December, 2015

RESEARCH OUTPUT OF CIIT-LAHORE FOR YEAR 2014

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 2014. For this accomplishment, the contribution of researchers of CIIT Lahore is also extraordinary. They produced 290 journal papers during the year 2014. The compilation in your hands consists of the papers which published during the year 2014and at CIIT platform. We only included journal papers for this anthology. The purpose of this compilation is to record the research work of our faculty members and also to facilitatethe users to get all the research papers of all departments in one binding. Apart from therecord, I am also sure that this compilation will provide the guidelines to new researchersof CIIT and to the researchers of other institutes, as well.

I am very much thankful to worthy Director CIIT-Lahore Dr. Qaiser Abbas and Dr. Robbina Farooq, Convener Library Affairs Committee, they not only provided the guidelines, butalso encourage us to prepare this compilation in appropriate form. I am also very much thankful to ORIC, which provided the data to compile this report.Without this 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 "data" into"information". He is really a good asset of the library.

With Regards

Muhammad Tariq
Incharge, Library Information Services
CIIT Lahore

December, 2015

SUMMARY

DEPARTMENT	JOURNAL PAPERS
Chemical Engineering	24
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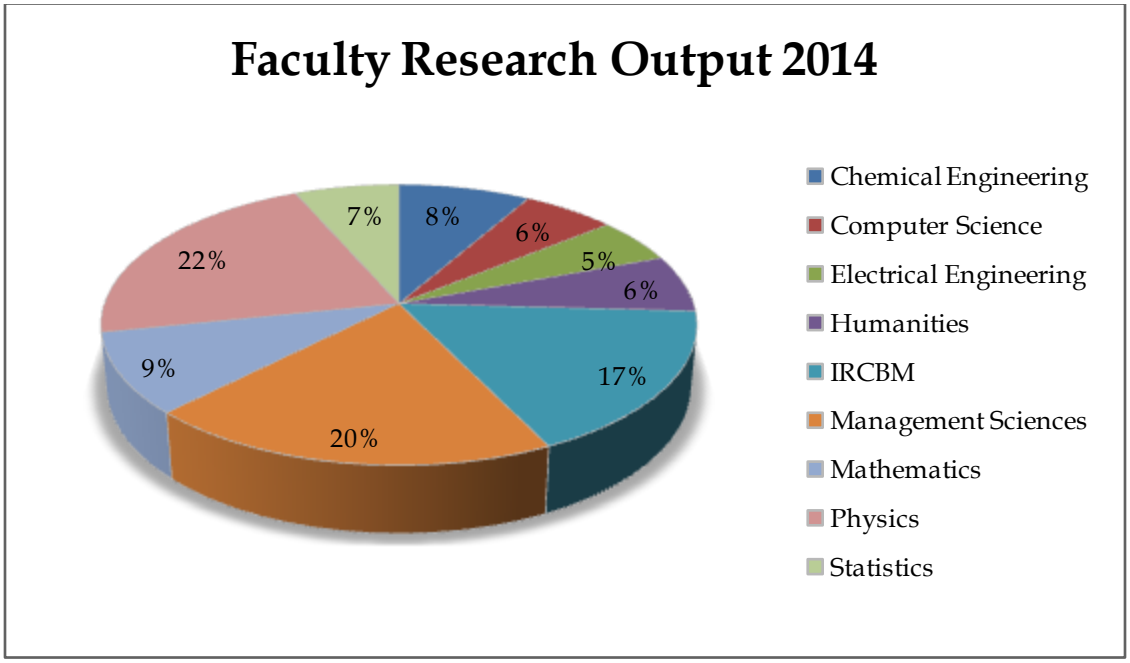

DEPARTMENT OF CHEMICAL ENGINEERING

Journal Papers

1. Abbas, T., Bazmi, A. A., Bhutto, A. W., & Zahedi, G. (2014). Greener energy: Issues and challenges for Pakistan-geothermal energy prospective. ***Renewable and Sustainable Energy Reviews*****, *31(1)*, 258-269.**

ABSTRACT:

There is an indispensable need to develop geothermal technologies to supplement the long-term energy needs of Pakistan to a significant level. Geothermal energy is one of the oldest, most versatile and also most common form of utilization of renewable energy. Pakistan is rich in geothermal energy, many of the researchers highlighted and emphasized about its importance, but due to less awareness, lack of confidence and management, no realistic work has been done so far in this domain. This paper investigates the progress of geothermal energy sources, technologies and its potential. Finally the prospects for the geothermal energy sources in Pakistan are described to encourage national and international investment in developing these resources.

URL:http://www.sciencedirect.com/science/article/pii/S1364032113007922

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2. Abd-ur-Rehman Raza, M. H., Jaffery, M. U. D. G., & Fareed-ud-Din, M. U. R. (2014). Analysis and Performance Evaluation of Proposed Organic Rankine Cycle. Journal of Basic and Applied Scientific Research, 4(8).114-118

ABSTRACT:

This paper provides a critical and analytical assay in the process vicinity of an Organic Rankine Cycle (ORC) resulting in a representation of a flow model as the best approach to implement an efficient Plant focusing on the robust and elegant energy .

URL:https://scholar.google.com.pk/scholar?q=Analysis+and+Performance+Evaluation+of+Proposed+Organic+Rankine+Cycle&btnG=&hl=en&as_sdt=0%2C5

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3. Abid. F., G. Moinuddin, M. Hussain J.& Shahzad. K. (2014). Effects of Catalysts(Mg and Fe) on Kinetics of Biomass Gasification Using CO2 as Gasifying Agent.*Journal of Basic and Applied Scientific Research.* 4(3)31-41.

ABSTRACT:

The effect of two catalysts (Mg and Fe) on CO2 gasification reactivity and kinetics at different temperatures (300K-1400K) were studied. The derived model equations were computed using MATLAB. It was found that the reaction rate increased with the addition of catalyst as well as the time for the conversion also reduced comprehensively. The gasification reactivity of biomass improved with the addition of catalyst in a sequence Mg>Fe till 400K and Fe>Mg after 400K. As Fe shows the maximum reaction rate and the minimum reaction time for 100% conversion at given temperature.

URL:https://www.google.com.pk/?gws_rd=cr,ssl&ei=sy03VtzuH4bUPJn5rsAO#q=Effects+of+Catalyst+%28Mg+and+Fe%29+on+kinetics+of+Biomass+Gasification+using+CO2+as+gasifying+agent

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4. Afzal, S., Tabassum, S., Gilani, M. A., Hussain, N., Farooq, R., Zahid, S., ...& Khan, A. (2014). Total phenolic content, in vitro radical scavenging and antimicrobial activities of rumex hastatus. ***Science International*****, 26(2). 721-727.**

ABSTRACT:

The importance of biological screening of plants has increased due to their greater therapeutic potential. The objective of the present study is to expose the antioxidant and antibacterial potential of the plant, Rumex hastatus. Antioxidant activity of different solvent fractions (n-hexane, ethyl acetate, chloroform, butanol and aqueous) was evaluated with different assays such as 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) (ABTS), 1,1-diphenyl-2-picrylhydrazyl (DPPH) and Folin-Ciocalteu (FC). The 50% inhibitory concentration determined by DPPH and ABTS assays ranged from 26.28-233.73 µg and 6.7-78.75 µg respectively. The total phenolic contents were 122.87-637.00 mg GAE/g extract. In vitro antimicrobial activity of R. hastatus was evaluated by the standard Disc diffusion method. All of its fractions showed antibacterial activity against Gram positive and Gram negative bacteria. Among the

different fractions tested, ethyl acetate fraction was the most potent showing inhibition zones of 15 mm and 7.6 mm against Staphylococcus aureus and E.coli respectively.

URL:http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=98322646&h=sWpOQbukG1As4gIAZB%2f0jhNJ%2bAGXr7D26icJHaWUz3YO6ITTByDCPPN26133hF%2f014na9qyKKjHnoYm9hlh3kw%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d98322646

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5. Akhtar, M. N., Khan, M. A., Ahmad, M., Murtaza, G., Raza, R., Shaukat, S. F., ... & Raza, M. R. (2014). Y 3 Fe 5 O 12 nanoparticulate garnet ferrites: Comprehensive study on the synthesis and characterization fabricated by various routes. ***Journal of Magnetism and Magnetic Materials*****, *368*, 393-400.**

ABSTRACT:

such as sol–gel (SG), self combustion (SC) and modified conventional mixed oxide (MCMO) on the structure, morphology and magnetic properties of the ($Y_3Fe_5O_{12}$) garnet ferrites have been studied in the present work. The samples of $Y_3Fe_5O_{12}$ were sintered at 950 °C and 1150 °C (by SG and SC methods). For MCMO route the sintering was done at 1350 °C for 6 h. Synthesized samples prepared by various routes were investigated using X-ray diffraction (XRD) analysis, Field emission scanning electron microscopy (FESEM), Impedance network analyzer and transmission electron microscopy (TEM). The structural analysis reveals that the samples are of single phase structure and shows variations in the particle sizes and cells volumes, prepared by various routes. FESEM and TEM images depict that grain size increases with the increase of sintering temperature from 40 nm to 100 nm.Magnetic measurements reveal that garnet ferrite synthesized by sol gel method has high initial permeability (60.22) and low magnetic loss (0.0004) as compared to other garnet ferrite samples, which were synthesized by self combustion and MCMO methods. The *M–H* loops exhibit very low coercivity which enables the use of these materials in relays and switching devices fabrications. Thus, the garnet nanoferrites with low magnetic loss prepared by different methods may open new horizon for electronic industry for their use in high frequency applications.
URL:http://www.sciencedirect.com/science/article/pii/S0304885314005198

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6. Akhtar, M. N., Khan, M. A., Raza, M. R., Ahmad, M., Murtaza, G., Raza, R., ...& Nazir, M. S. (2014). Structural, morphological, dielectric and magnetic characterizations of Ni 0.6 Cu 0.2 Zn 0.2 Fe 2 O 4 (NCZF/MWCNTs/PVDF) nanocomposites for multilayer chip inductor (MLCI) applications. ***Ceramics International*****, *40*(10), 15821-15829.**

ABSTRACT:

Nanocomposites of $Ni_{0.6}Cu_{0.2}Zn_{0.2}Fe_2O_4$ (NCZF/PVDF) with and without Multiwalled Carbon Nanotubes (MWCNTs)were prepared via sol–gel auto combustion method. Structural, morphological, dielectric and magnetic properties of nanocrystalline NCZF/PVDF/MWCNTs composites have been studied using X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), transmission electron microscopy (TEM) and impedance analyzer. The average particle size was found to increase by increasing sintering temperature from 550 °C to 750 °C. FESEM and TEM images showed homogenous and well distributed crystallized grains of MWCNTs. The real and imaginary part of the dielectric constant and dielectric loss tangent have been illustrated according to the polarization phenomenon in ferrites based on Koop′s theory and Maxwell–Wagner model. The high initial permeability and dielectric constant were found in $Ni_{0.6}Cu_{0.2}Zn_{0.2}Fe_2O_4$/PVDF/MWCNTs sintered at 750 °C; whereas very low electric and magnetic loss factors were investigated. This was attributed to the densification and grain growth of NCZF ferrites combined with remarkable properties of MWCNTs. The optimized dielectric and magnetic properties of NCZF nanocomposites with MWCNTs indicated that these types of nanoferrites can be used for the device fabrication such as multilayer chip inductors (MLCI′s) and for high frequency applications.

URL:http://www.sciencedirect.com/science/article/pii/S027288421401164X

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7. Bhutto, A. W., Bazmi, A. A., Zahedi, G., & Klemeš, J. J. (2014). A review of progress in renewable energy implementation in the Gulf Cooperation Council countries. ***Journal of Cleaner Production*****, *71*, 168-180.**

ABSTRACT:

In an effort to diversify economies and reduce high oil dependency, the Gulf Cooperation Council (GCC) countries plan to increase the use of renewable energy sources to meet the challenges of a post-oil future. The Accession to the United Nations

Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, which require a commitment to reduce greenhouse gas emissions, has started a process of environmental awakening in the GCC countries. This paper reviews the publications on renewable energy with reference to the GCC countries since 2005. The objective was to investigate the benefits of funding and investing in renewable energy projects in the GCC countries. The article shows that the GCC countries have begun to adopt a more pro-active approach toward renewable energy that will help progress the GCC countries towards sustainability. The reorientation of strategies and policies toward renewable energy is evolving in the GCC countries.

URL:http://www.sciencedirect.com/science/article/pii/S095965261300927X

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8. Butt, A. I., Shaams, S. B., Ghauri, M., Shahzad, K., & Jaffery, M. H. (2014). Study of Physical, Chemical and Ergonomic Occupational Hazards Faced by Photocopy Machine Operators. ***Life Science Journal, 11*** **(8).370-381**.

