RESEARCH OUTPUT OF CIIT LAHORE FOR YEAR 2012

Abstract Book

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Preface:

CIIT is not only providing quality education, but also producing the valued research publications. Due to this research work, the CIIT got its better ranking in Pakistan and Higher Education Commission declared CIIT at top ranking among Pakistani Universities.

The credit goes to the researchers of CIIT, who, as usual, produced lots of papers in the year 2012. For this accomplishment, the contribution of researchers of CIIT Lahore is also extraordinary. They produced 225 journal papers during the year 2012.

The compilation in your hands is consists of the papers which published during the year 2012 and at CIIT platform. We only included journal papers in this anthology. The purpose of this compilation is to record the research work of our faculty members and also to facilitate the users to get all the research papers of all departments in one binding. Apart from the record, I am also sure that this compilation will provide the guidelines to new researchers of CIIT and to the researchers of other institutes, as well.

I am very much thankful to worthy Director Dr. Mahmood Ahmad Bodla and Dr. Robina Farooq, Convener Library Affairs Committee, they not only provided the guidelines, but also encourage us to prepare this compilation in appropriate form. I am really very much appreciative of Dr. Talat Afza, Head Academic and Research who provided the data for this compilation. Without their help, it was very difficult to prepare this collection of research articles. Mr. Sajjad Ahmad, Library Assistant also did a very good job to convert the articles into a compilation. He is really a good asset of the library.

With Regards

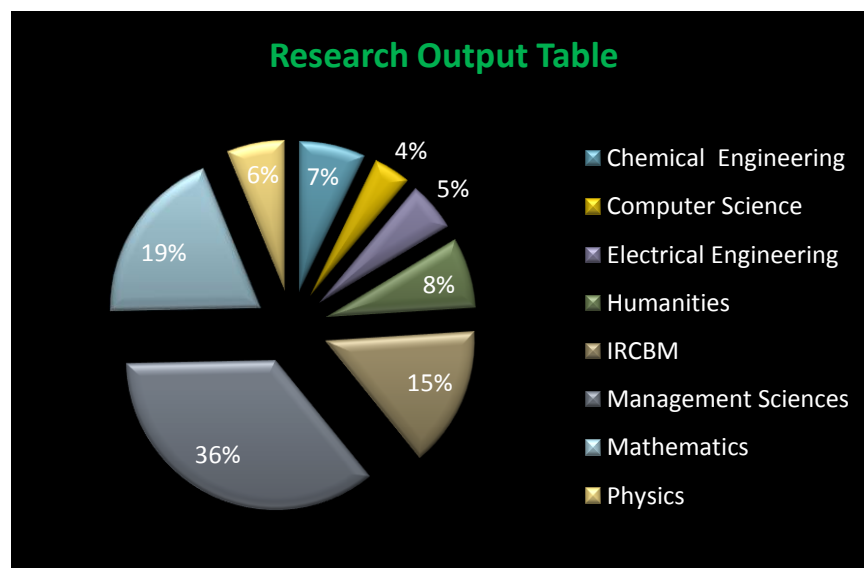**Muhammad Tariq Najmi**
Incharge, Library Information Services
CIIT Lahore

August, 2014

RESEARCH PUBLICATIONS OF CIIT LAHORE FOR THE YEAR 2012

Departments	Journal Papers
Chemical Engineering	16
Computer Science	09
Electrical Engineering	12
Humanities	17
IRCBM	34
Management Sciences	80
Mathematics	43
Physics	14
Total	**225**

DEPARTMENT OF CHEMICAL ENGINEERING

Journal Papers

1. Abbas, T., Ghauri, M., Nazir, S., & Rashid, Z. (2012). Simulations Study Of Producing NH4HCO3 Nhsimulation Study Of Producing From The Flue Gases Of Brick Kiln – An Environmental Friendly Approach. Sci.Int.(Lahore), 24(4),435-441.

Abstract:

Carbon dioxide (CO2) emissions caused by human beings and its adverse effect as global warming has alarmed us to find new and better ways to meet the energy requirements while reducing the Green House Gases. In Pakistan brick kilns are one of the major sources of flue ases emission. The purpose of this work is to develop a simulation model to alleviate CO2emissions and use it to help nature in conditioning of the soil that can help the agriculture need and economy. The widely used MEA solvent to capture flue gases is replaced by Aqueous Ammonia. Simulation results using HYSYS software shows that absorption efficiency is increased with increase of NH3 /CO2 molar ratio. This simulation methodology being pioneer in Pakistan can produce ammonium bicarbonate (NH4HCO3) a fertilizer from the flue gases of brick kilns that does not contaminate the underground water. This technology if implemented can also generate 31331 tons carbon credits per year from the flue gases of brick kiln, a step towards sustainability.
URL: http://www.sci-int.com/pdf/147958870419-Simulation%20Study%20Of%20Producing%20NH4HCO3%20Comsat-24-4-12%20reformated%20435-441.pdf

2. Ali, Zulfiqar; Le, Hai Hong; Khan, Asad U.; Mahmood, N.; Ilisch, Sybill; Radusch, Hans-Joachim. (2012). Elastomer Polarity Driven Morphology Development and Clay Localization in the Organoclay Filled Rubber Blends Nanocomposites. 1(1) 60-67.

Abstract:

This work introduces the application of the online method based on the electrical conductance for the characterization of +elastomer polarity effect on the morphology development and the kinetics of clay distribution in Hydrogenated Nitrile Butadiene rubber/Natural Rubber (HNBR/NR) and Hydrogenated Nitrile Butadiene rubber/Epoxidized Natural Rubber 50 (HNBR/ENR50) blend nanocomposites during the mixing process. A correlation between the conductance and the degree of dispersion of the nanoclay used is established and discussed. The dispersion of the nanoclay is characterized by using techniques such as TEM, AFM, and SAXS. It is found that the online electrical conductance not only depends on the phase specific localization of the organoclay but also on the change of the blend morphology either from the co-continuous to island matrix or the complete phase inversion. The former is due to favorable

interaction of the organoclay with one of the blend phases whereas the latter is due to the migration of the organoclay at the interfaces. The polarity of the blend phases provides the driving force for the localization of the organoclay in the organoclay filled blends nanocomposites either in one of the phases or at the interface. Thus, the online conductance method promises a powerful tool, for research of the organoclay dispersion processes on the laboratory scale and for the monitoring of the quality of rubber-organoclay composites on the production scale.

*URL:*http://www.ingentaconnect.com/content/asp/jcsb/2012/00000001/00000001/art00008?token=00431f2066e2f37387459f2437a63736a6f7c47465d58762a255349566f642f4642

3. Bhutto, A. W., Bazmi, A. A., & Zahedi, G. (2012). Greener energy: Issues and challenges for Pakistan-hydel power prospective. *Renewable and Sustainable Energy Reviews*, *16*(5), 2732-2746.

Abstract:

Water is a vital resource that supports all forms of life on earth. Progressive release of greenhouse gases (GHG) from increasing energy-intensive industries has eventually caused human civilization to suffer. During the past two decades, the risk and reality of environmental degradation have become more apparent. Renewable Energy provides an effective option for the provision of energy services from the technical point of view while hydropower, a major source of energy in the, appears an important renewable source of energy, its viability for large-scale energy production. Hydropower is renewable, reliable, clean, and largely carbon-free, and represents a flexible peak-load technology. With most of the world's hydropower potential available for near future development, it is local interests and sovereign states that decide how to manage their water resource base. In Pakistan the availability of power had been continually falling short of the demand of 24,474 MW and as a result, the country is experiencing power shortages of varying degrees in different parts of the country. Geographically, Pakistan has been blessed with river flows that are naturally supportive to electricity generation. Considering the large potential and the intrinsic characteristics of hydropower in promoting the country's energy security and flexibility in system operation, government is tried to accelerate hydropower development through number of policy initiatives. This paper investigates the progress and challenges for hydel power generation in Pakistan according to the overall concept of sustainable development and identifies the region wise potential of hydel power in Pakistan, its current status. Barriers are examined and Policy issue and institutional roles and responsibilities are discussed.
URL: http://www.sciencedirect.com/science/article/pii/S1364032112001281

4. Bhutto, A. W., Bazmi, A. A., & Zahedi, G. (2012). Greener energy: issues and challenges for Pakistan—solar energy prospective. *Renewable and Sustainable Energy Reviews*, *16*(5), 2762-2780.

Abstract:

Energy plays a pivotal role in socio-economic development by raising standard of living. It is becoming gradually accepted that current energy systems, networks encompassing everything from primary energy sources to final energy services, are becoming unsustainable. Development of conventional forms of energy for meeting the growing energy needs of society at a reasonable cost is the responsibility of the Governments. In recent years, public and political sensitivities to environmental issues and energy security have led to the promotion of renewable energy resources. Diversification of fuel sources is imperative to address these issues; and limited fossil resources and environmental problems associated with them have emphasized the need for new sustainable energy supply options that use renewable energies. Development and promotion of new non-conventional, alternate and renewable sources of energy such as solar, wind and bio-energy, etc. are now getting sustained attention. Solar power is one of the hottest areas in energy investment right now, but there is much debate about the future of solar technology and solar energy markets. This investigates the progress and challenges for solar power in Pakistan according to the overall concept of sustainable development, and identifies the region wise potential of solar power in Pakistan and its current status. Barriers are examined over the whole solar energy spectrum and policy issues and institutional roles and responsibilities are discussed.
URL: http://www.sciencedirect.com/science/article/pii/S1364032112001372

5. Bhutto, A. W., Bazmi, A. A., & Zahedi, G. (2012). Underground coal gasification: From fundamentals to applications. *Progress in Energy and Combustion Science*.

Abstract:

Underground coal gasification (UCG) is a promising option for the future use of un-worked coal. UCG permits coal to be gasified in situ within the coal seam, via a matrix of wells. The coal is ignited and air is injected underground to sustain a fire, which is essentially used to "mine" the coal and produce a combustible synthetic gas which can be used for industrial heating, power generation or the manufacture of hydrogen, synthetic natural gas or diesel fuel. As compared with conventional mining and surface gasification, UCG promises lower capital/operating costs and also has other advantages, such as no human labor underground. In addition, UCG has the potential to be linked with carbon capture and sequestration. The increasing demand for energy, depletion of oil, and gas resources, and threat of global climate change have lead to growing interest in UCG throughout the world. The potential for UCG to access low grade, inaccessible coal resources and convert them commercially and competitively into syngas is enormous, with potential applications in power, fuel, and chemical production. This article reviews the literature on UCG and research contributions are reported UCG with main emphasis given to the chemical and physical characteristic of feedstock, process chemistry, gasifier designs, and operating conditions. This is done to provide a general background and

allow the reader to understand the influence of operating variables on UCG. Thermodynamic studies of UCG with emphasis on gasifier operation optimization based on thermodynamics, biomass gasification reaction engineering and particularly recently developed kinetic models, advantages and the technical challenges for UCG, and finally, the future prospects for UCG technology are also reviewed.

URL: http://www.sciencedirect.com/science/article/pii/S0360128512000573

6. Ghauri, M., Tahir, M., Abbas, T., M. Shehzad Khurram*Khurram Shehzad. (2012). Adsorption Studies For The Removal Of Ammonia By Thermally Activated Carbon Sci.Int.(Lahore), 24(4),443-446.

Abstract:

The efficiency of charcoal fraction activated at temperature (oC) 50,100,150 and 200oC for 24 hr duration was investigated in this study. The results demonstrate that the adsorption of ammonia increases with the increase of contact time and adsorption process gradually reaches to equilibrium. A thirty min contact time appears to be optimal. Adsorption of ammonia also increases with the increase of adsorbent dosage and a one gram of adsorbent quantity appears to be optimal, particularly in case of charcoal fractions activated at higher temperatures. It is also evident from the results that the adsorption of ammonia increases with the increase of activation temperature. The adsorption of ammonia is particularly higher in charcoal fractions prepared at activation temperature of 200oC. The adsorption of ammonia increases with the increases in ammonia concentration. The data from experiments was applied to Freundlich and Longmuir isotherms. The data was best fitted in Freundlich equation. Empirical formula obtained indicated that thermally activated charcoal had an excellent capacity of ammonia removal.

URL: http://www.sci-int.com/searchpage.php?cat_id=23

7. Kausar, S., Mahmood, Q., Raja, I. A., Khan, A., Sultan, S., Gilani, M. A., & Shujaat, S. (2012). Potential of Arundo donax to treat chromium contamination. *Ecological Engineering*, *42*, 256-259.

Abstract:

The ability of *Arundo donax* against chromium pollution was tested. *A. donax* plants were grown under greenhouse conditions in nutrient solution having Cr (0, 50, 100, 200, 400, 600, and 900 $\mu g \, L^{-1}$) for three weeks. Shoots and roots dry matter production, growth parameters, plant physiological and morphological characters were measured. The maximum Cr content in roots was 206.33 $\mu g \, g^{-1}$. Likewise, Cr concentration in stem was 262.6 $\mu g \, g^{-1}$ at 900 $\mu g \, L^{-1}$ supplied Cr. In case of leaves, the maximum Cr concentration was 206.33 $\mu g \, g^{-1}$ at 900 $\mu g \, L^{-1}$ supplied Cr. The IC_{50} values of antioxidants using ABTS and DPHH standards showed that both time and increasing Cr concentrations affected the production of antioxidants indicated by lower IC_{50} value on 21st day. *A. donax* may be used in remediation of Cr contaminated wastewaters.

URL: http://www.sciencedirect.com/science/article/pii/S0925857412000699

8. Khan, A. U., Ahmad, N. M., & Mahmood, N. (2012). Rheological Studies on Stabilised Zirconia Aqueous Suspensions. *Journal of Colloid Science and Biotechnology*, *1*(2), 175-184.

Abstract:

The rheological characterisation of the aqueous submicron zirconia particulate suspension stabilised with two polyvalent organic salt dispersants called Tiron and Aluminon including a poly(vinyl) alcohol (PVA) binder are investigated. It is observed that dispersants adsorbs to the zirconia particles and significantly influenced the rheology of the systems. The addition of PVA in combination with the dispersants causes the flocculation of the particles in the suspension. For a given amount of the dispersant, increasing the PVA concentration increases the viscosity, storage and loss moduli. At relatively low PVA concentrations, the excess amount of the dispersant in the system causes the flocculation by a reduction of the electrostatic (double layer) effect, whereas at relatively higher PVA concentration depletion flocculation occurs.
URL: http://www.ingentaconnect.com/content/asp/jcsb/2012/00000001/00000002/art00003

9. Khan, A. L., Klaysom, C., Gahlaut, A., Li, X., & Vankelecom, I. F. (2012). SPEEK and functionalized mesoporous MCM-41 mixed matrix membranes for CO2 separations. *Journal of Materials Chemistry*, *22*(37), 20057-20064.

Abstract:

Mixed matrix membranes (MMMs) composed of sulfonated aromatic poly(ether ether ketone) (SPEEK) and $-SO_3$ functionalized mesoporous MCM-41 were prepared by the solution casting method. A SPEEK polymer with a fixed degree of sulfonation was used for membrane synthesis. CO_2 permeation data and SEM images of the synthesized MMMs suggest that the functionalized fillers adhered well to the polymer matrix. Gas permeation tests indicated that the addition of functionalized MCM-41 to the polymer matrix increased both the gas permeability and selectivity. The highest selectivities obtained here for CO_2/N_2 and CO_2/CH_4 were 40.46 and 22.86 (at a CO_2 permeability of 21.04 Barrer), respectively. In order to initiate the evaluation of the practical commercial viability of these membranes, they were tested under different operating pressures and temperatures.
URL: http://pubs.rsc.org/en/content/articlelanding/2012/jm/c2jm34885c#!divAbstract

10. Khan, A. U., Mahmood, N., & Luckham, P. F. (2012). Rheological Characterization of Alumina Ceramic Suspensions in Presence of a Dispersant and a Binder. *Journal of Dispersion Science and Technology*, *33*(8), 1210-1217.

Abstract:

The rheological responses of aqueous alumina suspensions, stabilized with an organic polyvalent salt dispersant called "Aluminon," and including a poly(vinyl) alcohol (PVA) binder, are described in this study. It is observed that the addition of PVA, without any dispersant does not significantly influence the rheology. However, in the presence of the dispersant the rheology is affected significantly. At a given concentration of the dispersant, the viscosity, the

storage and loss modulii all increase with the PVA concentration. Also, for a given concentration of the PVA, the viscosity, the storage and loss modulii values increases as the concentration of the dispersant is increased. At relatively low PVA concentrations, an excess concentration of the dispersant, causes flocculation of the particles in the suspension by a reduction of the electrostatic (double layer) effect. On the contrary, at higher concentrations of the PVA the flocculation of the suspension occurs via a depletion mechanism.
URL: http://www.tandfonline.com/doi/abs/10.1080/01932691.2011.605646

11. Khan, A. U., Haq, A. U., Mahmood, N., & Ali, Z. (2012). Rheological studies of aqueous stabilised nano-zirconia particle suspensions. *Materials Research*, *15*(1), 21-26.

Abstract:

In the present investigation aqueous suspensions of nano- and colloidal range particles are stabilised by changing the ambient pH. Rheology is used to establish the stability of the suspensions and it is found that the rheology of the suspensions is strongly dependent on the pH values. The viscosity is highest close to the iso-electric point of the powders. At the iso-electric point the net surface charge on the powder particles is zero and is the cause of the high viscosity. Away from the iso-electric point, the particles are charged, giving rise to a double layer phenomenon and causing the reduction in viscosity. It is also found that increasing the solid contents of the suspensions reduces the pH region of low viscosity.
URL: http://www.scielo.br/scielo.php?pid=S151614392012000100004&script=sci_arttext&tlng=es

12. Malik, S. N., & Sukhera, O. R. (2012). Management of natural gas resources and search for alternative renewable energy resources: A case study of Pakistan. *Renewable and Sustainable Energy Reviews*, *16*(2), 1282-1290.

Abstract:

Energy usage in Pakistan has increased rapidly in past few years due to increase in economic growth. Inadequate and inconsistent supply of energy has created pressure on the industrial and commercial sectors of Pakistan and has also affected environment. Demand has already exceeded supply and load shedding has become common phenomenon. Due to excessive consumption of energy resources it would become difficult to meet future energy demands. This necessitates proper management of existing and exploration of new energy resources. Energy resource management is highly dependent on the supply and demand pattern. This paper highlights the future demands, production and supply of energy produced from natural gas based on economic and environmental constraints in Pakistan with special emphasis on management of natural gas. An attempt has been made by proposing a suitable course of action to meet the rising gas demand. A mechanism has been proposed to evaluate Pakistan's future gas demand through quantitative analysis of base, worst and best/chosen option. CO_2 emission for all cases has also been evaluated. The potential, constraints and possible solutions to develop alternative renewable energy resources in the country have also been discussed. This work will be fruitful for the decision makers responsible for energy planning of the country.

This work is not only helpful for Pakistan but is equally important to other developing countries to manage their energy resources.

URL: http://www.sciencedirect.com/science/article/pii/S1364032111004813

13. Mahmood, N., Ullah Khan, A., Ali, Z., Sohail Khan, M., Haq, A. U., Werner Stöckelhuber, K., & Heinrich, G. (2012). Preparation and characterization of thermoplastic polyurethane–urea and carboxylated acrylonitrile butadiene rubber blend nanocomposites. *Journal of Applied Polymer Science*, *123*(6), 3635-3643.

Abstract:

This study deals with the preparation and characterization of novel thermoplastic polyurethane–urea (TPUU) and carboxylated acrylonitrile butadiene rubber (XNBR) blends. Blends of different compositions were prepared in tetrahydrofuran using a solution technique, following an ultra-sonication. The chemical reaction between the two inherently immiscible blend phases was determined with the help of Fourier transform infrared-attenuated total reflectance (FTIR-ATR) spectroscopy and [1]H-nuclear magnetic resonance (^{1}H-NMR) spectroscopy. The identification of the new peaks in the FTIR-ATR spectra corroborates the existence of chemical reaction between the carboxylic functional group of XNBR and the amide group of the TPUU. In addition, an increase in the network crosslink density of the blend investigated using ^{1}H-NMR spectroscopy further supports the occurrence of the chemical reaction between the XNBR and the TPUU. The scanning and transmission electron micrographs of the blend morphology show a uniform dispersion of the minor TPUU phase in the XNBR. Furthermore, the existence of a single glass transition peak also confirms the enhancement in the interfacial miscibility. Additionally, the incorporation of 5 wt % of organomodified montmorillonite nanoclay improves the mechanical properties to a considerable extent in comparison with the unfilled blend elastomeric material. © 2011 Wiley Periodicals, Inc. J Appl Polym Sci, 2012.
URL: http://onlinelibrary.wiley.com/doi/10.1002/app.35008/full

14. Nadeem, I., Khan, A. U., Asghar, M. N., Ashfaq, M., Shahid, S., & Ahmed, D. (2012). In vitro Total Antioxidant and Radical Scavenging Activities of Organic Extracts from Leaves, Stem and Inflorescence of Cannabis sativa L. *Asian Journal of Chemistry*, *24*(11), 5067-5072.

Abstract:

The in vitro total antioxidant and radical scavenging properties of organic extracts from leaves, stem and inflorescence of male and female plants of Cannabis sativa were studied using 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS) radical cation scavenging, total phenolic conents (TPC), 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging, lipid peroxidation inhibition and metal chelating activity assays. The stem, leaves and inflorescence of male (MS, ML and MI, respectively) and female (FS, FL and FI, respectively) plants were initially extracted in methanol and subsequently partitioned in n-hexane, chloroform, ethyl acetate and 1-butanol, successively. Employing ABTS radical scavenging activity assay the fractions obtained in

polar solvents exhibited high ABTS scavenging activity. Trolox equivalent antioxidant capacity (TEAC) values obtained for various extracts of different parts of C. sativa ranged from 144.46-1.47 mM trolox equivalents for 1-butanol fraction of FI and chloroform fraction of FS, respectively. Total phenolic contents using Folin- Ciocalteu's method ranged from 3.562-0.339 mg/L gallic acid equivalent for 1-butanol fraction of FS and chloroform fraction of MI, respectively. A direct relationship between Trolox equivalent antioxidant capacity and total phenolic contents values was not observed for the extracts except for MS indicating that only phenolic compounds were not responsible for the total antioxidant activity of the fractions. The rate of scavenging of DPPH radical for these extracts reflected the presence of a diverse nature of antioxidative components. Using ammonium thiocyanate method, all the extracts of both the genders demonstrated significant lipid peroxidation inhibition activity. The per cent chelating activity using ferrozine as reference chelator ranged from 9.46-84.94 for ethyl acetate fraction of ML and methanol fraction of FL, respectively. A poor correlation of ferrous ion chelating activity with total phenolic conents of the extracts was observed and this indicates that phenolic compounds might not be the main chelators of iron ions.

URL:http://web.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=09707077&AN=89561034&h=kW0%2bSyvJer11XdjKQYbePvAVHJ5Vgj97A6rHWwMQy0%2bhirAD6J4L%2fykiOMZ7goAQWTQbCTCL5%2bqG7U67Mrk1Mg%3d%3d&crl=c

15. Riaz, M., Rasool, N., Bukhari, I. H., Shahid, M., Zahoor, F., Gilani, M. A., & Zubair, M. (2012). Antioxidant, antimicrobial and cytotoxicity studies of Russelia equisetiformis. *Afr J. of Microbio. Res*, *6*, 5700-5707.

Abstract:

In the present study of *Russelia equisetiformis* belonging to the family scrophulariaceae, leaves were evaluated for antioxidant, antimicrobial and cytotoxicity studies. The leaves were extracted with absolute methanol and further fractionated by solvent-solvent extraction method with increasing polarity based absolute solvents, that is, *n*-hexane,chloroform, ethyl acetate and *n*-butanol. The qualitative analysis of phytochemicals such as alkaloids, flavonoids, saponins, tannins, steroids and terpenoids were carried out. The total phenolics and flavonoids content were analyzed by spectroscopic technique. The 1,1-diphenyl-2-picrylhydrazyl (DPPH) scavenging and linoleic acid oxidation assays were carried out. The inhibitory concentration (IC_{50}) and percentage inhibition by linoleic acid oxidation was found to be in the range of 9.96 to 89.79 and 39.46 to 90.69, respectively. The antioxidant activity was also studied to evaluate the protective effect of plant by H_2O_2induced oxidative damage in plasmid pBR322 DNA and found that it protected the DNA. The potential of the extract and fractions against selected bacterial (*Pasturella multocida, Escherichia coli, Bacillus subtilis* and *Staphylococcus aureus*) and fungal strains (*Aspergillus niger, Aspergillus flavus, Alternaria alternate* and *Rhizopus solani*) wasevaluated in the present study. The plant extract and fractions were assayed against human red blood cells (RBCs) and the percentage lysis was found to be in the range of 1.89 to 4.96%.
URL: http://www.academicjournals.org/journal/AJMR/article-abstract/FDF651439870

16. Yaqub, A., Ajab, H., Isa, M. H., Jusoh, H., Junaid, M., & Farooq, R. (2012). Effect of ultrasound and electrode material on electrochemical treatment of industrial wastewater. *J New Mater Electrochem Syst*, *15*, **289-292.**

Abstract:

Abstract: The effect of ultrasound (US) and electrode material on electrochemical treatment of industrial wastewater was studied. Samples were taken from three industries i.e. battery, ghee and tannery. Treatment efficiency was monitored by comparing the results of electrochemical and sonoelectrochemical processes in terms of metals and chemical oxygen demand COD removal. Experiments were performed in ultrasonic bath. In sonoelectrochemical process concentration of Pb decreased from 11.3 to 0.47 ppm at 80 kHz form battery industry. Similarly about 95 % removal of Cr (III) was observed from tannery wastewater using lead cathode. Titanium anode was found best counter electrode in metals removing. High COD removal was obtained by using steel anode at 80 kHz. Use of ultrasound is very effective in removing heavy metals and organic pollutants from industrial wastewater.
URL: http://www.groupes.polymtl.ca/jnmes/modules/message/index.php/content0002.html

DEPARTMENT OF COMPUTER SCIENCES
Journal Papers

1. Bosse, T., Hoogendoorn, M., Memon, Z. A., Treur, J., & Umair, M. (2012). A computational model for dynamics of desiring and feeling. *Cognitive Systems Research*, (*19)*, 39-61.

