic Waves in a Magnetized Dusty Plasma in Presence of Nonthermal Electron

T. Saha*, P. Chatterjee*, **M. R. Amin****

Abstract

The Kadomtsev-Petviashili (KP) equation is derived for weakly nonlinear ion-acoustic waves in a magnetized dusty plasma in the presence of nonthermal electrons. Soliton solutions are obtained in both the one-dimensional and two-dimensional framework. For the one-dimensional soliton solution the 'tanh' method is considered while the two-dimensional solution is obtained by a method introduced by S. V. Manacov et. al., Phys. Lett. A63, 205 (1977). It is found that in case of the one-dimensional solution, both compressive and rarefactive solitary waves exist which could be obtained depending on the ratio of the electron and ion density. It is also seen that the nonthermal distribution of electrons has some significant effect in the shape of both the one-dimensional and two-dimensional solitary wave.

* Department of Mathematics, Siksha Bhabana Visva Bharati, Santiniketan, India.
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: ramin@ewubd.edu

Journal of Convergence Information Technology (JCIT), Vol. 4, No. 4, pp. 31-35, Korea December, 2009.

Determination of Save Operating Border of Asynchronous Data Traffic Based on MMPP

Md. Imdadul Islam*, **M. R. Amin****

Abstract

This paper reveals an analytical method of evaluating performance of an asynchronous transfer mode (ATM) data link based on the chain of two states Markov Modulated Poisson Process (MMPP). Two important traffic parameters, 'successful retransmission time' and 'average system failure time' of packet are considered as the key factors for evaluation of save operating region of a network. A group of curves for the above two parameters are drawn against probability of single bit error, taking 'threshold erroneous bit' as a parameter. The trajectory of intersection points of the above set of curves is determined to observe the profile of the border of safe operating region of the ATM link.

* Department of Computer Science and Engineering, Jahangirnagar University, Savar Dhaka. *Email address*: imdad@juniv.edu

** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka-1212. *Email address*: ramin@ewubd.edu

Journal of Discrete Mathematical Sciences & Cryptography, Vol. 12, No. 6, pp. 691-705
December, 2009

Call Admission Scheme of Mixed Traffic for Mobile Cellular Networks

Md. Imdadul Islam*, J. K. Das*, **M. R. Amin****

Abstract

The call admission scheme (CAS) optimizes the use of allocated channels against multi dimensional offered traffic maintaining the required quality of service (QoS). In this paper, a call admission control scheme is proposed for mobile cellular network as an extension of the dynamic partition scheme. The proposed scheme for call admission is based upon the channel borrowing mechanism for voice/data integrated service including thinning scheme of borrowed channel in a one-dimensional Markov model. The model is applicable for underlay overlay mobile cellular network. The proposed scheme has greatly reduced the forced termination (handover failure) of voice calls at the expense of other traffic parameters (blocking of new originated voice call and data call) and the model is also able to make explicit comparison with the different existing call admission schemes like guard channel (GC), dynamic partition (DP) and dual threshold bandwidth reservation (DTBR).

Keywords: Call admission control, dynamic channel allocation (DCA), thinning scheme, forced termination, Markov chain.

* Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh. *Email address*: imdad@juniv.edu
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address:* ramin@ewubd.edu

Research Journal of Information Technology, Vol. 1, No. 2, pp. 57-69, (Academic Journals Inc.), Pakistan, 2009. (ISSN 1815-7432)

Evaluation of Delay of Voice End User in Cellular Mobile Networks with 2D Traffic System

M. R. Amin*, Md. I. Islam**

Abstract

In this paper, we present a simple scheme to improve the performance of mobile cellular networks by incorporating delay of voice end user to the new originating calls over handoff calls in a two-dimensional traffic model. We have derived expressions for probability of forced termination of handoff calls and the blocking probability of new originating calls. It has been found from our study that the probability of forced termination of handoff calls is drastically reduced due to the incorporation of the delay of voice end user compared to the case when no delay of voice end user is used in the system. We have also compared our results for performance improvement with the existing method of channel reservation scheme for handoff calls and have found that our results provide much better performance improvement by reducing the probability of forced termination and the blocking probability.

Keywords: DOVE, handoff calls, newly originated calls, probability of forced termination

* Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: ramin@ewubd.edu.
** Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka, Bangladesh. *Email address*: imdad@juniv.edu

Journal of Applied Physics, Vol. 105, No. 4, pp. 044307 (1-6), American Institute of Physics [DOI: 10.1063/1.3078826], 2009.

Electronic Properties of a Strained <100> Silicon Nanowire

Redwan Noor Sajjad*, **Khairul Alam****

Abstract

The effects of uniaxial strain on the electronic properties of silicon nanowires grown in <100> direction are studied using a tight binding $sp^3d^5s^*$ orbital basis quantum simulation. Calculations are performed using both Harrison and Boykin formalisms (discussed in Sec. II). The energy difference between the fourfold (Δ_4) and the twofold (Δ_2) degenerate valleys of conduction bands reduces with compressive strain and the nanowire becomes an indirect band gap material when the compressive strain exceeds a certain value. With tensile strain, this energy difference increases and the nanowire band structures remain direct. The conduction band edge is downshifted with compressive strain and is upshifted with tensile strain. However, the valence band edge is upshifted with both types of strain that results in band gap reduction with strain. The four-valley degeneracy of conduction band at the center of one dimensional wire Brillouin zone is slightly lifted with both types of strain. The energy difference between the top two valence bands is insensitive to tensile strain and is significantly changed with compressive strain. The strain has no effect on conduction band effective mass but changes the valence band effective mass significantly. A 1% strain can change the hole effective mass by $\approx$ 53%. Harrison and Boykin formalisms produce very similar valence band edge and hole and electron effective masses and significantly different conduction band edge and band gap. In Boykin formalism, strain affects the energy levels of both the (Δ_4) and (Δ_2) valleys of conduction band while the energy level of only (Δ_2) valleys is affected by strain in Harrison calculations. The direct to indirect transition occurs at a slightly higher compressive strain in Boykin formalism.

* Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka 1000, Bangladesh

** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: kalam@ewubd.edu

Semiconductor Science and Technology, Vol. 24, pp. 045023 (1-8), March 20, 2009
[DOI: 10.1088/0268-1242/24/4/045023]

Parametrization of a Silicon Nanowire Effective Mass Model from $sp^3d^5s^*$ Orbital Basis Calculations

Redwan Noor Sajjad*, **Khairul Alam****, Quazi D M Khosru*

Abstract

We parameterize a silicon nanowire effective mass model to facilitate device simulation, where the mass depends on the wire dimension. Parametrization is performed for n-channel silicon nanowire transistors from $sp^3d^5s^*$ atomic orbital basis tight-binding calculations. The nanowires used in this study are grown in <100> and <110> directions. With the parameterized nanowire effective masses, we then calculate the current and compare against the full band I–V. The full band I–V is calculated for <110> wires of cross sections 0.82 nm × 0.82 nm and 1.2 nm × 1.2 nm due to computational resource limitation. The full-band and effective-mass I–V characteristics of 1.2 nm × 1.2 nm wire show very good agreement. However, a relatively larger mismatch is observed for the 0.82 nm × 0.82 nm wire, especially at the lower gate biases. This is because the current has both the thermal and tunneling components, and the nanowire effective-mass model overestimates the tunneling current. This overestimation is relatively larger for thinner wires. The thermal component of current is the same in both the nanowire effective-mass and full-band models. The performance metrics, namely the intrinsic switching delay and the unity current gain frequency are evaluated from the full-band calculations. The device has a near ideal subthreshold slope, a fraction of picosecond switching delay and a tera Hertz unity current gain frequency.

* Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka 1000, Bangladesh
** Department of Electrical and Electronic Engineering, East West University 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: kalam@ewubd.edu

IEEE Transactions on Nanotechnology, Vol. 8, No. 4, pp. 528-534, July 2009
[DOI: 10.1109/TNANO.2008.2011811]

Uniaxial Strain Effects on the Performance of a Ballistic Top Gate Graphene Nanoribbon on Insulator Transistor

Khairul Alam*

Abstract

The effects of uniaxial strain on the bandgap and performance of a top gate graphene nanoribbon (GNR) on insulator transistor are studied using π-orbital basis 3-D ballistic quantum simulation. The bandgap variation with strain shows zigzag pattern for the three families of nanoribbon. The variation is linear between two turning points and has almost equal magnitude of gradient for all the families. The ON-state and the OFF-state currents reduce and the ON/OFF current ratio increases with the type of strain that results in larger bandgap. The variation of OFF current and ON/OFF current ratio is exponential, and that of ON current is linear with strain and is independent of the type of strain applied. The intrinsic switching delay reduces and the intrinsic cutoff frequency increases with the type of strain that results in smaller bandgap. While the OFF-state current and the ON/OFF current ratio improve with strain, the ON-state current and switching performance degrade, and vice versa. Therefore, careful tradeoff should be considered in strain engineering of GNR transistors.