ABSTRACT:

Photocopy machines are a source of indoor air pollution. This study, conducted at Gulberg, Walton, D.H.A, Shadman, R.A.Bazar, Barket Market, Firdous Market, and Nabah road in Lahore aimed at assessing the occupational hazards to which photocopy machine operators are exposed. The study was conducted in hot and cold season for monitoring at 36 sites among 126 photocopy operators by socioeconomic survey. Very few operators (12%) used protective measures. 47% of the operators had visual discomfort from machine's light while only 27% got disturbed from the noise of the machine. Noise level at majority of the photocopy shops were within the Standard limits (70dBA). PM10 concentration at majority of the shops exceeded the 250 µg/m3 ambient air quality standard. Statistical analysis of the Air pollutants (VOC, PM10, O3, CO, SOX) showed a high statistical significance as the p value was < 0.005. Dry mouth was most common health issue among the photocopy operators and was most frequent in age group 35 to 40 while fatigue and headache were the most common health outcomes affecting all age groups almost in the same frequency. Ergonomic issue comparison showed that neck pain and swelling of feet was most frequent in age group 35 – 40 and 41 – 46. Back pain was most common ergonomic problem affecting all the age groups. A strong positive correlation exists between PM10, Ozone, Carbon monoxide, SOx emitted from the photocopy machine. Emission levels of PM10, VOC,

Ozone, CO, SOx were significantly high for Winter when compared with that of Summer season.

URL:https://scholar.google.com.pk/scholar?q=Study+of+Physical%2C+Chemical+and+Ergonomic+Occupational+Hazards+Faced+by+Photocopy+Machine+Operators&btnG=&hl=en&as_sdt=0%2C5

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9. Farooq, A., Ghauri, M., & Hussain Jaffery, M. (2014). Modeling of biomass gasification using Ni and Ca as catalyst (s). ***Science International*****, 26(5).2265-2268.**

ABSTRACT:

The effect of two catalysts (Ni and Ca) on CO ₂ gasification reactivity and kinetics at different temperatures (400K-1000K) were studied. The derived model equations were computed using MATLAB. It was found that the reaction rate increased with the addition of catalyst as well as the time for the conversion also reduced comprehensively. The gasification reactivity of biomass improved with the addition of catalyst in a sequence Ni>Ca. As Ni shows the maximum reaction rate and the minimum reaction time for 100% conversion at given temperature.

URL:http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=103197654&h=992kO4LTp8hftNSoCmakcsH6PmKnnFJEMTzXQ6tI86JK2uOYUCwjt8CrvEC7%2bL2mrTmJnxqVk6HMAr0uBDAd4w%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d103197654

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10. Inayat, A., Ahmad, M. M., Mutalib, M. I. A., Yusup, S., & Khan, Z. (2014). Mathematical Modelling for Hydrogen Production from Steam Gasification of Cellulose. In ***Applied Mechanics and Materials*****. 625, 176-179.**

ABSTRACT:

In Malaysia, due to its abundance, oil palm is a good candidate to be used as a feedstock for hydrogen production. Oil palm biomass generally consists of cellulose, hemicellulose and lignin. Steam gasification, coupled with CO_2 removal has been shown to be one of the promising methods for hydrogen production. This work focuses on the mathematical modeling of hydrogen production from cellulose via steam

gasification and steam gasification with in-situ CO_2 capture using CaO. The results are compared and rationalized against published data on steam gasification of pure cellulose and good agreement is observed. The model predicts an increase in hydrogen output from 48 to 56 mol% with the addition of CaO into the system. By increasing temperature and steam/biomass ratio the cold gas efficiency decreases, however, temperature have higher impact compared to steam/biomass ratio.

URL:http://www.scientific.net/AMM.625.176

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11. Khan, Z., Yusup, S., Ahmad, M. M., & Chin, B. L. F. (2014). Hydrogen production from palm kernel shell via integrated catalytic adsorption (ICA) steam gasification. ***Energy Conversion and Management*****, *87*, 1224-1230.**

ABSTRACT:

The present study investigates the integrated catalytic adsorption (ICA) steam gasification of palm kernel shell for hydrogen production in a pilot scale atmospheric fluidized bed gasifier. The biomass steam gasification is performed in the presence of an adsorbent and a catalyst in the system. The effect of adsorbent to biomass (A/B) ratio (0.5–1.5 wt/wt), fluidization velocity (0.15–0.26 m/s) and biomass particle size (0.355–2.0 mm) are studied at temperature of 675 °C, steam to biomass (S/B) ratio of 2.0 (wt/wt) and biomass to catalyst ratio of 0.1 (wt/wt). Hydrogen composition and yield, total gas yield, and lower product gas heating values (LHV_{gas}) increases with increasing A/B ratio, while particle size has no significant effect on hydrogen composition and yield, total gas and char yield, gasification and carbon conversion efficiency. However, gas heating values increased with increasing biomass particle size which is due to presence of high methane content in product gas. Meanwhile, medium fluidization velocity of 0.21 m/s favoured hydrogen composition and yield. The results showed that the maximum hydrogen composition and yield of 84.62 vol% and 91.11 g H_2/kg biomass are observed at A/B ratio of 1.5, S/B ratio of 2.0, catalyst to biomass ratio of 0.1 and temperature of 675 °C. The product gas heating values are observed in the range of 10.92–17.02 MJ/N m^3. Gasification and carbon conversion efficiency are observed in the range of 25.66–42.95% and 20.61–41.95%, respectively. These lower efficiencies are due to significant CO_2 capturing in using adsorbent in pilot the scale fluidized bed gasification system. Comparative study with literature shows that the combination of adsorbent and catalyst produces better results in terms of hydrogen composition and

gas heating values compared to that of only using biomass in steam catalytic gasification and in steam gasification with in situ CO_2 adsorbent.

URL:http://www.sciencedirect.com/science/article/pii/S0196890414002167

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12. Khan, Z., Yusup, S. S., Ahmad, M. M., Fui, L., & Chin, B. (2014). Performance Study of Ni Catalyst with Quicklime (CaO) as CO2 Adsorbent in Palm Kernel Shell Steam Gasification for Hydrogen Production. In *Advanced Materials Research*. 917, 292-300.

ABSTRACT:

There is a need to search for efficient material that reduce CO_2 content and enhance the hydrogen composition in the product gas from biomass steam gasification particularly for large scale production. The present study was carried out to perform the characterization of commercial quicklime as CO_2 absorbent and Ni powder as catalyst. The chemical composition of the materials perform using x-ray fluorescence (XRF) indicated high amount of CaO and Ni in the bulk samples. Using XRF and SEM analyses, it was found that both materials showed high crystalinity. The adsorption isotherm from physisorption analysis suggested that the materials exhibits Type II category according to the IUPAC classification scheme. These types of material exhibit mesoporous structure which was also verified by the pore size of the samples found via BET analysis. The BET surface area reported was 4.16 m^2/g and 0.78 m^2/g for quicklime and Ni powder, respectively. In conclusion, commercial quicklime has the potential as CO_2 absorbent, based on the pore size and surface area. Conversely, the surface properties of the Ni powder were found relatively lower as compared to other commercial catalysts available for biomass steam gasification.

URL:http://www.scientific.net/AMR.917.292

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13. Mahmood, T., Gilani, M. A., Tabassum, S., Khan, A. F., & Khan, F. A. (2014). DFT Studies of Biphenyl Derivatives, Potential Application as Chiral Dopants for Liquid Crystals. ***Journal of the Chemical Society of Pakistan*****, *36*(3), 498-502.**

ABSTRACT:

High polarization power may be achieved by designing dopants with chiral cores having polar functional groups that are conformationally more restricted when confined to the zigzagbinding site of the (smectic) SmC* host. Axially chiral biphenyls having conformationally restricted and unresticted cores were investigated for dipole moment at B3LYP/6-31G(d) method of DFT(density functional theory). It was reflected from the computed data that the dipole moment of conformationally restricted biphenyl cores containing dioxolane and dithiolane bridge was more compared to the conformationally unrestricted biphenyl core. Overall we have investigated the dipole moment of nineteen biphenyl derivatives having substituents at different positions.Key words: Liquid crystal, Biphenyl, Dipole moment.

URL:https://scholar.google.com.pk/scholar?hl=en&q=DFT+Studies+of+Biphenyl+Derivatives%2C+Potential+Application+as+Chiral+Dopants+for+Liquid+Crystals&btnG=&as_sdt=1%2C5&as_sdtp=

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14. Khan, Z., Yusup, S., Ahmad, M. M., & Rashidi, N. A. (2014). Integrated catalytic adsorption (ICA) steam gasification system for enhanced hydrogen production using palm kernel shell. ***international journal of hydrogen energy*****, *39*(7), 3286-3293.**

ABSTRACT:

This paper investigates the integrated catalytic adsorption (ICA) steam gasification of palm kernel shell for hydrogen rich gas production using pilot scale fluidized bed gasifier under atmospheric condition. The effect of temperature (600–750 °C) and steam to biomass ratio (1.5–2.5 wt/wt) on hydrogen (H_2) yield, product gas composition, gas yield, char yield, gasification and carbon conversion efficiency, and lower heating values are studied. The results show that H_2 hydrogen composition of 82.11 vol% is achieved at temperature of 675 °C, and negligible carbon dioxide (CO_2) composition is observed at 600 °C and 675 °C at a constant steam to biomass ratio of 2.0 wt/wt. In addition, maximum H_2 yield of 150 g/kg biomass is observed at 750 °C and at steam to biomass ratio of 2.0 wt/wt. A good heating value of product gas which is 14.37 MJ/Nm^3 is obtained at 600 °C and steam to biomass ratio of 2.0 wt/wt.

Temperature and steam to biomass ratio both enhanced H_2 yield but temperature is the most influential factor. Utilization of adsorbent and catalyst produced higher H_2 composition, yield and gas heating values as demonstrated by biomass catalytic steam gasification and steam gasification with in situ CO_2 adsorbent.

URL:http://www.sciencedirect.com/science/article/pii/S0360319913029534

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15. Khurram, M. S., Shahzad, K., Ahmed, A., Haider, R., & Ghauri, M. (2014). Kinetic Study of Metal-EDTA Complex Formation and Metal-to-Metal Exchange between Free Metal Ions and Metal-EDTA Complex. ***Journal of the Pakistan Institute of Chemical Engineers*****, *42* (2), 91-99.**

ABSTRACT:

In this study, the kinetics of metal-EDTA complex formation and metal-to-metal exchange between free metal ions and metal ions in metal-EDTA complex was investigated. The reactions of metals, Ca, Co, Cu, Fe (III), Mg, Mn, Ni, Al and Zn, with EDTA were carried out to understand how fast metal-EDTA complexes are formed at different pH and concentrations. The exchange kinetics between a free metal ion (Mn^{2+}, Co^{2+}, or Zn^{2+}) and a metal ion in its metal-EDTA complex were investigated. EDTA complexes with the free metal ions, were found to be formed almost instantaneously. The exchange between a free metal ion and a metal ion in its metal-EDTA complexes was generally fast (<30 min) when it occurred and seemed to be affected by pH but not by concentration. In general, a metal ion in its metal-EDTA complex could be replaced by a free metal ion, which forms a much more stable complex with EDTA than the former complex. Equilibrium constants for each reaction were calculated and compared with literature values. The results of this study would be useful to design physical/chemical/biological processes for removing metal-EDTA complexes.

URL:http://www.piche.org.pk/journal/index.php?journal=jpiche&page=article&op=view&path[]=132

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16. Mahmood, Q., Masood, F., Bhatti, Z. A., Siddique, M., Bilal, M., Yaqoob, H., ...& Ullah, Z. (2014). Biological treatment of the dye Reactive Blue 19 by cattails and anaerobic bacterial consortia. ***Toxicological & Environmental Chemistry*****, *96*(4), 530-541.**

ABSTRACT:

This study demonstrates the bioremediation potential of anaerobic sludge and cattail (*Typha angustifolia*) for the treatment of the dye Reactive Blue 19 (RB19). The anaerobic sludge and cattails used in this study were not previously exposed to dyes or other xenobiotics. Different anaerobic sludge concentrations (30%, 50%, and 70%) were used along fixed dye concentrations at pH 8.0 and 25 °C. Subsequently, 50% sludge was selected to treat RB19 at various concentrations. The discoloration of non-hydrolyzed dye was between 70% and 85% using 50% biomass. For the hydrolyzed form of RB19, the range of decoloration was 70%–90%. Dye treatment efficiencies between 50% and 75% were observed for the two forms of the dye when treated with *T. angustifolia*. Overall, the anaerobic biomass at pH 8.0 showed better potential than cattails to treat RB19. The observation that non-enriched anaerobic sludge can decolorize RB19 is important because it opens up the prospects of developing anaerobic treatment systems, which can easily decolorize dyes in industrial wastewaters and also possesses potential advantages over systems using defined bacterial cultures.

URL: http://www.tandfonline.com/doi/abs/10.1080/02772248.2014.970556

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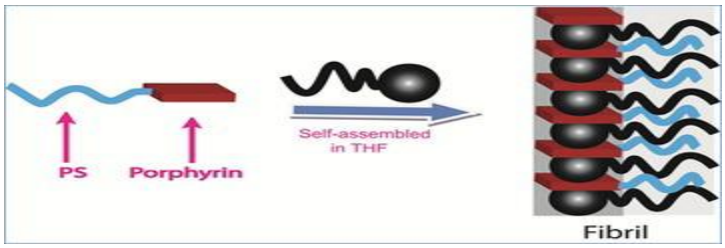
17. Nawaz, M. H., Riaz, S., & Liu, F. (2014). Atomic Force Microscopic Investigations of Fibrils Formed by Complexation of Monochelic Polystyrenic Porphyrin and PEGylated Fullerene (C60). ***Journal of Dispersion Science and Technology*****, *35*(5), 753-756.**

ABSTRACT:

Atomic force microscopic studies have been conducted for insight into the morphological aspects of monochelic porphyrin and fullerene complexes forming fibrils of continuous nature. Alternating dark and bright segments could be envisioned clearly, as individual porphyrin-fullerene repeating units. These fibrils also caused a remarkable red shift in the soret band absorption of porphyrin. Dynamic light scattering analysis was also conducted under different solvent conditions, which showed the swelling of fibrils when the solvent was changed from THF to water.