Abstract:

In this paper a computational model is presented for how a desire triggers responses and feelings. The model shows how these feelings can be biased, for example due to addicting experiences in the past. Both the strength of a response and of the associated feeling result from a converging dynamic pattern modeled by reciprocal causal interactions between the two. The model has been used to conduct a number of simulation experiments under varying circumstances. Moreover, it has been evaluated by formal analysis of emerging patterns entailed by the model. Furthermore, it has been pointed out how the computational model can be applied within an ambient agent system supporting a human in not being tempted. In a simple example scenario it is shown such an ambient agent system is able to predict and assess a human's desire state, and use this assessment to suggest alternatives to avoid falling for certain temptations.
URL: http://www.sciencedirect.com/science/article/pii/S1389041712000228

2. Naseer, S., Hussain, S. A., Raza, I., Chaudry, S. R., Mirza, J. S., & Raza, M. H. (2012). Mobile Ad-hoc Network Routing Protocols: A Simulation and Performance Analysis Using Multimedia Traffic. *J. Basic. Appl. Sci. Res.*, 2(10)9925-9930.

Abstract:

Mobile ad hoc Networks (MANETs) dynamically form non-permanent network without any common administration or infrastructure. Its dynamic topology requires new set of routing protocols different from traditional wired networks. Multimedia applications such as video conferencing demands consistent throughput and end to-end delay under varying network load. This requirement is very challenging due to restrictions such as dynamic topology, bandwidth limitation, energy constraint, and autonomy. In this Paper different routing protocols of MANETs have been analyzed with performance metrics of throughput, end-to-end delay and network load by simulating multimedia (video conferencing) traffic. The simulation results show that proactive protocol OLSR outperforms reactive protocol AODV and hybrid protocol TORA due to readily available routing paths.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%2810%299925-9930,%202012.pdf

3. Rasool, G., Umair, M., & Talib, R. (2012). Extended Visualization of Overlapping in Recognized Design Patterns. *Journal of Basic and Applied Scientific Research*, *2*(9), 9080-9087.

Abstract:

A large number of design pattern recovery techniques supplemented with tool support are presented in the past to extract patterns from source code of legacy applications. Different tools present their results in different formats. The maintenance activities can yield to true benefits of pattern recovery if the results of pattern recovery tools are comprehensible and reusable. The comprehension of relationships between the results is important because most of pattern based designs use different patterns which are connected with each other. Visualization of overlapping in recognized design patterns plays a key role for comprehension, maintenance, reverse engineering and reengineering. This paper focuses on detection, analysis and visualization of overlapping in recognized design pattern instances which is important for the maintenance and comprehension of legacy applications. The scope of work in this paper is limited only to structural design patterns. Based on the results of experimental examples the concept of the approach is validated.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%289%299080-9087,%202012.pdf

4. Rasool, G., & Hussain, S. (2012). CREAT: Customizable Reverse Engineering Abstraction Technique. *World Applied Sciences Journal*, *19*(10), 1453-1461.

Abstract:

Emergent advancements in technology, new business requirements and stakeholder's needs escort to frequent migration from legacy systems to more powerful, dedicated, secure and reliable computing systems. Different reverse engineering methodologies, techniques and tools are used to extract artifacts from existing legacy systems starting from the implementations and going back to design, architecture and requirements. Most presented techniques supplemented with tool support are specific to particular projects and their generalization and customization is always questionable. This paper presents customizable software reverse engineering technique integrated with different recovery techniques and tools to extract different artifacts from legacy systems. The concept of technique is validated through different examples.
URL: http://www.idosi.org/wasj/wasj19%2810%2912/14.pdf

5. Sadiq, A., Farooq, A., A Conceptual Framework for developing an Automatic Design Discovery Tool for obscure system design through Petri nets. *Journal of Systems and Softwar.(Abstract not found).*

6. Talib, R., Rasool, G., & Umair, M. (2012). Convergence of Data Mining and Process Management for Operational Inteligence. *J. Basic. Appl. Sci. Res.***, 2(10)10384-10395. (Abstract not found).**

Abstract:

Convergence of data mining and process management is ideal–but still limited. Data mining techniques helps in actionable knowledge discovery but lack for context awareness whereas process management systems support context awareness butlack for operational intelligence. To make process management systems operational intelligent, data mining techniques can be integrated within them in removing different inefficiencies. This paper presents an example of such a convergence in resolving one of the inefficiency relating to its resource management specifically to its static agent assignment strategies. To highlight the potentials of this convergence, an exemplary use case from textile industry is present ed and discussed in depth along with experiments and experiences from textile industry.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%2810%2910384-10395,%202012.pdf

7. Umair, M., Talib, R., & Rasool, G. (2012). An Adaptive Multi-Agent Model for Dynamics of Emotion Contagion in Group. *J. Basic. Appl. Sci. Res.***, 2(8)7876-7883.**

Abstract:

In this paper a multi-agent model is proposed that can simulate emotion contagion processes within groups. The obtained dynamical multi-agent model is integrated with the environment in an adaptive manner by use of specific characteristics of a group's emotion contagion. The model dynamically adapts the values of these parameters to the characteristics of the group. It is implemented in Java.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%288%297876-7883,%202012.pdf

8. **Umair, M., Mirza, J. S. Optimized Solution for Phrase Recognition Algorithms,** *Journal of Basic and Applied Scientific Research. (Abstract not found)*

9. Umair, M., Mirza, J. S. Asymptotic Analysis for Phrase Recognition Algorithms. *Journal of Basic and Applied Scientific Research. (Abstract not found)*

DEPARTMENT OF ELECTRICAL ENGINEERING
Journal Papers

1. Asif, H. M., Honary, B., & Ahmed, H. (2012). Multiple-input multiple-output ultra-wide band channel modelling method based on ray tracing. *Communications, IET*, *6*(10), 1195-1204.

Abstract:

In this work, the authors have developed a deterministic Ultra Wide Band (UWB) channel model for indoor environment using both ray-tracing technique and the art of computer game technology in 3D Game Studio (game development tool). In the developed model, the characteristics of indoor environment such as texture, transparency etc. can be taken into consideration while indoor parameters such as room size, objects position etc. can be interactively changed. Each time, indoor environment is changed, the program is compiled and hence, the underlying ray-tracing captures the updated indoor environment. It is the key novelty of the authors' developed model and it has been so incorporated to make the authors' model independent of any fixed (pre-defined) indoor environment. The developed model is compared against the standard statistical UWB channel model based on certain parameters such as delay spread etc. to address its validity and accuracy. The model is then enhanced to use multiple antennas on both sides of the system and capture the channel response accordingly. Finally, the developed model has been tested over a range of frequencies to see frequency effect on the channel impulse response. The simulation results have been presented and discussed in the simulation section.
URL:http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6261624&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6261624

2. Baig, S., & Mughal, M. J. (2012). In-Home Power Line Communications Local Area Network Based on Uniform Discrete Multitone Transceiver. *World Applied Sciences Journal*, *18*(1), 142-147.

Abstract:

Cyclic prefix based channel equalization employed in the Discrete Multitone (DMT) modulation offers the advantage of simplified implementation. However, this method has the disadvantage of amplifying channel noise for channels having deep nulls in the frequency response. The in-home power line channel is one such channel that has high noise content, in addition to deep frequency nulls. Enhancement of channel noise degrades bit error rate (BER), at the receiver. In order to improve the BER and the signal-to-noise ratio (SNR), for the in-home power line channel, a novel Uniform DMT transceiver is proposed. It divides the channel spectrum into uniform bandwidth sub-bands, and allocates variable power to each sub-band, according to the

modified Fischer's power loading algorithm. The proposed Uniform DMT transceiver shows BER improvement in comparison with the conventional DMT system, for the in-home power line channel
URL: http://www.idosi.org/wasj/wasj18%281%2912/19.pdf

3. Farooq, U., Parvez, H., Mehrez, H., & Marrakchi, Z. (2012). A new heterogeneous tree-based application specific FPGA and its comparison with mesh-based application specific FPGA. *Microprocessors and Microsystems*, *36*(8), 588-605.

Abstract:

A heterogeneous Application Specific FPGA (ASIF) is a modified form of heterogeneous FPGA which is designed to explore the solution space between FPGAs and ASICs. Compared to an equivalent FPGA architecture, it has reduced flexibility but improved density. On the other hand, compared to an ASIC, it has reconfigurability but increased area. This work presents a new heterogeneous tree-based ASIF. Four ASIF generation techniques are explored for it using 17 benchmarks. Experimental results show that, on average, the best ASIF generation technique gives 70% area gain when compared to an equivalent FPGA architecture. Further experiments are performed to determine the effect of Lookup-Table (LUT) and arity size on heterogeneous tree-based ASIF. Later, area comparison between tree-based ASIF and equivalent mesh-based ASIF shows that the former gives either equal or better results than the latter. Finally quality comparison of two ASIFs shows that, on average, tree-based ASIF produces 18% better area results than mesh-based ASIF.

4. Hamayun, M. T., Edwards, C., & Alwi, H. (2012). Design and analysis of an integral sliding mode fault-tolerant control scheme. *Automatic Control, IEEE Transactions on*, *57*(7), 1783-1789.

Abstract:

A novel scheme for fault-tolerant control is proposed in this paper, in which integral sliding mode ideas are incorporated with control allocation to cope with the total failure of certain actuators, under the assumption that redundancy is available in the system. The proposed scheme uses the effectiveness level of the actuators to redistribute the control signals to healthy actuators without reconfiguring the controller. The effectiveness of the proposed scheme against faults or failures is tested in simulation based on a large transport aircraft model.
URL:http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6107518&url=http%3A%2F%2Fi eeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6107518

5. Khan, A. A., & Brown, A. K. (2012). Intelligent z-plane boundary condition-particle swarm optimiser for small array pattern synthesis. *Microwaves, Antennas & Propagation, IET*, *6*(14), 1598-1607.

Abstract:

This study concerns the radiation performance improvement of small periodic linear phased arrays in the presence of mutual coupling. An approach using a particle swarm optimiser (PSO) coupled with Schelkunoff's z-plane unit circle is proposed, with z-plane zeros constrained using adaptive boundary conditions (termed the intelligent z-plane boundary condition-PSO). It is shown that the proposed optimisation scheme has successfully achieved the target results for a range of problems presented including low-sidelobe scanned beam, and sector-beam pattern synthesis. The approach has consistent and faster convergence when compared with competitive techniques. Results showing significant improvement are presented using a Bowtie dielectric resonator antenna and uniform hemispherical elements.
URL:http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6403980&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6403980

6. Masood, K., Ahmad, M., Zafar, J., ul Haq, M., Ashfaq, A., & Zafar, H. (2012). Assessment of Occupational Exposure Among Pakistani Medical Staff During 2007–2011. *Australasian Physical & Engineering Sciences in Medicine*, *35*(3), 297-300.

Abstract:

The data analysis of occupationally exposed medical workers in Nuclear Medicine (NM), Radiotherapy (RT) and Diagnostic Radiology (DR) at the Institute of Nuclear Medicine and Oncology (INMOL), Pakistan is presented for the time interval (2007–2011). The whole-body exposure doses of the workers were measured by using the Film Badge Dosimetry technique. The annual average effective doses in NM, RT and DR have been found well below the permissible annual limit of 20 mSv (averaged over a period of 5 consecutive years), with no over-exposure detected. This declining trend of annual average effective dose is the consequence of improved radiation protection practices at INMOL during the recent years.
URL: http://link.springer.com/article/10.1007/s13246-012-0156-y

7. Shuja, M,. K, I. Ahmad, E. Ibrahim, S. Iqbal, M. Imran. Design and Implementation of Micro-Grid Smart Station Using Hybrid Integration of Solar-Wind. *Smart Grid and Renewable Energy. (Abstract not found)*

8. Masood, k,.& H. Zafar. Junaid Zafar, (2012). Design and Analysis of a High-Power Electron Beam Source (>50KW/cm2) Confined in a Highly Uniform Magnetic Field Region. *Plasma Science, IEEE Transactions on (Volume: 40 , Issue: 4)* 1064 – 1069.

Abstract:

A directly heated line source emitter with beam power (>; 50 KW/cm^2) is developed. The emitter assembly design parameters and beam characteristics are analyzed using a highly

uniform magnetically confined region. Circular cross-sectional tungsten cathodes of diameters 0.9 mm and 1.5 mm were used, and their results are compared. The developed emitter configuration ensures low angular divergence, millisecond evaporation time for large samples, operational reproducibility, and beam stability. The emitter source has been tested by experimentally developing extremely homogeneous magnetic field in large cylindrical region of more than one-half of the coil's diameter.

URL:http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6161661&sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A6179768%29

9. Noreen, U., Baig, S., & Khan, F. (2012). A Review of Bit Allocation for MCM Techniques in Power Line Communication for Smart Grids. *World Applied Sciences Journal*, *19*(7), 929-936.

Abstract:

In recent history there has been an enormous development in the subject area of Power Line Communications (PLC), since it has become possible due to advanced digital communications and digital signal processing techniques to use power lines for data transmission. PLC allows the use of the dynamic and far-reaching power cables to support high speed communication capabilities. Discrete Multi-tone (DMT) is a form of multicarrier modulation (MCM), particularly suited to wire line communications, therefore it is more suitable modulation technique for PLC systems. In this paper, we present an overview of various bit loading algorithms that are proposed in literature, of a DMT system for smart grid applications using PLC. For the PLC transceivers, we consider DMT modulation based on an adaptive bit loading technique of the subcarriers. We have also compared two basic rate adaptive bit loading algorithms, Water-filling and Levin Campello, for PLC in Smart Grid communication applications.
URL: http://www.idosi.org/wasj/wasj19%287%2912/4.pdf

10. Yousaf, R., Anwar, W., Bajwa, U. I., & Khan, A. N. Percentage Discounting: A New Good Turing Smoothing Technique. Research Journal of Applied Sciences, Engineering and Technology. 4(08) 902-905.

Abstract:

In this study, we have applied percentage discounting technique to overcome a drawback in Good- Turing smoothing technique. Data sparseness is an inherent and a severe problem in language modeling. Smoothing is one of the important processes to handle this problem. There are several well-known smoothing techniques which are used to solve data sparseness problem. In general, smoothing techniques ignore linguistic knowledge and are particularly based on statistical hypotheses. Good Turing is very effective for data sparseness problem but it has a drawback that it calculates zero probability if frequency of next frequency is zero. Consequently a new technique is presented in this study, which is percentage discounting technique and this technique can overcome the drawback of Good Turing smoothing.
URL: http://maxwellsci.com/jp/abstract.php?jid=RJASET&no=187&abs=10

11. Zafar, J. (2012). Efficient Closed Form Cut-Off Planes and Propagation Planes Characteristics for Dielectric Slab Loaded Boundary Value Problems. *Bulletin of Electrical Engineering and Informatics*, *1*(2), 89-96.

Abstract:

The geometrical relationship between the cut-off and propagating planes of any waveguide system is a prerequisite for any design process. The characterization of cut-off planes and optimisation are challenging for numerical methods, closed-form solutions are always preferred. In this paper Maxwells coupled field equations are used to characterise twin E-plane and H-plane slab loaded boundary value problems. The single mode bandwidths and dispersion characteristics of these structures are presented and critically compared. The impact of slab mobility upon cut-off and propagations planes has been envisaged. The presented formulation has been extended further to derive a vectorized Green function expression linking electric and magnetic fields for the characterization of planar waveguide structures.
URL: http://journal.uad.ac.id/index.php/EEI/article/view/95

12. Zafar, J., & Zafar, H. (2012). Modal Coupling Coefficients and Frequency/Bias Planes for Gyromagnetic Boundary Value Problems. *International Journal of Electrical and Computer Engineering (IJECE)*, *2*(5), 609-614.

Abstract:

This study concerns the radiation performance improvement of small periodic linear phased arrays in the presence of mutual coupling. An approach using a particle swarm optimiser (PSO) coupled with Schelkunoff's z-plane unit circle is proposed, with z-plane zeros constrained using adaptive boundary conditions (termed the intelligent z-plane boundary condition-PSO). It is shown that the proposed optimisation scheme has successfully achieved the target results for a range of problems presented including low-sidelobe scanned beam, and sector-beam pattern synthesis. The approach has consistent and faster convergence when compared with competitive techniques. Results showing significant improvement are presented using a Bowtie dielectric resonator antenna and uniform hemispherical elements.
URL:http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6403980&url=http%3A%2F%2Fi eeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6403980

DEPARTMENT OF HUMANITIES

Journal Papers

1.Bashir, A., & Ghani, M. (2012). Effective Communication and Neurolinguistic Programming. *Pak. J. Commer. Soc. Sci*, *6*(1), 216-222.

Abstract:

Importance of effective communication can hardly be ignored in any sphere of life. This is achieved through various means. One such instrument is Neurolinguistic Programming (NLP) which has now taken roots in various aspects of learning and education. Its potential spans education and learning, language teaching, business management and marketing, psychology, law, and several other fields. In our work, we will briefly explore various facets of NLP with special reference to effective communication.
URL: http://www.jespk.net/publication_paper.php?publicationid=11

2. Fatima, S. Teaching Report Writing Skills through Communicative Activities. (2012). *American International Journal of Contemporary Research*. 2(2)104-109.

Abstract:

Designing communicative activities for teaching any specific skills has been used for the last few decades effectively worldwide. In teaching Report Writing Skills its use is somewhat new as the subject itself has not been taught separately before as a com plete course in many universities of Pakistan and internationally as well. It happened only with the passage of time that it has been introduced as a separate course due to the need of learning of specific skills and time required in writing, developing an d presenting reports by business students or in some cases students of other professional disciplines such as engineering.This workshop will suggest methodologies and techniques that cater the needs and interests of the teachers teaching a technical subject t like Report Writing Skills. It will also emphasize the kind of problems students face while learning report writing a form of technical writing. They are affected by the basic handicaps/mistakes developed since childhood in learning of English language. It is obvious and natural to cause them to make similar mistakes even at higher level of education when they are studying technical subjects like report writing skills. The grammatical errors, the style of writing is erroneous due to no exposure and experience of writing reports or technical documents previously. Moreover, the focus of this workshop will be to teach Report Writing Skills using non expensive Communicative Activities to enhance writing skills of the students in writing professional reports.
URL: http://aijcrnet.com/journals/Vol_2_No_2_February_2012/12.pdf

3. Irfan, S. M., Ijaz, A., Kee, D. M. H., & Awan, M. (2012). Improving Operational Performance of Public Hospital in Pakistan: A TQM Based Approach. *World Applied Sciences Journal*, *19*(6), 904-913.

Abstract:

Total quality management (TQM) has been widely and successfully implemented and is considered as a strategic and operational tool to gain competitive edge through increased performance and customer satisfaction. However, developing countries, especially Pakistan is still lagging behind to adopt TQM as a strategic tool to optimize its performance. Public health care in Pakistan is one of the most ignored sectors with regard to its service quality implementation and delivery. Pakistan, with its rapid growing population exceeding 179 million people today typically results in the highest levels of adverse effect on the overall system of the country. Given the fact that public hospital is one major source healthcare facilities provider to its citizens, however facilities provided by them are inadequate to meet the needs of its people. It affects the smooth functioning of public hospital. A questionnaire using fourteen TQM practices was designed to measure the impact of TQM practices on operational performance of public hospital in Pakistan. Structural Equation Modeling (SEM) approach with AMOS 16.0 was employed to develop a TQM and performance model. A total of 239 questionnaire was included in the study and the results show that selected TQM practices has a significant positive impact on TQM implementation and also on operational performance in terms of increased flexibility, improved quality of services, reduction in service time and effective diagnostics.
URL: http://www.idosi.org/wasj/wasj19%286%2912/21.pdf

4. Jibeen, T., & Hynie, M. (2012). Perceptions of Autonomy and Life Satisfaction in Pakistani Married Immigrant Women in Toronto, Canada. *Sex roles*, *67*(1-2), 1-16.

Abstract:

Immigration can have powerful effects on gender roles and family relationships. In the present study, 102 Pakistani married immigrant women in Canada completed questionnaires on recalled pre-migration, and perceptions of current post-migration, personal autonomy in their family; life satisfaction; living arrangements (i.e., whether with in-laws) in both countries; income and employment in Canada; and their expectations of, and willingness to, immigrate. The women reported significantly higher personal autonomy and life satisfaction while living in Canada relative to Pakistan. Linear regression analyses indicated that living with in-laws was associated with lower life satisfaction in Pakistan but this was fully mediated by autonomy. More autonomy was also related to higher life satisfaction in Canada, but not to living arrangements or any other measured variable. The results suggest that, for these women, immigration was associated with more personal autonomy and life satisfaction, but determinants of women's autonomy differed in Pakistan and Canada.
URL: http://link.springer.com/article/10.1007/s11199-012-0130-x

5. Jibeen, T., & Khalid, R. Cross Validation of Ryff's Scales of Psychological Well-being: Translation into Urdu Language. *The International Journal of Psychological and Educational Assessment.* *(Abstract not found)*

6. Jibeen, T. From home to Shelter homes: Victimization of Young Women in Pakistan. *Women Studies International Forum.* *(Abstract not found)*

7. Jibeen, T. Identification of risk factors for undergraduates' academic achievement: The comparison between low and high achievers. *International journal of Educational Research.* *(Abstract not found)*

8. Sadiq, U., & Bilal, K. (2012). Depression in Prenatal Period as Determinant of Postnatal Depression. *Psychology Research*, 2(9), 540-544.

Abstract:

Globally over the recent years, concept of depression during prenatal and postnatal periods is acknowledged in a way that depressive illness around child birth may be a naturally occurring problem during the periods of maternal life. However, in developing countries, the issue of depression in prenatal and postnatal periods still needs to be researched and propagated among masses. Therefore, the present study aims to examine the predictive relationship of prenatal depression with postnatal depression. Initially 155 pregnant women completed the demographic form and EPDS (Edinburgh Postnatal Depression Scale) during the third trimester, however, postnatal sample, due to attrition, was reduced to 90 women, who were reassessed within four weeks after delivery, using EDPS. Predictive association of depression in prenatal period with postnatal depression is highly significant ($p < 0.01$). It is concluded that, to prevent women from depression in postnatal period, they should be prevented from depression in prenatal period.
URL:http://www.davidpublishing.com/davidpublishing/Upfile/11/26/2012/2012112670899705.pdf

9. Sadiq, U., & Khatoon, A. (2012). Does Maternal Parenting Effects The Psychological Well Being of Adolescents?. *Pakistan Journal of Psychology*, *43*(1), 55-66.

Abstract:

The aim of the present study was to determine the association between perceived maternal parenting styles and psychological problems among adolescents. On the basis of previous findings and literature review it was hypothesized that there would be a positive correlation between perceived negative maternal parenting styles and psychological problems among adolescent. Sample was selected from different private schools located in urban areas of Karachi and comprised of 100 adolescents (M=57; F=43) with the age range of 13-17 years (M=15.years). The Parental Authority Questionnaire (PAQ; Buri, 1991), and Strength and Difficulty Questionnaire (SDQ; Goodman, Meltzer, & Bailey, 1998) were administered to assess the variables of the study. Pearson product-moment correlation coefficient was computed to assess the relationship among variables. Results revealed that perceived

permissive parenting style (r =.249, p<.05); and perceived authoritarian parenting styles (r=.222, p<.05) are positively correlated with psychological problems among adolescence. **URL:**http://web.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=0030 9869&AN=85505404&h=uy7%2fWvqBQZp0n73SvfH0KGTGf1QNUit0SlL9K2Uk0RoLUmIjGdyahNpv6nvaxbVPdZDP pScCb5WyzwLoLKSKTg%3d%3d&crl=c

10. Sadiq U., & Khawer Bilal Baig. Early Parenting Practices And Well-Being Outcomes In Young Adulthood. *Pakistan Journal of Social and Clinical Psychology*. *(Abstract not found)*

11. Zaidi, U, Afzal, A, & Amin, R., Impaired Neuropsychological Functioning of Heroin Addicts on NFI. *Journal of Pakistan Psychological Association. (Abstract not found)*

12. Zaidi, U., Farooq, S., & Amin, R., Codependency and Relationship Satisfaction among Spouses of Alcohol Abusers. *Pakistan Journal of Psychology. (Abstract not found)*

13. Zaidi, U., Sahazadi, R., & Amin, R. Pathological Optimism and Treatment Compliance in Heroin Addicts. *Pakistan Journal of Social & Clinical Psychology. (Abstract not found)*

14. Zaidi, U., Ejaz, S., & Amin, R. Clinical Anger, Affective and Somatic Symptoms in Depressed Patients. *FWU Journal of Social Sciences. (Abstract not found)*

15. Zaidi, U., Ejaz, S., & Amin, R. Clinical Anger and Perceived Social Support in Depressed Patients: A Co relational Study. *Pakistan Journal of Clinical Psychology. (Abstract not found)*

16. Zaidi, U., Muntaha, S., & Amin, R. Relationship between Perceived Social Support and Readiness for Treatment in patients with Conversion Disorder. *Journal of Ayub Medical College. (Abstract not found)*

17. Zaidi, U., & Tariq, M. Time Management and Professional Stress among Bank Managers: A Co relational Study. *Business Review. (Abstract not found)*

DEPARTMENT OF IRCBM

Journal Papers

1. Abbas, G., Kostakis, G. E., Lan, Y., & Powell, A. K. (2012). Synthesis and characterization of isostructural tetranuclear lanthanide complexes [Ln$_4$(μ_3-OH)$_2$(ampdH$_4$)$_2$(piv)$_{10}$]· 4CH$_3$CN (Ln= Sm, Eu, Gd, Tb, Dy, Ho, Er). *Polyhedron*, *41*(1), 1-6.