Index Terms: Graphene nanoribbon (GNR) on insulator transistor, nonequilibrium Green's function (NEGF) formalism, performance of GNR transistor, strain effects.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: kalam@ewubd.edu

Semiconductor Science and Technology, Vol. 24, pp. 085003 (1-6), June 30, 2009
[DOI: 10.1088/0268-1242/24/8/085003]

Transport and Performance of a Gate All Around InAs Nanowire Transistor

Khairul Alam*

Abstract

The transport physics and performance metrics of a gate all around InAs nanowire transistor are studied using a three-dimensional quantum simulation. The transistor action of an InAs nanowire transistor occurs by modulating the transmission coefficient of the device. This action is different from a conventional metal-oxide-semiconductor field effect transistor, where the transistor action occurs by modulating the charge in the channel. The device has 82% tunneling current in the off-state and 81% thermal current in the on-state. The two current components become equal at a gate bias at which an approximate source-channel flat-band condition is achieved. Prior to this gate bias, the tunneling current dominates and the thermal current dominates beyond it. The device has an on/off current ratio of 7.84×10^5 and an inverse subthreshold slope of 63 mV dec^{-1}. The transistor operates in the quantum capacitance limit with a normalized transconductance value of 14.43 mS μm^{-1}, an intrinsic switching delay of 90.1675 fs, and an intrinsic unity current gain frequency of 6.8697 THz.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: kalam@ewubd.edu

Tropical Journal of Pharmaceutical Research (Faculty of Pharmacy, University of Benin, Benin City), Vol. 8. No. 2. pp. 145-152, Nigera, April, 2009. http:// www.tjpr.org

Investigation of *In vitro* Release Kinetics of Carbamazepine from Eudragit® RS PO and RL PO Matrix Tablets

Apurba Sarker Apu*, **Atiqul Haque Pathan***, Dilasha Shrestha**, Golam Kibria**, Reza-ul Jalil**

Abstract

Purpose: The objective of this research work was to prepare and evaluate the effect of Eudragit RS PO and Eudragit RL PO polymers on the physical property and release characteristics of carbamazepine matrix tablets.

Methods: Matrix tablets containing carbamazepine were prepared with Eudragit® RS PO alone as the rate-retarding polymer (coded batch series 'A') and also with a combination of Eudragit® RS PO and RL PO (coded batch series 'B'). The tablets were characterized for hardness as well as for carbamazepine release. The release data were subjected to different models in order to evaluate their release kinetics and mechanisms.

Results: The hardness of batch series 'A' matrix tablet was >160 kg/cm^2 while for batch series 'B', it was >170 kg/cm^2. Carbamazepine tablets containing only Eudragit RS PO showed very slow release (less than 6% in 8 h) but when Eudragit RL PO was blended with Eudragit RS PO, the release rate improved significantly to 44% in 24 h ($p < 0.05$). Drug release mechanism was a complex mixture of diffusion and erosion.

Conclusion: Carbamazepine matrix tablets of satisfactory hardness were produced. Furthermore, by blending Eudragit RS PO with Eudragit RL PO in the matrix, tablets of varying release characteristics can be prepared.

Keywords: Carbamazepine, Matrix tablet, Hardness, Eudragit® RS PO, Eudragit® RL PO, Release kinetics.

* Department of Pharmacy, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: asa@ewubd.edu

** Faculty of Pharmacy, University of Dhaka, Dhaka-1000, Bangladesh

Mathematics. Information. Sciences. Physics (Bulletin of PFUR), University of Russia, No. 1, pp. 79-84, 2009

Static Solution with Spherical Symmetry with Conformal Gravitation: Vacuum Solution

Ramit Azad*, Pyzh V.M**

Abstract

The oscillating model of conformal gravity is considered. The static solution is studied in vacuum-dominated conformal gravitation, which is modeled by scalar field $\chi(x)$. The vacuum solution ($\chi = 0$, $T\mu\nu = 0$) in Einstein's gauge $\varphi(x) = \varphi 0 = \text{const}$ being considered, the Newtonian potential is obtained. The significance of the additional term in the potentialis also discussed.

Keywords and Phrases: oscillating model, conformal cosmology, Einstein's gauge, Newtonian potential.

* Department of Electronics and Communications Engineering, 43 Mohakhali C/A Dhaka 1212 Bangladesh.
** Department of Theoretical Physics Kharkov State University, Kharkov, Ukraine

Journal of Applied Physics, Vol. 105, No. 6, pp. 064505(1-5), 2009

Wave Function Penetration Effects on Ballistic Drain Current Modeling and MOSFET scaling

A. I. Khan*, M. K. Ashraf*, **Anisul Haque****

Abstract

A study of the evolution of wave function penetration effects on ballistic drain current (I_D) in nanoscale double gate (DG) metal-oxide-semiconductor field-effect-transistors (MOSFET) with the downscaling of device dimensions is presented. The electrostatics of the devices is calculated through the self-consistent solution of two dimensional Schrödinger and Poisson equations. HfO_2 /SiO_2 stack is considered as the gate-dielectric material. It is observed that wave function penetration increases drain current in DG MOSFETs fabricated on (110) silicon, and the off-state current is more sensitive to the penetration effects than the on-state current. Numerical results show that the magnitude of the relative increase in (I_D) due to wave function penetration increases sharply with the downscaling of silicon body thickness. On the other hand, the impact of the downscaling of gate length on the penetration effects depends on the gate bias. The relative increase in the off-state current due to wave function penetration decreases with the scaling of the gate length, while the variation in the relative increase in the on-state current with the gate length is insignificant. Drain-induced barrier lowering plays an important role in determining the effects of wave function penetration on the ballistic drain current with device scaling. Wave function penetration effect decreases the threshold voltage and increases the on-state transconductance. This phenomena becomes stronger with the scaling of the silicon body thickness. However, gate length scaling has little influence on these parameters. With the simultaneous scaling of the body thickness and the gate length, wave function penetration effects on all the parameters become more dominant. Physical explanations for these observations are provided.

* Department of Electrical Engineering and Computer Science, University of California at Berkeley, Berkeley, CA 94720, USA

** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: ahaque@ewubd.edu

Solid-State Electronics, Vol. 53, No. 3, pp. 271-275, 2009

Wave Function Penetration Effects on Ballistic Drain Current in Double Gate MOSFETs Fabricated on (100) and (110) Silicon Surfaces

M. K. Ashraf*, A. I. Khan*, **Anisul Haque****

Abstract

A comparison of wave function penetration effects on ballistic drain current (I_D) in nanoscale double gate (DG) MOSFETs fabricated on (100) and (110) silicon surfaces is presented. MOS electrostatics is determined from the self consistent solution of 2D Schrödinger and Poisson equations and (I_D) is calculated assuming that the ballistic transport through each subband is independent. Numerical results show that (I_D) is much more sensitive to wave function penetration in (110) DG MOSFETs than in (100) DG MOSFETs. This difference is due to the much heavier quantization effective mass in the longitudinal valley of (100) silicon relative to that in the fourfold valley ($\Delta 4$) of (110) silicon. It is also observed that in (100) devices, penetration effect is not sensitive to device scaling, whereas in (110) devices, penetration effect increases significantly with device scaling. The wave function penetration effect on (I_D) may be represented in terms of a reduction of the threshold voltage.

* Department of Electrical Engineering and Computer Science, University of California at Berkeley, Berkeley, CA 94720, USA

** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address:* ahaque@ewubd.edu

Plasma Science and Technology, (supported by the New Energy and Industrial Technology Development organization of Japan), Vol. 11, No.1, February, [IOP, UK], 2009

Numerical and Experimental Investigation on the In-Flight Melting Behaviour of Granulated Powders in Induction Thermal Plasmas

YAO Yaochun1*, **M. Mofazzal Hossain****, T. Watanabe*****

Abstract

An innovative in-flight glass melting technology with thermal plasmas was developed for the purpose of energy conservation and environment protection. In this study, modelling and experiments of argon-oxygen induction thermal plasmas were conducted to investigate the melting behaviour of granulated soda-lime glass powders injected into the plasma. A two-dimensional local thermodynamic equilibrium (LTE) model was performed to simulate the heat and momentum transfer between plasma and particle. Results showed that the particle temperature was strongly affected by the flow rate of carrier gas and the particle size of raw material. A higher flow rate of carrier gas led to lower particle temperature and less energy transferred to particles which resulted in lower vitrification. The incomplete melting of large particles was attributed to the lower central temperature of the particle caused by a larger heat capacity. The numerical analysis explained well the experimental results, which can provide valuable practical guidelines for the process control in the melting process for the glass industry.

Keywords: induction thermal plasmas, numerical modelling, carrier gas flow rate, particle size, heat transfer.