URL:
http://www.tandfonline.com/doi/abs/10.1080/01932691.2013.802654#.VjiA7G6ddck

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18. Rehman, F., Medley, G. J., Bandulasena, H., & Zimmerman, W. B. (2014). Fluidic oscillator-mediated microbubble generation to provide cost effective mass transfer and mixing efficiency to the wastewater treatment plants. ***Environmental research*****, *137*, 32-39.**

ABSTRACT:

Aeration is one of the most energy intensive processes in the waste water treatment plants and any improvement in it is likely to enhance the overall efficiency of the overall process. In the current study, a fluidic oscillator has been used to produce microbubbles in the order of 100 μm in diameter by oscillating the inlet gas stream to a pair of membrane diffusers. Volumetric mass transfer coefficient was measured for steady state flow and oscillatory flow in the range of 40–100 l/min. The highest improvement of 55% was observed at the flow rates of 60, 90 and 100 l/min respectively. Standard oxygen transfer rate and efficiency were also calculated. Both standard oxygen transfer rate and efficiency were found to be considerably higher under oscillatory air flow conditions compared to steady state airflow. The bubble size distributions and bubble densities were measured using an acoustic bubble spectrometer and confirmed production of monodisperse bubbles with approximately 100 μm diameters with fluidic oscillation. The higher number density of microbubbles under oscillatory flow indicated the effect of the fluidic oscillation in microbubble production. Visual observations and dissolved oxygen measurements suggested that the bubble cloud generated by the fluidic oscillator was sufficient enough to provide good mixing and to maintain uniform aerobic conditions. Overall, improved mass transfer coefficients, mixing efficiency and energy efficiency of the novel microbubble generation method could offer significant savings to the water treatment plants as well as reduction in the carbon footprint.

URL:http://www.sciencedirect.com/science/article/pii/S0013935114004320

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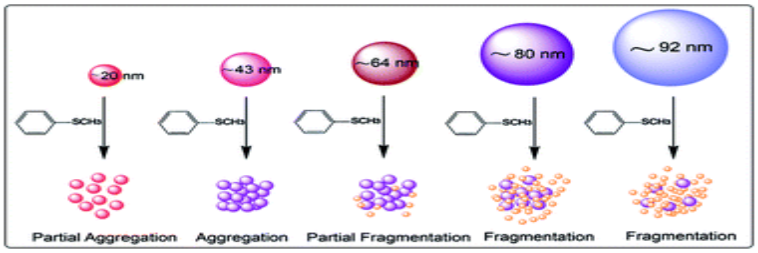
19. Riaz, S., Qu, L., Fodjo, E. K., Ma, W., & Long, Y. T. (2014). Thioanisole induced size-selective fragmentation of gold nanoparticles. ***RSC Advances*****, 4(27), 14031-14034.**



URL:http://pubs.rsc.org/en/content/articlelanding/2014/ra/c4ra00528g/unauth#!divAbstract

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20. Shahzad, K., Saleem, M., Ghauri, M., Khan, W. A., & Akhtar, N. A. (2014). Modeling and Analysis of SO 2 Emissions under Fast Fluidized Bed Conditions Using One Dimensional Model. ***Advances in Chemical Engineering and Science*****, 4(3), 327-338.**

ABSTRACT:

Fluidized bed combustion behavior of coal and biomass is of practical interest due to its significant involvement in heating systems and power plant operations. This combustion behavior has been studied by many experimental techniques along with different kinetic models. In this study, SO_2 emissions have been studied out in a pilot scale test facility of Circulating Fluidized Bed combustor (70 KW) under fast fluidized bed conditions burning coal with Pakistani wheat straw. One dimensional Mathematical model is being developed to predict the SO_2 emissions under different operating conditions like bed temperature, Ca/S molar ratio, solids circulation rate, excess air ratio and secondary to primary air ratio. These parameters are varied to validate the model and encouraging correlation is found between the experimental values and model predictions.

URL:http://file.scirp.org/Html/6-3700467_47593.htm

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21. Siddique, M., Farooq, R., & Price, G. J. (2014). Synergistic effects of combining ultrasound with the Fenton process in the degradation of Reactive Blue 19. *Ultrasonics sonochemistry*, *21*(3), 1206-1212.

ABSTRACT:

The decoloration of reactive dye C.I. Reactive Blue 19 (RB 19) using combined ultrasound with the Fenton process has been investigated. The effect of varying the concentrations of hydrogen peroxide and iron sulfate, initial pH, ultrasonic power, initial dye concentration and dissolved gas on the decoloration and degradation efficiencies was measured. Calibration of the ultrasound systems was performed using calorimetric measurements and oxidative species monitoring using the Fricke dosimeter and degradations were carried out with a 20 kHz probe type transducer at 2, 4, 6 and 8 W cm^{-2} of acoustic intensity at 15, 25, 50 and 75 mg L^{-1} initial dye concentrations. First order rate kinetics was observed. It was found that while the degradation rate due to ultrasound alone was slow, sonication significantly accelerated the Fenton reaction. While the results were similar to those reported for other dyes, the effects occurred at lower concentrations. The rate and extent of decoloration of RB 19 increased with rising hydrogen peroxide concentration, ultrasonic powers and iron sulfate concentration but decreased with increasing dye concentration. An optimum pH value of pH = 3.5 was found. The rate of decoloration was higher when dissolved oxygen was present as compared with nitrogen and argon confirming the solution phase mechanism of the degradation.

URL:http://www.sciencedirect.com/science/article/pii/S1350417713003234

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22. Siddique. M., Khan, Romana. F, Ather. K& F. Robina. (2014).Improved Photocatalytic Activity of TiO2 Coupling Ultrasound for Reactive Blue 19 Degradation, *Journal of Chemical Society of Pakistan, 36(1), 37-43.*

ABSTRACT:

The degradation of Reactive Blue 19 (RB 19) using photolysis, photocatalysis and sonophotocatalysis in aqueous solutions was investigated. Emphasis was given on the effects of different operating conditions viz. catalyst concentration, pH, initial dye concentration, ultrasonicpower and reaction time) on RB 19 degradation. The extent of photocatalytic and sonophotocatalytic degradation was increased by decreasing pH, initial dye concentration and increasing catalysts loading and ultrasonic power.

Ultrasound combined with photocatalysis was found efficient than the respective individual processes due to the enhanced formation of reactive hydroxyl radicals as well as the possible ultrasound-induced increase of the active surface area of the catalyst. The sonophotocatalytic efficiency was increased in acidic conditions as compare to individual processes at same experimental conditions (100 mg L-1 of dye concentration, 300 mg L-1 of TiO2 concentration, 240 W ultrasonic power and at pH 4). The kinetic study of RB 19 degradation under different experimental conditions apparently followed first order reaction. The intermediates and end products formed during the degradation were identified using gas chromatography/mass spectrometry (GC/MS) and a possible degradation pathway of RB 19 was proposed.

URL:http://www.jcsp.org.pk/ViewByVolume.aspx?v=1195&i=VOLUME%2036,%20NO1,%20FEB-2014

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23. Talib, N. A., Riaz, A., & Iqbal, M. J. (2014). Influence of national and engineering culture on team role selection. ***International Journal of Technology and Design Education*****, *24*(1), 91-105.**

ABSTRACT:

Engineering education is an emerging field of research. Due to its applied nature, recent theoretical developments have been followed by empirical evidence and interdisciplinary research. The present study attempted to describe the team roles assumed by members of project teams composed of young engineering students. The study was conducted in Pakistan by using the Belbin Team Role Self Perception Inventory. It was found that young Pakistani engineers assumed the roles of implementer, coordinator, shaper and team worker. This study attempts to understand role choices through the framework of national cultural dimensions proposed by Hofstede and engineering education culture offered by Godfrey and Parker. The study strongly recommends that engineering curriculum should incorporate activities which could foster creativity among engineers. Moreover, engineering students should be motivated to innovate through collaboration in a problem and project based environment, which is seriously lacking in engineering education of Pakistan.

URL:http://link.springer.com/article/10.1007/s10798-013-9242-z

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24. Yusup, S., Khan, Z., Ahmad, M. M., & Rashidi, N. A. (2014). Optimization of hydrogen production in in-situ catalytic adsorption (ICA) steam gasification based on Response Surface Methodology. *biomass and bioenergy*, *60*, 98-107.

ABSTRACT:

The present study investigates the optimization of hydrogen (H_2) production with in-situ catalytic adsorption (ICA) steam gasification by using a pilot-scale fluidized bed gasifier. Two important response variables i.e. H_2 composition (in percent volume fraction, %) and H_2 yield (in g kg^{-1} of biomass) are optimized with respect to five process variables such as temperature (600 °C–750 °C), steam to biomass mass ratio (1.5–2.5), adsorbent to biomass mass ratio (0.5–1.5), superficial velocity (0.15 m s^{-1}–0.26 m s^{-1}) and biomass particle size (350 μm–2 mm). The optimization study is carried out based on Response Surface Methodology (RSM) using Central Composite Rotatable Design (CCRD) approach. The adsorbent to biomass mass ratio is found to be the most significant process variables that influenced the H_2 composition, whereas temperature and biomass particle size are found to be marginally significant. For H_2 yield, temperature is the most significant process variables followed by steam to biomass mass ratio, adsorbent to biomass mass ratio and biomass particle size. The optimum process conditions are found to be at 675 °C, steam to biomass mass ratio of 2.0, adsorbent to biomass mass ratio of 1.0, superficial velocity of 0.21 m s^{-1} that is equivalent to 4 times the minimum fluidization velocity, and 1.0 mm–2.0 mm of biomass particle size. The theoretical response variables predicted by the developed model fit well with the experimental results.

URL:http://www.sciencedirect.com/science/article/pii/S0961953413004807

DEPARTMENT OF COMPUTER SCIENCE

Journal Papers

1. Bhatti, M. S., Akram, M. U., Ajmal, M., Sadiq, A., Ullah, S., & Shakil, M. (2014). Information Extraction From Images. ***World Applied Sciences Journal*****, 29(10), 1273-1276.**

ABSTRACT:

Text detection and optical character recognition (OCR) in images is a new challenging area in the fields of computer vision (CV), Artificial Intelligence (AI) and Machine learning (ML). Knowledge integration in recognition of optical characters (KROC) is merger of CV, AI and ML fields. Its main function is to increase the accuracy rate of existing OCR tools in the domain of character recognition, spell checking and knowledge integration. KROC take images or image based PDF files to fetch data content and uses set of templates to separate one character from the other. For many images or PDF files KROC is more accurate, efficient and optimistic method.

URL:https://scholar.google.com/scholar?q=Muhammad+Shahid+Bhatti%2C+Muhammad+Usman+Akram

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2. Bhatti, M. S., Saeed, F. Ajmal, M. (2014). Survey of Computer Vision Techniques for License Plate Detection. ***J. Basic Appl. Sci.*** **4(1), 68-77.**

Abstract not found

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3. Chaudhry, M. T., Ling, T. C., Hussain, S. A., & Manzoor, A. (2014). Minimizing Thermal Stress for Data Center Servers through Thermal-Aware Relocation. ***The Scientific World Journal,9/684501.***

ABSTRACT:

A rise in inlet air temperature may lower the rate of heat dissipation from air cooled computing servers. This introduces a thermal stress to these servers. As a result, the poorly cooled active servers will start conducting heat to the neighboring servers and giving rise to hotspot regions of thermal stress, inside the data center. As a result, the physical hardware of these servers may fail, thus causing performance loss, monetary

loss, and higher energy consumption for cooling mechanism. In order to minimize these situations, this paper performs the profiling of inlet temperature sensitivity (ITS) and defines the optimum location for each server to minimize the chances of creating a thermal hotspot and thermal stress. Based upon novel ITS analysis, a thermal state monitoring and server relocation algorithm for data centers is being proposed. The contribution of this paper is bringing the peak outlet temperatures of the relocated servers closer to average outlet temperature by over 5 times, lowering the average peak outlet temperature by 3.5% and minimizing the thermal stress.

URL:http://www.hindawi.com/journals/tswj/2014/684501/abs/

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4. Farooq, M. S. B. Hassan, M. Naseer, A. Abid,Y. D. Khan, N. S. Khan, M. U. AkramAnd S. Ullah. (2014).Studio Applications and Software Development Kits for Microsoft Kinect: A Survey. ***Journal of Applied Environmental and Biological Sciences.4.*****398-402.**

Abstract not found

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5. Hassan, B., Akram, U., Saifullah, M. N., Ali, F., Akhter, S., & Ajmal, M. (2014). A Publicly Available RGB-D Data Set of Muslim Prayer Postures Recorded Using Microsoft Kinect for Windows. ***J. Basic. Appl. Sci. Res.*****, 4(7)115-125.**

ABSTRACT:

In computer vision applications, availability of dataset for the training and testing of any newly developed system is always a key requirement. Most of the time, people use dataset built by other researchers. In case of unavailability of particular type of dataset, they built the dataset by their own. The datasets for the evaluation of computer vision systems could be of various types. These could be of thumb impressions, retinal scans or images of human activities/postures. The prayer performed by Muslim community also comprises of activities/postures which are the subset of the activities performed by an individual. In order to train and test the human activity recognition system on prayer activities/postures, the availability of prayer dataset is much needed. To the best of our knowledge, no such dataset is available in this area. In order to fulfill this requirement, we have recorded a dataset of prayer postures for an individual in a closed environment. The dataset comprises of RGB, Depth and skeleton frames of an individual from different pose and varying distance. We have recorded this dataset by

using Microsoft Kinect for Windows sensor. We have captured more than 1700 RGB, Depth and skeleton frames of different actions comprises of positive and negative examples. We have labeled data and provided in various file formats like .xls, .mat and .arff. We are hopeful that the dataset developed by us will not only enforce the research community working on Human activity/posture recognition to test their system on this particular type of dataset but also to add more to the dataset. It will also help provide them understanding that how to record their own dataset using Kinect if need arises. Apart from that, this wills also a publicly available bench mark in this particular domain.