Abstract:

A series of seven isostructural lanthanide tetramers of general formula [Ln$_4$(μ_3-OH)$_2$(ampdH$_4$)$_2$(piv)$_{10}$] 4CH$_3$CN, where ampdH$_4$ is 3-amino-3-methylpentane-1,5-diol, piv is pivalate, and Ln = Sm (**1**), Eu (**2**), Gd (**3**), Tb (**4**), Dy (**5**), Ho (**6**) and Er (**7**) have been successfully synthesized and characterized. Magnetic studies on the Dy^{III} analogue show weak intramolecular coupling within the four Dy^{III} ions and Single Molecule Magnet (SMM) behaviour.
URL: http://www.sciencedirect.com/science/article/pii/S027753871200160X

2. Ali, G., Siddiqi, S., A., Saleem, S., Mehmood S., R.(2012). Sol Gel Synthesis and Effect of Co-substitution on the structural, electrical, and magnetic properties of Bi $_{0.9}$La$_{0.1}$FeO$_3$, Int. J. Miner. Metal. Mater. (Abstract not found).

3. Atiq, S., Saleem, M., Ramay, S. M., Siddiqi, S. A., Anwar, M. S., & Shin, S. C. (2012). Enhanced magnetic moment of epitaxial γ'-Fe4N films at low temperature. *Journal of the Korean Physical Society*, *60*(10), 1745-1748.

Abstract:

Ferromagnetic iron nitride has fascinated researchers owing to its amazing magnetic properties for spintronic applications. We have prepared single-phase epitaxial thin films of γ'-Fe$_4$N on single-crystal MgO(100) substrates by using dc magnetron sputtering. X-ray diffraction revealed that the substrate temperature and the annealing time were the most important parameters for single-phase epitaxial growth of the films. Atomic force microscopy and scanning electron microscopy were utilized to investigate the surface morphology of the films. Angle dependent magnetic anisotropy was observed in epitaxial thin films of γ'-Fe$_4$N. A superconducting interference device was utilized to explore the magnetic and the electrical behaviors of γ'-Fe$_4$N films at low temperatures.
URL: http://link.springer.com/article/10.3938%2Fjkps.60.1745

4. Babar, A., Munawar Ali Munawar, M. Nawaz Tahir, Ather Farooq Khan and Muhammad Ilyas Tariq. Crystal Structure of 2-anilinothiazole. *Acta Cryst. (Abstract not found).*

5. Babar, A., Ather Farooq Khan, Munawwar Ali Munawwar, Muhammad Yar, Mazhar Amjad Gilani. Sulphamtates; A novel Arylating agent. *Russian Journal of Organic Chemistry. (Abstract not found).*

6. Batool, A., Kanwal, F., Imran, M., Jamil, T., & Siddiqi, S. A. (2012). Synthesis of polypyrrole/zinc oxide composites and study of their structural, thermal and electrical properties. *Synthetic Metals, 161(23), 2753-2758.*

Abstract:

Intrinsically conducting PPy/ZnO composites were synthesized with varying amounts of zinc oxide (0–20 wt.%) via a facile chemical oxidation polymerization approach. These composites were characterized for their structure, thermal stability, surface morphology and DC electrical conductivity by XRD, FT-IR, TGA, DSC, SEM and four-probe method respectively. FT-IR results show broadening and shifts of peaks towards lower wave numbers in all composites suggesting better conjugation and some chemical interactions between PPy and ZnO particles. Powder X-ray diffraction analysis demonstrated the amorphous nature of PPy and its composites as well with no indication of crystalline peaks. The percolation threshold for conductivity of PPy/ZnO composites was 15 wt.% of the volume fraction of PPy. SEM and TGA data suggest that PPy/ZnO composites have high thermal stability due to better conformation, compactness and reduction of grain boundary volume with zinc oxide particle loading that in parallel enhanced their DC conductivity.
URL: http://www.sciencedirect.com/science/article/pii/S0379677911004644

7. Chaudhry, A., A., Iqbal, N., Khan, A., S., Hussain, R., Abdullah, A., Anis-ur-Rehman, Manzoor, U., Rehman, R., and Darr, J., A., Accelerated Ageing of Magnesium Substituted Calcium Phosphates via Microwave Irradiation of Precipitated Suspensions. *Current Applied Physics. (Abstract not found).*

8. Chaudhry, A. A., Knowles, J. C., Rehman, I., & Darr, J. A. (2012). Rapid hydrothermal flow synthesis and characterisation of carbonate-and silicate-substituted calcium phosphates. *Journal of Biomaterials Applications.*

Abstract:

A range of crystalline and nano-sized carbonate- and silicate-substituted hydroxyapatite has been successfully produced by using continuous hydrothermal flow synthesis technology. Ion-substituted calcium phosphates are better candidates for bone replacement applications (due to improved bioactivity) as compared to phase-pure hydroxyapatite. Urea was used as a

carbonate source for synthesising phase pure carbonated hydroxyapatite (CO_3-HA) with ≈5 wt% substituted carbonate content (sample 7.5CO_3-HA) and it was found that a further increase in urea concentration in solution resulted in biphasic mixtures of carbonate-substituted hydroxyapatite and calcium carbonate. Transmission electron microscopy images revealed that the particle size of hydroxyapatite decreased with increasing urea concentration. Energy-dispersive X-ray spectroscopy result revealed a calcium deficient apatite with Ca:P molar ratio of 1.45 (±0.04) in sample 7.5CO_3-HA. For silicate-substituted hydroxyapatite (SiO_4-HA) silicon acetate was used as a silicate ion source. It was observed that a substitution threshold of ~1.1 wt% exists for synthesis of SiO_4-HA in the continuous hydrothermal flow synthesis system, which could be due to the decreasing yields with progressive increase in silicon acetate concentration. All the as-precipitated powders (without any additional heat treatments) were analysed using techniques including Transmission electron microscopy, X-ray powder diffraction, Differential scanning calorimetry, Thermogravimetric analysis, Raman spectroscopy and Fourier transform infrared spectroscopy.

URL: http://jba.sagepub.com/content/early/2012/09/12/0885328212460289.abstract

9. Chaudhry, A. A., Yan, H., Viola, G., Reece, M. J., Knowles, J. C., Gong, K., ... & Darr, J. A. (2012). Phase stability and rapid consolidation of hydroxyapatite–zirconia nano-coprecipitates made using continuous hydrothermal flow synthesis. *Journal of Biomaterials Applications*, *27*(1), 79-90.

Abstract:

A rapid and continuous hydrothermal route for the synthesis of nano-sized hydroxyapatite rods co-precipitated with calcium-doped zirconia nanoparticles using a superheated water flow at 450°C and 24.1 MPa as a crystallizing medium is described. Hydroxyapatite and calcium-doped zirconia phases in the powder mixtures could be clearly identified based on particle size and morphology under transmission electron microscopy. Retention of a nanostructure after sintering is crucial to load-bearing applications of hydroxyapatite-based ceramics. Therefore, rapid consolidation of the co-precipitates was investigated using a spark plasma sintering furnace under a range of processing conditions. Samples nominally containing 5 and 10 wt% calcium-doped zirconia and hydroxyapatite made with Ca:P solution molar ratio 2.5 showed excellent thermal stability (investigated using in situ variable temperature X-ray diffraction) and were sintered via spark plasma sintering to >96% sintered densities at 1000°C resulting in hydroxyapatite and calcium-doped zirconia as the only two phases. Mechanical tests of spark plasma sintering sintered samples (containing 10 wt% calcium-doped zirconia) revealed a three-pt flexural strength of 107.7 MPa and Weibull modulus of 9.9. The complementary nature of the spark plasma sintering technique and continuous hydrothermal flow synthesis (which results in retention of a nanostructure even after sintering at elevated temperatures) was hence showcased.

URL: http://jba.sagepub.com/content/27/1/79.short

10. Farooq, U., Khan, A., Khan, A. F., Khan, S. S., Sarwar, R., Ahmad, V. U., & Waseem, A. (2012). Two new ballonigrin-type diterpenoids from the roots of Ballota limbata. *Natural product communications*, *7*(2), 149.

Abstract:

Two new ballonigrin type lactone diterpenoids, named ballonigrin lactone A and B, have been isolated from the roots of Ballota limbata. Structure elucidation of the isolated compounds was based on spectroscopic {IR, 1H- and 3C-NMR, and 2D-NMR (HMQC, HMBC, COSY and NOESY} and EI-MS data.
URL: http://www.ncbi.nlm.nih.gov/pubmed/22474939

11. Khan, A. S., Hassan, K. R., Bukhari, S. F., Wong, F. S., & Rehman, I. U. (2012). Structural and in vitro adhesion analysis of a novel covalently coupled bioactive composite. *Journal of Biomedical Materials* Research Part *B: Applied Biomaterials 100B* (1): 239–248.

Abstract:

The interfacial adhesion between a restorative composite and tooth is one of the major factors that determine the ultimate performance of composite restoration. A novel polyurethane (PU) composite material was prepared by chemically binding the nano-hydroxyapatite (nHA) to the diisocyanate component in the PU backbone by utilizing solvent polymerization. The procedure involved stepwise addition of monomeric units of the PU and optimizing the reagent concentrations. The resultant materials were characterized structurally (Raman Spectroscopy) and *in vitro* bioactive analysis was conducted in modified-simulated body fluid for periodical time intervals. The *in vitro* study evaluated the push-out bond strength of existing obturating material and novel covalently linked PU/nHA composites to dentin after long-term storage in deionized water and artificial saliva. Human extracted molar roots were filled with experimental samples and analyzed at predetermined time intervals. The shear bond strength of samples was measured and surface morphologies were evaluated. Covalent bond formation was achieved between PU and nHA without intermediate coupling agent. With the increase in concentration of nHA, the composite showed more bioactivity and adhesion toward tooth structure. Bond strength of this new composite were in accordance with obutrating material, therefore, the material can be used as an obturating material because of its direct adhesion with tooth structure.
URL:http://onlinelibrary.wiley.com/doi/10.1002/jbm.b.31945/abstract;jsessionid=7E13900E71490E39EF8160635A9776AF.f02t02?deniedAccessCustomisedMessage=&userIsAuthenticated=false

12. Khan, A., S., F.S.L. Wong, Ihtesham Ur Rehman. Thermal and in-vitro bioactivity analysis of a novel dental restorative composite Progress in Natural Science. *Materials International. (Abstract not found)*.

13. Khan, A., S., Ferranti. S. L. Wong, I. J. McKay, R. A. Whiley, Ihetesham. Ur Rehman. Structural, mechanical and biocompatibility analyses of a novel restorative nano-composite. *Journal of Applied Polymer Sciences. (Abstract not found).*

14. Khan, A., S., Amir, S.,, Chaudhry, A., A., Ferranti S.L. Wong, Ihtesham Ur Rehman. Synthesis and Characterization of a Fluoride Releasing Dental Restorative Material. *Acta Biomaterialia. (Abstract not found)*.

15. Iqbal, N., Nazir, R., Asif, A., Chaudhry, A. A., Akram, M., Fan, G. Y., ... & Hussain, R. (2012). Electrophoretic deposition of PVA coated hydroxyapatite on 316L stainless steel. *Current Applied Physics*, *12*(3), 755-759.

Abstract:

Polyvinyl alcohol (PVA) coated hydroxyapatite was deposited onto a 316L stainless steel substrate by electrophoretic deposition. Deposition was carried out in a methanol suspension at pH 5.5 using a graphite rod as an anode. Parameters such as PVA concentration, deposition voltage and time were optimized to achieve a homogeneous, crack-free adhesive coating. Techniques such as X-ray diffraction and Fourier transform infrared spectroscopy were used to study the phase composition of the coated materials and the stability of hydroxyapatite in the presence of PVA.

URL: http://www.sciencedirect.com/science/article/pii/S1567173911005761

16. Mahmood, N., Mariyah Ahsan, Ishafaq Ahmad, Syed Ali Raza Naqvi, Muhammad Yar, Zulfiqar Ali Khanand Sohail Anjum Shahzad. Molecular expression profile of different cellulolytic enzyme genes in *Aspergillus niger* in response to UV and chemical mutagenesis. *Acta Biologica Hungarica. (Abstract not found).*

17. Mehboob, H.,Muhammad Awais, Hamad Khalid, Inum Arshad, Aqif Anwar Chaudhry, Muhammad Usman, Saadat Anwar Siddiqi, Anis-ur-Rehman, Ihtesham Rehman. Polymer-assisted deposition of hydroxyapatite coatings using electrophoretic technique *Materials Chemistry and Physics. (Abstract not found).*

18. Nazir, R., Iqbal, N., Khan, A. S., Akram, A., Asif, A., Chaudhry, A. A., & Hussain, R. (2012). Rapid synthesis of thermally stable hydroxyapaptite.*Ceramics International*, *38*(1), 457-462.

Abstract:

We have optimized the wet precipitation synthesis of hydroxyapaptite to obtain thermally stable powder in the short time span of 3 min. Exposure of the reaction mixture to 1000 W microwave for 3 min furnished hydroxyapatite, which was thermally stable at temperatures up to 1200 °C. Powders were analyzed for phase purity using X-ray crystallography; chemical composition was studied using Fourier transform infrared spectroscopy while particle morphology was analyzed using scanning electron microscopy.

URL: http://www.sciencedirect.com/science/article/pii/S0272884211006663

19. Nazir, R., Khan, A. S., Ahmed, A., Rehman, A. U., Chaudhry, A. A., Rehman, I. U., & Wong, F. S. (2012). Synthesis and< i> In-vitro</i> cytotoxcity analysis of microwave irradiated nano-apatites. *Ceramics International.*

Abstract:

Nano-sized calcium deficient apatite (CDA) micelles were synthesized through microwave assisted the wet precipitation technique. Cetyltrimethylammonium bromide (CTAB) was employed as surface template to furnish the CDA particles with tailored size and shape. As-precipitated CDA was heat treated to observe the effect of heat treatment temperature on the interatomic rearrangement of entities within the apatite lattice. This transformation is responsible for conversion of CDA to β-tricalcium phosphate (β-TCP) at specific temperature. The phase purity, particles size, morphology and transformation kinetics were analyzed using X-ray Diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR), Scanning Electron Microscopy (SEM) and Thermogravimetric Analysis (TGA). *In-vitro* studies were performed on β-TCP with three cell lines: osteoblasts, HeLa, and SF 767. The results showed that nano-sized particles were successfully synthesized in short time. The cells had appreciable proliferation/attachment on the surface of these nano-particles. It is concluded that the microwave irradiated synthesized β-TCP has good capacity in terms of biocompatibility and has the potential to be used in hard tissue regeneration applications.
URL: http://www.sciencedirect.com/science/article/pii/S0272884212012722

20. Nazir, R., Khan, A. S., Ahmed, A., Rehman, A. U., Chaudhry, A. A., Rehman, I. U., & Wong, F. S. (2012). Synthesis and< i> In-vitro</i> cytotoxcity analysis of microwave irradiated nano-apatites. *Ceramics International*.

Abstract:

Nano-sized calcium deficient apatite (CDA) micelles were synthesized through microwave assisted the wet precipitation technique. Cetyltrimethylammonium bromide (CTAB) was employed as surface template to furnish the CDA particles with tailored size and shape. As-

precipitated CDA was heat treated to observe the effect of heat treatment temperature on the interatomic rearrangement of entities within the apatite lattice. This transformation is responsible for conversion of CDA to β-tricalcium phosphate (β-TCP) at specific temperature. The phase purity, particles size, morphology and transformation kinetics were analyzed using X-ray Diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR), Scanning Electron Microscopy (SEM) and Thermogravimetric Analysis (TGA). *In-vitro* studies were performed on β-TCP with three cell lines: osteoblasts, HeLa, and SF 767. The results showed that nano-sized particles were successfully synthesized in short time. The cells had appreciable proliferation/attachment on the surface of these nano-particles. It is concluded that the microwave irradiated synthesized β-TCP has good capacity in terms of biocompatibility and has the potential to be used in hard tissue regeneration applications.
URL: http://www.sciencedirect.com/science/article/pii/S0272884212012722

21. Ramay, S. M., Siddiqi, S. A., Anwar, M. S., Park, C. Y., & Shin, S. C. (2012). Effect of annealing time on structural and magnetic properties of laser ablated oriented Fe3O4 thin films deposited on Si (100). *Bulletin of Materials Science*, *35*(4), 501-503.

Abstract:

We have fabricated ~143 nm Fe_3O_4 thin films on Si(100) substrates at 450°C and then annealed them at the same temperature for 30, 60 and 90 min under a vacuum of 10^{-6} torr with pulsed laser deposition. We studied the effects on the structural and magnetic properties of Fe_3O_4 thin films. The films have been characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM) and vibrating sample magnetometry (VSM). XRD studies showed pure single phase spinel cubic structure of Fe_3O_4 with a preferential [111] orientation, independent of substrate orientation at 90 min annealing. Higher magnetization was obtained up to 60 min annealing due to Fe phase but at 90 min, we obtained reduced magnetization of 335 emu/cc. This is attributed to the formation of antiphase boundaries between substrate and film.
URL: http://link.springer.com/article/10.1007/s12034-012-0318-2

22. Rashida, M., Rabia Raza, Ghulam Abbas, Muhammad Shakil Shah, George E. Kostakis, Joanna V Lecka, Jean Sévigny,Muhammad Muddassar and Jamshed Iqbal. Discovery of Novel Chromone Based Sulfonamides as Highly Potent and Selective Inhibitors of Alkaline Phosphatases. *ACS Medicinal Chemistry Letters. (Abstract not found).*

23. Saleem, M., Atiq, S., Naseem, S., & Siddiqi, S. A. (2012). Structural and magnetic studies of Ni-doped ZnO synthesized with auto-combustion and co-precipitation techniques. *Journal of the Korean Physical Society*, *60*(10), 1772-1775.

Abstract:

Synthesis techniques strongly influence the various properties of diluted magnetic semiconductor materials. Auto-combustion and co-precipitation techniques were employed to prepare $Zn_{0.95}Ni_{0.05}O$ samples. X-ray diffraction studies exhibited a phase with a pure wurtzite-

type crystal structure in both samples. However, traces of nickel oxide were detected in the sample synthesized with the coprecipitation technique. The structural morphology was studied with scanning electron microscopy. Energy dispersive X-ray analysis confirmed the incorporation of Ni content into the zinc-oxide matrix. The decrease in resistivity with increasing temperature demonstrated a typical semiconducting behavior. Room-temperature ferromagnetism was detected only in the sample synthesized with the auto-combustion technique.

URL: http://link.springer.com/article/10.3938/jkps.60.1772

24. Shahzad, F., Siddiqi, S. A., Jing, X., & Hong-Liang, B. (2012). Variations in Magnetic Properties of SmCo5/Fe Exchange-Coupled Bilayers with Increasing Fe Thickness. *Arabian Journal for Science and Engineering*, *37*(1), 251-254.

Abstract:

Exchange-coupled hard/soft magnetic materials have been widely studied during the last decade because of the prediction that these magnetic materials would have high energy-products. The soft and hard magnetic phases are exchange-coupled at particular grain sizes to give single-phase magnetic behavior. The grain size of the soft phase depends on the nature of the hard phase, and is usually around 10 nm. In this work, we studied soft phase exchange coupling with a hard phase at grain sizes of more than 10 nm to investigate the changes in magnetic properties, particularly the energy products, of nanocomposite hard/soft magnets. Bilayers of $SmCo_5$/Fe were fabricated using magnetron sputtering on a 70-nm-Cr-buffered Si (100) substrate. The Fe thickness was varied up to 40 nm with 20 nm of $SmCo_5$. Magnetic measurements were made using an alternating gradient magnetometer. In all the samples, the phases were strongly exchange-coupled with each other. The magnetization was found to increase and the coercivity to decrease with increasing Fe thickness. The energy product first increased and then decreased.

URL: http://link.springer.com/article/10.1007/s13369-011-0159-0

25. Shahzad, S. A., Yar, M., Khan, Z. A., Khan, I. U., Naqvi, S. A. R., Mahmood, N., & Khan, K. M. (2012). Microwave-assisted solvent free efficient synthesis of 1, 3, 4-oxadiazole-2 (3H)-thiones and their potent in vitro urease inhibition activity. *European Journal of Chemistry*, *3*(2), 143-146.

Abstract:

An efficient solvent free microwave assisted synthesis of 5-substituted-1,3,4-oxadiazole-2(3*H*)-thiones (2a-2r) from hydrazides and carbon disulfide has been accomplished in good to excellent yield. The urease inhibition activity of the resulting compounds was investigated. Preliminary bioassay indicated that the compound 2j bearing 2-bromo substituent is the most active inhibitor exhibiting IC_{50} 12.60 ± 0.92 μM.

18 Examples, Yield: 73-98%

URL: http://www.eurjchem.com/index.php/eurjchem/article/view/551
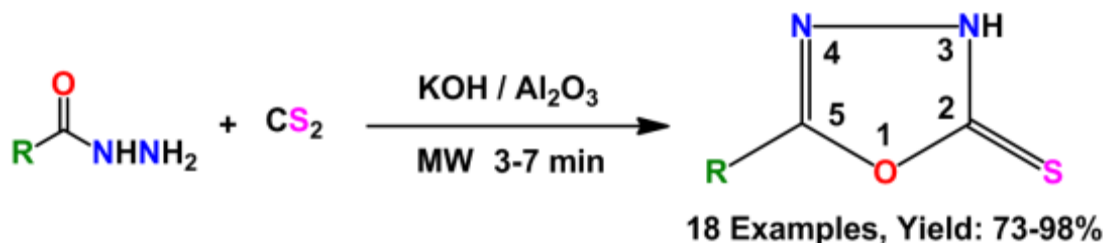
26. Siddiqui, S., A., Saleem, M., Atiq, S.M. Ramay, Ju-Young Kim and M. S. Anwar. Experimental investigations on thermally treated $Zn_{0.95}Mn_{0.05}O$ nanocrystallites. *Materials Characterization. (Abstract not found).*

27. Siddiqi, S., A., Kanwal, F., Riaz, T., Gull, B., N., and Jamil, T. Synthesis of polyaniline/silicon dioxide (PANI/SiO2) composite by chemical oxidation method and study of their structural, thermal and electrical properties. *Synthetic Metals. (Abstract not found).*

28. Sidra, L. R., Khan, I. U., Yar, M., & Simpson, J. (2012). 2-(1H-Indol-3-yl) acetohydrazide. *Acta Crystallographica Section E: Structure Reports Online*, *68*(11), o3140-o3141.

Abstract:

In the title compound $C_{10}H_{11}N_3O$, the mean plane of the indole ring system (r.m.s. deviation 0.0131 Å) subtends a dihedral angle of 87.27 (5)° to the almost planar acetohydrazide substituent (r.m.s. deviation 0.0291 Å). In the crystal, bifurcated N-H...(O,N) and N-H...N hydrogen bonds involving the pyrrole N-H grouping combine to form zigzag chains along *a*. Additional N-H...O contacts from the hydrazide N-H group augmented by C-H...π interactions link the molecules into chains along the *a* axis. The overall effect of these contacts is a three-dimensional network structure with molecules stacked along the *b*-axis direction.
URL: http://scripts.iucr.org/cgi-bin/paper?hg5253

29. Tahir, M., Khan, A., S., Muzaffar, R. Faryal, Khan, A., S., Siddiqi, S., A., R. Ahmed, Ihtesham Ur Rehman. Structural, surface and in-vitro bacterial adhesion analysis of dental restorative composite. *Acta Biomaterialia. (Abstract not found).*

30. Tufail, A., Shah, Sana Ahmad, Muhammad Farhan. Synthesis of SBA-16 supported copper Nanoparticles and their use for Fabrication of Carbon nanotubes by Chemical Vapour Deposition Method. *Colloids and Surfaces A: Physicochemical and Engineering Aspects. (Abstract not found).*

31. Veerapandian, M., Kim, B., Amin, R., Lee, J., Yun, K., & Park, S. H. (2012). NMR Studies of Artificial Double-Crossover DNA Tiles. *Journal of Nanoscience and Nanotechnology*, *12*(3), 2300-2310.

Abstract:

This report documents the design and characterization of DNA molecular nanoarchitectures consisting of artificial double crossover DNA tiles with different geometry and chemistry. The Structural characterization of the unit tiles, including normal, biotinylated and hairpin loop structures, are morphologically studied by atomic force microscopy. The specific proton resonance of the individual tiles and their intra/inter nucleotide relationships are verified by proton nuclear magnetic resonance spectroscopy and 2-dimensional correlation spectral studies, respectively. Significant up-field and down-field shifts in the resonance signals of the individual residues at various temperatures are discussed. The results suggest that with artificially designed DNA tiles it is feasible to obtain structural information of the relative base sequences. These tiles were later fabricated into 2D DNA lattice structures for specific applications such as protein arrangement by biotinylated bulged loops or pattern generation using a hairpin structure.
URL: http://www.ingentaconnect.com/content/asp/jnn/2012/00000012/00000003/art00078

32. Yar, M., Arshad, M., Akhtar, M. N., Shahzad, S. A., Khan, I. U., Khan, Z. A., ... & Ninomiya, I. (2012). **Studies towards the synthesis of (±)-reserpine: Photocyclization mediated a novel and efficient synthesis of 11, 18-dimethoxy-(20α)-18, 19-didehydro-yohimban-17-one.** *European Journal of Chemistry*, *3*(1), 26-31.