* National Engineering Laboratory of Vacuum Metallurgy, Kunming University of Science and Technology, Kunming 650093, China

** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: dmmh@ewubd.edu

*** Department of Environmental Chemistry and Engineering, Tokyo Institute of Technology, Yokohama 226-8502, Japan

Chemical Engineering Journal, Vol. 150, pp. 561-568, 2009
www.elsevier.com/locate/cel

In-Flight Thermal Treatment of Soda-Lime-Silica Glass Powders for Glass Production by Argon–Oxygen Induction Thermal Plasmas

M. Mofazzal Hossain*, Yaochun Yao**, Takayuki Watanabe***, Fuji Funabiki****, Tetsuji Yano****

Abstract

In order to investigate the plasma–particle energy exchange dynamics and optimize the plasma discharge and particle parameters during in-flight thermal treatment of soda-lime-silica glass powders, a plasma–particle interaction model was developed. This model solved the conservation equations to predict the plasma temperature and flow fields, and then calculated the injected individual particle trajectories and temperature histories, and the particle source terms to take into account the plasma–particle interaction. It was noticed that particle injection significantly reduced the plasma temperature around the centerline of the torch and hence decreased the heat transfer to particles at higher carrier gas flow-rate and powder feed-rate. As a result the size and composition of quenched particles were affected significantly by the above factors. The simulated results were consistent with those of experiment, which provided valuable guidelines in optimizing the plasma discharge and particle parameters for the efficient thermal treatment of soda-lime-silica glass particles.

* Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: dmmh@ewubd.edu
** Kunming University of Science & Technology, Kunming 650093, Yunnan Province China
*** Department of Environmental Chemistry and Engineering, Tokyo Institute of Technology, G1-22, 4259 Nagatsuta, Yokohama 226-8502, Japan
**** Department of Chemistry and Materials Science, Tokyo Institute of Technology, S7-4 2-12-1 O-okayama, Tokyo 152-8550, Japan

Engineering e-Transaction, Vol. 4, No. 1, pp. 35-38, June, 2009. (ISSN: 1823-6379)

A Study and Design of Direct Sequence Code Division Multiple Access (DS-CDMA) Transceiver

N. Choudhury*, M. Q. Islam*, I. Murshed*, M. A. Matin*, Z. Rahman*, **M. Mofazzal Hossain****

Abstract

This paper addresses CDMA transceiver using direct sequence spread spectrum and includes real time signal processing for scrambling of spread spectrum signal, and descrambling the signal at the receiver using the same pseudo-random code. The simulation of the entire DS-CDMA transceiver system has been implemented using MATLAB, which provides real time audio input to the system.

Keywords: Code division, multiple accesses (CDMA) Direct sequence spread spectrum (DSSS)

* Department of Electrical Engineering and Computer Science, North South University, Bangladesh.

** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address:* dmmh@ewubd.edu

Transactions on Electrical and Electronic Engineering (IEEJ), (Journal of the Institute of Electrical Engineers of Japan, Published by John Wiley & Sons, Inc.), Vol. 4, No. 4, pp. 504 - 509, July, 2009. (ISSN 1931-4973)

A Numerical Study of Plasma-Particle Heat Transfer Dynamics in Induction Thermal Plasmas for Glassification

M. Mofazzal Hossain*, Yaochun Yao**, Takayuki Watanabe***

Abstract

Dependence of energy exchange between plasma and soda-lime-silica glass particles on the particle size, powder feed-rate and nozzle insertion length during in-flight thermal treatment for glassification by induction thermal plasmas has been studied. For the numerical investigation into the plasma-particle energy exchange dynamics during melting and vaporization of particles, a thermofluid plasma-particle interaction model has been developed taking into account the strong plasma-particle interactions and particle loading effects. It is found that heat transfer to the particles depends strongly on the particles' size, powder feed-rate, nozzle insertion length, and plasma discharge parameters. Thus, for the efficient thermal treatment of particles, the above parameters should be optimized.

Keywords: plasma-particle interaction, energy transfer, soda-lime-silica glass, glassification degree

* Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: dmmh@ewubd.edu
** National Engineering Lab of Vacuum Metallurgy, Kunming University of Science and Technology, Kunming 650093, Yunnan, China
*** Department of Environmental Chemistry and Engineering, Tokyo Institute of Technology, G1-22, 4259 Nagatsuta, Yokohama 226-8502, Japan

Indian Journal of Physics, Vol. 83, No. 3, pp. 365-374, India, 2009

Large Amplitude Double Layer in Four Component Dusty Plasma with non-Thermal ions

Gurudas Mandal*, Kaushik Roy**, Prasanta Chatterjee**

Abstract

Dust acoustic double layers are studied in a four component dusty plasma. Positively and negatively charged mobile dust and Boltzmann distributed electrons are considered. The ion distribution is taken as nonthermal. The existence of compressive and rarefractive double layers is studied by pseudopotential approach. The effect of non-thermal ions on small amplitude and arbitrary amplitude double layers are also studied.

Keywords: Soliton; pseudo-potential; double-layers; non-thermal ions

* Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Bangladesh. *Email address:* gdmandal@ewubd.edu
** Department of Mathematics, Siksha Bhavana, Visva Bharati, Santiniketan-731235, West Bengal, India.

IEEE Transaction on Plasma Science, Vol. 37, No. 4, pp. 627-631, USA, April, 2009

Dust-Acoustic Shock Waves in a Dusty Plasma With Charge Fluctuating Positive Dust

S. K. Paul*, **G. Mandal****, A. A. Mamun***, **M. R. Amin****

Abstract

The nonlinear propagation of the dust-acoustic waves in a dusty plasma consisting of Boltzmann distributed electrons and ions, and mobile charge fluctuating positive dust has been investigated by employing the reductive perturbation method. It has been shown that the dust charge fluctuation is a source of dissipation, and is responsible for the formation of the dust-acoustic shock waves in such a dusty plasma. The basic features of such dust-acoustic shock waves have been identified. The basic features of the dust-acoustic shock waves predicted in this investigation should be useful in understanding the properties of localized waves in some space dusty plasmas.

* Department of Mathematics, The University of Asia Pacific, Dhanmondi, Dhaka Bangladesh.
** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *E-mail address*: ramin@ewubd.edu.
*** Department of Physics, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh.

Jurnal Fizik Malaysia, Vol. 30, No. 1 & 2, 30, pp. 29-36, Malaysia, 2009.

Shock Waves in Plasmas with Charge Fluctuating Dust of Opposite Polarity

S. K. Paul*, **G. Mandal****, A. A. Mamun***, **M. R. Amin****

Abstract

A dusty plasma system containing Boltzmann-distributed electrons and ions, mobile charge fluctuating positive dust and charge fluctuating stationary negative dust has been considered. The nonlinear propagation of the dust-acoustic (DA) waves in such a dusty plasma has been investigated by employing the reductive perturbation method. It has been found that the dust charge fluctuation is a source of dissipation, and is responsible for the formation of DA shock waves in such a dusty plasma. The basic features of the DA shock waves have been identified in this investigation which could be useful in understanding the properties of localized space dusty plasmas. It has been proposed to design a new laboratory experiment, which will be able to identify the basic features of the dust-acoustic shock waves predicted in this theoretical investigation.

* Department of Mathematics, The University of Asia Pacific, Dhanmondi, Dhaka-1212. Bangladesh.
** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: ramin@ewubd.edu
*** Department of Physics, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh.

Journal of Physical Sciences, Vol. 13, pp. 97-105, 2009. (ISSN: 0972-8791)
http://www.vidyasagar.ac.in/journal

Finitely Generated n-ideals Which Form Relatively Normal Lattices

Md. Abul Kalam Azad*, Md. Bazlar Rahaman*, **A. S. A. Noor****

Abstract

Here the authors give several characterizations of Relatively normal lattices in terms of n-ideals. They introduce the notion of relative n-annihilators in a lattice. They show that the lattices of finitely generated n-ideals Fn (L) is relatively normal if and only if for any two incomparable prime n-ideals P and Q, $P \vee Q = L$

* Department of Mathematics, Khulna University of Engineering and Technology.
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Bangladesh. *Email address:* noor@ewubd.edu

Progress In Electromagnetic Research (PIER 98), pp. 267-282, 2009.
doi:10.2528/PIER09092403

Detecting Dissimilarities in EM Constitutive Parameters Using Differential Imaging Operator on Reconstructed Wavefield

M. I. Raza*, R. E. DuBroff****

Abstract

Electromagnetic field will scatter when incident on boundaries separating media with different constitutive parameters. This paper demonstrates the use of a differential operator on recorded scattered waves to reveal the shape of the boundary. The method is noninvasive and is composed of three phases. First, the area of interest is illuminated and the resulting scattered electromagnetic fields are recorded. In the 2nd phase, the captured data is numerically reverse simulated in time to reconstruct the field distribution in the region of interest. Finally, the differential imaging operator is applied on the reconstructed wave field, creating an image delineating the boundary where scattered fields originated. This technique does not require the knowledge of location of the boundaries nor the nature of the discontinuity in the constitutive parameters. The proposed imaging system is scalable, whereby modification of the source signal, recorder sampling, and numerical model allows imaging objects of smaller dimensions and creation of sharper and more accurate images.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh.
** Department of Electrical and Computer Engineering, Missouri University of Science and Technology, Rolla, MO 65409, USA

Dhaka Univ. J. Pharm. Sci. Vol. 8, No. 1, pp. 1-6, June, 2009

In vitro Release Kinetic Study of Theophylline from Eudragit RS PO and Eudragit RL PO Matrix Tablets

Apurba Sarker Apu*, **Atiqul Haque Pathan***, Golam Kibria**, Reza-ul Jalil**

Abstract

The aim of the present study was to investigate the release kinetics of theophylline from permeable acrylic polymer matrix tablets. Matrix tablets were prepared by direct compression method using Eudragit RS PO and Eudragit RL PO. Two batches of matrix tablets were prepared. Only Eudragit RS PO was used in the first batch, and in the second batch both Eudragit RS PO and Eudragit RL PO were used as the rate retarding polymers in different proportions. The variation of hardness was insignificant in batches. Drug release was investigated by using USP basket method and the results of release rates were analyzed by using correlation coefficient value of Zero order release plot & Higuchi plot and exponent value of Bi-exponential release profile. Theophylline tablets having only Eudragit RS PO showed comparatively slow release but release rate improved significantly as seen in formulations containing Eudragit RL PO and Eudragit RS PO. It was also revealed that, in all cases the release of theophylline followed mixed release kinetics where Zero order release kinetics was predominant.