URL:https://scholar.google.com.pk/scholar?q=A+Publicly+Available+RGB-D+Data+set+of+Muslim+Prayer+Postures+Recorded+Using+Microsoft+Kinect+for+Windows%E2%80%9D&btnG=&hl=en&as_sdt=0%2C5

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6. Hassan, B.M. S. Farooq, A. Abid, N. S. Khan, Y. D. Khan, M. Naseer, M. U. Akram and S. Ullah. (2014). Requirement Engineering Practices in Pakistans Software Industry: Major Problems. ***Journal of Applied Environmental and Biological Sciences*****.1.391-397.**

Abstract not found

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7. Hussain, I., Chen, L., Mirza, H. T., Xing, K., & Chen, G. (2014). A Comparative Study of Sonification Methods to Represent Distance and Forward-Direction in Pedestrian Navigation. ***International Journal of Human-Computer Interaction*****,** ***30*****(9), 740-751.**

ABSTRACT:

This article presents a new design of using nonspeech audio (i.e., earcons, spearcons, and short pulses) to represent distance and forward-direction for pedestrian navigation in eyes-free environment. Experiment in the field is carried out with the involvement of 15 participants using within-subject design to evaluate the newly developed earcons, spearcons, and short pulses for distance and forward-direction in pedestrian navigation. Results from the experiment suggest that spearcons are efficient in tasks completion, and it conveys distance and forward-direction information to participants more accurately compared with earcons and short pulses. Overall, participants have shown their satisfaction with spearcons as an audio feedback in pedestrian navigation.

URL:http://www.tandfonline.com/doi/abs/10.1080/10447318.2014.925381#.Vdw7tn2ddh8

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8. Hussain, S., Kamal, A., Ahmad, S., Rasool, G.,& Iqbal, S. (2014). Threat Modeling Methodologies: A Survey. *Sci. Int.(Lahore)*, *26*(4), 1607-1609.

ABSTRACT:

The security of software systems can be broadly divided into two categories namely external security and internal security. The internal security of software systems is the main issue for any secure system. This issue of software security depends on the design of software systems and integration of security features into the design. This process involves the identification of security threats to software systems, identification of relevant mitigation measures and their integration into the design of software systems. To identify security requirements of software systems, many techniques have been developed. Threat modelling is one of the approaches to identify security requirements and helps to add them into the design of the software systems. Threat modelling makes it possible to identify all potential threats to the software systems and hence helps software designers to add mitigations to make their software design more secure and reliable. Many threat modelling approaches had been developed over the time since its emergence. This paper presents a survey on various threat modelling techniques. In this paper, we have focussed on the techniques in the context of secure web applications.

URL:https://scholar.google.com.pk/scholar?hl=en&q=Threat+Modeling+Methodologies%3A+A+Survey&btnG=&as_sdt=1%2C5&as_sdtp

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9. Hussain, I., Chen, L., Mirza, H. T., Chen, G., & Hassan, S. U. (2014) Right mix of speech and non-speech: hybrid auditory feedback in mobility assistance of the visually impaired. *Universal Access in the Information Society*, 527-536.

ABSTRACT:

Despite the growing awareness about mobility issues surrounding auditory interfaces used by visually impaired people, designers still face challenges while creating sound for auditory interfaces. This paper presents a new approach of hybrid auditory feedback, which converts frequently used speech instructions to non-speech (i.e., spearcons), based on users' travelled frequency and sound repetition. Using a within-

subject design, twelve participants (i.e., blind people) carried out a task, using a mobility assistant application in an indoor environment. As surfaced from the study results, the hybrid auditory feedback approach is more effective than non-speech and it is pleasant compared with repetitive speech-only. In addition, it can substantially improve user experience. Finally, these findings may help researchers and practitioners use hybrid auditory feedback, rather than using speech- or non-speech-only, when designing or creating accessibility/assistive products and systems.

URL:http://link.springer.com/article/10.1007/s10209-014-0350-7

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10. Iftikhar, M. A., Jalil, A., Rathore, S., Ali, A., & Hussain, M. (2014). An extended non- local means algorithm: Application to brain MRI. ***International Journal of Imaging Systems and Technology*****, *24*(4), 293-305.**

ABSTRACT:

Improved adaptive nonlocal means (IANLM) is a variant of classical nonlocal means (NLM) denoising method based on adaptation of its search window size. In this article, an extended nonlocal means (XNLM) algorithm is proposed by adapting IANLM to Rician noise in images obtained by magnetic resonance (MR) imaging modality. Moreover, for improved denoising, a wavelet coefficient mixing procedure is used in XNLM to mix wavelet sub-bands of two IANLM-filtered images, which are obtained using different parameters of IANLM. Finally, XNLM includes a novel parameter-free pixel preselection procedure for improving computational efficiency of the algorithm. The proposed algorithm is validated on T1-weighted, T2-weighted and Proton Density (PD) weighted simulated brain MR images (MRI) at several noise levels. Optimal values of different parameters of XNLM are obtained for each type of MRI sequence, and different variants are investigated to reveal the benefits of different extensions presented in this work. The proposed XNLM algorithm outperforms several contemporary denoising algorithms on all the tested MRI sequences, and preserves important pathological information more effectively. Quantitative and visual results show that XNLM outperforms several existing denoising techniques, preserves important pathological information more effectively, and is computation all efficient.

URL:http://onlinelibrary.wiley.com/doi/10.1002/ima.22106/full

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11. Mirza,J.S. & N. Mudassar (2014). An XHTML Application to Determine CIIT Expertise. ***Research Journal of Applied Sciences, Engineering and Technology,*** **8(1), 20-23.**

ABSTRACT:

The aim of the study is to provide the means to the faculty of COMSATS Institute of Information Technology, henceforth called (CIIT), who have PhD students ready to be examined for their PhD Degrees. As yet no rule exists demanding external examiner be taken from CIIT, but the time is not far off when such a rule is going to be made in view of the runaway expenditure and appropriateness of examiners. We first describe the structure of the CIIT which is ambitious enough to take a good research position among some 130 universities of Pakistan. This attitude is the outcome of the phenomenon whereby each year Higher Education Commission (HEC) of Pakistan issues a data indicating which university is doing better with regard to its resources. The runaway expenditure of the CIIT might someday provide justification to seek reduced expenditure to have the said rule. It is conjectured that such a study can be expanded to cover in its domain further benefits covering job seeks, seminar givers etc. An XHTML file has been prepared for the experienced CIIT faculty of 8 campuses who may like to be on the list of external examiners. As yet only the artificial names were prepared. The file has been satisfactorily browsed over an XHTML browser. The advantages of XHTML over old technologies like Access and Excel are apparently convenient and the gain of ability to convert XHTML into HTML file, the still extant language of the web file.

URL:http://www.maxwellsci.com/jp/abstract.php?jid=RJASET&no=449&abs=03

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12. Majid, A., Chen, L., Mirza, H. T., Hussain, I.,& Chen, G. (2014). A system for mining interesting tourist locations and travel sequences from public geo-tagged photos. ***Data & Knowledge Engineering*****, 95, 66-86.**

ABSTRACT:

Geo-tagged photos of users on social media sites (e.g., Flickr) provide plentiful location-based data. This data provide a wealth of information about user behaviours and their potential is increasing, as it becomes ever-more common for images to be associated with location information in the form of geo-tags. Recently, there is an increasing tendency to adopt the information from these geo-tagged photos for learning to recommend tourist locations. In this paper, we aim to propose a system to recommend

interesting tourist locations and interesting tourist travel sequences (i.e., sequence of tourist locations) from a collection of geo-tagged photos. Proposed system is capable of understanding context (i.e., time, date, and weather), as well as taking into account the collective wisdom of people, to make tourist recommendations. We illustrate our technique on a sample of public Flickr data set. Experimental results demonstrate that the proposed approach is able to generate better recommendations as compared to other state-of-the-art landmark based recommendation methods.

URL:http://www.sciencedirect.com/science/article/pii/S0169023X14000962

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13. Mushtaq, M. A. Ahmad, H.T. Mirza& I. Hussain. (2014). Formal Verification and Implementation for Developing Trust in Ride Share Systems. *J. Appl. Environ. Biol. Sci.* 4(12): 192-202.

ABSTRACT:

Traffic obstruction, elevated gas prices and insufficient communal transportation are foremost confront for any countryside, trade or entity. The conventional loom to solve this problem is to recover public transportation and use greener power by massive reserves and time. An alternative solution seeks to reduce the number of vehicles on the roads and to travel by making run time or dynamic plans by ride share systems. This system can lead to less consumption of currency, fuel and ecological destructions. One problem that is not focused much in the system is social distress that begins due to deficiency of trust amongst riders and ride givers. In this work we are trying to understand the perception of trust by a model which identifies user's preferences, needs, and travelling behaviors for sharing private vehicles. We formally verified our model and implemented it to reduce three core issues; trust, convenience and incentives. Implementation of the model is provided as a working application. The model identifies trust and dis-trust among trustor and trustee by evaluating human based, ride based and system based trust rating in a feedback criteria. This feedback will help us in identifying trust norms and beliefs to constitute long term societal comfort.

URL: http://www.textroad.com/JAEBS-December,%202014.html

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14. Mushtaq, M. A. Ahmad, H.T. Mirza and I. Hussain. (2014). A Trust Development Model in Dynamic Ridesharing. *J. Appl. Environ. Biol. Sci.* 4(12): 22-40.

ABSTRACT:

Ridesharing enables different people to share ride with each other to reach a common destination. It helps the users as individually to save cost, the community as collectively to reduce air pollution and road congestions. Now a day's smart phone technology has enabled people to share rides on short notices. However, trust is a major apprehension of people while providing ease in selecting a safe ride and developing acceptable and comfortable environment inside the ride. So, a trust development mechanism may elevate ride sharing systems as a common transport system which can greatly reduce the road congestion. This research puts the users as the primary stakeholders and thus encapsulates the human preferences in trust evaluations. It then formalizes the mathematically traceable concepts through temporal logic where the treatment is formal and based on logics. The reliability and the trust ranking is done by Chronbach's alpha and Kruskal-Wallis tests. Overall, the necessity to improve the trust development in dynamic ride share is the main contribution of this article.

URL: http://www.textroad.com/JAEBS-December,%202014.html

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15. Rasool, G., & Mäder, P. (2014). A customizable approach to design patterns recognition based on feature types. *Arabian Journal for Science and Engineering*, *39*(12), 8851-8873.

ABSTRACT:

Accurate recognition of design patterns from source code supports development-related tasks such as program comprehension, maintenance, reverse engineering, and re-engineering. Researchers focused on this problem for many years, and a variety of recognition approaches have been proposed. Though, much progress has been made, we still identify a lack of flexibility and accuracy in the pattern recognition process. This paper evaluates different design pattern recovery approaches and examines the detection accuracy of these approaches. We found that the major impedance in the accurate recovery of design patterns is the large number of variations for implementing the same pattern. Furthermore, we realized that the combination of multiple searching techniques is required to improve accuracy of pattern detection. Based on these observations, we propose variable pattern definitions, which can be customized and

improved towards a pattern catalog that detects patterns in all their variations. The customizable pattern definitions are created from reusable feature types. Each feature type can use one or more searching techniques for efficient detection. The proposed approach supports detection of patterns from multiple programming languages. A prototype implementation of the approach was tested on seven different open-source software projects. For each software project, a baseline was determined and the trustworthiness of each pattern–project combination was rated. The extracted results have been compared with established baselines and with the results of previous techniques.

URL:http://link.springer.com/article/10.1007/s13369-014-1449-0

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16. Sadiq, A., Ahmad, F., Khan, S. A., Valverde, J. C., Naz, T., & Anwar, M. W. (2014). Modeling and analysis of departure routine in air traffic control based on Petri nets. ***Neural Computing and Applications*****, 25(5), 1099-1109.**

ABSTRACT:

Departure routine is essential part in the air traffic control and must be formally designed to avoid potential hazards and to verify proper functioning of the underlying processes. This paper addresses the Petri net approach to formally model the departure routine of the aircraft which ensures the organized flow of air traffic during departure. First, the high-level design of the system is presented by identifying key objects involved in departure routine, and then, its detailed model is presented. Moreover, the verification of the underlying methodology has been made using cover ability tree. The proposed model is verified to be safe (bounded), potentially reversible and deadlock free which ensures reliability of the system and guarantees the efficient and controlled communication between the aircraft and local and ground controllers.