Abstract:

A short, highly efficient synthesis of advanced intermediates to reserpine **1** has been developed starting from enamide **8**. The enamide underwent photocyclization reaction using high pressure mercury lamp to afford the lactam **9** in excellent yield. Then lactam was reduced to the required amine **10**, which upon acidic hydrolysis gave the nonconjugate ketone product **11**, followed by reaction with sodium hydroxide resulted the desired conjugate ketone **12**. Epoxidation, and then ring opening of the epoxide **13** with methanol yielded the desired product **14**, which is key intermediate to the total synthesis of (±)-reserpine.

URL: http://eurjchem.com/index.php/eurjchem/article/view/503
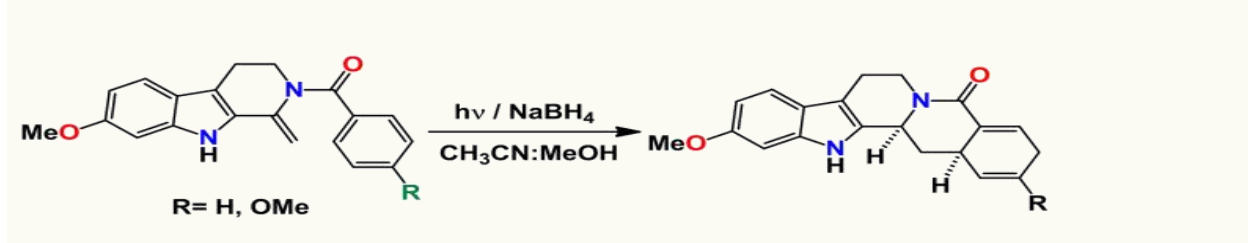
33. Yar, M., Lala Rukh Sidra, Islam Ullah Khan, Muhammad Ashraf, Nasir Mahmood, Zulfiqar Ali Khan, Syed Ali Raza Naqvi, Sohail Anjum Shahzad and Monim-ul-Mehboob. Synthesis of some new indole derivatives and their evaluation as urease inhibition, antioxidant and antimicrobial activities via *in vitro* models. *Turkish Journal of Chemistry. (Abstract not found).*

34. Younas, B., Khan, A., S.,, Chaudhry, A., A., Hussain, I., Rehman, I,. *In-situ* Kinetic Reaction Analysis of Dental Restorative Materials. *Advanced Sciences Letter. (Abstract not found).*

DEPARTMENT OF MANAGEMENT SCIENCES

Journal Papers

1. Abbasi, A., & Alvi, A. (2012). Impact of Organizational Justice on Employee Engagement in Banking Sector of Pakistan. *Middle-East Journal of Scientific Research*, *12*(5), 643-649.

Abstract:

Employee engagement is a key variable for organizational success. The aim of this study was to explore dynamics of employee engagement in banking sector of Pakistan. This study utilized all three dimensions of organizational justice including procedural distributive and interactional justice as independent variable. With the help of literature current study proposed four hypotheses regarding organizational justice and employee engagement. Banking sector was selected for conducting this research. Random sampling was used to select 312 respondents of banks located in Lahore a second biggest city of Pakistan and 30 most populated urban area in the world. A structure questionnaire was designed to collect the data. SPPS and AMOS were used for statistical analyses including regression and correlation. This study provided beneficial insight about employee engagement in banking sector of Pakistan. Same kind of studies in other sectors can help professional to understand overall linkage between organizational justice and employee engagement in corporate sector of the country.
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2178276

2. Abbasi, A. (2012). Impact of Teacher's Ability, Student's Work Ethics and Institutional Environment on Student Performance of University of Gujrat. Middle-East Journal of Scientific Research 12 (4): 572-579.

Abstract:

This study is aimed to investigate the impact of teacher's ability, student's work ethics and institutional environment on performance of students in University of Gujrat. Student's performance at university level majorly depends upon the effort of the student. Yet there are certain determinants that are of importance. University of Gujrat is a newer university with 8 years of history. The findings of the study will help determine the factors that are playing major role in the performance of the students. Subsequently those would be given importance to enhance student's performance in universities in general and in University of Gujrat in particular.
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2178577

3. Abbasi, A. S., Mir, G. M., & Hussain, M. (2012). Islamic work ethics: how they affect organizational learning, innovation and performance. *Actual Probl Econ*, *12*, 471-480.

Abstract:

This research paper aims to investigate the impact of Islamic work ethics on organizational learning, innovation and performance. Researchers selected Servis Industries of Pakistan for the purpose of this study. This paper provides insight about the extent of application of Islamic work ethics in business organizations of Pakistan particularly in manufacturing sector. Results of this study supported the argument that following the Islamic work ethics in a business organization boosts learning, innovation and eventually organizational performance. Findings of this study provides way forward to other Pakistani organizations to incorporate Islamic work ethics in to their culture for better organizational outcomes.
URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/539-8588666007891963308.pdf

4. Afza, T., & Nazir, M. S. (2012). Role of corporate governance in operating performance enhancement of mergers and acquisitions in Pakistan. *Elixir Finance (42)* **6447-6456.**

Abstract:

The present study investigates the relationship between corporate governance profile of acquiring firms and operating performance changes associated with merger and acquisitions in Pakistan. The financial sector mergers and acquisitions have been selected as sample transactions for the period of 1996 to 2008 and two years pre- and post-merger analysis has been conducted by using OLS regression. The estimated results indicated that post-merger operating performance of acquiring firms is positively related to its pre-merger level. Moreover, board size and CEO duality are negatively while board independence, outside dominated boards, and presence of large independent blockholder are positively related to change in post-merger operating performance of acquiring firms in Pakistan. The results were also robust with an alternative dependent variable of change in market value of acquiring firms. The results from replaced dependent variable were found to be more strong and cohesive with corporate governance profile of acquiring firms. Aligned with the existing literature, the study concluded that effective corporate governance mechanism does play its role in aligning the interests of managers with shareholders and enhances value for firms, particularly in large scale transactions of mergers and acquisitions.
URL:http://scholar.google.com.pk/scholar?q=Role+of+Corporate+Governance+in+Operating+Performance+Enhancement+of+Mergers+and+Acquisitions+in+Pakistan++Elixir+Online+Journal+&btnG=&hl=en&as_sdt=0%2C5

5. Afza, T., & Asghar, M. J. E. K. A. (2012). Financial reforms and efficiency in the insurance companies of Pakistan. *African Journal of Business Management*, *6*(30), 8957-8963.

Abstract:

This study examined the determinants of efficiency in the insurance companies of Pakistan over the period 2003 to 2007. Data envelopment analysis (DEA) was applied to estimate the efficiency scores of the insurance companies and then the study used regression analysis to analyze the relationship of line of business, size, profitability, investment, claim and financial reforms with the DEA efficiency scores. Moreover, for a more comprehensive analysis, the present study has also divided the sample into life and non-life insurers. In the non-life insurers, it was found out that investment, profitability and financial reforms are positively related whereas, claim was found negatively related with the efficiency scores. In contrast, investment, profitability and financial reforms were found negatively related whereas, claim was found positively related with the efficiency scores of the life insurers.
URL: http://www.academicjournals.org/journal/AJBM/article-abstract/4576AF922546

6. Afza, T., & Tahir, M. S. Determinants of Price-Earnings Ratio: The Case of Chemical Sector of Pakistan.(2012), *International Journal of Academic Research in Business and Social Science.2(8),331-343.*

Abstract:

Price-to-Earnings (P/E) ratio, a relative valuation technique has always remained at the centre of attention of market analysts and investors ever since the origin of discounted dividend growth model of Gordon and Shapiro (1956). The present study attempts to identify the factors explaining variations in P/E ratio for chemical sector of Pakistan by using Ordinary Least Square (OLS) regression on pooled data of 25 firms listed at Karachi stock exchange for the period 2005 to 2009. Furthermore, taking into account the volatility in Pakistani stock market during the study period, a time-series analysis has also made by using OLS regression model to examine whether determinants of P/E ratio differ across years or not. Results demonstrate that Dividend payout ratio and Tobin's Q remain the most important determinants of P/E ratios for pooled as well as time-series analysis. The study is expected to facilitate decision makers to evaluate factors that explain variations in firm's P/E ratio in order to attract investor's attention and raise their confidence to select these firms in their portfolios.
URL: http://www.hrmars.com/admin/pics/1063.pdf

7. Ahmad, J., Ali, I., Grigore, G. F., & Stancu, A. (2012). Studying Consumers' Ecological Consciousness–A Comparative Analysis of Romania, Malaysia and Pakistan. *The AMFITEATRU ECONOMIC journal*, *14*(31), 84-98.

Abstract:

In the context of an increasing discourse on sustainability and environmental protection, the research on ecological consumer behavior becomes a necessity for companies. The extension in number of multinational companies determines an adaptation of their policies from one country to another. Based on a comparative approach of consumers in Romania, Malaysia and Pakistan, this paper analysis the dimensions of ecological consciousness, and highlights similarities and differences between the countries. In order to reach this objective, the research presents a structural equation model founded on primary data collected from an online survey. Religion and national culture are the main differences outlined by the analysis, in terms of ecological consciousness.
URL:**http://s3.amazonaws.com/academia.edu.documents/30147269/Journal_no_31.pdf?AW SAccessKeyId=AKIAJ56TQJRTWSMTNPEA&Expires=1388054812&Signature=FB188bJLh68Z0nC MRHhakAhP7hU%3D&response-content-disposition=inline#page=84**

8. Akhter, W., & Hussain, T. (2012). < IT> Takaful</IT> standards and customer perceptions affecting< IT> takaful</IT> practices in Pakistan: a survey. *International Journal of Islamic and Middle Eastern Finance and Management*, *5*(3), 229-240.

Abstract:

Purpose – The purpose of this paper is to attempt to see the effectiveness of operational and transformational standards raised by joint working group of Islamic Financial Services Board (IFSB) and International Association of Insurance Supervisors (IAIS) as well as respondents' perceptions about Takaful (Islamic insurance) practices in Pakistan. *Design/methodology/approach* – A total of two questionnaires were designed for this purpose: one for Takaful operators in Pakistan and other for insurance customers. For the first questionnaire, three Takaful operators were visited at Karachi. For the second questionnaire, a sample of 150 insurance customers was surveyed at Rawalpindi. Descriptive statistics and Chi-square test was used to analyze the data. *Findings* – Reporting standards and internal controls were found to have low level of observance among Takaful operators in Pakistan. The survey of insurance customers revealed that majority of the respondents (91 percent) are unaware of Takaful concept. Education was found to be the single important factor affecting income of the respondents, their perceptions and level of Takaful awareness. *Research limitations/implications* – The survey is conducted at one major city of the country based on convenient sampling technique and its results have been generalized for the entire country. However, actual results might differ when a sufficiently large sample is taken from all the main cities of the country. *Practical implications* – The study would help the policy makers to focus on strengthening regulatory framework for Takaful. It will also help Takaful operators in understanding public perceptions about Takaful and devising strategies to promote Takaful business to the vast population of Pakistan. *Originality/value* – This is the first empirical research conducted on Takaful in Pakistan that analyzes the Takaful practices both from managerial perspective as well as from regulatory perspective.
URL: **http://www.emeraldinsight.com/journals.htm?articleid=17048201&show=abstract**

9. Akram, W., Munir, S., Hashmi, M. H., & Saleem, R. Borrowing Behavior towards Institutional Credit in Punjab-A case study of Faisalabad district. *International Journal of Academic Research in Economics and Management Sciences.1(5),36-47.*

Abstract:

This paper focuses on the borrowing behavior of the Farmers towards financial institutions and identifies credit constraints faced by the farmers for the accessibility of institutional credit and suggests remedial measures to make efficient use of agricultural credit schemes. The contribution of this research is to provide more empirical evidences on determinants of rural household's borrowing behavior using the data from Faisalabad District. Provision of an efficient rural credit market is a precondition for promoting agriculture of an economy. The estimated demand for borrowing implies that source of loan, size of land holding, predict interest rate, education level, previous year's income and value of farm implements are the most important factors affecting household's credit activities.
URL: http://www.hrmars.com/admin/pics/1108.pdf

10. Akram, Z., & ur Rehman, H. Financial Liberalization andPoverty Nexus: A case study of Pakistan. *International Journal of Business, Economics and Law,* **198-204.**

Abstract:

The linkage between financial liberalization and economic growth has been widely substantiated. However, limited studies have focused on the empirical relationship between financial liberalization and poverty especially in case of Pakistan. Times series data from the year 1984 to 2009 has been used in the present study to explore the impact of liberalization of financial sector on poverty in Pakistan. De facto measure of financial liberalization has been used. Liberalization of financial sector has been proxied by capital flows as a percentage of GDP.ARDL approach to cointegration has been employed to achieve the objectives. *The* empirical findings suggest statistically significant and long run and short run relation between financial liberalization and Poverty.
URL: http://klibel.com/journal-publications/ijbel-vol1/

11. Ali, I. & Ahmad, J. (2012). An Investigation of Environmental Knowledge and Environmental Practices among Malaysians *Far East Journal of Marketing and Management* **Vol. 2 No. 1 April 2012 27-38.**

Abstract:

Malaysia has been actively involved in environmental issues since 1980. Malaysias rapid urbanization and industrialization have intensified the environmental problems. A potential way of addressing this issue would be to increase the environmental awareness among the public. The objectives of the study described here were to assess the level of environmental knowledge among Malaysian residents in Sabah and Sarawak, to examine the sources of their

environmental knowledge, and to analyses the relationship between knowledge and environmental attitude and practice.
URL: http://www.fareastjournals.com/archive_detail.aspx?jid=22&aid=26

12. Ali, J. F., & Ali, I. (2012). Effects of national culture on organizational innovativeness. Elixir Mgmt. Arts (42), 6503-6506.

Abstract:

In today's dynamic world where innovation is central to or ganizational long-term success, national culture shaped the behavior of individual and organizat ions which in turn affects their innovative capability. This research has analyzed the Hofstede's cultural dimensionseffects on organizational innovativeness. We have based our study on the dimensions which are taken form Hofstede's model, which included; Power Distance, Masculinity versus Femininity, Long & short term approach, Avoidance to uncertainties and Collectivism. We have aggregated data form 350 differential organizations which belong to various sectors of Pakistan. We have utilized Structure Equation Modeling technique to examine and interpret data. The study has found, higher power distance and uncertainty avoidance are having distressing relationship with organization innovativeness. On the other hand collectivism, short term approach and masculinity are having significant relationship impact with organizational innovativeness.
URL:http://www.elixirpublishers.com/articles/1350726281_42%20%282012%29%206503-6506.pdf

13. Ali, I., Alvi, A. K., & Ali, R. R. Corporate Reputation, Consumer Satisfaction And Loyalty, (2012).*Romanian Review of Social Sciences* (30) 13-23.

Abstract:

Research suggests that it takes five times more expenses to attract new customer than to retain existing consumer. The growing concern of corporations in today's competitive environment is to retain consumers. As a result, plenty of researches have been conducted to identify the approaches to satisfy and retain consumers. The current study examines the affects of corporate reputation on consumer satisfaction and consumer loyalty. The primary data has been collected from the consumers of cellular industry in Pakistan. The rationale behind selecting respondents from cellular industry is the intense competition, which is enduring in the cellular companies of Pakistan. The study used SPSS and AMOS to analyze the data. The correlation analysis, regression analysis, reliability analysis and model fit index analysis has been used to test hypotheses and interpret some interesting results. The study found significantly positive associations of corporate reputation on consumer satisfaction and consumer loyalty. The study also found strongly positive affects of consumer satisfaction on consumer loyalty for the case of cellular industry of Pakistan. The study proposes some useful recommendations for policy makers in the area.
URL:http://rrss.univnt.ro/CORPORATE-REPUTATION-CONSUMER-SATISFACTION-AND-LOYALTY_a369.html

14. Amir, H., & Bilal, K. Consumption Pattern of Different Commodities in Pakistan. (2012), *International Journal of Academic Research in Business and Social Sciences, 2(8),* **395-401.**

Abstract:

The aim of this research is to analyze the "Consumption Pattern of Different Commodities in Pakistan" using the cross-sectional data taken from the household integrated Economic survey. This paper aims to analyze that what is the impact of per capita consumption on different household income group in Pakistan. In particular, per capita consumption of eleven (11) different variables with respect to different income groups. Ordinary least square method was used for the estimation of each equation for each variable. in the purpose of estimating this, different income groups were taken and identified the exact relationship between average incomes per household to the average expenditures per household since in the estimation of equations per capita consumption of each income group calculated respect to per capitaincome, so the formation of different equations were determined. Per capita income (PCY) becomes independent of the unit of observation. Since, each household faces the same commodity prices prevailing at the time of household survey, for the purpose of analysis, total consumption expenditure has been disaggregated in to 11 commodity groups listed in table. The table indicates that value of R- squared is high and the co-efficient have correct signs and are significant at 1 percent level of significance, at 5 percent level of significance and at 10 percent level of significance. Overall results explain that with the increase in income expenditure increase for luxuries and decrease for necessities, but it will differ in rich and poor. Finally it is found that poor people consume more on necessities and rich people consume on luxuries as their income increase.

15. Asghar, A., Kausar, M. J. E., & Afza, T. (2012). Determinants of Performance in the General Insurers of Pakistan. *Actual Problems of Economics, 12(138),286-292*

Abstract:

The study has investigated the determinants of performance in the general insurers of Pakistan over the period 2004 to 2009. Performance of the general insurers is measured as Return on Assets (ROA) and Return on Equity (ROE) whereas; size, investments, leverage, claims, past year performance and age are chosen as explanatory variables. The results suggest that size, investment, past performance and age are positively related whereas; leverage and claims are negatively related with the performance of the general insurers. Moreover, it was also found that the recent economic uncertainty has adversely affected the performance of the general insurers in Pakistan.
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2007534

16. Aslam, M. S., & Safdar, U. (2012). The Influence of Job Burnout on Intention to Stay in the Organization: Mediating Role of Affective Commitment. 2(4), 4016-4025.

Abstract:

The study is conducted with the a im to investigate the effects of job burnout on employees' intentions to stay with the current organization. Mediating role of affective commitment between the relationship of all dimensions of job burnout and intention to stay in the organization is also explored in this study. The research was conducted in banking sector of Pakistan and data was collected from banking sector employees working in different local private, local nationalized and foreign banks located in Lahore city. The study found emotional exhaustion to have significant effects on employees' intent to stay in the organization directly and through the mediation of affective commitment. Whereas lack of accomplishment have only indirect effects on intention to stay through the mediation of affective commitment. Findings of the study provide strong implications for banking management to have careful insight about the attitudinal and behavioral problems of the employees. The limitations and future area of research are also discussed in the study.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%284%294016-4025,%202012.pdf

17. Aslam, M. S., Ahmad, F., & Anwar, S. (2012). Job Burnout and Organizational Citizenship Behaviors: Mediating Role of Affective Commitment. J. Basic. Appl. Sci. Res. 2(8), 8120-8129.

Abstract:

The objective of this research work is to explore the job burnout and its consequences in banking sector of Pakistan. Effects of three dimensions of job burnout on organizational citizenship behaviors (OCB) have been computed in this study. Mediation of affective commitment has also been computed between job burnout and citizenship behaviors. Two dimensions of organizational citizenship behaviors such as citizenship behaviors for organization (OCBO) and citizenship behaviors for individuals/peer colleagues (OCBI) have been included in this study. Data has been collected from employees working in all 31 foreign, local private and local nationalized banks. A well -structured questionnaire has been used to collect the data and respondents have been approached personally during their duty hours. Different statistical tools such as Confirmatory Factor Analysis, Reliability Analysis, Correlation Analysis and Structural Equation Model have been applied to compute the results. It is noted that emotional exhaustion and lack of accomplishment has direct and indirect effects while depersonalization have only direct effects on both dimensions of OCB. Affective commitment has not mediating role between depersonalization and OCBI & OCBO. The implications and limitations of this research have also been discussed at the end of article.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%288%298120-8129,%202012.pdf

18. Bodla, M. A., Danish, R. Q., & Nawaz, M. M. (2012). Mediating role of Perceived Organizational Politics relating Job Characteristics to Morale. *African Journal of Business Management*, *15*(6), 5185-5192.

Abstract:

Organizational politics has been perceived to be an integral part of every work organization. Moreover, the perceptions of employees about the organizational politics are considered to have a significant influence on the morale of employees. However, the nature and degree of this influence may differ from job to job and individual to individual. Thus, the present study tries to investigate the mediating role of organizational politics in between the job character istics and morale of the employees. Job characteristics included in the study are job ambiguity, skill variety, feedback and autonomy, whereas the morale is a composite construct of job satisfaction and affective commitment. The empirical evidence is based on the national level sample data collected through self administered questionnaires from executives of multitude of Pakistani industries such as health, manufacturing, energy, financial services, education, telecommunication and information technology. The sample comprised of 577 respondents. Structural equation modeling was used to analyze the fitness of casual relationship. Several practical implications are drawn to benefit the practicing managers.
URL:http://www.ciitlahore.edu.pk/Papers/Abstracts/491-8588626104750433894.pdf

19. Ehsan, S., & Kaleem, A. (2012). An Empirical investigation of the relationship between Corporate Social Responsibility and Financial Performance (Evidence from Manufacturing Sector of Pakistan). *Journal of Basic and Applied Scientific Research,* 2(3), 2909-2922.

Abstract:

Relationship between Corporate Social Responsibility (CSR) and Financial Performance (FP) has been a very important issue and topic of great interest for researchers since from the origin of business ent ities. This actually motivates organizations to think broadly about their obligations towards the society in which they operate rather than just maximizing their wealth. The refore, his study is conducted with the aim to explore the nature of relationship between CSR and FP in the context of Pakistan. Panel data of one hundred non - financial firms for the period of 2006-2009 has been collected from manufacturing sector. These firms are listed at Karachi Stock Exchange and their data has been collected from their annual reports. Statistical tools and techniques such as Correlation and Generalized Least Square Random Effect Regression have been applied to analyze the data. Results revealed that the nature of relationship between CSR and FP is positive in case of Pakistani manufacturing firms.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%283%292909-2922,%202012.pdf

20. **Ehsan, S., & Kaleem, A. (2012). An empirical investigation of the relationship between corporate social responsibility and financial performance (Evidence from manufacturing sector of Pakistan).** *Journal of Basic and Applied Scientific Research*, *2*(3), 2909-2922.

Abstract:

Relationship between Corporate Social Responsibility (CSR) and Financial Performance (FP) has been a very important issue and topic of great interest for researchers since from the origin of business entities. This actually motivates organizations to think broadly about their obligations towards the society in which they operate rather than just maximizing their wealth. The refore, this study is conducted with the aim to explore the nature of relationship between CSR and FP in the context of Pakistan. Panel data of one hundred non-financial firms for the period of 2006-2009 has been collected from manufacturing sector. These firms are listed at Karachi Stock Exchange and their data has been collected from their annual reports. Statistical tools and techniques such as Correlation and Generalized Least Square Random Effect Regression have been applied to analyze the data. Results revealed that the nature of relationship between CSR and FP is positive in case of Pakistani manufacturing firms.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202%283%292909-2922,%202012.pdf

21. **Ehsan, S., Kaleem, A., & Jabeen, S., (2012) Impact of High Insider Stock Ownership on Corporate Social Responsibility: A Case from Manufacturing Sector of Pakistan.** *Northeast business and economics association, Newyork, USA. (Abstract not found).*

22. **Ellahi, N. (2012). Bounds testing approach to find the impact of capital inflow on real output growth of Pakistan.** *International Journal of Economics and Finance*, *4*(4), 106-113.

Abstract:

The dollar recipient countries of the world utilize the funds to augment their developmental activities, curtail balance of payment distortions, enhance the pace of economic growth, and alleviating poverty. Capital flows into these economies, in two forms, firstly foreign direct investment and secondly, in the form of foreign aid. However, the present study is, mainly, conducted to check the impact of Foreign aid (FA) and foreign direct investment (FDI) on real output growth of Pakistan. To test the empirical relationship, the study utilized annual time series data set over the period 1970 to 2010. Econometric techniques include testing the stationarity of data by applying augmented Dicky Fuller (ADF) test and applying Autoregressive Distributed Lag (ARDL) method of estimation. Moreover, Short run and long run estimates were found. The findings suggested a robust and direct link between economic inflow of foreign capital and economic performance indicators. However, the magnitude of foreign aid impact was explored considerably low as compared to FDI. In the end, it is suggested that though impacts of capital inflows are positive but economies must rely upon the indigenous resources to promote development rather depending on external factors.
URL: http://www.ccsenet.org/journal/index.php/ijef/article/view/15917

23. Farooq, U., & Nazir, M. S. (2012). An analysis of operating and financial distress in Pakistani firms. *Elixir Finance* **(44) 7133-7137.**

Abstract:

Current study intended to explore cost of financial distress in case of Pakistani manufacturing ongoing firms listed at KSE. In doing so, financial distress is divided into operating distress and financial but not operating distress. Sample consists of ongoing firms that were at least once on distress counter for the period of analysis. To conclude the proposed theory descriptive and independent t-test for mean differences are used. It is found that firms bear opportunity loss before and after entering to both operating and financial distress. Moreover, results also show that operating distress affects more to firms' value as compared to financial but not operating distress category. However, result for pre financial but not operating distress is found insignificant. In conclusion current study provides opportunity to all investors, management and other stake holders to assess firms' performances before and after entering to both operating and financial distress.
URL: http://www.elixirpublishers.com/articles/1350306437_44%20%282012%29%207133-7137.pdf

24. Farooq, U., Nazir, M. S., & Nawaz, M. M. (2012). Operating or Financial Distress? How much Costly these are? American Journal of Scientific Research. (55), 96-108.