Keywords: Sustained release, matrix tablet, theophylline, acrylic polymers, eudragit, release rate, dissolution, hardness.

* Department of Pharmacy, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: asa@ewubd.edu

** Department of Pharmaceutical Technology, Faculty of Pharmacy, University of Dhaka Dhaka-1000, Bangladesh

Proc. of the 12th International Conference on Computer and Information Technology (ICCIT), IEEE Digital Library (USA), December 21-23, Dhaka, Bangladesh, 2009.

Performance Evaluation of Time Dependent Micro Macro Cellular Network Using MMPP Traffic

Mushlah Uddin Sarkar*, Md. Imdadul Islam**, **M. R. Amin***

Abstract

Two-dimensional (2D) and three-dimensional (3D) steady state Markov chains are widely used to analyze the traffic performance of communications networks. When the characteristics of the network changes with time, such steady state Markov chain is unable to determine different probability states. Markov Modulated Poisson Process (MMPP) is a special case of Markov Arrival Process (MAP) where arrival rate depends on probability states. In this paper, a traffic model of micro-macro cellular network of time dependent traffic load is modeled and its probability states are evaluated using MMPP varying load condition of the network under different parts of observation time.

* Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *E-mail address*: ramin@ewubd.edu

** Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka, Bangladesh. *E-mail address*: imdad@juniv.edu

Proc. of the 12th International Conference on Computer and Information Technology (ICCIT), IEEE Digital Library (USA), December 21-23, Dhaka, Bangladesh, 2009.

Performance Evaluation of MIMO System Incorporating Water Filling Model and Minimum Eigenvalue Constraints

Nur Afroza Khurshid*, Md. Imdadul Islam*, **M. R. Amin****

Abstract

In this paper, both equal power and water filling models are simulated for comparison of their performance in a multiple-input multiple-output environment. The effects of fast fading and the shadowing effects have been incorporated in the models. Minimum eigenvalue required for successful transmission for individual link is evaluated from the probability density functions of eigenvalue and equivalent uncoupled multiple-input multiple-output link. Impact of the number of antenna elements of an array on the minimum eigenvalue of an uncoupled channel is analyzed based on probability density function of eigenvalue of the channel matrix. The analysis shows that the cutoff eigenvalue decreases with increase in the number of antenna elements and signal to noise ratio of the received signal.

Keywords: Antenna elements channel capacity, MIMO, Raleigh fading, shadowing effects and SNR.

* Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh. *E-mail address*: imdad@juniv.edu.

** Department of Electronics and Communications Engineering, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *E-mail address*: ramin@ewubd.edu.

Proc. of the 12th International Conference on Computer and Information Technology (ICCIT), IEEE Digital Library (USA), December 21-23, 2009, Dhaka, Bangladesh, 2009.

Adaptive Array Antenna System in Cancellation of Jammer and Noise of Wireless Link

Md. Imdadul Islam*, Md. Golam Gaus**, Avijeet Das**, Mushlah Uddin Sarkar**
M. R. Amin**

Abstract

Single element antennas have very little capability of variation of antenna gain pattern. For a desired directivity, shape of beam and steer able beam, array antenna is widely used in wireless network. Relative magnitude of feed currents, relative phases or separation between antenna elements, geometrical configuration of array are responsible for the overall radiation pattern. The weighting factor of each antenna element is governed by an adaptive algorithm based on input signal and desired signal to achieve dynamic shaping of antenna beam. In this paper, both single and multiple elements adaptive array antenna system is used to tune the gain in such a way that the gain is enhanced in the direction of desired signal and reduced in the direction of interference or jamming signals.

Keywords: Adaptive beamforming, auto-correlation, cross-correlation vector, jammer, radiation pattern, reference and primary omni.

* Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh. *E-mail address*: imdad@juniv.edu
** Department of Electronics and Communications Engineering, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *E-mail address*: ramin@ewubd.edu

Proc. of the 12th International Conference on Computer and Information Technology (ICCIT), IEEE Digital Library (USA), December 21-23, Dhaka, Bangladesh, 2009.

Capacity Enhancement of Limited User Traffic of Mobile Cellular Networks Using DOVE Technique

M. Omar Faruq*, M. Arifur Rahman*, Md. Imdadul Islam**, **M.R. Amin***

Abstract

In this paper, a simple scheme is presented to improve the performance of mobile cellular networks by using delay of voice end user (DOVE) to the new originating calls over handoff calls in a two-dimensional traffic model for finite number of users. Expressions for probability of forced termination of handoff calls and the blocking probability of new originating calls have been derived. From this study it has been found that the probability of forced termination of handoff calls is significantly reduced due to the incorporation of the delay of voice end user compared to the case when no such delay of voice end user is used in the system.

* Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *E-mail address*: ramin@ewubd.edu
** Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka, Bangladesh. *Email address*: imdad@juniv.edu

Proc. of the 12th International Conference on Computer and Information Technology (ICCIT), IEEE Digital Library (USA), December 21-23, 2009, Dhaka, Bangladesh, 2009.

Performance Evaluation of a Mobile Cellular Network with two Hop Ad Hoc Relaying

Nusrat Sultana*, M.A. Jobayer Bin Bakkre*, Md. Imdadul Islam**, **M.R. Amin***

Abstract

In a mobile cellular network both new originating and handoff calls can be dropped at any time in the middle of a conversation when a user enters in a dead spot. So there is always some discrepancy between traffic originated by the mobile station (MS) and the traffic received by the base station (BS). A probability model is incorporated to evaluate this discrepancy considering geometry of service area and probability density function of user distribution. Blocking Probability experienced by base station is found less than that of theoretical approach supports the central idea of the paper. Finally same traffic model is applied for ad hoc two hop relay mobile cellular system for performance evaluation.

Keywords: Ad-hoc relaying, performance evaluation. New originating call, handoff call and wireless mobile communication.

* Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka, Bangladesh. *E-mail address*: ramin@ewubd.edu

** Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka, Bangladesh. *E-mail address*: imdad@juniv.edu

International Physics Conference on Physics and Sustainable Development in the 21st Century (organized by Bangladesh Physical Society), Central Auditorium, Bangladesh University of Engineering and Technology (BUET), May 15-17, Dhaka, Bangladesh, 2009

Magnetic Field of a Rotating Massive Sphere Taking Baroelectric Effect into Account

Ramit Azad*, Ermolaev Yu. G**

Abstract

Magnetic field due to the baroelectric effect which arises due to the rotation of the redistributed charges caused by high pressure has been calculated which is expected to work in addition to the normal contributions in conventional magnetic systems. This particular effect, although very small, can become effective in the cosmic scale, where the enormous pressure due to the gravitational field or other effects is involved. Expressions are obtained for magnetic fields produced by volume charge density and surface charge density. These expressions can be used in calculating the magnetic fields of celestial bodies due to baroelectric effect.

Keywords: Magnetic field, baroelectric effect, charges redistribution, cosmic scale.

* Department of Electronics and Communication Engineering, East West University, 43 Mohakhali C/A, Dhaka1212, Bangladesh.
** Department of Theoretical Physics Peoples Friendship University of Russia, Moscow, Russia. *Email address*: mag42@list.ru

National Conference on Materials Science & Technology For Sustainable Development: Bangladesh Perspective, (organized by Department of Physics, Chittagong University of Engineering & Technology (CUET), November 8, Chittagong, Bangladesh, , 2009

Generation of the Magnetic Fields of Celestial Bodies

Ramit Azad*, Ermolaev Yu. G**

Abstract

Some mechanisms of the generation of magnetic fields of rotating objects of cosmic scale are analyzed. The analysis focuses on non-dynamo mechanisms. The occurrence of magnetic fields at electrically neutral objects due to the rotation of uncompensated charge distribution is considered. Expressions are obtained for magnetic fields produced by volume charge density and surface charge density. These expressions can be used in calculating the magnetic fields of celestial bodies.