URL:http://link.springer.com/article/10.1007/s00521-014-1590-4

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17. Zhu, J., Hassan, S. U., Mirza, H. T., & Xie, Q. (2014). Measuring recent research performance for Chinese universities using bibliometric methods. ***Scientometrics*****,** ***101*****(1), 429-443.**

ABSTRACT:

This paper focuses on measuring the academic research performance of Chinese universities by using Scopus database from 2007 to 2010. We have provided meaningful indicators to measure the research performance of Chinese universities as compared to world class universities of the US and the European region. Using these indicators, we first measure the quantity and quality of the research outcomes of the universities and then examine the internationalization of research by using international collaborations, international citations and international impact metrics. Using all of this data, we finally present an overall score called research performance point to measure the comprehensive research strength of the universities for the selected subject categories. The comparison identifies the gap between Chinese universities and top-tier universities from selected regions across various subject areas. We find that Chinese universities are doing well in terms of publication volume but receive less citations from their published work. We also find that the Chinese universities have relative low percentage of publications at high impact venues, which may be the reason that they are not receiving more citations. Therefore, a careful selection of publication venues may help the Chinese universities to compete with world class universities and increase their research internationalization.

URL:http://link.springer.com/article/10.1007/s11192-014-1389-1

DEPARTMENT OF ELECTRICAL ENGINEERING

Journal Papers

1. Abd-ur-Rehman Raza, M. H., Jaffery, M. U. D. G., & Fareed-ud-Din, M. U. R. (2014). Analysis and Performance Evaluation of Proposed Organic Rankine Cycle. Journal of Basic and Applied Scientific Research,4(8).114-118

ABSTRACT:

This paper provides a critical and analytical assay in the process vicinity of an Organic Rankine Cycle (ORC) resulting in a representation of a flow model as the best approach to implement an efficient Plant focusing on the robust and elegant energy .

URL:https://scholar.google.com.pk/scholar?q=Analysis+and+Performance+Evaluation+of+Proposed+Organic+Rankine+Cycle&btnG=&hl=en&as_sdt=0%2C5

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2. Ansari, E. A. (2014). Performing lowpass, highpass, bandpass and bandstop filtering of input auto and cross correlation sequences in linear time. *Science international*, *26*(2). 621-626.

ABSTRACT:

Performing filtering on the input and output data sequences through linear time invariant (*LTI*)
systems formulates an important operation of *Digital Signal* and *Image Processing* fields. This paper proposes a *simple* and *efficient* technique in discrete-time domain which does the lowpass, highpass, bandpass and bandstop filtering of the input auto and cross correlation sequences of discrete-time real wide sense stationary (*WSS*) process through *exponential, rectangular, triangular* and *trapezoidal* shaped windows in *linear* time. As the frequency responses of the discrete-time windows mentioned above *resemble* very much with the frequency response of low pass filters, the proposed algorithm [5] does indeed perform the *Low Pass Filtering* (*LPF*) of the input auto and cross correlation sequences in *linear* time. We have already shown in [5] that processing or *LPF* of auto and cross correlation sequences through the above four mentioned windows can be achieved in $O(L)$ time, where L denote the size of the input autocorrelation sequence. From the knowledge of impulse response of low pass filter, $hlp[n]$, the impulse response of a high pass filter $hhp[n]$ may be obtained by subtracting $hlp[n]$ from the unit sample sequence,

$\delta[n]$. This shows that high pass filtering (*HPF*) of the input auto and cross correlation sequences can also be performed through above four windows in linear time. Finally, the known values of impulse responses of low and high pass filters determine the impulse and frequency responses of a band pass filter, $hbp[n]$. In frequency domain, it is usually implemented with a cascade connection of low and high pass filter's frequency responses with different cut-off frequencies. However, in time domain, $hbp[n]$ becomes equal to the convolution of $hlp[n]$ with $hhp[n]$. Moreover, like $hhp[n]$, the impulse response of band stop filter, $hbs[n]$ is simply equal to the difference of $\delta[n]$ and $hbp[n]$. This reveals that bandpass filtering (*BPF*) and bandstop filtering (*BSF*) operations on the input auto and cross correlation sequences can also be done through above four windows in linear time. We have also shown in [5] that our proposed algorithm *outperformed* all the existing techniques in *both* time and frequency domains with regards to both *exact* number of arithmetic operations and to its *worst case* time complexity that grew *linearly* with the length of the input auto correlation sequence for the case when $L >> K$, where K denote the size of an exponential window.

URL:https://scholar.google.com.pk/scholar?q=PERFORMING+LOWPASS%2C+HIGHPASS%2C+BANDPASS+AND+BANDSTOP+FILTERING+OF+INPUT+AUTO+AND+CROSS+CORRELATION+SEQUENCES+IN+LINEAR+TIME&btnG=&hl=en&as_sdt=0%2C5

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3. Ansari, E. A. (2014). Computing Cross and Auto-Correlation Sequences of Output WSS Real Random Process in Linear Time. *Science International*, *26*(1). 205-209.

***ABSTRACT*:**

This paper proposes a *new, simple* and *efficient* technique in discrete-time domain which does the processing of auto correlation of the input discrete-time wide sense stationary (*WSS*) process through *exponential, rectangular, triangular* and *trapezoidal* shaped discrete time windows in *linear* time. The proposed algorithm also performs the *Low Pass Filtering* (*LPF*) of the input auto correlation in *linear* time since the frequency responses of the above mentioned discrete-time windows very much *resemble* with the frequency response of low pass filters. First, we develop the proposed algorithm for a discrete-time exponential shaped window having 'M' samples and show that it takes $O(L)$ arithmetic operations (i.e., both $+s$ and $*s$) in processing the input auto correlation through it, where 'L' is the size of input auto correlation sequence. We then, make use of this result in processing the input auto correlation through a rectangular shaped

(moving average) window by incorporating a *slight* modification in it. Subsequently, we process the input auto correlation through triangular and trapezoidal shaped discrete-time windows using the modified result of the proposed algorithm. We thus show that our proposed algorithm *only* requires $O(L)$ *additions* to perform the low pass filtering of the input auto-correlation through the *last three* windows mentioned above. We also show that the proposed algorithm *just* takes $2 \times (L - 1)$ *additions* to perform the *LPF* of the input auto correlation through a rectangular shaped window and it remains *independent* with respect to the change in the size of the window, i.e., M. Finally, we also show that our proposed algorithm *outperforms* all the existing techniques in *both* time and frequency domains with regards to *exact* number of arithmetic operations and its *worst case* time complexity grows *linearly* with the length of the input auto correlation sequence for the case when $L >>$

URL:https://scholar.google.com.pk/scholar?q=Computing+Cross+and+Auto-Correlation+sequences+of+Output+WSS+Real+Random+Process+in+Linear+Time&btnG=&hl=en&as_sdt=0%2C5

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4. Ansari, E. A. (2014). Obtaining time domain expressions of band limited signal pulses for zero ISI. ***Science International*****, 26(1). 169-173.**

ABSTRACT:

In this paper, we derive time domain expressions of band limited signal pulses used to obtain zero inter symbol interference (***ISI***) for digital communication. Although time domain expressions of raised cosine (***RC***) and square root raised cosine (***SRRC***) pulses have been reported in many Electrical Engineering books on Digital Communications but however, their closed forms have not been computed. We thus, make use of Fourier transform properties along with its tables in a sensible way to derive these expressions in time domain. We consider only four band limited pulses in frequency domain which are rectangular, triangular, raised cosine and square root raised cosine. We start with the Fourier transform pair of unit step function and compute the time domain expression of rectangular band limited pulse using time shift and linearity properties of Fourier transform. Then, we make use of auto correlation / convolution property of Fourier transform to obtain time domain expression of triangular band limited pulse. Finally, we compute the time domain expressions of (***RC***) and (***SRRC***) band limited pulses using linearity, differentiation and even properties of Fourier transform.

URL:https://scholar.google.com.pk/scholar?q=Obtaining+Time+Domain+Expressions+of+Band+Limited+Signal+Pulses+for+Zero+ISI&btnG=&hl=en&as_sdt=0%2C5

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5. Ansari, E. A., & Akhtar, S. (2014). Real versus complex gaussian distributions for digital communication. ***Science International*****, *26*(1). 85-89.**

ABSTRACT:

Concept of both real and complex Gaussian Random Variables (GRVs) and their corresponding Gaussian Random processes (GRPs) is very important and critical for understanding and designing of a real Communication System. In this paper, we thus discuss and compute the various parameters involved in characterizing the real and complex Gaussian distributions completely for one and multiple Random Variables (RVs). We first carry out our analysis for one real GRV and then extend our work to multiple real GRVs. Furthermore, we apply our technique for studying one complex GRV and subsequently extend it to the analysis of multiple complex GRVs also known as multivariate complex Gaussian random vector. Finally, we make the necessary comparison between real and complex Gaussian Distributions which are the key components of Additive White Gaussian Noise (AW GN) for baseband and bandpass transmission of the digital data through non ideal channels of digital Communication Systems.

URL:http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=97435067&h=9Kj1lWC3UlffnkLkaE7Qtu%2bFR0TiXA5y9msfa1aQlxIfWKJjrhxIF5stsTl9CGPOmv5XlWqDw%2fq0qOlMA9Gbog%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d97435067

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6. Butt, A. I., Shaams, S. B., Ghauri, M., Shahzad, K., & Jaffery, M. H. (2014). Study of Physical, Chemical and Ergonomic Occupational Hazards Faced by Photocopy Machine Operators. ***Life Science Journal*****, *11*(8). 370-381.**

ABSTRACT:

Photocopy machines are a source of indoor air pollution. This study, conducted at Gulberg, Walton, D.H.A, Shadman, R.A.Bazar, Barket Market, Firdous Market, and Nabah road in Lahore aimed at assessing the occupational hazards to which photocopy

machine operators are exposed. The study was conducted in hot and cold season for monitoring at 36 sites among 126 photocopy operators by socioeconomic survey. Very few operators (12%) used protective measures. 47% of the operators had visual discomfort from machine's light while only 27% got disturbed from the noise of the machine. Noise level at majority of the photocopy shops were within the Standard limits (70dBA). PM10 concentration at majority of the shops exceeded the 250 µg/m3 ambient air quality standard. Statistical analysis of the Air pollutants (VOC, PM10, O3, CO, SOX) showed a high statistical significance as the p value was < 0.005. Dry mouth was most common health issue among the photocopy operators and was most frequent in age group 35 to 40 while fatigue and headache were the most common health outcomes affecting all age groups almost in the same frequency. Ergonomic issue comparison showed that neck pain and swelling of feet was most frequent in age group 35 – 40 and 41 – 46. Back pain was most common ergonomic problem affecting all the age groups. A strong positive correlation exists between PM10, Ozone, Carbon monoxide, SOx emitted from the photocopy machine. Emission levels of PM10, VOC, Ozone, CO, SOx were significantly high for Winter when compared with that of Summer season.

URL:https://scholar.google.com.pk/scholar?hl=en&q=Study+of+Physical%2C+Chemical+and+Ergonomic+Occupational+Hazards+Faced+by+Photocopy+Machine+Operators&btnG=&as_sdt=1%2C5&as_sdtp= 5.

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7. Bilavarn, S., Khan, J., Belleudy, C., & Bhatti, M. K. (2014). Effectiveness of power strategies for video applications: a practical study. ***Journal of Real-Time Image Processing*****, 1-10.**

ABSTRACT:

This study examines the practical effectiveness of power strategies for video applications. Based on real implementations of three power strategies using representative platforms and H.264 applications, we analyse platform and application level parameters affecting the operability and efficiency of power strategies. Results show that, in the same conditions, a strategy might offer highly variable results and sometimes increases energy, depending on the characteristics of the platform. Therefore, we report different measurement results which lead to useful guidelines for succesful power management and show the potential benefits of advanced power strategies over currently available approaches for demanding workloads like video applications.

URL:http://link.springer.com/article/10.1007/s11554-013-0394-6

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8. Farooq,. A, Ghauri, M, Jaffery, M. H. & Shahzad, K. (2014) Effects of Catalysts(Mg and Fe) on Kinetics of Biomass Gasification Using CO2 as Gasifying Agent.*Journal of Basic and Applied Scientific Research.*, 4(3), 31-41.

ABSTRACT:

The effect of two catalysts (Mg and Fe) on CO2 gasification reactivity and kinetics at different temperatures (300K-1400K) were studied. The derived model equations were computed using MATLAB. It was found that the reaction rate increased with the addition of catalyst as well as the time for the conversion also reduced comprehensively. The gasification reactivity of biomass improved with the addition of catalyst in a sequence Mg>Fe till 400K and Fe>Mg after 400K. As Fe shows the maximum reaction rate and the minimum reaction time for 100% conversion at given temperature.

URL:https://www.google.com.pk/?gws_rd=cr,ssl&ei=sy03VtzuH4bUPJn5rsAO#q=Effects+of+Catalyst+%28Mg+and+Fe%29+on+kinetics+of+Biomass+Gasification+using+CO2+as+gasifying+agent

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9. Khan, H. H., Ansari, E. A., & Akhtar, S. (2014). Exact closed form expressions and performance evaluation of cognitive amplify-and-forward relaying in (inid) nakagami-m fading environment. *Science international*, *26*(2), 779-783.

ABSTRACT:

Dynamic Spectrum Acquisition is playing the key role in making the licensed band more ffective.
Cognitive relay network is the solution for the efficient utilization of the licensed band. This paper therefore discusses the performance evaluation of cognitive amplify-and-forward (AF) relay networks model over (i.n.i.d.) Nakagami-*m* fading channel environment. By considering a radio resource sharing environment having a secondary user or cognitive user source *S*, *K* number of secondary relays *Rk*, secondary destination *D* and a primary receiver *P*under best relay selection (*BRS*) strategy, several important performance parameters are investigated. For secondary user network exact closed form expressions for the average symbol error probability (*SEP*) and outage probability

(*OP*) are derived. These derived analytical results are very important and useful in understanding the performance of the system against quite lengthy time consuming simulations. Asymptotic plots are also considered and sketched on the same curves in order to validate the accuracy of the derived theoretical results. This further allows the evaluation of the system performance considering flexibility in fading scenarios.