Abstract:

Current study intended to explore the cost of financial distress for Pakistani manufacturing ongoing firms listed at KSE. In doing so, financial distress is divided into operating distress and financial but not operating distress. Sample consists of ongoing firms that were at least once in distressed counter for the period of analysis. Independent t-test, parametric and non-parametric correlation analysis and GLM regression analyses are used to conclude proposed models. It is found that firms borne opportunity losses before and after entering to both operating and financial distress. Moreover, results also show that operating distress affects more severely to firms' value as compared to financial but not operating distress category. However, result for pre financial but not operating distress is found insignificant. On the other hand organization al efficiencies are also evidenced in post year to distress. In short current study provides pportunity to all stakeholders to assess firms' performances before and after entering to both operating and financial distress.
URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/146-8588087141145945808.pdf

25. Fatima, A., Shahbaz, M., & Islam, F. (2012). Nexus of Trade, Investment and Poverty: Evidence from Pakistan. *Bangladesh Development Studies*, *35*(2).87-108.

Abstract:

Poverty alleviation, a complex multidimensional phenomenon, is among the most formidable challenges for policymakers in developing nation. Despite mixed results on the long term impact on poverty, the general view is that if implemented and managed carefully, trade and

investment can help promote economic growth and alleviate poverty. The paper empirically examines the impact of trade and investment on poverty alleviation in Pakistan by employing the Johansen-Juselius (1990) approach to cointegration for a long run relation; and the error correction mechanism for the short run dynamics. The results suggest that poverty alleviation policy has brought fruition in Pakistan and helped achieve the objective both in the short and the long run. The findings should help policymakers determine appropriate strategy in addressing the economic growth vis-à-vis poverty. While investment is a key to promoting economic growth, trade openness can also help by improving business climate through access to modern capital and technical know-how; and lead to sustained economic growth in Pakistan.
URL: http://www.bids.org.bd/bds/35-2/04_Nexus%20of%20Trade,%20Investment.pdf

26. Gondal, U. H., & Shahbaz, M. (2012). Interdepartmental Communication Increases Organizational Performance Keeping HRM as a Mediating Variable.*Journal of Asian Business Strategy*, *2*(6), 127-141.

Abstract:

The current study addresses the importance of Human Resource Management (HRM) and implication of its widely used practices. We tested the relationship of Interdepartmental Communication with Organizational Performance using Human Resource Management (HRM) as a mediator. A cross - sectional study was conducted and data was collected through survey questionnaire method from 200 respondents in three different multinational organizations (Telenor, Silk Bank and CureMD). Using Linear Regression Model ,we found HRM to be strongly mediating the relationship of Interdepartmental Communication and Organizational Performance. Further areas for future research and implications are also highlighted.
URL: http://www.pakinsight.com/pdf-files/2%281%2939-JABS-127-141.pdf

27. Haque, A., & Anwar, S. (2012). Linking Top Management Support and IT Infrastructure with Organizational Performance: Mediating Role of Knowledge Application. *Canadian Social Science*, *8*(1), 121-129.

Abstract:

The current study is conducted with the objective to measure the influence of top management support and IT infrastructure on knowledge application and the effects of knowledge application on organizational performance. Moreover, the mediating effects of knowledge application between the relationship of management support and IT infrastructure with organizational performance have also been investigated. Data has been collected from branch managers, operation management and other key position holders from different branches of all local private, local nationalized and foreign banks working in Pakistan. As per findings, both management support and IT infrastructure has positive and significant effect on knowledge application and also knowledge application has positive significant impact on organizational performance. Moreover, knowledge application has significant mediating role between the relationship of management support and IT infrastructure and organizational performance. The

study is concluded with the implications, limitations and future area of this topic to be explored in future.
URL: http://50.22.92.12/index.php/css/article/view/2326

28. Haque, A., & Tariq, A. (2012). Efficiency of banks in Pakistan: A non parametric approach. *Business and Economic Research*, *2*(1). 1-12.

Abstract:

Banks play a vital role in growth and development of an economy through prudent allocation of capital resources and their efficient utilization. This study evaluates efficiency of banking sector of Pakistan, including both conventional and Islamic banking, for the time period 2006-2010 by covering a total of 22 banks; Sample includes 16 Conventional and 6 Islamic banks. Efficiency is measured through frontier non parametric technique of data envelopment analysis based on intermediation approach. During the sample period the banking sector was not much efficient in the year 2009 and the estimated efficiency scores recommend that Islamic banks performed more efficiently during the study period as compared to Conventional banks.
URL: http://www.macrothink.org/journal/index.php/ber/article/view/1711

29. Haque, A., & Sarwar, S. (2012). Macro-Determinants of Stock Return in Pakistan. *Middle-East Journal of Scientific Research*, *12*(4), 504-510.

Abstract:

This study explores the association among macro-determinants and stock returns by analyzing the reaction of macroeconomic variables on individual equity returns. For this purpose a panel data of 394 listed companies listed in the Karachi Sock Exchanger over the period of 1998-2009 is used for empirical analysis. The results revealed that volatility and gross domestic product has a significant positive effect on individual equity return, while, inflation, interest rate, money supply and budget deficit confirm a significant negative association. The findings also highlighted a significant positive effect of exchange rate on equity return of textile sector. To recapitulate, returns of different sectors react differently to the same macro variable.

30. Hashmi, M. S., & Naqvi, I. H. (2012). Investigating Organizational Commitment as the Outcome of Job Satisfaction: A Study of Banking Sector of Pakistan. *International Journal of Learning and Development*, *2*(4), Pages-146.

Abstract:

This study aims to elaborate the role of job satisfaction in committing employees with organization. This study tested the effect of both components of job satisfaction (intrinsic and extrinsic) of on organizational commitment in banking sector of Pakistan. Data was gathered from employees working in banks of Pakistan. The study has uses descriptive statistics (mean and standard deviation) to identify sample characteristics and inferential statistics (multiple linear regression) to find out the relationship between variables. Results showed the significant and positive effect of both components of job satisfaction on organizational commitment. This

study is a contribution to theory and practice with an increased understanding on importance of job satisfaction in committing the employees with the organization.
URL: http://www.macrothink.org/journal/index.php/ijld/article/view/2077

31. Hashmi, M. S., & Naqvi, I. H. (2012). Psychological Empowerment: A Key to Boost Organizational Commitment, Evidence from Banking Sector of Pakistan. *International Journal of Human Resource Studies*, *2*(2), 132-141.

Abstract:

The purpose of this study is to elaborate the role of psychological empowerment in committing employees with organization. This study tested the effect of dimensions of psychological empowerment on organizational commitment in banking sector of Pakistan. Data was gathered from employees working in banks of Pakistan. Results showed the significant effect of all dimensions of psychological empowerment (meaning, competence, self determination and impact) on organizational commitment. This study is a contribution to theory and practice with an increased understanding on importance of psychological empowerment in committing the employees with the organization.
URL: http://www.macrothink.org/journal/index.php/ijhrs/article/view/1807

32. Islam, F., Hye, Q. M. A., & Shahbaz, M. (2012). Import-economic growth nexus: ARDL approach to cointegration. *Journal of Chinese Economic and Foreign Trade Studies*, *5*(3), 194-214.

Abstract:

Purpose – The purpose of this paper is to examine the relationship between import and economic growth for 62 countries. *Design/methodology/approach* – The paper applies autoregressive distributed lag model (ARDL) for long-run relation and Granger causality test, in order to detect the direction of short-run and long-run causal relationship. *Findings* – The results indicate that the long-run relationship exists in the USA, the UK, Japan, Iceland, Canada, Italy, Algeria, Brazil, Chile, Colombia, Cuba, Gabon, Malaysia, Mexico, Peru, South Africa, Uruguay, Bolivia, Cameroon, Cote d'Ivoire, Ecuador, Egypt, El Salvador, Guatemala, Honduras, India, Lesotho, Nicaragua, Papua New Guinea, Thailand, Bangladesh, Benin, Chad, Congo, Gambia, Kenya, Madagascar, Togo, Zambia and Zimbabwe when economic growth is dependent variable. This result confirms the importance of import in the process of sustainable economic growth of these countries. In alternative combination when import is dependent variable, the long-run relationship is found in the USA, the UK, Japan, Finland, Iceland, Canada, Italy, Brazil, Cuba, Dominican Republic, Iran, Malaysia, Mexico, Peru, South Africa, Bolivia, Cameroon, Guatemala, Honduras, India, Indonesia, Lesotho, Morocco, Nicaragua, Pakistan, Philippines, Senegal, Sudan, Swaziland, Thailand, Tunisia, Bangladesh, Benin, Burkina Faso, Chad, Congo, Gambia, Kenya, Madagascar, Malawi, Mali, Mauritania, Togo and Zambia. These findings confirm the importance of source of economic growth for import. On the other hand, the results of Granger causality test indicate mixed results but the importance is that in the case of higher income countries, there is unidirectional long-run causality found from import to

economic growth (except the USA, Iceland and Italy), and bidirectional long-run causal relationship exists between import and economic growth in low income countries except Madagascar and Mauritania. *Originality/value* – This paper provides the largest sample, including 62 countries, examining the relationship between import and economic growth, from 1971 to 2009.
URL: http://www.emeraldinsight.com/journals.htm?articleid=17058221&show=abstract

33. Khan, M. K., Kaleem, A., & Nazir, M. S. (2012). Impact of Firm Capital Structure Decisions on Debt Agency Problem: Evidence for Pakistan. *J. Basic. Appl. Sci. Res*., 2(8)7897-7905.

Abstract:

Agency problem is highly discussed topic in financial literature, but mostly focused on one aspect of agency cost and agency problem of debt is still debatable. Present study determines mechanisms to protect the interests of debtholders in Pakistani firms. By analyzing top 100 capitalized Pakistani manufacturing firms and by applying fixed effect and random effect techniques of generalized least square regression, study aims to check the effectiveness of capital structure decisions of firm on agency cost of debt. Study also incorporates the effect of managerial ownership and ownership concentration on the debt agency cost while keeping the impact of dividend policy constant. Moreover study finds whether monitoring of banks is effective in agency cost of debt. Study suggests that managerial ownership, concentrated ownership and Increased level of debt in firm reduces the agency cost of debt.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202(8)7897-7905,%202012.pdf

34. Khan, M. K., Kaleem, A., Nazir, M. S., & Khan, A. (2012). Do Insiders Protect Debtholders' Interest? Evidence from Pakistan. *J. Basic. Appl. Sci. Res*., 2(7)7320-7327.

Abstract:

This paper investigates the relationship between the agency cost of debt and insiders' ownership while controlling the firm decisions regarding capital structure and dividends. Agency Study selected top 100 highly capitalized manufacturing firms listed in Karachi Stock Exchange as sample from the period of 2006-2010. By applying fixed effect and random effects technique of generalized least square regression, we found that insiders in Pakistan are more concerned with the cost of debt financing because they look their long term benefits and take care of their reputation which may destroy if firm become bankrupt in case of nonpayment of their debt obligation. So they try to avoid high agency cost of debt. Moreover study has analysis of impact of managerial ownership in Pakistan on the agency cost of debt.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202(7)7320-7327,%202012.pdf

35. Khan, A., Kaleem, A., & Nazir, M. S. (2012). Impact of Financial Leverage on Agency cost of Free Cash Flow: Evidence from the Manufacturing sector of Pakistan. *Journal of Basic and Applied Scientific Research*, *2*(7), 6694-6700.

Abstract:

The objective of this study is to examine how manufacturing sector of Pakistan mitigate the agency cost of free cash flow by using leverage. To measure the agency cost of free cash flow firm free cash flow is used as a proxy. Leverage of the firm is measured by using two ratios including debt to equity ratio and long term debt. Panel data of 54 manufacturing firms for the period 2006 to 2010 has been collected from the non financial sector of Pakistan. These firms were in the Karachi 100 stock index. Results revealed that the firm leverage play an important role in reducing the agency cost of free cash flow by reducing the free cash flow that is under the control of the manager. This result is consistent with the free cash flow theory. The implications, limitations and future area of study are also discussed in the conclusion at the end of the study.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202(7)6694-6700,%202012.pdf

36. Khan, A., Kaleem, A., Nazir, M. S., & Khan, K. (2012). Voluntarily contribution and Agency cost of Free Cash Flow: Evidence from Manufacturing sector of Pakistan. *J. Basic. Appl. Sci. Res.*, 2(7)6882-6888.

Abstract:

The purpose of this study is to examine the impact of firm volunteer contribution (donations, kind gift and charities) on the agency cost of Free Cash Flow (FCF). Either the volunatrily contribution increase the agency cost of free cash flow or mitigate it. To measure the agency cost of free cash flow firm free cash flow is used as a proxy. Voluntarily contribution is measured by the amount of cash paid out by the firm in the form of donations, charities and kind gift. Panel data of 54 manufacturing firms for the period 2006 to 2010 has been collected from the manufacturing sector of Pakistan. Results revealed that the firm contribution in donations, charities and gift increase the agency cost of free cash flow. Managers feel prestige in distributing the owner's cash in the form of donations, charities and kind gift. The paper shows the impact of voluntarily contribution on the agency cost of free cash flow. These indicates that the firms that want to maximize the value of the firms by reducing the agency cost of free cash flow should also keep in view the level of firm cash that is distributed by the firm in the form of free cash.
URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202(7)6882-6888,%202012.pdf

37. Kumar, Saten, and Muhammad Shahbaz. "Coal consumption and economic growth revisited: structural breaks, cointegration and causality tests for Pakistan." *Energy, Exploration & Exploitation* **30.3 (2012): 499-522.**

Abstract:

A global profusion of coal provides many countries with opportunities for economic growth. The direction of causality between coal consumption and economic growth is useful for policy making, however, existing empirical evidence have failed to reach a consensus. This paper examined the liaison between coal consumption and economic growth for Pakistan over the period 1971-2009. The endogenous two-break *LM* unit root test, derived in Lee and Strazicich (2003), is used to assess the order of integration of the variables and structural breaks in the data series. Application of the autoregressive distributed lag (*ARDL*) bounds test reveals a cointegrating relationship between real income, real capital stock, labour and coal consumption, and further application of general to specific (*GETS*), Engle and Granger (*EG*), Stock Watson's dynamic ordinary least squares (*DOLS*) and Phillip Hansen's fully modified ordinary least squares (*FMOLS*) methods show statistical robustness of the estimates. The elasticity with respect to coal consumption is positive and significant. The vector error correction model (*VECM*) based Granger causality test and innovative accounting procedures (variance decomposition and impulse response functions) are also applied.
URL: http://multi-science.metapress.com/content/67g440452176k35p/

38. Leitão, N. C., & Shahbaz, M. (2012). Migration and tourism demand. *Theoretical and Applied Economics***. 19(2), 39-48.**

Abstract:

This study considers the relationship between immigration and Portuguese tourism demand for the period 1995-2008, using a dynamic panel data approach. The findings indicate that Portuguese tourism increased significantly during the period in accordance with the values expected for a developed country. The regression results show that income, shock of immigration, population, and geographical distance between Portugal and countries of origin are the main determinants of Portuguese tourism.
URL: http://repositorio.ipsantarem.pt/handle/10400.15/599

39. Leitão, N. C., & Shahbaz, M. (2012). Migration and tourism demand. *Theoretical and Applied Economics 2(567). 39-48.*

Abstract:

This study considers the relationship between immigration and Portuguese tourism demand for the period 1995-2008, using a dynamic panel data approach. The findings indicate that Portuguese tourism increased significantly during the period in accordance with the values expected for a developed country. The regression results show that income, shock of

immigration, population, and geographical distance between Portugal and countries of origin are the main determinants of Portuguese tourism.

URL: http://repositorio.ipsantarem.pt/handle/10400.15/599

40. Malik, M. E., & Naeem, B. (2012). Towards Understanding Controversy on Herzberg Theory of Motivation. *J. Basic. Appl. Sci. Res.*, 2(11)11936-11941.

Abstract:

In order to better understand motivation and attitudes of the workers, numerous researchers used Herzberg's motivator-hygiene theory to determine factors causing their job satisfaction and dissatisfaction. So, it can be safely said that Herzberg's theory provided great stimulus to the investigators for advancing research on job satisfaction. In 1959, Herzberg, Mausner and Snyderman dropped a bombshell on the traditional view of job satisfaction by introducing motivator-hygiene theory and challenged to the established model of job satisfaction. Herzberg theorized that provision of motivators such as recognition, work itself, advancement, responsibility and achievement generates job satisfaction while their absence leads to no job satisfaction but has nothing to do with job dissatisfaction. On the other hand, lack of hygiene factors such as working conditions, pay, interpersonal relations,job security, company policies and administration produces job dissatisfaction and has nothing to do with job satisfaction. Since the inception of theory, it has been tested across divergent cultures, samples, occupations and methods but to date there is still no consensus to what extent Herzberg's theoretical predictions are valid. This prompted the researchers to undertake this qualitative review of empirical studies to improving the understanding about mounting controversies surrounding such influential theory. Based on qualitative analysis, it can be concluded that possibility of empirical substantiation of theory would be higher provided replication of Herzberg's original methodology is undertaken.
URL: http://www.textroad.com/JBASR-November,%202012%285%29.html

41. Malik, M. E., & Naeem, B. (2012). Aaker's Brand Personality Framework: A Critical Commentary. *J. Basic. Appl. Sci. Res.*, 2(12)11992-11996.

Abstract:

Brand personality, an integral part of brand image, is considered critical to differentiate a brand in the marketplace. It opened new horizons for brand management in relational marketing field. Researchers' interest in brand personality expanded rapidly after the seminal work of Aaker framework. But to date, heavy criticism was leveled against Aaker's multi-dimensional model to measure brand personality construct. This prompted researchers to review the literature on the effectiveness and limitations of influential framework of brand personality to inform future research. Comprehensiveness of the Aaker's framework is generalizable over multiple product categories. As regards limitations, Aaker's scale is considered as crude measure of brand personality as it transposed human personality traits rather than using brands themselves. Additionally, the framework is American culture specific as Aaker's five-

dimensional structure did not always receive empirical substantiation across different cultural settings. Directions for future research are also presented.
URL: http://www.textroad.com/JBASR-December,%202012%281%29.html

42. Malik, M. E., Naeem, B., & Ahmad, W. (2012). Role of Optimism Subculture and Optimism in Sales force Creative Performance: Empirical Evidence from Pharmaceutical Industry in Pakistan. *J. Basic. Appl. Sci. Res.***, 2(12)12389-12395.**

Abstract:

The purpose of this research investigation was to ascertain whether or on sales force creative performance is developed by their optimism and perceptions of optimism subculture. Three hundred and sixty five statistically usable survey questionnaires, administrated to frontline pharmaceutical salespersons and sales managers, were analyzed to test study hypothesis. Results of regression analysis revealed that both optimism subculture and optimism contributed to nurturing creative performance of frontline salespersons only but not for sales managers. Implications for future research and sales force management were presented, too.
URL: http://textroad.com/JBASR-December,%202012%282%29.html

43. Malik, M. E., Naeem, B., & Ahmad, W. (2012). Creative Performance of Pharmaceutical Salesforce: Role of Intrinsic Motivation and Learning Goal Orientation. *J. Basic. Appl. Sci. Res.***, 2(12)12633-12640.**

Abstract:

The purpose of this study was to investigate the role of pharmaceutical salesforce intrinsic motivation and learning goal orientation in fostering their creative performance for both sales managers and frontline sales persons. For this purpose, data was collected from the managerial and non-managerial sales persons working in national and multinational pharmaceutical companied operating in Lahore region of Pakistan. Three hundred and sixty five structured survey questionnaires were successfully administered to pharmaceutical salesforce. Regression analyses were employed separately on managerial and non-managerial sales persons to test the study hypotheses. Contrary to expectation of the researchers, neither learning goal orientation nor intrinsic motivation contributed significant variance in creative performance of the managerial salesforce whereas interestingly both had their positive role in nurturing creative ideation and its innovative execution for frontline sales persons. Implications of the study findings for future research and salesforce management were presented, too.
URL: http://textroad.com/JBASR-December,%202012%283%29.html

44. Malik, M. E., Naeem, B., & Munawar, M. (2012). Brand Image: Past, Present and Future. *J. Basic. Appl. Sci. Res.***, 2(12)13069-13075.**

Abstract:

Strategic role of brand image has been proven in extensive literature as it is considered as distinct component in designing the marketing mix to building sustainable competitive edge.

So, this paper presents divergent perspectives defining the brand image concept and concluding the debate about its multidimensionality. Five major clusters of definitions of brand image construct are observed such as generic definitions, meanings/messages, symbolic definitions, personality based definitions and cognitive/psychological definitions. Another important milestone in the evolution of brand image is the theory behind the concept of brand positioning. Brand Image is a multidimensional construct that is triggered by cognitions, emotions, symbols, values and attitudes of consumers. However, many researchers measured it as uni-dimensional construct. Initially benefits based dimensionality was used to measure brand image (Park, 1986). Later, associative network model was used to measure brand image. Researchers advanced functional, symbolic, experiential, affective, economic, social, personality, self-esteem, corporate and utilitarian dimensions which could be summarized as dual model of brand image comprising of cognitive or affective domains. Prior research mostly showed confirmation with the established models of brand gurus such as Park, 1986; Aaker, 1992; Keller, 1993. Measurement of brand image has been remained a concern by researchers whether measured on attitudinal scales or using projective techniques. But the use of numerous qualitative techniques failed to capturing consumer thoughts and feelings at non verbal and unconscious level due to lacking in vocabulary or awareness. So the focus qualitative research for measuring the brand image is now a latest trend in brand image research. The suggestions for future research are presented, too.
URL: http://textroad.com/JBASR-December,%202012%285%29.html

45. Mir, G., & Abbasi, A. (2012). Role of Emotional Intelligence in Developing Transformational Leadership in Higher Education Sector of Pakistan. *Middle-East Journal of Scientific Research*, *12*(4), 563-571.

Abstract:

This study is based on the investigation of the relationship between emotional intelligence and transformational leadership of academic leaders in higher educational sector of Pakistan. The purpose of this study is to validate the significance of emotional intelligence in shaping transformational leadership behavior among academic leaders that ultimately leads to enhanced performance of educational institutes. A structured questionnaire has been used to collect data from 345 faculty members having doctorate degree in top performing universities of Pakistan. A number of statistical techniques including correlation analysis, linear and multiple regressions were applied for the purpose of data analysis. The findings of the study provide evidence that emotional intelligence is at the core of transformational leadership behavior. The results also confirm that all the elements of emotional intelligence are significantly related to transformational leadership. This study suggests that emotionally intelligent leaders are better able to exhibit transformational leadership. This study has implications for policy makers and leadership of educational institutes to identify how effective leadership can be shaped up to improve research productivity and enhance performance to achieve a reputable place in international research arena.
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2178574

46. Mujtaba, B. G., Sikander, A., Akhtar, N., & Afza, T. (2012). Business Ethics of Pakistanis in Islamabad and Lahore: Do Age, Gender and Data Collection Processes Make a Difference?. *International Journal of Learning and Development*, **2**(3), 325.341.

Abstract:

Pakistan is an emerging economy and a modernizing workplace. This research surveyed 318 citizens, managers, and employees in Lahore and Islamabad to measure their Personal Business Ethics Scores (PBES) based on age and gender, as well as to see if face-to-face and online data collection processes make a difference in their level of ethical maturity. Furthermore, this study contributes to the theory of moral development. The results suggest that age is a significant factor in moral development as it leads to higher scores in moral maturity. Gender is not a factor in the ethical maturity scores of these respondents. Kohlberg's moral development theory regarding ethical maturity is supported since those who were older do have higher business ethics scores. Furthermore, significant differences were found based on the data collection process. These results can be helpful for human resources managers and expatriates who work in these cities with local professionals. Suggestions and implications are discussed.
URL: http://www.macrothink.org/journal/index.php/ijld/article/view/1972

47. Naqvi, I. H., & Razvi, A. S. (2012). Inflation Overrides Low Differential Basic Pay Scales in Pakistan. *World Applied Sciences Journal*, **18**(9), 1220-1225.

Abstract:

While trying to help its employees fight inflation and fluctuation in food basket price through yearly pay raises, the government of Pakistan failed in its obligations. Despite annual increase in pays, the low scaled government employees always get further compressed purchasing power. The problem resides in the tight differentials in the Basic Pay Scales. Annual pay raises are always announced as a percentage of basic pay for all scales resulting into inadequate increase in comparison with prevailing unleashed inflation for low paid employees. The major reason for increase in price of food basket is the oil price. Nevertheless, the tight differential in low scales demands optimization, remedial approach can be linking pay raises with oil prices, reducing unit production costs by increasing productivity to lower food prices, monetizing perks and privileges of top level managers etc.

48. Naqvi, I. H. (2012). Islamic banking in Pakistan: Fiqa-e-Jaferia offers optimization. *African Journal of Business Management*, **6**(5), 2071-2085.

Abstract:

Islamic banking is an initiative of State Bank of Pakistan (SBP) and Shariah scholars for purifying the financial and economic system of Pakistan from interest (Riba). The framework of Islamic banking guides banks to customize their policies and product mix in conformance with Shariah standards. Despite targeting a noble cause of eliminating interest (Riba) from the economy of Pakistan the existing practices of Islamic banks and certain aspects of the framework of Islamic banking face logical objections. Due to inappropriate operational measures, Islamic banks are

yet criticized for not having embraced Islam completely. Islamic banks are found adopting Islam in parts and chunks. Islamic banks are epitomized by certain sect instead of Islam and further, they are not imbued to alleviate poverty from mass root level being mere commercial enterprises. Fiqa-e-Jaferia explains Islam based on the Holy Quran and teachings of Prophet Muhammad (SAAW) explained by Imams in his Ah-e-Bait (AS). By now, the Islamic banking framework and Islamic banks are no t benefited by the input and support of Fiqa-e-Jaferia .The study discovered that the aforementioned objections on Islamic banking can be rectified through incorporating guidance of Fiqa-e-Jaferia. In January 2008, this study joined an Islamic bank that was functioning as per Fiqa-e-Hanafi to observe and experience the norms and practices in Islamic banks. It investigated and interpreted the root cause of short comings in Islamic banking rendering it objectionable. Since January 2008 to date, the study compared the two major fiqas that are Fiqa-e-Jaferia and Fiqa-e-Hanafi with the intention of contributing a consensus on Islamic banking for strengthening this noble cause. In the light of Fiqa-e-Jaferia,t he study has identified Kibor Halal for SBP and number of opportunities for SBP, Islamic banks and stakeholders for optimizing the framework and practices of Islamic banking. The study recommends a solution to resolve all objections on Islamic banks and Islamizing the entire banking industry within three steps. It recommends engaging SBP, banks and their clients in a double tier master slave relationship such as Slave 1 (bank)–Master (SBP) –Slave 2 (client) to get the entire banking functions Halal with a little modification in the mechanism of banking. It invites divergent Muslim scholars and SBP to reach a consensus considering Islamic banking as a national cause instead of keeping it as a mere commercial movement. It offers opportunities for further research, development and unity among divergent sects to strengthen both Islamic banking and Pakistan. The ultimate milestone is recommended to be an Islamic financial system seeking interest free economy, implementing real spirit of Islamic financial culture shielded from capitalistic and satanic intentions and norms.

URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/538-8588668679511374113.pdf

49. Naqvi, I. H., Shamim, S., & Hashmi, M. S. (2012). Entrepreneurship a Panacea for Unemployment, A Myth or Reality?. *Elixir Inter. Busi. Mgmt*. **(48), 9238-9241.**

Abstract:

Unemployment is a global challenge especially to developing nations like Pakistan. In the current era motivating the nation towards entrepreneurship is recommended to be a solution of unemployment. As adequate number of jobs both in government and private sectors are not being generated due to economic crisis in Pakistan, it is perceived that more entrepreneurial projects should mitigate the unemployment. Nevertheless, opting entrepreneurship is one solution, however the question arises is it a universal solution of unemployment for people of all classes in a nation? This conceptual cum empirical study contributes a critical view on the role of entrepreneurship in mitigating unemployment in Pakistan with the help of existing literature, expert's opinions and logical analysis. The study concluded that although entrepreneurship is a solution for unemployment, but it is not universally applicable for all people in Pakistan. The study recommends that measures must be taken to ensure balance of new vacancies in all walks of life as every person in the nation cannot serve an entrepreneur. Further, a nation for its prosperity and growth depends on quality professionals in all spheres of

life. The study therefore concluded not to consider entrepreneurship a panacea. In addition to using entrepreneurship as one tool, it recommends production and utilization of quality professionals in all walks of life with continuous generation of adequate vacancies at a predefined periodic interval to address unemployment effectively.

URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/538-8588603049081422058.pdf

50. Naqvi, I. H., David Simm and Maryam Saeed Hashmi (2012) Effect of human resource workload management on project result. *Elixir Project Mgmt.* (50) 10220-10224.

Abstract:

Successful project management depends upon practicing nine knowledge areas; managing project scope, time, cost, quality, time and workload management for human resources, stakeholder communication, procurement, risk and integration of all these. However, existing literature does not give primary importance to workload management for human resources. From July 2007 to April 2009, this study observes that in the IT industry working in Islamabad, Pakistan, workload management was considered as support or secondary function of human resource management. Focusing on workload management this study hypothesized that the quality of the workload management determines the project outcome. Adopting stratified sampling 70 heterogeneous IT projects from 24 different software houses were selected. Using a reliable instrument, data was about the quality of workload management by the project managers and the consequent results of the IT projects was collected in a cross sectional manner. The data was analyzed using frequency distribution, Pearson correlation and linear regression. The findings confirmed a strong correlation and dependency of project outcome on proper workload management. This study recommends good quality workload management a primary tool for determining the project's scope, time and cost. The study contributes guidelines and templates to help project managers improve workload management skills and its role in project outcomes respectively.

URL:http://www.elixirpublishers.com/articles/1350469336_50%20%282012%29%2010220-10224.pdf

51. Naqvi I, H., Bilal, K., Yusuf, M. U., & Simm, D. (2012). Religious Perspective in Knowledge Management Rationalizes Business. *World Applied Sciences Journal*, *19*(2), 223-228.

Abstract:

Knowledge is the key determinant of the success and competitiveness of firms for operating locally and internationally. Among many other theories, two most recent theories are important contributions in the literature on theory of firm. Those are resource based theory of the firm and knowledge-based theory of the firm. The latter is the extension of the former. In terms of knowledge based theory little is recommendedfrom religious perspective as business is believed to be kept separate from religion. However, the latest drift toward acknowledging and embracing the importance of business ethics negates such belief and practices. The study selected Grant's (1996) knowledge based model for analyses. It identified that knowledge based business firms can be benefited from the religious perspective as businesses cannot get

legal and prosper without adopting ethical standards. Grant's (1996) model does not incorporate the religious perspective for rationalizing the ethical standards. This study analyzed it critically with intention to append the religious perspective in Grant's (1996) model for knowledge based firms by short listing and explaining the relevant lessons and examples mutually endorsed by Islam and Christianity as these are two similar religions practiced by majority in the world.
URL: http://www.idosi.org/wasj/wasj19%282%2912/11.pdf

52. Nauman, B.(2012). Organization Development inn city Traffic Police Lahore-A Case Study. *International Journal of Research inn Commerce, IT & Management.* **2(2), 34-39.**

Abstract:

The following case study analyzes the largest and most challenging change process occurred in a government sector service organization within thedepartment of Police i.e., establishment of city traffic police(CTP) in the city of Lahore, Pakistan. This change process was administered by internal ODpractitioners. Focus of case study is on three main issues, Firstly, finding reasons for change, Secondly, how OD was conducted at CTP(LHR) and finally analyzing the impact of this OD process. Techno structural, Human Resource Management and Cultural Change Interventions were used to transform CTP(LHR). As this case study seeks to provide some first steps into a new and little explored area of CTP(LHR) so exploratory research method is used. Data is collected from various sources i.e., semi structured interviews, focus group discussions, personal observations, informal interviews and the review of the existing literature. Findings of the case study gives evidence that service quality and organizational performance improved after the change process that had taken place at CTP(LHR) over the past three years. Despite some instances of resistance and opposition to change (specially) on having no room for promotion) interviews and discussions seem to indicate general increases in communication, employee participation and, as a whole, an acceptance of the change in culture both within organization and among general public.
URL: http://ijrcm.org.in/it/index.php?type=Archives

53. Nazir, M. S., Naqvi, I. H., & Nawaz, M. M. (2012). Role of Return Rate, Inflation & Deposits in Loan Supply: An Empirical Study of Banking Sector in Pakistan. *Actual Problems of Economics* **01(127), 407-415.**

Abstract:

In Pakistan, banks are experiencing a significant increase in loan supply. Trend of financing through banks is increasing in time. The purpose of this research paper is to investigate the major factors which determine role of the supply of loans at the local market of Pakistan. Statistical techniques have been used to relate the supply of loans with deposits, weighted average rate of returns on loans, and rate inflation. The data used was collected from various published reports of the State Bank of Pakistan, Federal Bureau of Statistics, and Economic Survey of Pakistan on monthly basis for the period of 1991 to 2009. The results reported that

the supply of loans is positively related with the inflation and negatively associated with the weighted average rate of return on loans sanctioned by banks. Moreover, the amount of deposits is found positively predicting the loan supply by the banking sector of Pakistan.

URL:http://web.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=19936788&AN=71405472&h=vxs0CVXxgAn4TfYlsC6uGBvNA0xmoryqQJdDQg%2btYRl%2fnawdF4jVL3y08BQyqXBPWj8w5Hbg2j7Muavd4ZFmMA%3d%3d&crl=c

54. Nazir, M. S., Siddiqui, A., & Nawaz, M. M. (2012). Determinants of Capital Structure of Engineering Sector of Pakistan. *Actual Problems of Economics 128***(2), 412-420.**

Abstract:

This research is conducted to evaluate which determinants have influence on the leverage of the engineering sector. This research is designed on capital structure of the engineering sector. The research data is on 32 firms, from 1998 to 2008. The results are concluded by applying descriptive analysis, correlation analysis and regression analysis. 6 determinants (profitability, growth, size, tangibility, risk and investment opportunity) are examined. The purpose is to investigate which factors have strong influence on the leverage. The analysis reveals that profitability, tangibility and investment opportunities have significant negative association with the leverage while the size and growth have significant positive correlation with the leverage. The impact of risk is not significant. The study also discusses the reason of the relations between these factors. Furthermore, the lever-age of engineering sector is compared to other sectors.

URL:http://web.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=19936788&AN=73312483&h=b3x04dEAGEs696%2fytRlAGaWyBrSWnJaceI6HHXD1APqvaajv8ULkwVjZkh%2fcmBsurNQ67rk4NHB4s3s9wVyJng%3d%3d&crl=c

55. Nazir, M. S., Butt, A., & Nawaz, M. M. (2012). Interest Rate Determinants of Banks in Pakistan. *Actual Problems of Economics***,** *129***(3), 415-424.**

Abstract:

This study attempts to investigate determinant factors of interest rate differential on deposits and loan accounts of Pakistani banks. For this purpose 4-year data on 30 banks is included in this research paper. The empirical results based on the correlational analysis of the relationship between weighted average rate of interest and 10 independent variables which are credit risk, amount of deposit, administrative cost, profit margins, bank's liquidity, amount of loan, market share, inflation rate, macroeconomic conditions and bank specific factors. These variables will help to highlight customer reaction towards variation in interest rates which help banks to review their policies regarding interest rates, margins and risk premium. The results shows that credit risk, administrative costs, profit margins and deposit amounts are important factors for the interest rate determination and these are positively related with interest rate. Bank's

liquidity and deposit amount have negative relationship with interest rate. Meanwhile, inflation and market share have no significant relationship with interest rate fluctuations.

URL:http://web.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=19936788&AN=73956322&h=vaOh4w3MsrZfVZBh%2f6j3Kf2cj%2barXSGOP8Tzy2bBxjMlY9ewaJBienfKrLS54ANSdeHkMqeDLET%2fYjSVLkYYbQ%3d%3d&crl=c

56. Nazir, M. S., Aslam, A., & Nawaz, M. M. (2012). The Impact of CEO Duality on Capital Structure: A Case from Non-Financial Sector of Pakistan. 56 (2012), 5-12.

Abstract:

The purpose of present study is to analyze the impacts of CEO duality on the capital structure of Pakistani non financial firms listed a t Karachi stock exchange. In the current study capital structure theories of signaling and agency cost are tried to integrate with corporate governance issues. We tried to focus on CEO duality where CEO also holds the position of chairman as well. After eliminating (default, new, incomplete data and 5% trim data) firms, we select 269 non financial firms for the period of 2004 to 2009. We applied generalized regression model to our data and found the positive and significant relationship of firm's leverage with CEO duality. On the other hand cross effects of CEO duality with tangibility reveal negative results and positive relation with size and profitability. There is no change in the results of risk whether duality exists or not.
URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/146-8588087139709383308.pdf

57. Nazir, M. S., Raza, H., & Nawaz, M. M. (2012). Financial Behavior of Textile Firms of Pakistan. *Actual Problems of Economics/Aktual'ni Problemi Ekonomìki*, *130*(4), 412-422.

Abstract:

The present study aims to explore the determinants of capital structure in the textile sector of Pakistan and to examine the effect of these determinants on the composition of capital structure. In this study we analyze different theories related to capital structure, i.e. static trade-off theory, pecking order theory, signaling theory and agency theory. The analysis is performed by means of panel data technique using sample of 102 firms listed on KSE for the period of 2002-2009. Stepwise regression analysis applied on the data available, the results suggest that profitability, tangibility, liquidity and international diversification are negatively related with leverage and are strongly significant. Market share and corporate size are negatively related while inflation related positively with leverage, but are insignificant. The results confirm the pecking order theory and static trade-off approach.
URL:http://web.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=19936788&AN=74565492&h=XlA%2b%2bx%2bFtV%2bmzgBJM%2brO0EbcKrAA2NKBt8yuXbImV2YfWoE%2bzAsNbuKedmQaY0RrvsjlolY87GO%2bZBJ4a1Z8cw%3d%3d&crl=c

58. Nazir, M. S., & Abdullah, M. M. N. (2012). How Dividend Policy Affects Volatility of Stock Prices of Financial Sector Firms of Pakistan. *American Journal of Scientific Research*. (61),132-139.

Abstract:

Corporate dividend policy is an important issue from the perspective of both the investors and the managers of the company because abrupt change in the prices of the stock indicates its riskiness. The main purpose of this study is to determine the effect of dividend policy on the volatility of stock prices of the financial sector firms of Pakistan listed in the Karachi Stock Exchange after controlling for earning v0latility, assets growth, firm size and leverage. Fixed effect regression analysis was performed to see the impact of dividend policy on the stock price volatility. The results showed that there is significant negative relationship between dividend yield and price volatility and also between dividend payout and price volatility in KSE listed firms. The study indicates that dividend policy is an important tool in setting share prices in emerging economy like Pakistan.
URL:http://scholar.google.com.pk/scholar?q=How+Dividend+Policy+Affects+Volatility+of+Stock+Prices+of+Financial+Sector+Firms+of+Pakistan&btnG=&hl=en&as_sdt=0%2C5

59. Nazir, M. S., Saita, H. K., & Nawaz, M. M.(2012). The Role of Debt in Reducing Agency Cost: Empirical Evidence from Pakistan. Innova Ciencia 4(5), 28-43.

Abstract:

This study tests the agency cost hypothesis that use of leverage decreases agency cost. This relationship has been tested using data of 265 non-financial companies listed on Karachi stock exchange during the period of 2004-2009. Assets utilization is used as inverse proxy to measure agency cost. Increase in asset utilization shows reducing agency cost. To test agency cost hypothesis pooled and panel regression analysis have been used. We find some evidence in support of agency cost hypothesis. Results show that total debt and short term debt ratio are positively related with asset utilization ratio, showing that increase in leverage increases asset utilization and reduces agency cost. But long term and contractual debt show opposite relation. This non-controlling effect of long term debt on agency can be explained by the fact that in Pakistan non-financial sector long term debt ratio is quite low and this low percentage does not seem to have any substantial controlling effect on agency cost. While monitoring effect of contractual debt seems to be weak in Pakistan because of political influence on banks and high loans write-off ratio. This study also provides implication for the debt holders as well as the policy makers on the use of debt in total financing of a firm.
URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/146-8588087136634383308.pdf

60. Nazir, M. S., Rakha, A., & Nawaz, M. M. (2012). Corporate Payout Policy and Market Capitalization: Evidence from Pakistan. *Journal of Economics and Behavioral Studies*, *4*(6), 331-343.

Abstract:

Present study examines the relationship between corporate payout policy and market capitalization by studying payout ratio and dividend yield as measures of payout policy and controlling other variables of size, growth, EPS, Leverage, GDP growth, and Interest rates. Different statistical techniques of correlation, regression, fixed effect and random effect are applied on pooled and panel data to find out the relationship between corporate payout policy and market capitalization. The results show that measures of corporate payout policy, dividend yield and payout ratio has strong negative correlation with market capitalization. Control variables of size and leverage have positive significant correlation with market capitalization while higher earnings per share are leading it negatively and these relationships are statistically significant at various levels of significance. Overall results suggested that the corporate payout policy has significant impact on market capitalization in Pakistan and this notion is consistent with the earlier studies.

URL: http://ifrnd.org/ResearchPapers.aspx?VolumeID=121

61. Nazir, M. S., Saita, H. K., Ahmed, I., & Nawaz, M. M. (2012). The Impact of Financial Leverage on Agency Cost: Empirical Evidence from Non-Financial Sector of Pakistan. *Science Series Data Report*, *4*(6).

Abstract:

This study tests the agency cost hypothesis that use of leverage decreases agency cost. This relationship has been tested using data of 265 non-financial companies listed on Karachi stock exchange during the period of 2004-2009. General & admin expense to sales ratio is used as proxy to measure agency cost. Total, short term, long term and contractual debt ratios have been used separately to test agency cost hypothesis. The results of pooled and panel regression models show that general &admin expense ratio is negatively related to all four leverage ratios. Thus, this study givesevidence in support of agency cost hypothesis that use of debt in capital structure reduces agency cost.

62. Shabbir, M. S. (2012). Military spending and economic growth in Pakistan: New evidence from rolling window approach. *Economic Research 25(1)144-159.*

Abstract:

Purpose: This paper re-investigates causality between military spending and economic growth by applying autoregressive distributed lag model or ARDL bounds testing approach to cointegration. Furthermore, rolling window approach (RWA) to cointegration is also applied to confirm the established long run relation between the variables. The VECM Granger causality is

used to detect the direction of causality between military spending and economic growth. Our empirical exercise indicated long run relationship between military spending and economic growth as confirmed by rolling window approach. Moreover, negative unidirectional causality is found running from defense spending to economic growth. This paper opens up new sights for policy-making authorities to sustain economic growth by curtailing defense spending.
URL: http://www.ciitlahore.edu.pk/Papers/Abstracts/430-8588652303665494558.pdf

63. Shahbaz, M., & Lean, H. H. (2012). Does financial development increase energy consumption? The role of industrialization and urbanization in Tunisia. *Energy Policy*, (*40*), 473-479.

Abstract:

This paper assesses the relationship among energy consumption, financial development, economic growth, industrialization and urbanization in Tunisia from 1971 to 2008. The autoregressive distributed lag bounds testing approach to cointegration and Granger causality tests is employed for the analysis. The result confirms the existence of long-run relationship among energy consumption, economic growth, financial development, industrialization and urbanization in Tunisia. Long-run bidirectional causalities are found between financial development and energy consumption, financial development and industrialization, and industrialization and energy consumption. Hence, sound and developed financial system that can attract investors, boost the stock market and improve the efficiency of economic activities should be encouraged in the country. Nevertheless, promoting industrialization and urbanization can never be left out from the process of development. We add light to policy makers with the role of financial development, industrialization and urbanization in the process of economic development.
URL: http://www.sciencedirect.com/science/article/pii/S0301421511008652

64. Shahbaz, M., Lean, H. H., & Shabbir, M. S. (2012). Environmental Kuznets curve hypothesis in Pakistan: Cointegration and Granger causality. *Renewable and Sustainable Energy Reviews*, *16*(5), 2947-2953.

Abstract:

The paper is an effort to fill the gap in the energy literature with a comprehensive country study of Pakistan. We investigate the relationship between CO_2 emissions, energy consumption, economic growth and trade openness in Pakistan over the period of 1971–2009. Bounds test for cointegration and Granger causality approach are employed for the empirical analysis. The result suggests that there exists a long-run relationship among the variables and the Environmental Kuznets Curve (EKC) hypothesis is supported. The significant existence of EKC shows the country's effort to condense CO_2 emissions and indicates certain achievement of controlling environmental degradation in Pakistan. Furthermore, we find a one-way causal relationship running from economic growth to CO_2 emissions. Energy consumption increases CO_2 emissions both in the short and long runs. Trade openness reduces CO_2 emissions in the

long run but it is insignificant in the short run. In addition, the change of CO_2 emissions from short run to the long span of time is corrected by about 10% yearly.

URL: http://www.sciencedirect.com/science/article/pii/S1364032112001086

65. Shahbaz, M., Islam, F., & Aamir, N. (2012). Is devaluation contractionary? Empirical evidence for Pakistan. *Economic Change and Restructuring*, *45*(4), 299-316.

Abstract:

The paper examines the effect of real devaluation on economic growth. In the empirical model we include few other theoretically justified variables e.g., money supply, foreign remittances, and government spending as they appear relevant for Pakistan. The ADF unit root test is used for stationarity of the series. Also, to capture possible structural breaks due to currency regimes shifts, the Saikkonen and Lütkepohl unit root test is used. We apply the ARDL bounds testing approach to cointegration to explore a long run relation among the series; and the variance decomposition method and impulse response function for the direction of causality. The findings affirm cointegrating relation among the series. Real devaluation exerts contractionary effect on economic growth. The results should help in formulating a comprehensive trade policy including the use of competitive devaluation as a tool to correct balance of payments problems.

URL: http://link.springer.com/article/10.1007/s10644-011-9119-7

66. Shahbaz, M., Leitao, N. C., & Butt, M. S. (2012). Pakistan Intra-industry Trade: A Panel Data Approach. *International Journal of Economics and Financial Issues*, *2*(2), 225-232.

Abstract:

This study examines the determinants of intra-industry trade (IIT) between Pakistan and trade patterns in the period 1980-2006, using a static and dynamic panel data approach. In the recent years, the government of Pakistan had realized factors to liberalize the international trade. The literature of international economics demonstrates that this condition (trade liberalization) induces the IIT. The case study for Pakistan has been negligence in the economic literature. This study uses country-specific characteristics as explanatory variables. This study utilizes country-specific characteristics as explanatory variables. The empirical evidence indicates that IIT is a negative function of the difference in GDP per capita between Pakistan and her trading partners. Furthermore, econometric results point out that trading is influenced by the similar demand. We have also introduced an economic dimension; this proxy confirms the positive effects of IIT. Our findings reveal the importance of scales economies and the variety of differentiated products. The study supports to accept the hypothesis that trading increases if the transportation costs decrease.

URL: http://econjournals.com/index.php/ijefi/article/view/133

67. Shahbaz, M., & Smile, D. U. B. E. (2012). Revisiting the relationship between coal consumption and economic growth: cointegration and causality analysis in Pakistan. *Applied Econometrics and International Development*, *12*(1), 166-192.

Abstract:

The paper re-visits the relationship between coal consumption and economic growth by including other supporting variables such as capital use and labor participation rate in Pakistan over the 1972-2009 period. The paper adopts an augmented neoclassical production framework. In doing so, for the long run relationship between the variables, the ARDL bounds testing approach to cointegration is applied. The VECM Granger causality procedure is used to detect the direction of causality between coal consumption and economic growth while an innovative accounting approach is used to check the robustness of causality results. Empirical exercise confirms a long run relationship between the variables. The results suggest that coal consumption, capital use and the labor participation rate have positive impact on economic growth. Causality analysis indicates bidirectional causal relation between coal consumption and economic growth and results are robust through innovative accounting approach. This implies that energy (coal) conservation policies may retard economic growth that in turn lowers the demand of coal.
URL: http://ideas.repec.org/a/eaa/aeinde/v12y2012i1_13.html

68. Shahbaz, M., & Lean, H. H. (2012). The dynamics of electricity consumption and economic growth: A revisit study of their causality in Pakistan. *Energy*, *39*(1), 146-153.

Abstract:

This study revisits the relationship between electricity consumption and economic growth in Pakistan by controlling and investigating the effects of two major production factors – capital and labor. The empirical evidence confirms the cointegration among the variables and indicates that electricity consumption has a positive effect on economic growth. Moreover, bi-directional Granger causality between electricity consumption and economic growth has been found. The finding suggests that adoption of electricity conservation policies to conserve energy resources may unwittingly decline economic growth and the lower growth rate will in turn further decrease the demand for electricity. Therefore, government contemplating such conservationist policies should instead explore and develop alternate sources of energy as a strategy rather than just increasing electricity production per se in order to meet the rising demand for electricity in their quest towards sustaining development in the country.
URL: http://www.sciencedirect.com/science/article/pii/S0360544212000539

69. Shahbaz, M., Zeshan, M., & Afza, T. (2012). Is energy consumption effective to spur economic growth in Pakistan? New evidence from bounds test to level relationships and Granger causality tests. *Economic Modelling*, *29*(6), 2310-2319.

Abstract:

The present study investigates the relationship between energy (renewable and nonrenewable) consumption and economic growth using Cobb–Douglas production function in case of Pakistan over the period of 1972–2011. We have used the ARDL bounds testing and Gregory and Hansen (1990) structural break cointegration approaches for long run while stationarity properties of the variables have been tested applying Clemente-Montanes-Reyes (1998) structural break unit root test. Our results confirm cointegration between renewable energy consumption, nonrenewable energy consumption, economic growth, capital and labor in case of Pakistan. The findings show that both renewable and nonrenewable energy consumption add in economic growth. Capital and labor are also important determinants of economic growth. The VECM Granger causality analysis validates the existence of feedback hypotheses between renewable energy consumption and economic growth, nonrenewable energy consumption and economic growth, economic growth and capital.
URL: http://www.sciencedirect.com/science/article/pii/S0264999312002003

70. Shahbaz, M., Tiwari, A. K., & Tahir, M. I. (2012). Does CPI Granger-cause WPI? New extensions from frequency domain approach in Pakistan. *Economic Modelling*, *29*(5), 1592-1597.

Abstract:

The present study significantly contributes to the economic literature by investigating the direction of causality between WPI and CPI by applying frequency domain causality approach developed by Lemmens et al. (2008) based on spectral approach. We use monthly frequency data covering the period of 1961–2010 in case of Pakistan. Our results provide evidence of cointegration between the variables. Furthermore, we find unidirectional causal relationship running from CPI to WPI that varies across frequencies i.e., CPI Granger-causes WPI at lower, medium as well as higher level of frequencies reflecting long-run, medium and short-run cycles. This implies that CPI should be a leading indicator for important policy decisions pertaining to monetary or fiscal policies in Pakistan.
URL: http://www.sciencedirect.com/science/article/pii/S0264999312001356

71. Shahbaz, M., & Rahman, M. M. (2012). Does nominal devaluation improve income distribution? Evidence from Bangladesh. *South Asian Survey*.**18(2).**

Abstract:

The present paper aims to investigate the impact of nominal devaluation on income distribution in Bangladesh both in short and long runs. In doing so, ARDL (Auto Regressive Distributed Lag) bounds testing has been employed for cointegration, and ECM (Error Correction Model) has been used for short run dynamics. The empirical psychology has confirmed the existence of long run relationship between the variables. The ARDL-OLS estimated results reveal that nominal devaluation tends to decrease income inequality. Though economic growth appears to improve income distribution, non-linear link between both the variables, however, depicts Kuznets' inverted-U curve (1955). Financial development causes further deterioration in income distribution. Trade-openness contributes to income inequality as discussed in Leontief Paradox.
URL: http://eprints.usq.edu.au/23632/

72. Shahbaz, M., & Rahman, M. M. (2012). The dynamic of financial development, imports, foreign direct investment and economic growth: cointegration and causality analysis in Pakistan. *Global Business Review*, *13*(2), 201-219.