Keywords: Magnetic field, charge redistribution, non-dynamo, cosmic scale.

* Department of Electronics and Communication Engineering, East West University, 43 Mohakhali C/A, Dhaka1212, Bangladesh.
** Department of Theoretical Physics Peoples Friendship University of Russia, Moscow, Russia. *Email address*: mag42@list.ru

16th Mathematics Conference of Bangladesh Mathematical Society, (organized by Department of Mathematics, December 17-19, University of Engineering & Technology, (BUET), 2009

Evaluation of Integrals Using the Error Function and Error Function of Imaginary Argument

Ramit Azad*, Ermolaev Yu. G**

Abstract

In the simple thermodynamic approach to determine the distribution of the density of the displaced charges of a thin rotating disk, integrals are evaluated using the error function and error function of imaginary argument. Using the equations the exponential dependence of the density of displaced charges on the square of the radius is obtained.

Keywords: error function, error function of imaginary argument, charge distribution, exponential dependence.

* Department of Electronics and Communication Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh.
** Department of Theoretical Physics Peoples Friendship University of Russia, Moscow, Russia. *Email address*: mag42@list.ru

IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC), November 25-27, Xian, China 2009. (Paper ID # 01-046)

On the Physically Based, Quantum Mechanical Correction to the Accumulation Surface Potential of Nano-Scale MOSFETs

M. A. Karim*, **Anisul Haque***

Abstract

A physically based, explicit, analytical model for the quantum mechanical (QM) correction to the surface potential of nano-scale MOS devices, under accumulation bias, is presented. Wave function penetration effect is taken into account. Instead of using the bandgap widening approach which includes QM correction indirectly, the proposed correction term is directly added to the semiclassical surface potential. Under accumulation bias, charges in extended states and in quantized states contribute to the surface potential in different ways. This difference in contributions is considered in the proposed correction. The proposed correction shows significant improvement while comparing with two existing analytical QM correction models and with two self-consistent, QM numerical models. Gate C-V characteristics of different MOS devices have been simulated using the proposed correction. Excellent agreement with published experimental data has been observed.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: ahaque@ewubd.edu

Proc. (TECHPOS) Kualalumpur, December 14-15, Malaysia, 2009 [IEEE Explorer]

Performance Evaluation of Symmetric Encryption Algorithm in MANET and WLAN

M A Matin*, Md. Monir Hossain**, Md Foizul Islam**, Muhammad Nazrul Islam**
M. Mofazzal Hossain***

Abstract

The demand for adequate security to electronic data system grows high over the decades. As the security issue also impact on the performance analysis of the wireless network, data encryption is necessary for sending and receiving information secretly over the network. Since 1970s, Data Encryption Standard (DES) has received a substantial amount of attention from academic cryptanalysts. However, in 1998 it has been proved insecure and on October 2000, National Institute of Standards and Technology (NIST) announced that the Rijndael algorithm has been selected as the Advance Encryption Standard (AES).Our algorithm is based on AES. In this paper, we examine the performance of our new cipher in MANET and wireless LAN networks and make a performance comparison with that of AES.

* Department of Electrical Engineering and Computer Science North South University (NSU), Bangladesh.
** Department of Computer Science and Engineering
** Khulna University of Engineering and Technology (KUET), Bangladesh
*** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: dmmh@ewubd.edu

Proc. of the 2nd International Conference on Engineering Education for Sustainable Development, December 19-20, Dhaka, Bangladesh, 2009.

Detection Ability of Parametric Faults in Analog Circuits Using CBT Concept and its Test Limitations

Md. Delowar Hossain*, Tanay Kumar Ganguly**, Md. Shariful Islam**, **Sarwar Jahan*****, **M. Mofazzal Hossain*****

Abstract

This paper represents the coefficient-based test (CBT) method to detect parametric faults in linear, time-invariant analog circuits. We use transfer function concept, System Identification tools and Monte-Carlo Simulation to find out the parametric faults for a circuit under test (CUT). In previous works, since the results lack some practical needs, it cannot be applied in practical cases. Firstly, low noise level was considered and the signal to noise ratio was in the range of 15-20 dB. Secondly, the noise generated by the capacitors was ignored. As a result, the idealistic case was much more deviated from practical case. In this paper considering these two limitations, we adopt our further research on the CUT which is basically a higher order low pass filter. We found that by varying signal to noise ratio as well as considering noise generated by all the elements, results a different transfer function. And from the coefficient value of that deviated transfer function, it is easy to detect faults also in practical cases. Moreover, we tried to have a minimized coefficient-bound of the transfer function from which the faulty elements can be easily detected to compensate the faults. In this work we also present that there are some parametric faults which are undetectable irrespective of which test methodology is being used.

* Khulna University of Engineering and Technology, Khulna.
** Department of Electrical and Electronic Engineering, World University of Bangladesh.
*** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka-1212. *Email address*: dmmh@ewubd.edu

11th International Conference on Advanced Communication Technology (ICACT) February 15-18, Phoenix Park, Gangwon-Do, Republic of Korea, pp. 56, 2009. (ISBN: 978-89-5519-139-4)

A New Strategy to Implement Security in an Area Using Picocell Base Transceiver Station

S.H. Shah Newaz*, Jong Min Lee*, **Sarwar Jahan****, **M.R. Amin****, Junkyun Choi*

Abstract

Communication jamming devices have been adopted in different places where ringing of cell phone is not allowed or security is important. Our proposed mechanism that can be developed to block the unauthorized mobile station (UMS) for ensuring security, requires a picocell base transceiver station (PBTS) instead of communication jamming device and a simple algorithm which is stored in visitor location register (VLR) and takes decision whether the VLR will send call complete message (CCM) to mobile switching center (MSC) for allowing a traffic channel to MS or block the MS if is not authorized to make a call.

Keywords: VLR, jamming devices, picocell, MSC

* Information and Communications University (ICU), 113-6 Munji-Dong, Yuseong-Gu, Daejeon 305-732, Republic of Korea. *Email address*: newaz@icu.ac.kr
** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: ramin@ewubd.edu.

International Conference on Computer and Information Technology (ICCIT), December 21-23, Dhaka, Bangladesh, pp. 186-191, 2009

Minimized Reversible Synthesis of Non-Reversible Quinary Logic Function

Mozammel H. A. Khan*, Raqibul Hasan*

Abstract

Reversible multiple-valued logic circuit has several advantages over reversible binary logic circuit. In this paper, we propose a method of minimization of Galois field sum of products (GFSOP) expression for non-reversible quinary logic function. We also propose a method of reversible realization of quinary GFSOP expression as cascade of quinary reversible gates. Experimental results show that a significant minimization can be achieved using the proposed minimization method.

* Department of Computer Science and Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: mhakhan@ewubd.edu, raqib_cse@yahoo.com

International Conference on Computer and Information Technology (ICCIT), December 21-23, Dhaka, Bangladesh, pp. 7-12, 2009

Multiple-Case Outlier Detection in Least-Squares Regression Model Using Quantum-Inspired Evolutionary Algorithm

Mozammel H. A. Khan*, Salena Akter*

Abstract

In ordinary statistical methods, multiple outliers in least-squares regression model are detected sequentially one after another, where smearing and masking effects give misleading results. If the potential multiple outliers can be detected simultaneously, smearing and masking effects can be avoided. Such multiple-case outlier detection is of combinatorial nature and $2^N - 1$ sets of possible outliers need to be tested, where N is the number of data points. This exhaustive search is practically impossible. In this paper, we have used quantum-inspired evolutionary algorithm (QEA) for multiple-case outlier detection in least-squares regression model. An information criterion based fitness function incorporating extra penalty for number of potential outliers has been used for identifying the most appropriate set of potential outliers. Experimental results with four datasets from statistical literature show that the QEA effectively detects the most appropriate set of outliers.

* Department of Computer Science and Engineering, East West University, 43 Mohakhali Dhaka 1212, Bangladesh. *Email address*: mhakhan@ewubd.edu, s_lina_cse@yahoo.com

Proc. of the 39th International Symposium on Multiple-Valued Logic (ISMVL), May 21-23, Naha, Okinawa, Japan, pp. 103-108, 2009

Quantum Realization of Multiple-Valued Feynman and Toffoli Gates Without Ancilla Input

Mozammel H. A. Khan*

Abstract

Multiple-valued Feynman and Toffoli gates are used in GFSOP based synthesis of quantum logic circuits. These gates are macro-level gates and need to be realized using technology dependent primitive gates. In this paper, we present ancilla input free architectures for realization of d-valued ($d \geq 3$) Feynman and n-qudit ($n \geq 3$) Toffoli gates on the top of liquid ion-trap realizable Muthukrishnan-Stroud gates. The proposed architectures can be used for any d if GF(d) can be constructed. We show realization examples of ternary, quaternary, and quinary Feynman gates, and 3 and 4-qudit Toffoli gates. The present realizations require either less or equal primitive gates than the previously reported realizations. Moreover, in contrast to the earlier realizations, the present Toffoli gate realizations do not require any ancilla input, which reduce the register width of a synthesized quantum logic circuit.