URL:https://scholar.google.com.pk/scholar?q=Exact+closed+form+expressions+and+performance+evaluation+of+cognitive+amplify-and-forward+relaying+in+%28inid%29+nakagami-m+fading+environment&btnG=&hl=en&as_sdt=0%2C5 10.

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10. Khan, A. A., & Brown, A. K. (2014). Null steering in irregularly spaced sparse antenna arrays using aperture distributed subarrays and hybrid optimiser. ***IET Microwaves, Antennas & Propagation*****, *8*(2), 86-92.**

ABSTRACT:

Sparse antenna arrays with irregularly spaced elements are increasingly being used in large array applications such as radio astronomy and radar. These antenna arrays may consist of hundreds of elements and therefore optimisation of these arrays becomes computationally expensive. This study proposes a novel solution to the problem of null synthesis in such arrays, where nulls are formed in prescribed locations for two-dimensional irregular sparse antenna arrays. The technique is based on a subarray and hybrid synthesis solution, where each subarray spans the entire antenna aperture. Single and multiple null formations with array gain maximisation are considered. The technique's effectiveness is demonstrated using evolutionary optimisation algorithms; however, the basic technique can be used with other optimisation methods. The simulation results presented compare the null synthesis performance with and without subarraying and it has shown that the use of subarray results in improved convergence compared with a direct full array synthesis. Furthermore the technique is appropriate for ready application to parallel computer architectures.

URL:http://digital-library.theiet.org/content/journals/10.1049/iet-map.2013.0214

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11. Kashif, H., Rafique, U., Rehman, A. U., & Umer, A. (2014). Estimation of Pathloss in Femtocells for Indoor Environments. ***International Journal of Computer Science Issues (IJCSI), 11*****(3), 128-133.**

ABSTRACT:

Femtocells Access Points (FAPs) are low power base stations which improve the cellular service within indoor environments. RF propagation modeling is required to analyze the femtocell performance, power issue and the interference impact on the macro network. An indoor propagation channel is considerably more antagonistic than an outdoor channel. This paper deals with the path loss and coverage of the femtocells in indoor environments. The ability to accurately predict radiopropagation behavior for wireless systems is becoming crucial to system design. To reduce the cost of on-site measurements, propagation models have been developed. These models provide a suitable, low-cost and convenient alternative to costly on-site measurements. Lack of a LOS, heavy attenuation, diffraction by objects in the propagation path, and multipath all contribute to losses in an RF channel. RF modeling is required to predict this path loss. The path loss is associated with the design of base stations, as this tells us how much power a transmitter needs to radiate to provide coverage in the intended region. A femtocell increases overall system capacity by reducing the coverage holes and by capacity gain from higher SINR to indoor subscribers. Finally, RF modeling is carried out for indoor environments experienced in a typical femtocell.

URL:https://scholar.google.com.pk/scholar?q=Estimation+of+Pathloss+in+Femtocells+for+Indoor+Environments&btnG=&hl=en&as_sdt=0%2C5

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12. Shah. M. F., Shaikh, M, Ali.M. (2014). Comparative analysis of WSN Routing Protocols, ***International Journal of Information Technology and Electrical Engineering 32(2), 38-47.***

ABSTRACT:

The era is rapidly updated by the revolutionary technological growth every day specifically in the field of wireless communication. Wireless Sensor Network (WSN) is promising candidates for both the contemporary industrial development and the end user market demand. This paper presents the comparative analysis of WSN routing protocols. Routing in WSN network is different than the routing in the traditional data networks. Most of the attention has been given to the routing protocols. Currently various routing protocol have been designed and developed for WSN. In this work we

have done a deep survey of routing protocols and have made their comparison based on their pitfalls and benefits. We have compared two routing protocols of WSN. We have considered Battle field scenario. The two protocols have been compared in terms of power, network lifetime, delay and redundant.

URL:http://www.iteejournal.org/Archive_April_2014.php

13.Salam, A., Khan, A. A., & Hussain, M. S. (2014). Dual band microstrip antenna for wearable applications. ***Microwave and Optical Technology Letters*****, *56*(4), 916-918.**

ABSTRACT:

A dual narrow band wearable antenna is proposed to operate in the range of 2.4–2.5 GHz and 5.7–5.9 GHz for WLAN and telemedicine applications. The proposed design is achieved by simple modification to the rectangular patch antenna. The antenna design is low profile and easy to integrate with the fabric.

URL:http://onlinelibrary.wiley.com/doi/10.1002/mop.28210/full 9.

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14. Shehzad, M. N., Déplanche, A. M., Trinquet, Y., & Farooq, U. (2014). Efficient data generation for the testing of real-time multiprocessor scheduling algorithms. ***Przegląd Elektrotechniczny*****, *90*(9), 136-139.**

ABSTRACT:

In conducting the performance evaluation tests of real-time multiprocessor scheduling algorithms, synthetic input data is mandatory for obtaining reliable results and to draw strong conclusions. The results of the statistical evaluation highly depend on the data chosen for the experimentation. The data generation process is required to be efficient while the resultant data should comply with the user requirements. This article discusses two established data generation techniques used in the literature, explains their advantages and disadvantages, and finally proposes fewextensions in one of the techniques, which is considered quite efficient, to be made compatible with discrete time simulator.Streszczenie. W artykule przedyskutowano dwie techniki generacji danych w multiprocesorze czasu rzeczywistego. Zaproponowano modyfikacje algorytmu Stafforda.(Efektywny proces generacji danych w multiprocesorze czasu rzeczywistego).

URL:https://scholar.google.com.pk/scholar?q=Efficient+data+generation+for+the+testing+of+real+time+multiprocessor+scheduling+algorithms&btnG=&hl=en&as_sdt=0%2C5

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15. Safdar Raza, S., Ahmad, M., & Perveiz, M. S. (2014). Performance of energy meters under harmonic generating environment. ***Science international, 26*****(5). 2063-2069.**

ABSTRACT:

One of the major problems in utility power supply is the voltage and current harmonic distortion. Non linear loads produce harmonics which increases power losses and causes overheating of power system equipments. This paper discusses the effect of harmonic distortion on energy measurement of meter and behavior of current transducers under overloaded condition. It also presents a comparative study between solid state electronic meters and electromechanical watt hour meters. The total voltage and current harmonic distortion, displacement power factor is simulated by HIOKI 3197 power quality analyzer. The Microvip3 ELCONTROL energy analyzer is used to record the actual power consumption. It has been found that the energy measurement error in solid state energy meters is much less than the electromechanical meters if they are tested in same harmonic generating environment. The whole current operated meter slows down when large amount of current flows through the current coil and ultimately burnt. The CT operated meters have separate current transformer for each phase and if large amount of current flows through it, it saturates and metering stops.

URL:http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=103197660&h=JTLzSaJYjXEaHL%2bv8t6diMuQNz2QIs2qH%2bblLzfeqRZqxeBHscIxuEaPXxJwNj8hKobwYXHNfvo70ttaUhLpIw%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d103197660

DEPARTMENT OF HUMANITIES

Journal Papers

1. Ahmad, M. M. (2014). Understanding Hypertextual Modalities Using Meaning Making Strategies. ***NUML Journal of Critical Inquiry*****, *12*(1), 41-64.**

ABSTRACT:

This qualitative study attempts to understand different meaning making strategies that digital readers employ while they navigate through hypertextual compositions. These online texts are quite in vogue after the emergence of information and communication technologies. The hypertext representation under study is multimodal/multisequential which is conspicuously distinct from the classical traditional texts. This difference occurs at various levels especially the way texts are prepared, presented and explored by their readers, and therefore, a digital hypertext seems to invite noticeably different interactional strategies. These strategies appear
to be unlike the way traditional sequential texts are processed for meaning making. An online multimodal hypertext (text with links, images and visuals) was selected and participants were screened for this research. They were engaged to explore the assigned representation after they were given instructional sessions about the nature and features of the text. Qualitative methods were applied for data elicitation with each of the participants. Concurrent and Retrospective think aloud protocols were administered for gaining insights based on subjective understanding. Therefore, the participants were engaged individually and their responses were recorded. Time- stamp technique was used to record and transcribe participants' online interactions and these elicited responses were analysed afterward. Furthermore, the participants were interviewed individually to understand the nature of their meaning making strategies. The findings were insightful as the participants applied new meaning making strategies in addition to the traditional ones that they use for print based representations. These strategies highlight their preferred ways of
learning as well.

URL:https://scholar.google.com.pk/scholar?q=Understanding+Hypertextual+Modalities+Using+Meaning+Making+Strategies&btnG=&hl=en&as_sdt=0%2C5&as_vis=1

2. Ahmadi, A. (2014). The Legislation of Islamic Jurisprudence: A Dialogue between Opponents and Proponents. ***The Journal of Rotterdam Islamic and Social Sciences*****, *4*(1), 11-25.**

ABSTRACT:

Ijtihād, either individual or collective, has been controversial from the very beginning with respect to what extent the legislation of verdicts by Muslim jurists is allowed. There are two main opinions about taqnīn, i.e., the legislation of Islamic jurisprudence. The majority of Saudi scholars say that it is ḥarām i.e., legally forbidden in Islamic Sharīʿa, whereas the majority of Egyptian jurists are of the opinion that it is essential and needed in the modern period. Most Muslim countries follow the Egyptian view by enforcing written constitutions and laws. The conclusion from the comparative study of arguments is that it is somehow better that there be no taqnīn. The evidence and arguments presented bythose scholars who argue for doing away with taqnīn seem more convincing because their basis is sharīʿa rulings and they also provide logical, historical, and observable evidence as well, whereas the other side proves it case by quoting general principles from Maṣlaḥa, Sadd al-Dharāʾiʿ, and Istiḥsān, and most of their arguments are based on experience, logic, and demonstrable proofs and do not provide enough Sharīʿa support. Historically, however, we have seen and how skillfully and exquisitely Sharīʿa Courts have worked in the past 13 centuries without taqnīn.

URL:http://www.degruyter.com/view/j/jriss.2013.4.issue-1/jriss-2014-0002/jriss-2014-0002.xml

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3. Baig, M. M. Z. (2014). Rewriting breeds silences: Beast of burden, anxiety of authorship and the question of truth in jm coetzee's foe. ***Pakistan Journal of Women's Studies= Alam-e-Niswan= Alam-i Nisvan*****, *21*(2), 45-62.**

ABSTRACT:

Susan Barton, the narrator of *Foe*, idealizes a mode of writing based on bare truth, but she cannot execute her ideals of storytelling in the novella. In a face-to-face meeting with Foe, the English writer of Crusoe'sisland story, she experiences both the anxiety of influence and, more
specifically, the anxiety of authorship that further causes silences in her narration. She revises the canonical image of (De) Foe who is, here, merely a *beast of burden* writing in

the attic instead of an intellectual. She withholds details of her pre-island life in the retelling in order to resist Foe's attempts to excite English readers by mispresenting her as a whore.

URL:http://search.proquest.com/openview/4c64c48c4e9aee1bf96279bf57b329f0/1?pq-origsite=gscholar

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4. Fatima, S., & Sheikh, H. (2014). Socioeconomic status and adolescent aggression: the role of executive functioning as a mediator. ***American Journal of Psychology*****, 127(4), 419-430.**

ABSTRACT:

The primary focus of the present study was to determine the direct and indirect relations between socioeconomic status (SES), executive functioning (EF), and adolescent aggression. The test sample included 512 adolescents (girls = 255, boys = 257) of secondary and higher secondary grade within the age range of 13–19 years. Participants completed measures of SES and aggression in group settings, followed by the individual administration of tests of EF. Findings provided support for the meditational effect of executive skills in the relation between SES and aggression. Specifically, results showed that SES is positively and directly related to EF and indirectly related to aggression through EF. Implications of the study along with limitations and suggestions for future research are discussed.

URL:http://www.jstor.org/stable/10.5406/amerjpsyc.127.4.0419?seq=1#page_scan_tab_contents

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5. Fatima, S., & Sheikh, H. (2014). Translation and Adaptation of Parent-child Relationship Scale into Urdu Language. ***Journal of Behavioural Sciences.*** **24(1), 98-114.**

ABSTRACT:

Primary focus of the study was to translate and cross validate the Parent-child relationship scale (PCRS) into Urdu language, to be used with Pakistani Youth. The process was conducted in two
Studies. The first study examined the retest reliability and validity of Urdu translation against original English PCRS. Data was collected from 100 Pakistani bilingual

adolescents (50 men and 50 women), with age range of 13-19 years. Means and standard deviations of the Urdu and English scales were found to be significantly comparable. Statistical analysis revealed high positive correlation between both scores and strong retest reliability of the Urdu scale. Second study was conducted on 512 adolescents (255 men & 257 women) falling in age range of 13-19 years to find out internal consistency, inter scale correlation and socio demographic effects on parent-child relations. Results revealed significant effect of parental occupation and family socioeconomic status on parent child relationship. Implications for use of Urdu version of the scale in educational, clinical and research settings have been discussed.