Abstract:

The article investigates the effect of financial development, imports and foreign direct investment (FDI) on economic growth in case of Pakistan over the period of 1990–2008 using quarterly data set. The Autoregressive Distributed Lag (ARDL) bounds testing approach is applied to examine the long-run relationship and the direction of causality is investigated using the Vector Error Correction Model (VECM) framework between the variables. Our findings confirm the existence of cointegration, showing long-run relation between financial development, imports, FDI and economic growth. Financial development, imports and FDI have a positive and significant effect on economic growth of the country. Causality analysis reveals a bidirectional relation among the variables but strong causality is also running from financial development, economic growth and FDI to real imports.
URL: http://gbr.sagepub.com/content/13/2/201.short

73. Shahbaz, M., Mutascu, M., & Tiwari, A. K. (2012). Revisiting the relationship between electricity consumption, capital and economic growth: cointegration and causality analysis in Romania. *Journal for Economic Forecasting*, (*3)*, 97-120.

Abstract:

The paper empirically analyzes, in Romania's case, the cointegration and causality between electricity consumption, capital and economic growth. The data set covers the period 1980-2011. The results show the existence of bidirectional causality between electricity consumption and economic growth and between economic growth and capital use. At the same time, a

unidirectional causal relation is also found from capital use to electricity consumption. The main finding suggests that electricity conservation policies may hinder economic growth by reduction in electricity consumption. Moreover, in the opposite direction, from economic growth to electricity consumption, the fluctuations in economic growth may reduce demand for electricity.

URL:http://www.ipe.ro/rjef/rjef3_12/rjef3_2012p97-120.pdf?referer=http%3A%2F%2Fscholar.google.com.pk%2Fscholar%3Fq%3DRevisiting%2BThe%2BRelationship%2BBetween%2BElectricity%2BConsumption%252C%2BCapital%2Band%2BEconomic%2BGrowth%253A%2BCointegration%2Band%2BCausality%2BAnalysis%2Bin%2BRomania%26btnG%3D%26hl%3Den%26as_sdt%3D0%252C5#search=%22Revisiting%20Relationship%20Between%20Electricity%20Consumption%2C%20Capital%20Economic%20Growth%3A%20Cointegration%20Causality%20Analysis%20Romania%22

74. Shahbaz, M. (2012). Does trade openness affect long run growth? Cointegration, causality and forecast error variance decomposition tests for Pakistan. *Economic Modelling*, *29*(6), **2325-2339.**

Abstract:

The study investigates the impact of trade openness on economic growth in the long run. We apply the ARDL bounds testing approach to test for a long run relationship and the augmented production function by incorporating financial development as an additional determinant of economic growth using the framework of Mankiw et al. (1992). The results confirm cointegration among the series. In the long run, trade openness promotes economic growth. The growth-led-trade hypothesis is vindicated by VECM Granger causality test. The causality is also checked by using the innovative accounting approach (IAA).

URL: http://www.sciencedirect.com/science/article/pii/S0264999312002362

75. Shahbaz, M., & Feridun, M. (2012). Electricity consumption and economic growth empirical evidence from Pakistan. *Quality & Quantity*, *46*(5), 1583-1599.

Abstract:

The present article uses the Autoregressive Distributed Lag (ARDL) bounds testing procedure to identify the long run equilibrium relationship between electricity consumption and economic growth. Toda Yamamoto and Wald-test causality tests have identified the direction of the causal relationship between these two variables in the case of Pakistan in the period between 1971 and 2008. Ng-Perron and Clement-Montanes-Reyes unit root tests are used to handle the problem of integrating orders for variables. The results suggest that the two variables are in a long run equilibrium relationship and economic growth leads to electricity consumption and not vice versa.
URL: http://link.springer.com/article/10.1007/s11135-011-9468-3

76. Shamaila Jabeen, D., Kaleem, A., & Ehsan, S. (2012). Financial Performance of Family Firms (Evidence from Selected Manufacturing Sectors of Pakistan). *J. Basic. Appl. Sci. Res*., **2(10)10303-10313.**

Abstract:

The present study empirically investigates the impact of ownership structure on firm's performance while controlling the effect of other firm specific characteristics (firm age, firm size, risk, leverage, profitability, payout and firm growth). Four years data i.e. 2006 to 2009 of 62 non-financial firms, listed at Karachi Stock Exchange, has been collected and analyzed by using latest panel estimation techniques. Main objectives of this study are to examine the performance of family versus non-family firms and the performers of founder versus descendant firms. Using Random effects Generalized least Square estimation techniques results reveal that in Pakistan family firms are associated with poor performance as compare to non-family firms. But results are only significant for overall sample of family firms and not for the founder and descendant ownership variables, individually.

URL:http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%202(10)10303-10313,%202012.pdf

77. Shamim, S., & Abbasi, A. (2012). Interethnic Culture Orientation of Business Managers in Pakistan. *Middle-East Journal of Scientific Research*, **12(5), 632-642.**

Abstract:

Culture plays an important role in determining the approach to handle business matters, way of dealing and meetings with subordinates and colleagues and other business communications and decisions. Therefore it is important and worthy to explore the interethnic culture orientation of business managers in any multicultural society such as Pakistan. Pakistan is a blend of several ethnicities leading to variety of living patterns and changing languages and their dialects almost every 30 kilometers. This study explores the culture orientation of business managers in Pakistan from different ethnic groups working at different levels in different companies and explains their behavior on different dimensions of culture orientation. This is an empirical study of culture orientation, scenario based scale was used to measure each dimension of culture orientation. This study tried to determine how different ethnic groups of Pakistan behave in different dimensions of culture orientation at the work place, taking Punjabi, Muhajir, Sindhis, Saraiki, Baloch and Pashtoon as target participants as business managers in corporate sector of Pakistan. These ethnic groups can be found easily working at managerial level in different companies across Pakistan. SPSS software has been used for statistical analysis of survey responses. Results of the study indicate that there is meaningful difference in terms of culture orientation among managers of different ethnicities working in corporate sector of Pakistan, thus providing useful insight to industry professionals to devise strategic pattern while

managing workforce in different parts of the country. Researcher provided tabulated conclusion at the end of the article for an analysis in a glance. Limitation which struck this study has also been elaborated by the author.

78. Sheikh, Z., & Rana, S. (2012). Role of Third Party Logistics Providers with Advanced IT to Increase Customer Satisfaction in Supply Chain Integration. *International Journal of Academic Research in Business and Social Sciences, (2), 1546-558.*

Abstract:

The main area of change in organizational strategy is the extensive use of third party logistics providers who are using advanced information technology tools and integration of supply chain to enhance customer satisfaction. By outsourcing the logistics operations, companies can focus on their core competencies and other important areas of organization which can't be outsourced. The analysis of this paper is conducted by discussing different concepts of supply chain integration, customer satisfaction, advanced information technology and third party logistics providers, and their impact on customer satisfaction with theoretical framework. An analytical model is also presented.
URL:http://scholar.google.com.pk/scholar?q=Zaryab+Sheikh

79. Sikander, A., Mujtaba, B. G., & Afza, T. (2012). Stress, Task, and Relationship Orientations: Analysis Across Two Culturally Diverse Countries. *International Business and Management*, *4*(2), 33-40.

Abstract:

Stress is a normal part of the workplace and it is perhaps heavily influenced by one's level of task and relationship orientation. To explore the stress and leadership orientation of people in two different cultures, this study focused on the differences of 64 Australian and 155 Pakistani respondents. It appears that they have similar scores on the task orientation and stress perception, but Australians are more relationship-oriented. Overall, both groups reported a moderate level of stress with no statistically significant differences. In this paper, literature on the two cultures is presented along with practical suggestions and implications for future studies regarding leadership and stress management.
URL: http://www.cscanada.net/index.php/ibm/article/view/j.ibm.1923842820120402.1140

80. Sial, M. H., Hashmi, M. H., & Anwar, S.(2012). Role of Investment in the Course of Economic Growth in Pakistan. *International Journal of Academic Research in Economics and Management Science,1(5)48-61.*

Abstract:

The focus of present research is to investigate the role of investment in the economic growth in case of Pakistan. This study analyzes the role of public and private investment and impact of political and macroeconomic uncertainty on economic growth by using the vector

autoregressive approach (VAR). Both public and private investment showed a positive impact on economic growth in long run, but in the short run only the private investment had a significant relation with growth. Government consumption expenditure, economic uncertainty and political instability hampered the economic growth. The study also showed that uncertainty as measured by inflation had a positive effect on GDP growth however, only in short run.

URL: http://www.hrmars.com/admin/pics/1112.pdf

DEPARTMENT OF MATHEMATICS

Journal Papers

1. Abbasi, G. Q., Ahmad, S., Anwar, I., & Baig, W. A. (2012, December). f-Ideals of Degree 2. In Algebra Colloquium,19(01), 921-926.

Abstract:

In this paper, we introduce the concept of f-ideals and discuss its algebraic properties. In particular, we give a characterization of all the f-ideals of degree 2.
URL: http://www.worldscientific.com/doi/abs/10.1142/S1005386712000788?journalCode=ac

2. Abid, M., Maqsood, S., & Abdul Wajid, H. (2012). Comparative Modal Analysis of Gasketed and Nongasketed Bolted Flanged Pipe Joints: FEA Approach. Advances in Mechanical Engineering, 2012.

Abstract:

It is widely known that resonance can quickly lead to failure in vibrating bolted flanged pipe joints. Condition monitoring is performed time to time in some industries for smooth operation of a system, whereas mostly trial-and-error tests are performed to control vibration. During all this process, the inherent design problems are not considered. A bolted flange joint in piping system is not a simple problem, being the combination of flange, gasket, bolts, and washers. The success of a bolted flanged pipe joint is defined by the "static mode of load" in the joint. However, it has been recognized that a "dynamic mode of load" governs in a gasketed bolted flanged pipe joint, which leads to its failure due to flange rotation, providing flange yielding, fatigue of bolts, and gasket crushing. This paper presents results of detailed 3D finite element and mathematical modal analysis under bolt up to determine natural frequencies and mode shapes of gasketed flanged joints with and without raised face in comparison to the nongasketed flange joint.
URL: http://www.hindawi.com/journals/ame/2012/413583/abs/

3. Ahmad, A., Ali, K., Bača, M., Kovář, P., & Semaničová-Feňovčíková, A. (2012). Vertex-antimagic labelings of regular graphs. Acta Mathematica Sinica, English Series, 28(9), 1865-1874.

Abstract:

Let G = (V,E) be a finite, simple and undirected graph with p vertices and q edges. An (a, d)-vertex-antimagic total labeling of G is a bijection f from V (G) ∪ E(G) onto the set of consecutive integers 1, 2, …, p + q, such that the vertex-weights form an arithmetic progression with the

initial term a and difference d, where the vertex-weight of x is the sum of the value f(x) assigned to the vertex x together with all values f(xy) assigned to edges xy incident to x. Such labeling is called super if the smallest possible labels appear on the vertices. In this paper, we study the properties of such labelings and examine their existence for 2r-regular graphs when the difference d is 0, 1, ..., r + 1.
URL: http://link.springer.com/article/10.1007/s10114-012-1018-y

4. Ahmad, S., & Welker, V. (2012). On partial barycentric subdivision. *arXiv preprint arXiv:1209.2581*.

Abstract:

The lth partial barycentric subdivision is defined for a (d-1)-dimensional simplicial complex \Delta and studied along with its combinatorial, geometric and algebraic aspects. We analyze the behavior of the f- and h-vector under the lth partial barycentric subdivision extending previous work of Brenti and Welker on the standard barycentric subdivision -- the case l = 1. We discuss and provide properties of the transformation matrices sending the f- and h-vector of \Delta to the f- and h-vector of its lth partial barycentric subdivision. We conclude with open problems.
URL: http://arxiv.org/abs/1209.2581

5. Ali, K., Hussain, M., Shaker, H., & Javaid, M. Super edge-magic total labeling of subdivided stars.

Abstract:

An edge-magic total labeling of a graph G is a one-to-one map ¸ from V (G) [E(G) onto the integers f1; 2; ¢ ¢ ¢ ; jV (G) [E(G)jg with the property that, there is an integer constant c such that ¸(x)+¸(x; y)+¸(y) = c for any (x; y) 2 E(G). If ¸(V (G)) = f1; 2; ¢ ¢ ¢ ; jV (Gjg then edge-magic total labeling is called super edge-magic total labeling. In this paper, we formulate super edge-magic total labeling on subdivision of stars K1;p; for p ¸ 5:

6. Anwar, I,. Mahmood, H,. & Tahir, H. On the algebraic properties of $\Delta_s(F_n)$ *(Abstract not found).*

7. Anwar, I,. Mahmood, H,. Shaker, M. Asif. *On the Algebraic structure of $\Delta_s(F_n)$, Archives des Sciences. (Abstract not found).*

8. Ashraf, S., Husnine, S. M., & Rashid, T. (2012). Fuzzy transitivity and monotonicity of cardinality-based similarity measures. Fuzzy Information and Engineering, 4(2), 145-153.

Abstract:

The interrelationship of notions is presented in fuzzy transitivity and monotonicity of fuzzy similarity measures. It is observed that the axiom of fuzzy transitivity may replace that of monotonicity in the definition of fuzzy similarity measures.

URL: http://link.springer.com/article/10.1007/s12543-012-0107-z

9. Ashraf, S., Fuzzy Relational Calculus, The Bulletin of the. *Malaysian Mathematical Sciences Society. (Abstract not found).*

10. Beg, I., & Ashraf, S. (2012). Godel Form Of Fuzzy Transitive Relations. Sarajevo Journal of Mathematics, 8(20), 3-14.

Abstract:

The concepts of fuzzy transitivity of a fuzzy relation on a given universe and the measure of fuzzy transitivity are studied with the use of del fuzzy implicator.
URL:http://scholar.google.com.pk/scholar?q=G%C3%B6del+form+of+fuzzy+transitivity%2C+Sarajevo+&btnG=&hl=en&as_sdt=0%2C5

11. Beg, I., & Ashraf, S. (2012). Fuzzy Inclusion And Design Of Measure Of Fuzzy Inclusion.Romai J., 8(01), 1–15.

Abstract:

Fuzzy inclusion between fuzzy subsets of a crisp universe is defined as a binary operation on the set of all fuzzy subsets of a universe of discourse X: The fuzzy set defined as a fuzzy set of inclusion is then converted into a degree of inclusion with the help of a suitable measure. It is shown that the pointwise character of fuzzy inclusion allows many interesting properties to hold. Furthermore, the technique of applying a fuzzy measure to a fuzzy set of inclusion is used to construct mappings which provide degrees of inclusion.

12. Hussain, T., & Ali, W. (2012). Effects of Servant Leadership on Followers's Job Performance Sci., Tech. and Dev., 31 (4): 359-368.

Abstract:

The current study is aimed at investigating the impact of servant leadership on followers' job performance. The effects of five servant leadership dimensions, namely Agapao Love, Empowerment, Vision, Humility and Trust, on employee's job performance have been measured in this study. Data has been collected from 400 engineering employees of a defense organisation. Respondents have been approached personally for filling-up a well-structured questionnaire consisting of different measurement item statements. After the data was collected, it was entered into SPSS 17 and different statistical tools such as Confirmatory Factor Analysis, Reliability Analysis and Structural Equation Model were applied to analyse the data and test hypotheses. It has been reported that vision has insignificant contribution in increasing employee's job performance. The study provides significant implications for technical management organisations to get benefits from servant leadership in order to enhance morale of their employees, aimed at improving their work performance.
URL: http://www.pcst.org.pk/journal/articles.php?id=STD%20vol%2031%284%29%202012

13. Hussain, T., & Asif, S. (2012). Is employees' turnover intention driven by organizational commitment and perceived organizational support. *Journal of Quality and Technology Management*, *8*(2), 1-10.

Abstract:

This paper investigated the impact of organizational commitment and perceived organizational support on the turnover intention of Telecom employees in Pakistan. Data from 230 respondents was used to measure the impact of two factors on turnover intentions. Correlation and regression analysis techniques were used to analyze the relationship of organizational commitment and perceived organizational support with turnover intention. The results of the study showed that turnover intentions of telecom sector's employees were dependent on the organizational commitment and perceived organizational support; further organizational commitment and perceived organizational support had significant negative impact on the turnover intentions of the employees. Results have been discussed with specific reference to investigated sector's culture within Pakistan domain.

URL:http://results.pu.edu.pk/images/journal/iqtm/PDF-FILES/01-Is%20Employees_%20Turnover%20Intention%20driven-Dr%20Tajammal_V_VIII_IssueII_Decem2012.pdf

14. Hussain, M., Baskoro, E. T., & Ali, K. (2012). On super antimagic total labeling of Harary graph. Ars Comb., 104, 225-233.

Abstract:

This paper deals with two types of graph labelings namely, the super (a; d)-edge antimagic total labeling and super (a; d)-vertex an-timagic total labeling on the Harary graph Ctn. We also construct the super edge-antimagic and super vertex-antimagic total labelings for a disjoint union of k identical copies of the Harary graph.

15. Hussain, I., Spöck, G., Pilz, J., Faisal, M., & Yu, H. L. (2012). Spatio-Temporal Interpolatin Of Precipitation Including Covariates: During Monsoon Periods In Pakistan. Pak. J. Statist, 28(3), 351-365.

Abstract:

The space-time interpolation of precipitation has significant contribution to river control, reservoir operations, forestry interest and flash flood watches etc. The changes in environmental covariates and spatial covariates make space-time estimation of precipitation a challenging task. In the present paper, we use a generalized additive model with Gaussian link function to account for the effect of covariates; the resulting output is partitioned into two parts; trend component and residual component. The trend component is modeled on the basis of spatial artificial neural network (SANN) architecture. The residual component is assumed to be a spatio-temporal random field and is modeled using Le and Zidek (2006) hierarchical

Bayesian interpolation (HBI) method. The separable stationary space-time nested covariance model and purely spatial non-stationary non-parametric covariance model for interpolation of the residual component are used. For the interpolation of the amount of precipitation at ungauged locations the interpolated residual components for ungauged locations are added to the respective interpolated trend components. The results of two covariance functions are compared by means of cross-validations and suggest that HBI including covariates provides minimum mean square prediction error if the nested spatio-temporal stationary covariance model is used.

16. Hussain, T., & Asif, S (2012).IS Employees'turnover Intention Driven By Organizational Commitment And Perceived Organizational Support?. *Journal of Quality and Technology Management* **Volume VIII, Issue II, December 2012, Page 01–10**

Abstract:

This paper investigated the impact of organizational commitment and perceived organizational support on the turnover intention of Telecom employees in Pakistan. Data from 230 respondents was used to measure the impact of two factors on turnover intentions. Correlation and regression analysis techniques were used to analyze the relationship of organizational commitment and perceived organizational support with turnover intention. The results of the study showed that turnover intentions of telecom sector's employees were dependent on the organizational commitment and perceived organizational support; further organizational commitment and perceived organizational support had significant negative impact on the turnover intentions of the employees. Results have been discussed with specific reference to investigated sector's culture within Pakistan domain.
URL: http://pu.edu.pk/home/journal/22/Previous-Issue.html

17. Hussain, M., On (a,d) edge-antimagic total labeling of subdivided caterpillar. *Utilitas Mathematica. (Abstract not found).*

18. Hussain. M., M. Javaid, A.A.Bhatti. On (a,d)-edge-antimagic total labeling of extended w-trees. *Utilitas Mathematica. (Abstract not found).*

19. Hussain. M., M. Javaid, A.A.Bhatti. Further results on super edge-magic total labeling of extended w-trees. *Utilitas Mathematica. (Abstract not found).*

20. Hussain. M., K. Ali, M. Miller, A. Ali. On magic labeling of type (a, b, c) of wheels. *Utilitas Mathematica. Utilitas Mathematica. (Abstract not found).*

21. Hussain. M., M. Javaid, A.A.Bhatti. Some results on super edge-magic total labeling of extended w-trees. *(Abstract not found).*

22. Hussain, M. K. Ali, S. Ahmad, I. Anwar. Magic labeling of type (a, b, c) on subdivision ladders. *World Applied Sciences Journal. (Abstract not found).*

23. Hussain, M., & Kashif Ali. Super anti-magic total labeling. *ARS Combinatorial. (Abstract not found).*

24. Hussain, M., N. Iqbal, I. Nadeem, S. Ahmad. *On magic labeling of type (1, 1, 1) for the subdivision of prisms, Archives Des Sciences. (Abstract not found).*

25. Irfan, S. M., Ijaz, A., & Farooq, M. M. (2012). Patient Satisfaction and Service Quality of Public Hospitals in Pakistan: An Empirical Assessment. Middle-East Journal of Scientific Research, 12(6), 870-877.

Abstract:

Quality is one of the key parameter in order to measure the performance of a product or service and ultimately it referred to organizational performance. Customers are the key player, who played a significant role to measure the quality of the product or services. However, to measure the quality of services is quite difficult as compare to the product quality due to its intangible nature. This study is intended to investigate the level of quality of healthcare services delivered to patients by the public hospitals in Pakistan. Currently, healthcare system in Pakistan is comprised of public hospitals, healthcare units and dispensaries, which are not sufficient to meet the healthcare requirements of 169.9 million people. This study aims to investigate, quality of services delivered to patients by public hospitals in Pakistan. For this purpose, a questionnaire was developed based on modified 'SERVQUAL' using five service quality dimensions, namely; empathy, tangibles, timeliness, responsiveness and assurance. A total of 369 responses were collected from the patients availing services from the public hospitals located in Lahore, Pakistan. Data was analyzed using structural equation modeling technique (SEM) and results of this study indicate that public hospitals are not making visible efforts to deliver quality of services to their patients and are not making any visible efforts to meet patient's needs and wants.
URL: http://idosi.org/mejsr/mejsr12%286%2912.htm

26. Javaid, M., Hussain, M., Ali, K., & Shaker, H. (2012). On super edge-magic total labeling on subdivision of trees. Utilitas Mathematica, 89, 169.

Abstract:

An edge-magic total labeling of a graph G is a one-to-one map ¸ from V (G) [E(G) onto the integers f1; 2; ¢ ¢ ¢ ; jV (G) [E(G)jg with the property that, there is an integer constant c such that ¸(x)+¸(x; y)+¸(y) = c for any (x; y) 2 E(G). If ¸(V (G)) = f1; 2; ¢ ¢ ¢ ; jV (Gjg then edge-magic total labeling is called super edge-magic total labeling. In this paper we formulate super edge-magic total labeling on subdivision of some families of trees namely: K1;4 and w-tree.

27. Javaid, M., Bhatti, A. A., & Hussain, M. (2012). On (a, d)-edge-antimagic total labelings of extended w-trees. Utilitas Mathematica, 87, 293-303. *(Abstract not found).*

28. Javaid, M., Hussain, M., Ali, K., & Dar, K. H. Super edge-magic total labeling on forest of extended w-trees. Utilitas Math. *(Abstract not found).*

29. Khan, N. A., Ara, A., & Mahmood, A. (2012). Numerical solutions of time-fractional Burgers equations: A comparison between generalized differential transformation technique and homotopy perturbation method. International Journal of Numerical Methods for Heat & Fluid Flow, 22(2), 175-193.

Abstract:

Purpose – The purpose of this paper is to use the generalized differential transform method (GDTM) and homotopy perturbation method (HPM) for solving time-fractional Burgers and coupled Burgers equations. The fractional derivatives are described in the Caputo sense. *Design/methodology/approach* – In these schemes, the solutions takes the form of a convergent series. In GDTM, the differential equation and related initial conditions are transformed into a recurrence relation that finally leads to the solution of a system of algebraic equations as coefficients of a power series solution. HPM requires a homotopy with an embedding parameter which is considered as a small parameter. *Findings* – The paper extends the application and numerical comparison of the GDTM and HPM to obtain analytic and approximate solutions to the time-fractional Burgers and coupled Burgers equations. *Research limitations/implications* – Burgers and coupled Burgers equations with time-fractional derivative used. *Practical implications* – The implications include traffic flow, acoustic transmission, shocks, boundary layer, the steepening of the waves and fluids, thermal radiation, chemical reaction, gas dynamics and many other phenomena. *Originality/value* – The numerical results demonstrate the significant features, efficiency and reliability of the two approaches. The results show that HPM is more promising, convenient, and computationally attractive than GDTM.
URL: http://www.emeraldinsight.com/journals.htm?articleid=17024716&show=abstract

30. Mahmood, A., Khan, N. A., Siddique, I., & Nazir, S. (2012). A note on sinusoidal motion of a viscoelastic non-Newtonian fluid. Archive of Applied Mechanics, 82(5), 659-667.

Abstract:

In this note, the exact solutions of velocity field and associated shear stress corresponding to the flow of second-grade fluid in a cylindrical pipe, subject to a sinusoidal shear stress, are determined by means of Laplace and finite Hankel transform. These solutions are written as sum of steady-state and transient solutions, and they satisfy governing equations and all imposed initial and boundary conditions. The corresponding solutions for the Newtonian fluid, performing the same motion, can be obtained from our general solutions. At the end of this note, the effects of different parameters are presented and discussed by showing flow profiles graphically.

31. Mahmood, A. (2012). On analytical study of factional Oldroyd-B flow in annular region of two torsionally oscillating cylinders. Thermal Science, 16(2), 411-421.