* Department of Computer Science and Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: mhakhan@ewubd.edu

Proc. of the 39th International Symposium on Multiple-Valued Logic (ISMVL), May 21-23, Naha, Okinawa, Japan, pp. 343-348, 2009

Scalable Architectures for Design of Reversible Quaternary Multiplexer and Demultiplexer Circuits

Mozammel H. A. Khan*

Abstract

Quaternary reversible logic is very suitable for encoded realization of binary reversible logic functions by grouping two bits together into quaternary digits. Quaternary multiplexer and demultiplexer circuits are very important building blocks of quaternary digital systems. In this paper, we show reversible realizations of 4×1 multiplexer and 1×4 demultiplexer circuits on the top of liquid ion-trap realizable 1×1 and Muthukrishnan-Stroud gates. Then we show scalable architectures for design of m×1 multiplexer and 1×m demultiplexer circuits using 4×1 multiplexers and 1×4 demultiplexers, respectively, where $m \leq 4n$ and n is the number of selection inputs. The proposed realizations of reversible multiplexer and demultiplexer circuits are more efficient than the earlier realizations in terms of number of primitive gates and number of ancilla inputs required.

* Department of Computer Science and Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: mhakhan@ewubd.edu

18th International Workshop on Post-Binary ULSI Systems (ULSIWS), May 20, Naha Okinawa Japan, 2009

Reversible Synthesis of Quinary Logic Function

Mozammel H. A. Khan*

Abstract

In this paper, we introduce method of representing quinary logic function as minimized Galois field sum of products (GFSOP) expression using 1-reduced Post literals and reversible literals. For this purpose, we develop 114 Galois field expansions (GFEs) using which Galois field decision diagram (GFDD) can be constructed for any quinary logic function and then the GFDD can be flattened to write the minimized GFSOP expression. Finally, we discuss the realization of GFSOP expression as cascade of reversible gates.

* Department of Computer Science and Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: mhakhan@ewubd.edu

Proc. of the 42nd (IUPAC) Congress in SECC, August 02 – 07, Glasgow, United Kingdom 2009

Kinetic and Three Dimensional Quantitative Structure-Activity Relationship (3D-QSAR) Studies on New α- Glucosidase Inhibitors

Shamsun Nahar Khan*, M. Iqbal Choudhary**, Atta-ur-Rahman**

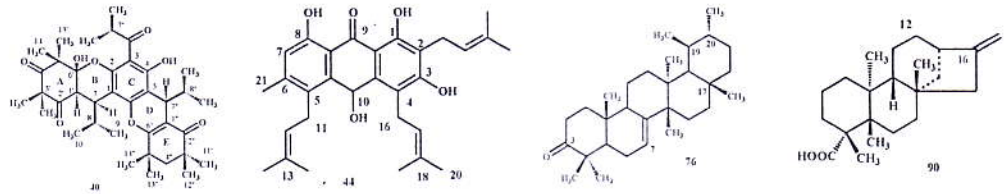
Abstract

α-Glucosidases are involved with carbohydrate metabolism. α-Glucosidase inhibitors interfere with gut glucose absorption by inhibiting the catalytic activity of the α-glucosidase to the disaccharides. α-Glucosidase enzyme inhibitors (AGIs) are one of the approaches to control the blood sugar levels for type-2 diabetes.

α-Glucosidase plays a crucial role in the life cycle of several viruses, which originate from the endoplasmic reticulum. Inhibition of α-glucosidases causes abnormal functionality of glycoproteins which is expected to show antiviral activity.

We have recently focused our efforts on the discovery of potent α-glucosidase inhibitors due to its important role in different clinical and pathological condition.

As an outcome of this study, several classes of natural compounds such as terpenoids, flavonoids, iridoids, phloroglucinols, anthranols, physalins, and acridone alkaloids were identified as new inhibitors of the enzyme.



Biscoumarins, isocoumarins, and reserpine group of indole alkaloids, acridine alkaloids, benzylhydrazide as well as chalcone derivatives were identified as the synthetic classes of the inhibitors. Kinetic studies on these inhibitors have been described in the context of their mechanism of inhibition and binding affinities. A detail Kinetic and three-dimensional quantitative structure-activity relationship studies (3D-QSAR) studies of these inhibitors will be described in the presentation.

* H. E. J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, Pakistan. (Currently Assistant Professor, Department of Pharmacy, EWU)

** H. E. J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270, Pakistan

Young Scientists Congress (YSC) (Bangladesh Academic of Sciences (BAS), December 29-30, 2009. (Oral Presentation)

Genotypes and Phenotypes of CYP3A4 in Bangladeshi People

Abdullah Al Maruf*, Maizbah Uddin Ahmed**, Abul Hasnat**

Abstract

The purpose of this study is to characterize the genotypes and phenotypes of CYP3A4 in Bangladeshi peoples, which will be helpful for the adjustment of dosage regimen, reduce the serious adverse drug reactions to ensure safe, effective and economic treatment. Human Cytochrome P4503A4 is a major P450 enzyme in the liver and gastrointestinal tract. It is responsible for the metabolism of more than 60% drugs used by the human including clinically important drugs like nifedipine, cyclosporine, erythromycin, midazolam, triazolam, digitoxin, lidocaine, quinine etc., some endogenous steroids, and harmful environmental contaminants. CYP3A4 exhibits a remarkable interindividual variation as high as 20-fold. To investigate whether the interindividual variation in CYP3A4 levels can be explained by genetic polymorphisms, this study has been designed to phenotype 200 healthy Bangladeshi subjects for CYP3A4 activity by measuring urinary ratio of 6β-hydroxy-cortisol/cortisol (6β-0H-CS/CS) and to genotype all the subjects whether they show low or high CYP3A4 activity for the presence of different CYP3A4 alleles. For phenotyping, morning spot urine samples were collected from 91 healthy Bangladeshi subjects. CS and 6β-OH-CS were extracted and quantified by HPLC. For CS, the maximum concentration found was 1366.73 ng/ml and minimum concentration was 7.21 ng/ml with an average of 246.10 ± 280.17 ng/ml. On the other hand, the maximum and minimum concentration of 6β-OH-CS was 819.26 ng/ml and 6.51 ng/ml respectively with an average of 126.85 ± 138.38 ng/ml. The ratio of 6β-OH-CS and CS ranges from 0.01 to 13.06 with an average of 1.86 ± 2.72 (SD). The within-day coefficient of variation (C.V.) was 4.5 % (n=91), while the between-day C.V. was found to be 8.7% (n=91). Genotyping was done using the extracted genomic DNA from 130 healthy Bangladeshi subjects followed by amplification of target DNA fragments by PCR. Amplified DNA fragments were digested by restriction enzymes (*Mbo*II, *Xcm*I, *BsmA*I, *Cla*I, *Hinf*I, *HpyCH4*III & *Hpa*II) followed by gel electrophoresis & sequencing to identify the target alleles namely CYP3A4*1B, CYP3A4*2, CYP3A4*4, CY3A4*5, CYP3A4*6, CYP3A4*10 & CYP3A4*18. No mutation was detected for CYP3A4*2, CYP3A4*4, CYP3A4*5, CYP3A4*6, CYP3A4*10 & CYP3A4*18 alleles, which are common in other ethnic groups. Two samples with CYP3A4*1B allele were found to be heterozygous (1.5%) (n=130). Correlation between phenotypes and genotypes will be done after analyzing rest of the samples.

* Department of Clinical Pharmacy and Pharmacology, Faculty of Pharmacy, University of Dhaka, Dhaka-1000, Bangladesh. (Currently Senior Lecturer, Department of Pharmacy, EWU).*Email address:* aalm@ewubd.edu

** Department of Clinical Pharmacy and Pharmacology, Faculty of Pharmacy, University of Dhaka, Dhaka-1000, Bangladesh.

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Lattices Whose Finitely Generated n-Ideals Form a Generalized Stone Lattice

M. Ayub Ali*, **A.S.A. Noor****

Abstract

In this paper the authors have studied a lattice L whose set of finitely generated n-ideals Fn(L) form a generalized Stone lattice. They have shown that Fn (L) is generalized Stone if and only if $< x >_n^+ \vee < x >_n^{++} = L$, which is also equivalent to $\left(< x >_n \cap < y >_n\right)^+ = < x >_n^+ \vee < y >_n^+$ for all $x, y \in L$. $< x >_n$ for all $x, y \in L$. $< x >_n$ denotes the principal n-ideal generated by x and $< x >_n^+$ is the pseudo complement of $< x >_n$ in the lattice of n-ideals of L. They have also shown that $F_n(L)$ is generalized Stone if and only if $P \vee Q = L$ for any two minimal prime n-ideals P and Q of L.

Keywords: Pseudo complementation, n-ideals, Stone lattice, Generalized Stone lattice.