URL:http://search.proquest.com/openview/a2da4db8851d8fce5626f0d0c9b90034/1?pq-origsite=gscholar

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6. Husnat, A. Tabassam, M. Ikram A,M. Kamran. Y.(2014). The use of methods of bilingualism or multilingualism rather Monolingualism in English language class by English teacher and its subsequent effects on students' achievements and personality. ***European Academic Research, 2(9),*** **12346-12358.**

ABSTRACT:

To estimate the casual relationship of English language teachers' use of bilingualism (English, Urdu), rather multilingualism (English, Urdu and Punjabi) during English language class and its subsequent effects on students' academic achievements, their confidence, character building and personality growth, its merits and demerits, a thorough study aiming students (Boys & Girls) of inter level of various private and public sector colleges of District Jhang, was conducted. Questionnaire was developed to collect responses of the sample population. Results showed that it has weak positive results on students' intellect, comprehension, academic achievements, character building, personality growth, understanding, reputation and recognition of English language teacher and least but not last, their perception, conception and international image of English language experience a great setback. Husnat Ahmed Tabassam, M. Asif Ikram, M.Kamran Yousuf- The use of methods of bilingualism or multilingualism rather Monolingualism in English language class by English teacher and its subsequent effects on students' achievements and personality

URL: http://euacademic.org/PastIssueList.aspx?artid=22

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7. Jibeen, T. (2014). From home to shelter home: Victimization of young women in Pakistan. ***Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*****, *46*(4), 475-485.**

ABSTRACT:

The current study explores young women's decision to leave their parental homes in Pakistan. Fifteen women (14 to 23 years) were interviewed from three shelter homes situated in Lahore, one of the cosmopolitan cities of Pakistan. The purpose of the study was to explore the familial structural and functional factors that influence young women's decision to leave their parental home. The in-depth interviews were audiotaped, transcribed, translated, and analysed by identification of themes. Content analysis revealed salient familial structural (broken homes, economic strain, and familial involvement in illegitimate activities) as well as functional factors (harmful parental practices 45haracterized by neglect or authoritarian attitude, double standard, discrimination, and sibling rivalry, etc.) as the background factors for leaving home. These dysfunctional familial factors set the stage for emotional, physical, and sexual abuse, which the women often reported as the ultimate cause of their decision to run away. (PsycINFO Database Record © 2014 APA, all rights reserved)

URL:http://psycnet.apa.org/journals/cbs/46/4/475/

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8. Jibeen, T. (2014). Personality Traits and Subjective Well-Being: Moderating Role of Optimism in University Employees. ***Social indicators research*****, *118*(1), 157-172.**

ABSTRACT:

The present study examined the moderating impact of optimism on the relationship between personality traits (neuroticism and conscientiousness) and subjective well-being (distress and satisfaction with life) among university employees. Participants were 251 (age 25–60) employees at COMSATS University, who completed demographic information sheet, two subscales (neuroticism and conscientiousness) of NEO Personality Inventory (Costa et al. in Br J Psychol 78:299–306, 1987), Life Orientation Test-Revised (Scheier et al. in J Pers Soc Psychol 67:1063–1078, 1994), Satisfaction with Life Scale (Dienere et al. in J Persy Assess 49:71–75, 1985), and two subscales (depression and anxiety) of Brief Symptom Inventory (Derogatis and Melisaratos in Psychol Med 13:595–605, 1983). On a final sample of 251 university employees, a series of moderated hierarchical regression analyses were performed separately for positive

and negative health outcomes. Results indicated that optimism moderated between neuroticism and distress and neuroticism and satisfaction with life. Further, optimism moderated between conscientiousness and distress and conscientiousness and satisfaction with life. The current findings have implications for clinicians, researchers, and policy makers for the identification of resource factors that may help to understand the resistant power of non clinical sample to maintain positive functioning.

URL:http://link.springer.com/article/10.1007/s11205-013-0416-6

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9. Jibeen, T. (2014). Personality dimensions and emotional problems: The mediating role of irrational beliefs in Pakistani adult non- clinical sample. ***International Journal of Psychology*****, *50*(2), 93-100.**

ABSTRACT:

This study presents the first examination of the relation between the Big Five personality traits, irrational beliefs and emotional problems in Pakistan, which is an understudied country in the psychological distress literature. A total of 195 participants (aged 25–60 years), employees at COMSATS University, completed a demographic information sheet, the Big Five Personality Questionnaire, the Irrational Belief Inventory and two subscales of the Brief Symptom Inventory including depression and anxiety. Direct effects of neuroticism, openness and conscientiousness were also observed for depression and anxiety. Structural Equation Modelling demonstrated that irrational beliefs played a significant mediating role in the relationship between neuroticism and anxiety and neuroticism and depression. The results highlight the importance of cognitive beliefs in functionally linking personality traits and emotional problems.

URL: http://onlinelibrary.wiley.com/doi/10.1002/ijop.12069/pdf

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10. Khalid, A., &Anjum, M. A. I. (2014) Text to Speech Software for Improving Pronunciation of Graduation Level Students.*European Academic Research*, 2(1), 1-18.

ABSTRACT:

Present study investigates the effectiveness of Text to Speech (TTS) software for improving pronunciation of Graduation level students. This study was an attempt to scrutinize the efficacy of Text to Speech Software in decreasing the fear of the learners

towards learning correct pronunciation. It is an experimental research. Two groups, twenty students each, were selected after a pre-test. Experimental group was taught English pronunciation through Text to Speech Software while the control group was taught using conventional teaching method. After this experimental study of twenty one days, both groups took post-test. Post-research questionnaire was also administered for experimental group students. Data was analysed statistically through SPSS version 21 for Windows. Comparison of results proves the effectiveness of Text to Speech Software. It was concluded that the integration of Text to Speech Software in pedagogy promotes learner autonomy, raises competence level and makes students' pronunciation intelligible and comprehensible.

URL:https://scholar.google.com.pk/scholar?q=Text+to+Speech+Software+for+Improving+Pronunciation+of+Graduation+Level+Students&btnG=&hl=en&as_sdt=0%2C5

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11. Naveed, A. Aziz . S, Mehfooz,M. (2014). Analysis of Cyber Language: Identifying Gender Boundaries. ***European Academic Research, 2(7),*** **9706-9724.**

ABSTRACT:

Cyber language and internet linguistics have been subjects of linguistics debates among researchers in recent years with the proliferation of the use of technology for communication. Along with its various other aspects, its analysis in determining the gender boundaries is a useful area of research. The present study was conducted to analyze cyber language to identify the gender boundaries among one hundred Facebook users of various age groups (13-30 years). In the Pakistani context the study examined the hypothesis that gender based linguistic differences exist in cyber space. For this purpose, the corpus was collected in natural form from the Facebook walls of its users. Gender boundaries were examined on the basis of new word formation and reduction at lexical level. These parameters were further divided into blending, conversion, compounding, derivation and coinage for new word formation, acronyms, phonetic spellings, non-standard spellings, letter/number homophones, clippings and contractions for reduction. Having suggested new parameters for gender identification, the study draws on gender differences on the basis of lexical features used on Facebook. The results indicate that a new buteasily understandable language has evolved through Facebook which is responsible for significant differences between males' and females' linguistic properties. The results show that a specific age group from a gender is the dominant user of a specific feature but that very feature is absent on the wall posts of

the same age group of the other gender. Levine's test for equality of variances revealed that there is a significant difference between genders on the basis of compounding, coinage, abbreviation, acronyms, non-standard spelling, letter insertion and clipping; whereas, no significant difference was found between genders on the basis of blending, derivation, conversion, abbreviation, phonetic spelling and letter number homophone. On the other hand, genders significantly differ from each other on the basis of their use of non-standard spelling and phonetic spelling.

URL:https://scholar.google.com.pk/scholar?q=Analysis+of+Cyber+Language%3A+Identifying+Gender+Boundaries&btnG=&hl=en&as_sdt=0%2C5&as_vis=1

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12. Waseem, F. (2014). Sir Sayyid Ahmad Khan and the Identity Formation of Indian Muskims through Education. ***Review of History and Political Science,*** **2(2), 131-148.**

ABSTRACT:

The study places Sir Sayyed Ahmad Khan as the central figure in the emancipation of South Asian Muslims of India after they were annihilated as a nation, politically, economically and morally by their defeat at the hands of the British colonists. Sayyed saw their plight and managed to bring the two communities together by removing their misunderstandings about each other. By shis pragmatic vision and untiring zeal he convinced the Muslims to come out of their isolation and gain modern western education without compromising their religious and cultural identity. The study offers insights into situations where teaching of foreign languages and culture raise concerns about national identity and subject construction of learners. It points directions for curriculum designers and for critical linguists.

URL:http://rhpsnet.com/vol-2-no-2-june-2014-abstract-7-rhps#j_menu

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13. Waseem, F. (2014). The Legacy of the Colonial Project of English Education in Pakistan. ***International Journal of Business and Social Science*****, 5(11). 138-145.**

ABSTRACT:

This review article explores the aims, implementations and results of the British Imperial education policies in theIndian Subcontinent which installed English language as a measure to establish British influence and control over the colony. It looks into the

historical beginnings of English in Pakistan in the postcolonial context, which resulted in the loss of Persian, the end of the indigenous system of education, formation of hybrid identities, and the establishment of elite institutions. These issues are still plaguing the education system in present day Pakistan.

URL:https://scholar.google.com.pk/scholar?q=The+Legacy+of+the+Colonial+Project+of+English+Education+in+Pakistan+&btnG=&hl=en&as_sdt=0%2C5&as_vis=1

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14. Waseem, F. (*2014*). Brain Drain. A Result or Condition of Internationalization of Higher Education?. *International journal of Science Commerce and Humanities, 2(2), 32-38.*

ABSTRACT:

This article aims to see whether the current spate of 'Brain Drain' from the less developed countries like Pakistan, is because of internationalization of higher education. The study explores this in the context of globalization and the resultant knowledge economy which has turned information into a marketable commodity. Globalization aided by faster means of communication and information, has internationalized knowledge, making it easily accessible and abundant. This has inscribed new ways of perceiving teaching and learning replacing traditional ways of regarding epistemology by equating it with economic benefits in technologically defined areas and activities. Brain drain can be seen as a necessary condition and result of this internationalization of higher education, as well as because of the socio-economic and political conditions of the sending country.
URL:https://scholar.google.com.pk/scholar?hl=en&q=Brain+Drain%3A++A+Result+or+Condition+of+Internationalisation+of+Higher+Education%3F&btnG=&as_sdt=1%2C5&as_sdtp

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15. Zubair, H. M., & Azhar, H. H. (*2014*). Islamic Sharia Teachings and Practices for Preventing Bullying.*American International Journal of Contemporary Research. 4(1), 254-265.*

ABSTRACT:

Bullying is an intentional aggressive behavior that involves a real or perceived power imbalance. The behavior is carried out repeatedly or has the potential to be repeated,

over time. It occurs within an interpersonal relationship and can take many forms. In many respects, study on bullying prevention is still in its infancy. Although scholars have documented success of some comprehensive programs in reducing bullying but we still have much to learn about new aspects of preventing bullying. Many professional attempts to reduce the bullyingare not so effective; however, religious practices are more likely to succeed. This research will explore the causes of bullying defined by Islam and lay the practices prescribed by Islamic Sharia for preventing bullying.

URL:https://scholar.google.com.pk/scholar?q=%C2%A0%22Islamic+Sharia+Teachings+and+Practices+for+Preventing+Bullying%22&btnG=&hl=en&as_sdt=0%2C5

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16. Zubair, H. M., & Chaudhry, N. G. (*2014*). Islamic Banking in Pakistan: A Critical Review. *International Journal of Humanities and Social Science. 4*(2), 161-176.

ABSTRACT:

The research paper examines the ideological contestation between Opponents and Proponents of Islamic Banking in Pakistan. Major part of the research is based on Sharīʿah and jurisprudential study of Modes of Financing inIslamic Banks. This explores the agreements and similarities between Conventional and Islamic Banking. This also analyze that the existing system in Islamic Banks is based on illegal tricks and subterfuges while there is some superficial fractional support to this system from Islamic Law, but the real Sharīʿah objectives for implementation of these laws has been severely trampled. Whether there are interest-free banks or conventional interest banks, in fact, they are not involved in trade or any kind of business, they only deal in money. This is the opinion of Ahl al-Ḥadīth and Majority scholars of Ḥanafī schools of thought in Pakistan, although foundation of such business institutions is the need of the Islamic society wherein on genuine basis and in the light of Sharīʿah principles, Mushārakah and Muḍārabah could be undertaken.

URL:https://scholar.google.com.pk/scholar?q=%22Islamic+Banking+in+Pakistan%3A+A+Critical+Review%22.&btnG=&hl=en&as_sdt=0%2C5

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17. Zubair. M. (2014).A Comparative study of Traditional and modern concepts of Ijtihad.*Journal of Islamic Studies and Culture (USA), 2(2), 119-151.*

ABSTRACT:

In present day, Muslim Umma has been polarized into two groups; traditionalist and modernists. Both, standing on their own ideology, are absolutely refuting each other. In this research, the search question is that is either Iǧ tihād said to the addition to Qurʾ ān and Sunna, modification and amendment in or pursuing Šarīʿ a rulings from the depths and vastness of Qurʾ ān and Sunna? Traditionalist point of view is that whenever any new issue is raised about which there is no clear solution or ruling present in Šarīʿ a, then to derive the solution from the depths and vastness of Qurʾ ān and Ḥadīṯ is called Iǧ tihād. Hence, the common idea of both classical and present day traditionalist is that Iǧ tihād is said to pursue of Šarīʿ a rulings about a newly raised issue into the light of Qurʾ ān and Sunna whereas according to Modernists ' theory of Iǧ tihād addition, amendment, modification and reformation of Islamic Šarīʿ a is allowed.