Abstract:

The velocity field and the associated shear stress corresponding to the torsional oscillatory flow of a fractional Oldroyd-B fluid, also called generalized Oldroyd-B fluid (GOF), between two infinite coaxial circular cylinders, are determined by means of the Laplace and Hankel transforms. Initially, the fluid and cylinders are at rest and after some time both cylinders suddenly begin to oscillate around their common axis with different angular frequencies of their velocities. The exact analytic solutions of the velocity field and associated shear stress, that have been obtained, are presented under integral and series forms in terms of generalized G and R functions. Moreover, these solutions satisfy the governing differential equation and all imposed initial and boundary conditions. The respective solutions for the motion between the cylinders, when one of them is at rest, can be obtained from our general solutions. Furthermore, the corresponding solutions for the similar flow of classical Oldroyd-B, generalized Maxwell, classical Maxwell, generalized second grade, classical second grade and Newtonian fluids are also obtained as limiting cases of our general solutions.
URL:http://www.doiserbia.nb.rs/Article.aspx?id=0354-98361100078M&AspxAutoDetectCookieSupport=1#.Us0E4PuuqL8

32. Mekheimer, K. S., Saleem, N., Hayat, T., & Hendi, A. A. (2012). Simultaneous effects of induced magnetic field and heat and mass transfer on the peristaltic motion of second-order fluid in a channel. International Journal for Numerical Methods in Fluids, 70(3), 342-358.

Abstract:

In this article, we investigate the influence of heat and mass transfer on the peristaltic flow of magnetohydrodynamic second-order fluid in a channel when the induced magnetic field effects are present. Problem formulation in a wave frame of reference is presented. The governing nonlinear analysis is carried out under the assumption of small wave number. Explicit expressions of the pressure gradient, the stream function, the magnetic force function, the axial induced magnetic field, the current density distribution, the temperature, and the concentration distribution are derived. The effects of embedded parameters are also examined
URL: http://onlinelibrary.wiley.com/doi/10.1002/fld.2693/abstract

33. Nazar, M., Mahmood, A., Athar, M., & Kamran, M. (2012). Analytic Solutions for the Unsteady Longitudinal Flow of an Oldroyd-B Fluid with Fractional Model. Chemical Engineering Communications, 199(2), 290-305.

Abstract:

The unsteady flow of an Oldroyd-B fluid with fractional derivative model, between two infinite coaxial circular cylinders, is studied by using finite Hankel and Laplace transforms. The motion is

produced by the inner cylinder that, at time t = 0⁺, is subject to a time-dependent longitudinal shear stress. The solutions that have been obtained, presented under series form in terms of the generalized G and R functions, satisfy all imposed initial and boundary conditions. The corresponding solutions for ordinary Oldroyd-B and generalized and ordinary Maxwell and Newtonian fluids, performing the same motion, are obtained as limiting cases of our general solutions. Finally, the influence of the pertinent parameters on the fluid motion, as well as a comparison between models, is shown by graphical illustrations.

URL: http://www.tandfonline.com/doi/abs/10.1080/00986445.2011.590164#.Us0BufuuqL8

34. Rafiullah, M. A New Sixth Order Iterative Method For Nonlinear Equations. Nonlinear Analysis Forum 17, pp. 117–122.

Abstract:

The aim of this paper is to construct an efficient iterative method to solve nonlinear equations. This method is obtained from M. Basto's method (Appl. Math. Comput. 173 (2006) 468-483), which is for the third-order. The convergence order of a new method is established to six and the efficiency index is 6 1 4 = 1. 565 1. The proposed method is compared with the second, third, fifth and sixth order methods. Some numerical test problems are given to show the accuracy and the fast convergence of the proposed method.

35. Rehman, M. A., & Taj, M. S. A. A Numerical Technique For Heat Equation Subject To Integral Specifications (2012). Sci.Int.(Lahore),24(1),1-6

Abstract:

This paper deals with numerical method for the approximate solution of one-dimensionalheat equation with integral boundary conditions. The integral conditions are approximated by using Simpson's 1/3 rule while the space derivatives are approximated by third-order finite difference approximations. Then method of lines, semidiscritization approach, is used to transform the model partial differential equation into a system of first-order linear ordinary differential equations whose solution satisfies a recurrence relation involving matrix exponential function. The method developed is L-acceptable, third-order accurate in space and time and do not require the use of complex arithmetic. A parallel algorithm is also developed and implemented on several problems from literature and found to be highly accurate when compared with the exact ones and alternative techniques.

URL: http://www.sci-int.com/searchresult.php?author=&title=&year=2012&x=5&y=13

36. Rehman, M. A., Mardan, S. A., Taj, M. S. A., & Bhatti, A. A. (2012). Fusion Higher-Order Parallel Splitting Methods for. In International Mathematical Forum (Vol. 7, No. 32, pp. 1567-1580).

Abstract:

A family of numerical methods, based upon a rational approximation to the matrix exponential function, was developed for solving parabolic partial 1568 M. A. Rehman, S. A. Mardan, M. S. A.

Taj and A. A. Bhatti differential equations. These methods were partially sixth-order precise in space and time, due to combination of sixth-order finite approximations and fifth-order pde's approximations. These methods do not involve the use of complex computation. In these methods second-order spatial derivates were approximated by sixth-order finite difference approximations. Parallel algorithms were developed and tested on the one, two and three-dimensional heat equations, with constant coefficients, subject to homogeneous boundary conditions and time dependent boundary conditions. It was observed that the results obtained through these methods were highly accurate and can be easily coded on serial or parallel computers.

URL:**http://www.m-hikari.com/.search?query=methods+for+parabolic+partial+differential+equation&name=Go**

37. Saleem, N., T. Hayat & A. Alsaedi. Effects of induced magnetic field and slip condition on peristaltic transport with heat and mass transfer in non-uniform channel. *International Journal of Physical Sciences. (Abstract not found).*

38. Saleem, N., T. Hayat & A. Alsaedi. Peristaltic motion of variable viscosity fluid in a non-uniform channel with induced magnetic field, accepted for publication. *International Journal of Physical Sciences. (Abstract not found).*

39. Saleem, N., T. Hayat & A. Alsaedi. A mathematical study of peristaltic transport in non-uniform channel with heat mass transfer and different wave forms. *(Abstract not found).*

40. Saleem, N., T. Hayat. S. Obaidat, Y. Khan. Effect of induced magnetic field on peristaltic motion of viscoelastic fluid in non-uniform channel. *Zeitscrift fur Naturforschung A. (Abstract not found).*

41. Shahid, N., Rana, M., & Siddique, I. (2012). Exact solution for motion of an Oldroyd-B fluid over an infinite flat plate that applies an oscillating shear stress to the fluid. Boundary Value Problems, 2012(1), 1-19.

Abstract:

The unsteady motion of an Oldroyd-B fluid over an infinite flat plate is studied by means of the Laplace and Fourier transforms. After time t = 0, the plate applies cosine/sine oscillating shear stress to the fluid. The solutions that have been obtained are presented as a sum of steady-state and transient solutions and can be easily reduced to the similar solutions corresponding to Newtonian or Maxwell fluids. They describe the motion of the fluid some time after its initiation. After that time when the transients disappear, the motion is described by the steady-state solutions that are periodic in time and independent of the initial conditions. Finally, the required time to reach the steady-state is established by graphical illustrations. It is lower for cosine oscillations in comparison with sine oscillations of the shear, decreases with respect to ω and λ and increases with regard to λ_r.
URL: **http://link.springer.com/article/10.1186%2F1687-2770-2012-48**

42. Spöck, G., & Hussain, I. (2012). Spatial sampling design based on convex design ideas and using external drift variables for a rainfall monitoring network in Pakistan. Statistical Methodology, 9(1), 195-210.

Abstract:

Spatial sampling design is concerned with the optimal allocation of samples to spatial coordinates in order to improve in a well-defined sense the estimation and prediction of spatial random fields. Unfortunately, objective functions in spatial sampling design seem to be so complicated so far that most often stochastic search algorithms are used to get these design criteria optimized. Our intention is to show that the minimization of the average kriging variance design criterion shows a mathematically tractable structure when considering the random field as a linear regression model with infinitely many random coefficients. Either the Karhunen–Loeve expansion or the polar spectral representation of the random field may be used to get such a favourable representation. Well-known convex experimental design theory may be applied then to this high dimensional cosine-sine-Bessel surface harmonics random coefficients regression model to calculate spatial sampling designs. We study a monitoring network for rainfall during the monsoon in Pakistan and consider both the optimal deletion and subsequent addition of monitoring stations from/to this network. Only deterministic optimization algorithms and no stochastic search algorithms are used for the task of network optimization. As external drift variables determining the rainfall trend wind, humidity and elevation are considered.
URL: http://www.sciencedirect.com/science/article/pii/S1572312711000050

43. Wajid, H. A., & Ayub, S. (2012). An optimally blended finite-spectral element scheme with minimal dispersion for Maxwell equations. Journal of Computational Physics.

Abstract:

We study the dispersive properties of the time harmonic Maxwell equations for optimally blended finite-spectral element scheme using tensor product elements defined on rectangular grid in d-dimensions. We prove and give analytical expressions for the discrete dispersion relations for this scheme. We find that for a rectangular grid (a) the analytical expressions for the discrete dispersion error in higher dimensions can be obtained using one dimensional discrete dispersion error expressions; (b) the optimum value of the blending parameter is p/(p+1) for all p∈N and for any number of spatial dimensions; (c) analytical expressions for the discrete dispersion relations for finite element and spectral element schemes can be obtained when the value of blending parameter is chosen to be 0 and 1 respectively; (d) the optimally blended scheme guarantees two additional orders of accuracy compared with standard finite element and spectral element schemes; and (e) the absolute accuracy of the optimally blended scheme is $O(p^{-2})$ and $O(p^{-1})$ times better than that of the pure finite element and spectral element schemes respectively.
URL: http://www.sciencedirect.com/science/article/pii/S0021999112004329

DEPARTMENT OF PHYSICS

Journal Papers

1. Abbas, G., Chaudhry, M. A., Raza, R., Singh, M., Liu, Q., Qin, H., & Zhu, B. (2012). Study of CuNiZnGdCe-nanocomposite anode for low temperature SOFC. *Nanoscience and Nanotechnology Letters*, *4*(4), 389-393.

Abstract:

Composite electrodes of $Cu_{0.16}Ni_{0.27}Zn_{0.37}Ce_{0.16}Gd_{0.04}$ (CNZGC) oxides have been successfully synthesized by solid state reaction method as anode material for low temperature solid oxide fuel cell (LTSOFC). These electrodes are characterized by XRD followed by sintering at various time periods and temperatures. Particle size of optimized composition was calculated 40–85 nm and sintered at 800 °C for 4 hours. Electrical conductivity of 4.14 S/cm was obtained at a temperature of 550 °C by the 4-prob DC method. The activation energy was calculated 4×10^{-2} eV at 550 °C. Hydrogen was used as fuel and air as oxidant at anode and cathode sides respectively. *I–V/I–P* curves were obtained in the temperature range of 400–550 °C. The maximum power density was achieved for 570 mW/cm^2 at 550°C.
URL: http://www.ingentaconnect.com/content/asp/nnl/2012/00000004/00000004/art00004

2. Asif, M., & Bashir, U. (2012). Steady Magnetohydrodynamic Equations for Quantum Plasmas. *Journal of Modern Physics*, *3*(12), 1856-1857.

Abstract:

Steady Magnetohydrodynamic (MHD) Equations of force, density and energy for quantum plasmas have been derived. These equations constitute our Steady Magnetohydrodynamic model for quantum plasmas. All the quantum effects are contained in the last term of quantum force equation and in the last three terms of quantum Energy Equation, so-called Bohm potential and may be valuable for the description of quantum phenomena like tunneling.
URL: http://www.scirp.org/journal/jmp/

3. Bukhari, S. H., Hussain, M. I., Khan, S. N., & Ahmad, M. A. (2012). Nonclassicality of two-mode nonorthogonal states. *Optik-International Journal for Light and Electron Optics*, *123*(24), 2288-2291.

Abstract:

Nonclassical features of Schrödinger cat state with two-mode superposition state based on two coherent states π out of phase by fixing the relative phase equal to average photon number are discussed. Study of two-mode quadrature squeezing, oscillatory and sub-Poissonian photon statistics show that nonclassicality exists for these states. However, it is observed that the

considered states do not violates the Cauchy–Schwarz inequality. Furthermore, simultaneously existence of quadrature squeezing and sub-Poissonian photon statistics shows that these states have more nonclassical features than that of famous even and odd coherent states.

URL: http://www.sciencedirect.com/science/article/pii/S0030402611006565

4. Fan, L., Zhu, B., Chen, M., Wang, C., Raza, R., Qin, H., ... & Ma, Y. (2012). High performance transition metal oxide composite cathode for low temperature solid oxide fuel cells. *Journal of Power Sources*, *203*, 65-71.

Abstract:

Low temperature solid oxide fuel cells (SOFCs) with metal oxide composite cathode on the ceria–carbonate composite electrolyte have shown promising performance. However, the role of individual elements or compound is seldom investigated. We report here the effect of the ZnO on the physico-chemical and electrochemical properties of lithiated NiO cathode. The materials and single cells are characterized by X-ray diffraction, scanning electron microscopy, DC polarization electrical conductivity, electrochemical impedance spectroscopy and fuel cell performance. The ZnO modified lithiated NiO composite materials exhibit smaller particle size and lower electrical conductivity than lithiated NiO. However, improved electro-catalytic oxygen reduction activity and power output are achieved after the ZnO modification. A maximum power density of 808 mW cm^{-2} and the corresponding interfacial polarization resistance of 0.22 Ω cm^2 are obtained at 550 °C using ZnO modified cathode and 300 μm thick composite electrolyte. The single cell keeps reasonable stability over 300 min at 500 °C. Thus, ZnO modified lithiated NiO is a promising cathode candidate for low temperature SOFCs.

URL: http://www.sciencedirect.com/science/article/pii/S0378775311024360

5. Fan, L., Wang, C., Osamudiamen, O., Raza, R., Singh, M., & Zhu, B. (2012). Mixed ion and electron conductive composites for single component fuel cells: I. Effects of composition and pellet thickness. *Journal of Power Sources*, *217*, 164-169.

Abstract:

Electrochemical performances of single component fuel cells (SCFCs) based on mixed ion and electron conductors have been studied as a function of composition and pellet thickness by polarization curves and electrochemical impedance spectroscopy. The electronic conductor of LNCZO shows conductivities of 21.7 and 5.3 S cm^{-1} in H_2 and in air, respectively. SCFC using 40 wt. % of LNCZO and 60 wt. % of ion conductive SDC-Na_2CO_3 with a thickness of 1.10 mm shows the highest power density of 0.35 W cm^{-2} at 550 °C. The performance is correlated to the mixed conduction properties (ionic and electronic, p and n-type) and the microstructure of the functional SCFC layer.

URL: http://www.sciencedirect.com/science/article/pii/S0378775312009044

6. Farooq, M., Shahzad, A., Fayyaz, A., & Shaukat, S. F. (2012). Feasibility Analysis of STARGATE Network with Integration of Ethernet based PON to Metro Network. *Journal Of Faculty Of Engineering & Technology*, **19(1).**

Abstract:

The performance of a STARGATE network, which provides all-optical integration of Ethernet based WDM PONs with metropolitan area networks, has been extensively studied in this research. This network provides transparent connections at wavelength and sub-wavelength granularity. The network efficiency has been improved by using single hop star network and spatially reusing wavelengths by exploiting multiple free spectral ranges (FSRs) of arrayed waveguide grating (AWG). The simulation has been performed in Optsim^{TM} and results have been shown as eye diagrams and BER plots obtained at the receiver end.
URL: http://111.68.103.26/journals/index.php/jfet/article/view/170

7. Liu, Q., Qin, H., Raza, R., Fan, L., Li, Y., & Zhu, B. (2012). Advanced electrolyte-free fuel cells based on functional nanocomposites of a single porous component: analysis, modeling and validation. *RSC Advances*, **2(21), 8036-8040.**

Abstract:

Recently, a fuel cell device constructed with only one layer composited of ceria-based nanocomposites (typically, lithium nickel oxide and gadolinium doped ceria ($LiNiO_2$–GDC) composite materials), called an electrolyte-free fuel cell (EFFC), was realized for energy conversion by Zhu *et al*. The maxium power density of this single-component fuel cell is 450 mW cm^{-2} at 550 °C when using hydrogen fuel. In this study, a model was developed to evaluate the performance of an EFFC. The kinetics of anodic and cathodic reactions were modeled based on electrochemical impedance spectroscopy (EIS) measurements. The results show that both of the anodic and cathodic reactions are kinetically fast processes at 500 °C. Safety issues of an EFFC using oxidant and fuels at the same time without a gas-tight separator were analyzed under open circuit and normal operation states, respectively. The reaction depth of anodic and cathodic processes dominated the competition between surface electrochemical and gas-phase reactions which were effected by the catalytic activity and porosity of the materials. The voltage and power output of an EFFC were calculated based on the model and compared with the experimental results.
URL: http://pubs.rsc.org/en/content/articlelanding/2012/ra/c2ra20694c/unauth#!divAbstract

8. Mihranyan, A., Esmaeili, M., Razaq, A., Alexeichik, D., & Lindström, T. (2012). Influence of the nanocellulose raw material characteristics on the electrochemical and mechanical properties of conductive paper electrodes. *Journal of Materials Science*, *47*(10), 4463-4472.

Abstract:

Paper-based conductive electrode materials of polypyrrole (PPy) and nanocellulose (NC) have received much attention lately for applications in non-metal-based energy storage devices, ion exchange, etc. The aim of this study was to study how the primary characteristics of NC raw materials impact and electrochemical properties of conductive NC–PPy composite sheets. Three NC raw materials were used: Cladophora cellulose (NC_{UU}) produced at Uppsala University, Cladophora cellulose (NC_{FMC}) produced at FMC Biopolymer, and microfibrillated cellulose (NC_{INN}) produced at Innventia AB. Composite paper sheets of PPy coated on the substrate NC material were produced. The NC raw materials and the composites were characterized with a battery of techniques to derive their degree of crystallinity, degree of polymerization, specific surface area, pore size distribution, porosity, electron conductivity, charge capacity and tensile properties. It was found that the pore size distribution and overall porosity increase upon coating of NC fibres for all the samples. The charge capacity of the composites was found to decrease with the porosity of the samples. It was further found that the mechanical strength of the pristine NC sheets was largely dependent on the overall porosity, with NC_{INN} having the highest mechanical strength and lowest porosity in the series. The mechanical properties of the composite NC–PPy sheets were significantly diminished as compared with pristine NC sheets because of the impaired H-bonding between fibres and PPy-coated nanofibres. It was concluded that to improve the mechanical properties of PPy–NC sheets, a fraction of additive bare NC fibres is beneficial. Future study may include the effect of both soluble and insoluble additives to improve the mechanical strength of PPy–NC sheets.
URL: http://link.springer.com/article/10.1007/s10853-012-6305-6

9. Raza, R., Qin, H., Fan, L., Takeda, K., Mizuhata, M., & Zhu, B. (2012). Electrochemical study on co-doped ceria–carbonate composite electrolyte. *Journal of Power Sources*, *201*, 121-127.

Abstract:

A co-doped ceria–carbonate ($Ce_{0.8}Sm_{0.2-x}Ca_xO_{2-\delta}$–$Na_2CO_3$) has been synthesized by a co-precipitation method. The detailed electrochemical characterizations (e.g. impedance spectra, polarization curve and IV curves) of this composite material are reported and discussed. The two phase nanocomposite electrolytes with carbonate coated on the co-doped ceria displays dual (H^+/O^{2-}) ion conduction at low temperature (300–600 °C) in solid oxide fuel cell. The observed remarkable temperature-dependent of conductivity is attributed to the softening/melting of carbonate phase as the physical state of carbonate phase transforms from solid to molten state. Coexistence of various charge carriers, oxide phase composition, and the

oxide–carbonate interfacial area are investigated by Raman spectra. The enhancement of conductivity is also discussed by the general mixing rule/percolation theory of composite interfaces. The co-doping with 2nd phase gives a good approach to realize challenges for solid oxide fuel cell.

URL: http://www.sciencedirect.com/science/article/pii/S0378775311021793

10. Qin, H., Zhu, B., Raza, R., Singh, M., Fan, L., & Lund, P. (2012). Integration design of membrane electrode assemblies in low temperature solid oxide fuel cell. *International journal of hydrogen energy*, *37*(24), 19365-19370.

Abstract:

In this paper, an integration design of membrane electrode assemblies in low temperature solid oxide fuel cells (LTSOFCs) is accomplished by using a mixed ionic–electronic conductor. The mixed ionic–electronic conductor is a composite material, LiNiCuZn oxides, Gd_2O_3 and Sm-doped CeO_2 composited with Na_2CO_3 (LiNiCuZn oxides-NGSDC), which consists of ionic conductor, n-type and p-type semiconductors. The multi-phase composite material can also be used in single layer fuel cell (SLFC) to replace single-phase materials. A SLFC using the LiNiCuZn oxides-NSGDC composite exhibits an OCV of 1.05 V and maximum power density of 800 mW cm^{-2}, which is comparable to the cell performance of conventional LTSOFCs and much higher than that of SLFC reported before. The reasons leading to the good performance are porous structure of electrode and the matching of ionic conductor and semiconductor.

URL: http://www.sciencedirect.com/science/article/pii/S0360319911024311

11. Shah, M., Nadeem, M., Idrees, M., Atif, M., & Akhtar, M. J. (2012). Change of conduction mechanism in the impedance of grain boundaries in Pr< sub> 0.4</sub> Ca< sub> 0.6</sub> MnO< sub> 3</sub>. *Journal of Magnetism and Magnetic Materials.*

Abstract:

Freshly synthesized polycrystalline $Pr_{0.4}Ca_{0.6}MnO_3$ sample has been analyzed by employing X-ray diffraction, magnetization and impedance spectroscopic techniques. Magnetization $M(T)$ showed charge ordering (T_{CO}) around 268 K and below this temperature variation of magnetic and electric field effects is discussed. With the decrease of temperature, the change in the size and shape of the impedance plane plot is explored in terms of modulation of different relaxation processes. An equivalent circuit model (RQ) is used to determine the electrical parameters of $Pr_{0.4}Ca_{0.6}MnO_3$ sample at different temperatures. Impedance of grain boundaries derived from the fitting of experimental data using an equivalent circuit model shows a change in conduction mechanism from small polaron hopping (SPH) to the variable range hopping (VRH) model around 148 K. Activation energies calculated from the SPH model and relaxation frequencies of imaginary part of impedance are compared and discussed. Average normalized

change (ANC) deduced from the impedance data illustrates a change in conduction mechanism around 148 K due to the superexchange networks of Mn^{3+} and Mn^{4+}.
URL: http://www.sciencedirect.com/science/article/pii/S0304885312009894

12. Samavati, M., Raza, R., & Zhu, B. (2012). Design of a 5-kW advanced fuel cell polygeneration system. *Wiley Interdisciplinary Reviews: Energy and Environment*, *1*(2), 173-180.

Abstract:

In this article, a planar, low-temperature, solid-oxide fuel cell based on nanocomposite materials is developed by cost-effective tape casting and hot-pressing methods. First, a single cell with active area of 6×6 cm^2 was manufactured and tested to determine the cell performance. The power density of 0.4 and 0.7 W cm^{-2} were achieved at stable open-circuit voltages at operating temperature of 550°C using the syngas and hydrogen, respectively. Based on these experimental results, a 5-kW low-temperature, solid-oxide fuel cell polygeneration system is designed and analyzed. This system can provide electrical power and heating concurrently from a single source of fuel. The system design and the energy and mass balance are presented and a simulation based on syngas is performed. Finally, effects of fuel utilization factor, fuel cell operating temperature, and air temperature at cathode inlet on performance of polygeneration system is investigated.

URL:http://onlinelibrary.wiley.com/doi/10.1002/wene.6/abstract;jsessionid=B0F6574D98DECE2561A7CB7330CC09C3.f04t02?deniedAccessCustomisedMessage=&userIsAuthenticated=false

13. Younas, M., Nadeem, M., Idrees, M., & Akhtar, M. J. (2012). Jahn-Teller assisted polaronic hole hopping as a charge transport mechanism in CuO nanograins. *Applied Physics Letters*, *100*(15), 152103-152103.

Abstract:

Impedance spectroscopy has been employed to investigate the dielectric and electric transport phenomena in sol-gel synthesized CuO nanograins. Semiconducting features of the grains and grain boundaries have been endorsed to the thermal activation of the localized charge carriers. On cooling below 303 K, a transition from Jahn-Teller polaron hopping mechanism to the Mott's variable range hopping mechanism has been observed owing to random potential fluctuations among localized sites. Activation energies for conduction and relaxation processes at grain.boundaries provide strong signatures for the involvement of Jahn-Teller adiabatic small polarons as a charge transport mechanism in CuO nanograins.

URL:http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6181862&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6181862

14. Zhu, B., Raza, R., Liu, Q., Qin, H., Zhu, Z., Fan, L., ... & Lund, P. (2012). A new energy conversion technology joining electrochemical and physical principles. *RSC Advances*, *2*(12), 5066-5070.

Abstract:

We report a new energy conversion technology joining electrochemical and physical principles. This technology can realize the fuel cell function but built on a different scientific principle. The device consists of a single component which is a homogenous mixture of ceria composite with semiconducting materials, *e.g.* LiNiCuZn-based oxides. The test devices with hydrogen and air operation delivered a power density of 760 mW cm^{-2} at 550 °C. The device has demonstrated a multi-fuel flexibility and direct alcohol and biogas operations have delivered 300–500 mW cm^{-2} at the same temperature. Device physics reveal a key principle similar to solar cells realizing the function based on an effective separation of electronic and ionic conductions and phases within the single-component. The component material multi-functionalities: ion and semi-conductions and bi-catalysis to H_2 or alcohol (methanol and ethanol) and air (O_2) enable this device realized as a fuel cell.
URL: http://pubs.rsc.org/en/content/articlelanding/2012/ra/c2ra01234k/unauth#!divAbstract

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