* Department of Mathematics, Govt. Titumir College, Dhaka, Bangladesh.
** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali, C/A Dhaka-1212. *Email address*: noor@ewubd.edu

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Finitely Generated n-Ideals which Form m-Normal Lattices

Md. Abul Kalam Azad*, Md. Bazlar Rahaman*, **A. S. A. Noor****

Abstract

A convex sublattice of a lattice L containing an element $n \in L$ is called an n-ideal. The set of all finitely generated n-ideals is denoted by $F_n(L)$, which is a lattice. A distributive lattice with 0 is called an m-normal lattice if its every prime ideal contains at most m number of minimal prime ideals. In this paper we include several characterizations of those $F_n(L)$ which form m-normal lattices. We also show that $F_n(L)$ is m-normal if and only if for any $x_0, x_1, \ldots\ldots\ldots\ldots, x_m \in L$, with $m(x_i, n, x_j) = n$ implies $\langle x_0 \rangle_n^* \vee \ldots\ldots\ldots\ldots \vee \langle x_m \rangle_n^* = L$.

Keywords: n-ideals, Minimal prime n-ideal, m-normal lattices, finitely generated n-ideal.

* Department of Mathematics, Khulna University of Engineering and Technology.
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali, C/A Dhaka-1212. *Email address*: noor@ewubd.edu

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Finitely Generated n-Ideals which Form Relatively m-Normal Lattices

Md. Abul Kalam Azad*, Md. Bazlar Rahaman*, **A. S. A. Noor****

Abstract

A convex sublattice of a lattice L containing an element $n \in L$ is called an n-ideal. The set of all finitely generated n-ideals is denoted by $F_n(L)$, which is a lattice. A distributive lattice with 0 is called an m-normal lattice if its every prime ideal contains at most m number of minimal prime ideals. A distributive lattice with 0 is called a relatively m-normal lattice if the interval [0,x] is m-normal for each $x \in L$. In this paper we include some characterizations of those $F_n(L)$ which form relatively m-normal lattices. We show that $F_n(L)$ is relatively m-normal if and only if for any m+1 pair wise incomparable prime n-ideals $P_0, P_1, \ldots\ldots\ldots\ldots, P_m$; $P_0 \vee P_1 \vee \ldots\ldots\ldots\ldots \vee P_m = L$.

Keywords: Prime n-ideal, m-Normal lattice, Relatively m-normal lattice, Relative n-annihilator.

* Department of Mathematics,Khulna University of Engineering and Technology
** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212. *Email address*: noor@ewubd.edu

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Nearlattices Whose Sets of Principal n-Ideals Form Normal Nearlattices

M. S. Raihan*, **A. S. A. Noor****

Abstract

In this paper the authors generalize several results of normal nearlattices in terms of n-ideals. They prove that the near lattice of principal n-ideals Pn(S) is normal if and only if each prime n-ideal contains a unique minimal prime n-ideal. Moreover, Pn(S) is normal if and only if $(< x >_n \cap < y >_n)^* = < x >_n^* \vee < y >_n^*$ for all x, y∈S. They also show that $P_n(S)$ is normal if and only if $P \vee Q = S$ for any two minimal prime n-ideals P and Q.

Keywords: n-ideal, Principal n-ideal, Minimal prime n-ideal, Normal Near lattice.

* Department of Mathematics, Rajshahi University, Rajshahi, Bangladesh
** Department of Electronics and Communications Engineering, East West University, 43 Mohakhali, C/A Dhaka-1212. *Email address*: noor@ewubd.edu

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Nearlattices Whose Sets of Principal n-ideals Form Relatively Normal Nearlattices

M. S. Raihan*, **A. S. A. Noor****

Abstract

Here the authors generalize several results of relatively normal near lattices in terms of n-ideals. They introduce the notion of relative n-annihilators in a near lattice and include some interesting results on this. They give several characterizations of the set of principal n-ideals $P_n(S)$ which forms a relatively normal near lattice in terms of relative n-annihilator. They also show that Pn(S) is relatively normal if and only if for any two incomparable prime n-ideals P and Q, $P \vee Q=S$.

Keywords: Relatively Normal Near lattice, Relative n-annihilator, Incomparable prime n-ideals.

* Department of Mathematics, Rajshahi University, Rajshahi, Bangladesh
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali, C/A Dhaka-1212. *Email address*: noor@ewubd.edu

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Some Properties of Modular n-Ideals of a Lattice

M. Ayub Ali*, **A.S.A. Noor****

Abstract

An ideal M of a lattice L is called a modular ideal if for all ideals $I, J \in I(L)$ with $J \subseteq I$, the relation $I \cap (M \vee J) = (I \cap M) \vee J$ is satisfied. In this paper the authors have introduced the notion of modular n-ideals of a lattice. They have given several characterizations and properties of modular n-ideals when n is a neutral element in lattice L. They proved that the principal n-ideal $< s >_n$ is a modular n-ideal if and only if $s \wedge n$ and $s \vee n$ are modular elements in (n] and [n) respectively. Finally, they have characterized modular n-ideals with the help of relative n-annihilators.

Keywords: Modular n-ideal, Neutral element, Principal n-ideal, Relative annihilators, Relative n-annihilators

* Department of Mathematics, Govt. Titumir College, Dhaka
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka-1212. *Email address*: noor@ewubd.edu

16th Mathematics Conference of Bangladesh Mathematical Society, December 17-19 BUET, Dhaka, Bangladesh, 2009

Around a Central Element of a Nearlattice

Jahanara Begum*, **A.S.A. Noor****

Abstract

A nearlattice S is a meet semilattice together with the property that any two elements possessing a common upper bound have a supremum. It is well known that if $n \in S$ is a neutral and upper element then its isotope $S_n = (S;\cap)$ is again a nearlattice, where $x \cap y = (x \wedge y) \vee (x \wedge n) \vee (y \wedge n)$ for all $x, y \in S$. In this paper we have discussed the central elements in a nearlattice and also in a lattice. We included several characterizations of these elements. We showed that for a central element $n \in S, P_n(S) \cong (n]^d \times [n)$, where $P_n(S)$ is the set of principal n-ideals of S. Then we proved that for a central element $n \in S$, an element $t \in S$ is central if and only if it is central in S_n. We also proved that for a lattice L, L_n is again a lattice if and only if n is central. Finally we showed that B is a Boolean algebra if and only if B_n is a Boolean algebra with same complement when n is central. Moreover, $B \cong B_n$.

Keywords: Central element, Nearlattice, Isotope, Boolean Algebra.

* Department of Mathematics, Dhaka College, Dhaka, Bangladesh
** Department of Electronics and Communications Engineering, East West University 43 Mohakhali C/A, Dhaka-1212. *Email address*: noor@ewubd.edu

Proc. Progress In Electromagnetics Research Symposium (PIERS), March 23-27, Beijing China, 2009

Design of an Optimum Antenna System for Maximum Power Transfer Using Statistical Design of Experiment Approach

A.S.M. Shamsuzzaman*, Arnab Roy*, Sushanta Paul*, **Md. Ishfaqur Raza****

Abstract

For optimum design of the feed of an antenna, the location of the feed with respect to the antenna is critical. The location and design of the feed is a function of the antenna target frequency, material characteristics of the substrate, and the physical measures of the antenna. The objective is to match the impedance of the feed to the impedance at the feed point. In this paper the design of an antenna system is implemented using the design of experiment statistical approach. A micro strip patch antenna is used as a test case to illustrate the design methodology. All the parameters that define the antenna and the feed are taken into consideration in the experiment to ensure maximum power transfer from the feed to the antenna and minimize return loss. A screening experiment is run to characterize the parameters that affect the maximum power transfer. Later a custom design is presented using the screened transmission system input variables to enable maximize power transfer. The result of this process creates a simple empirical function to design an efficient antenna.

* Student, Department of Electronics and Communications Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh.
** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: iraza@ewubd.edu

Proc. Progress In Electromagnetics Research Symposium (PIERS), March 23-27, Beijing, China, 2009

Interpolation Techniques to Improve RIO Boundary Detection

Avijit Hira*, Shaik Ashraf Hossain*, **Md Ishfaqur Raza***

Abstract

In non-invasive imaging techniques, the boundary of an object of unknown material characteristics embedded in a known region is detected without any physical penetration. The imaging is however, accomplished by analyzing the field propagation patterns around the object. A finite pulse generator located around the periphery of the known region is used as the source. Recorders are also placed at the periphery of the known region to record propagating field distribution. The recorded field consists of both the original pulse and the field scattered by the discontinuity of the object impedance. Using numerical modeling, recorded field is back propagated to reconstruct field around the object. An imaging operator is then used on the reconstructed field distribution to locate the boundary of the object. For numerical analysis, the region of interest is modeled using a spatial mesh. Due to physical constraints, the density of the recorders will be limited. Field propagating between the recorders will be lost. To improve the reconstruction of field distribution, a numerical mesh with cell size smaller then recorder intervals is designed. The source nodes that do not have recorded data are excited with signal estimated using interpolation techniques. Different numerical techniques such as cubic spline and linear interpolation methods are used to calculate the source data for source nodes without recorder data. Finer meshes are also modeled with several nodes between adjacent recorders. Imaging results for the different interpolation techniques are compared. It is also shown that the image definition improves with finer mesh.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: iraza@ewubd.edu

IEEE Regional Conference (TENCON), Region 10, November 23-26, Singapore, 2009

Analysis of a Low Power Passive RFID Tag Based on Advanced CMOS Process for Wide Area Application

A.S.M. Shamsuzzaman*, Arnab Roy*, Sushanta Paul*, **Md. Ishfaqur Raza****

Abstract

Passive RFID application is often used in back scatter mode where a weak reflected signal is relied upon by reader systems. This limits the application of the technology as the reader and tag distance is constrained. This paper presents a passive design where planar capacitors are used to locally store charges to power a tag based on newer CMOS technology. In this paper BSIM4 transistor model based CMOS circuits are used to design a simple LFSR based RFID tag. A GHz clock is generated using inverter connected in series. As all the components, including the capacitors are all on one substrate, the circuit is essentially monolithic. The proposal has been modeled using an advanced ADS momentum tool. The storage capacitor has shown excellent ability to support the operation of the CMOS circuits due to the low power consumption, keeping the voltage level stable. The system assumes one antenna to capture and store power while an independent antenna to transmit the LFSR code.

* Student, Department of Electronics and Communications Engineering, East West University, Dhaka-1212, Bangladesh.

** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: iraza@ewubd.edu

11th International Conference on Advanced Communication Technology (ICACT), Phoenix Park, Republic of Korea, February 15-18, pp 184-188, 2009. (ISSN: 1738-9445)

Gain-Bandwidth Adjusting Technique of A 36.1 GHz Single Stage Low Noise Amplifier Using 0.13μm CMOS Process

S.M. Shahriar Rashid*, Sheikh Nijam Ali**, Apratim Roy**, A. B. M. H. Rashid**

Abstract

This paper demonstrates that inserting a small resistance at the drain of a cascode LNA can be the simplest way of achieving higher bandwidth with only a slight degradation in noise figure. A 36.1 GHz single stage low noise amplifier is designed in 0.13 mum CMOS Process with a simple passive output matching circuit. The circuit is simulated using Cadence Spectre and simulation results show a forward gain (S21) of 11.4 dB at 36.1 GHz with 4.9 GHz Bandwidth. Reverse isolation is less than -24 dB, input-output matchings are -30.36 dB and -27.65 dB respectively. NF of the circuit is around 2.9 dB. Then the circuit is simulated again, this time employing a small resistance at the drain of the cscode LNA, to show that adding a small resistance at the drain of the cascode LNA is the easiest way to increase bandwidth of the circuit without significant sacrifice of noise figure. This single stage LNA consumes only 3.37 mW of power, when driven from a 1.2 V power supply. To the best of the authors knowledge gain-bandwidth adjusting technique of a single stage low noise amplifier operating at such high frequency is yet to be reported.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A Dhaka 1212, Bangladesh. *Email address*: smsr@ewubd.edu
** Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka 1000, Bangladesh.

World Congress on Computer Science and Information Engineering (CSIE), March 31-April 2, Los Angeles, USA, pp 480-483, 2009

A 36.1 GHz Single Stage Low Noise Amplifier Using 0.13μm CMOS Process

S.M. Shahriar Rashid*, Sheikh Nijam Ali**, Apratim Roy**, A. B. M. H. Rashid**

Abstract

In this paper, a 36.1 GHz single stage LNA using a simple passive output matching technique is demonstrated. The circuit is simulated in Cadence Spectra with 0.13 mum CMOS process parameters. The simulated results exhibit a forward gain of 11.4 dB at 36.1 GHz and 4.9 GHz bandwidth. Reverse isolation is less than -24.6 dB and the input-output matchings are -30.4 dB and -27.65 dB respectively. The circuit achieves a NF of 2.9 dB at the center frequency and consumes only 3.38 mW of power when driven from 1.2 V power supply. To the best of the authors' knowledge, a single stage LNA operating at such high frequency is yet to be reported.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: smsr@ewubd.edu

** Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka 1000, Bangladesh.

5th International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM), September 24-26, Beijing, China, pp. 1-4, 2009

A 23.5 GHz Double Stage Low Noise Amplifier Using .13μm CMOS Process with an Innovative Inter-Stage Matching Technique

S.M. Shahriar Rashid*, Sheikh Nijam Ali**, Apratim Roy**, A. B. M. H. Rashid**

Abstract

This paper demonstrates a 23.5 GHz double stage low noise amplifier using an innovative inter-stage matching technique. The same matching technique is also used at the output of the amplifier for the purpose of output matching. The circuit is designed in IBM .13 μm CMOS process and is simulated using cadence spectre. The simulated responses exhibit a forward gain of 20 dB at 23.5 GHz with a bandwidth of 2.5 GHz. Reverse isolation is less than -47.1 dB. Input and output matching parameters are -23 dB and -28.34 dB respectively. The amplifier achieves a NF of only 4.945 dB at the center frequency and consumes 21.7 mW of power when driven from a 1.2 V power supply. To the best of the authors' knowledge, double stage low noise amplifier of such high gain and low noise is rarely reported.

* Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *Email address*: smsr@ewubd.edu

** Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka 1000, Bangladesh.

IEEE Regional Conference, Region 10, November 23-26, Singapore, 2009

Effects of Interface Traps and Oxide Traps on Gate Capacitance of MOS Devices with Ultrathin (EOT ~ 1 nm) High-κ Stacked Gate Dielectrics

A. T. M. Golam Sarwar*, **Mahmudur Rahman Siddiqui****, Radwanul Hasan Siddique*, Quazi Deen Md. Khosru*

Abstract

A simple but accurate D_{it} extraction technique has been proposed from low frequency C-V characteristics of MOS devices with ultrathin high-K gate dielectrics. The proposed method incorporates quantum mechanical effect with wave function penetration for theoretical calculation of MOS electrostatics. Fermi-Dirac distribution function and the effect of finite temperature have also been included in the proposed technique. The extraction technique has been applied to different simulated devices with different D_{it} profiles. Excellent agreement has been found between extracted and actual D_{it} profiles.

* Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka 1000, Bangladesh.
** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: mrs@ewubd.edu

Proc. Progress In Electromagnetics Research Symposium (PIERS), March 23-27, Beijing, China, 2009

Reflection Cancellation from High Speed Transmission Line

Salahuddin Raju*, **S. M. Salahuddin****, **Ishfaqur Raza****

Abstract

An IO driver architecture is presented here to compensate scattering in high speed transmission line circuits. In this methodology a system is calibrated initially to measure system response to a step or a lone pulse. The IO driver is then programmed to generate measured pulses at designated interval to compensate scattering responses due to impedance mismatch in the system transmission line. The compensation is done for every single bit or pulse transmitted from the driver end to eliminate sustained reflections and resonances. This methodology is demonstrated with high speed design tool. The architecture of the driver and calibration methodology is also outlined.

* Department of Electrical and Electronic Engineering, American International University, Dhaka, Bangladesh.
** Department of Electrical and Electronic Engineering, East West University, 43 Mohakhali C/A, Dhaka-1212, Bangladesh. *Email address*: iraza@ewubd.edu

Index of EWU Authors

CENTER FOR RESEARCH AND TRAINING

43 Mohakhali C/A, Dhaka-1212, Bangladesh
Phone: 9887989, 9882308, 8814786, 8811381, Ext. 342
E-mail: ewucrt@ewubd.edu, http:// www.ewubd.edu

Proc. of the 12th International Conference on Computer and Information Technology (ICCIT), IEEE Digital Library (USA), December 21-23, 2009, Dhaka, Bangladesh, 2009.

Adaptive Array Antenna System in Cancellation of Jammer and Noise of Wireless Link

Md. Imdadul Islam*, Md. Golam Gaus**, Avijeet Das**, Mushlah Uddin Sarkar**
M. R. Amin**

Abstract

Single element antennas have very little capability of variation of antenna gain pattern. For a desired directivity, shape of beam and steer able beam, array antenna is widely used in wireless network. Relative magnitude of feed currents, relative phases or separation between antenna elements, geometrical configuration of array are responsible for the overall radiation pattern. The weighting factor of each antenna element is governed by an adaptive algorithm based on input signal and desired signal to achieve dynamic shaping of antenna beam. In this paper, both single and multiple elements adaptive array antenna system is used to tune the gain in such a way that the gain is enhanced in the direction of desired signal and reduced in the direction of interference or jamming signals.

Keywords: Adaptive beamforming, auto-correlation, cross-correlation vector, jammer, radiation pattern, reference and primary omni.

* Department of Computer Science and Engineering, Jahangirnagar University, Savar, Dhaka 1342, Bangladesh. *E-mail address*: imdad@juniv.edu
** Department of Electronics and Communications Engineering, 43 Mohakhali C/A, Dhaka 1212, Bangladesh. *E-mail address*: ramin@ewubd.edu