URL:http://jiscnet.com/vol-2-no-2-june-2014-abstract-9-jisc#j_menu

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18. Zubair Baig, M. M. (2014). The Erasure Of A Mad And An Infamous Mother In Jean Rhys's Wide Sargasso Sea. *Pakistan Journal of Gender Studies*, (9).23-35.

ABSTRACT:

The character of Bertha Mason has been stereotyped as a "madwoman in the attic" in Charlotte Bronte's novel "Jane Eyre (1847)." Jean Rhys in her novel "Wide Sargasso Sea (1966)," has tried to re-inscribe her character as Antoinette by analyzing how the imperialist and patriarchal forces led a woman from the wide world of Sargasso Sea to the attic of Thornfield Hall England. My contention to this corrective process of rewriting as rerighting is that, in an effort to authenticate Antoinette's character, this writing has othered Annette, Antoinette's mother, and has, in return, created another madwoman who has been left unattended in the plot that should have written back to the canon instead of furthering canonical images.

URL:https://scholar.google.com.pk/scholar?q=The+Erasure+of+a+Mad+and+an+Infamous+Mother+in+Jean+Rhys%27s+Wide+Sargasso+Sea&btnG=&hl=en&as_sdt=0%2C5&as_vis=1

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19. Zubair, H. M., & Munawar, M. S. (2014). Sharīʿa Ruling Regarding the Variant Readings of the Holy Qurʾān that were authentically narrated but not included in the ʿUthmānic Maṣāḥif'. ***International Journal of Business and Social Science, 5(4), 192-198.***

ABSTRACT:

Many of the variant readings of the Holy Qurʾān having sound chain of narration are not included in the ʿUthmānic Maṣāḥif (Codices). Hence, following three probabilities can be deduced about these readings; First:Those were abrogated in ʿArḍa Akhīra (last revision). Second: Those might be among those explanatory notes of the Holy Text by Prophet Muhammad PBUH that were erroneously written by a few companions within the actual text of Qurʾān considering them a part of the Qurʾān. Third: Those may belong to such Aḥruf (readings) that were authentically transmitted from the Messenger of Allah PBUH but, they were not mentioned in orthography of the ʿUthmānic Maṣāḥif by the compilers due to any possible reason. To us, if we come across any authentically narrated recitation of the senior Qurrāʾ companions that seems contrary to the orthography of the ʿUthmānic Maṣāḥif and there is no proof of theirs being from the second category, then, it is better to consider them from the third category instead of the first one.

URL:https://scholar.google.com.pk/scholar?q=Shar%C4%AB%CA%BFa+Ruling+Regarding+the+Variant+Readings+of+the+Holy+Qur%CA%BE%C4%81n+that+were+Authentically+Narrated+but+not+included+in+the+%CA%BFUthm%C4%81nic+Ma%E1%B9%A3%C4%81%E1%B8%A5if&btnG=&hl=en&as_sdt=0%2C5

DEPARTMENT OF IRCBM

Journal Papers

1. Abbas, G., Irfan, A., Rana, U. A., & Shakir, I. (2014). DFT studies on the tetranuclear cubane complex [Ni4 (ampd) 4 (Cl4)]· MeCN. ***Journal of Structural Chemistry*****,** ***55*****(1), 30-37.**

ABSTRACT:

Density functional theory (DFT) is used to investigate the structural properties of Ni(II) cubane $[Ni_4(ampdH)_4Cl_4]\cdot MeCN$. The structural features and ground state geometry calculations are computed at the B3LYP/6-31G* (LANL2DZ) level of theory. We shed light on the highest occupied molecular orbital and lowest unoccupied molecular orbital. The absorption spectrum is calculated using time-dependent DFT. The absorption wavelengths are calculated using different functionals, i.e., pw91pw91, B3LYP, BHandHLYP, CAM-B3LYP, LC-BLYP, and M06. The LC-BLYP is in good agreement with the experimental data.

URL:http://link.springer.com/article/10.1134/S0022476614010053

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2. Afzal**, S., Tabassum, S., Gilani, M. A., Hussain, N., Farooq, R., Zahid, S., ...& Khan, A. (2014). Total phenolic content, in vitro radical scavenging and antimicrobial activities of whole plant rumex hastatus.** ***Science International*****,** ***26*****(2).721-727.**

ABSTRACT:

The importance of biological screening of plants has increased due to their greater therapeutic potential. The objective of the present study is to expose the antioxidant and antibacterial potential of the plant, Rumex hastatus. Antioxidant activity of different solvent fractions (n-hexane, ethyl acetate, chloroform, butanol and aqueous) was evaluated with different assays such as 2,2′-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) (ABTS), 1,1-diphenyl-2-picrylhydrazyl (DPPH) and Folin-Ciocalteu (FC). The 50% inhibitory concentration determined by DPPH and ABTS assays ranged from 26.28-233.73 µg and 6.7-78.75 µg respectively. The total phenolic contents were 122.87-637.00 mg GAE/g extract. In vitro antimicrobial activity of R. hastatus was evaluated by the standard Disc diffusion method. All of its fractions showed

antibacterial activity against Gram positive and Gram negative bacteria. Among the different fractions tested, ethyl acetate fraction was the most potent showing inhibition zones of 15 mm and 7.6 mm against Staphylococcus aureus and E.coli respectively.

URL:http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=98322646&h=sWpOQbukG1As4gIAZB%2f0jhNJ%2bAGXr7D26icJHaWUz3YO6ITTByDCPPN26133hF%2f014na9qyKKjHnoYm9hlh3kw%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d98322646

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3. Afzal, A. (2014). Implantable zirconia bioceramics for bone repair and replacement: A chronological review. *Materials Express*, *4*(1), 1-12.

ABSTRACT:

Bone tissue engineering applies scientific principles to repair, regenerate, and restore the functions of defected hard tissues or to replace them with purposely built biomaterials. In the past few decades, the design, construction and modification of biomaterials possessing desirable properties—those mimicking natural bone—remained the center of attention. Consequently, zirconia is found to be the material of choice for bone repair and replacement applications due to its unique biomechanical properties. This paper aims to present a succinct review of the applications of zirconia based biomaterials in bone tissue engineering; for instance, as implantable bioceramic, as coating or thin film on other metallic implants, as porous bone scaffold and substitute material, and as a radio-opacifying agent in bone cements. The evolution of zirconia as an essential material in biomedical applications, especially those concerning bone repair and replacement, is presented in a chronological order. Particular emphasis is placed on recent progress and drawbacks of zirconia and its composites in terms of their mechanical and biological properties. It is concluded that zirconia certainly enjoys the best combination of mechanical strength, fracture toughness, biocompatibility, and bioactivity; however, its properties can be further improved either by suitable surface modification or through combination with other bioactive ceramics and glasses.

URL:http://www.ingentaconnect.com/content/asp/me/2014/00000004/00000001/art00001

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4. Asif, A., Nazir, R., Riaz, T., Ashraf, N., Zahid, S., Shahid, R., ... & Rehman, I. U. (2014). Influence of processing parameters and solid concentration on microstructural properties of gel-casted porous hydroxyapatite. ***Journal of Porous Materials*****, *21*(1), 31-37.**

ABSTRACT:

Porous hydroxyapatite (HA) scaffolds with interconnected porosity have been successfully fabricated by using food grade gelatin as a gelling agent. Phase stability, chemical composition and topographical features of HA scaffolds were evaluated by X-ray diffraction (XRD), Fourier transform infrared spectroscopy and scanning electron microscopy respectively. XRD study revealed that additives used in the gel-casting process did not influence the phase composition of the investigated materials. The porosity of sintered scaffolds was assessed by the liquid displacement method and found to be 55–76 %. The pores were tailored to spherical shape and size in the range 300–400 nm, feature of utmost interest to clinicians for cell attachment, proliferation and development of soft tissues. Biocompatibility of HA scaffolds was evaluated via hemolysis studies. The results of hemolysis proved the highly biocompatible behavior of the synthesized HA scaffolds.

URL:http://link.springer.com/article/10.1007/s10934-013-9743-x

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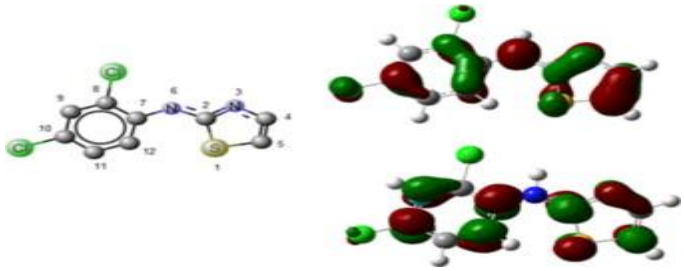
5. Babar, A., Khalid, H., Ayub, K., Saleem, S., Waseem, A., Mahmood, T., ... & Khan, A. F. (2014). Synthesis, characterization and density functional theory study of some new 2-anilinothiazoles. ***Journal of Molecular Structure*****, *1072*, 221-227.**

ABSTRACT:

We report here a comparative theoretical and experimental study of anilinothiazoles. The anilinothiazoles are synthesized by acid catalyzed condensation of N-phenylthioureas and 2-chloro-1,1-dimethoxyethane. Substituted anilines were employed to introduce substitution in 2-anilinothiazoles. The experimental geometric and spectroscopic properties of the anilinothiazoles are compared with the theoretically calculated ones. The model developed here comprises of geometry optimization at B3LYP method of DFT at 6-31+G(d) basis set. The optimized geometric parameters of anilinothiazoles show nice correlations with values obtained from X-ray crystal structure. Differences of up to 0.02 Å in bond length and 1.0° in bond angles are observed except S—C2—N6 and C7—N6—C2 where this difference is 1.77° and 6.01°,

respectively. The vibrational spectra are calibrated with a common scaling factor of 0.9613 and show nice correlations with the experimental IR spectra. The UV–Vis spectra calculated at 190–450 nm range show 20–25 nm difference from the experimental spectra. The consistent difference may be attributed to the condensed phase nature of anilinothiazoles however the theoretical spectra are for single molecules. In addition HOMO, LUMO and the associated band gaps are also calculated and depicted.

Graphical abstract



URL:http://www.sciencedirect.com/science/article/pii/S0022286014004682

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6. Bakas, I., Hayat, A., Piletsky, S., Piletska, E., Chehimi, M. M., Noguer, T., & Rouillon, R. (2014). Electrochemical impedimetric sensor based on molecularly imprinted polymers/sol–gel chemistry for methidathion organophosphorous insecticide recognition. ***Talanta*****, *13(29)*, 294-298.**

ABSTRACT:

We report here a novel method to detect methidathion organophosphorous insecticides. The sensing platform was architected by the combination of molecularly imprinted polymers and sol–gel technique on inexpensive, portable and disposable screen printed carbon electrodes. Electrochemical impedimetric detection technique was employed to perform the label free detection of the target analyte on the designed MIP/sol–gel integrated platform. The selection of the target specific monomer by electrochemical impedimetric methods was consistent with the results obtained by the computational modelling method. The prepared electrochemical MIP/sol–gel based sensor exhibited a high recognition capability toward methidathion, as well as a broad linear range and a low detection limit under the optimized conditions. Satisfactory results were also obtained for the methidathion determination in waste water samples.

URL:http://www.sciencedirect.com/science/article/pii/S0039914014005657

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7. Din, M. I., Hussain, Z., Mirza, M. L., Shah, A. T., & Athar, M. M. (2014). Adsorption optimization of Lead (II) using Saccharum bengalense as a non-conventional low cost biosorbent: Isotherm and thermodynamics modeling. ***International journal of phytoremediation*****, *16*(9), 889-908.**

ABSTRACT:

In the present study a novel biomass, derived from the pulp of *Saccharum bengalense*, was used as an adsorbent material for the removal of Pb (II) ions from aqueous solution. After 50 minutes contact time, almost 92% lead removal was possible at pH 6.0 under batch test conditions. The experimental data was analyzed using Langmuir, Freundlich, Timken and Dubinin-Radushkevich two parameters isotherm model, three parameters Redlich–Peterson, Sip and Toth models and four parameters Fritz Schlunder isotherm models. Langmuir, Redlich–Peterson and Fritz-Schlunder models were found to be the best fit models. Kinetic studies revealed that the sorption process was well explained with pseudo second-order kinetic model. Thermodynamic parameters including free energy change ($\Delta G°$), enthalpy change ($\Delta H°$) and entropy change ($\Delta S°$) have been calculated and reveal the spontaneous, endothermic and feasible nature of the adsorption process. The thermodynamic parameters of activation ($\Delta G^{\#}$, $\Delta H^{\#}$and $\Delta S^{\#}$) were calculated from the pseudo-second order rate constant by using the Eyring equation. Results showed that Pb (II) adsorption onto SB is an associated mechanism and the reorientation step is entropy controlled.

URL:http://www.tandfonline.com/doi/abs/10.1080/15226514.2013.803025

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8. Ghauri, M. A., Siddiqi, S. A., & Ashiq, M. G. B. (2014). Band gap measurement of ZnO-MoO3-P2O5 glasses by photoconductivity. ***Glass Physics and Chemistry*****, *40*(2), 151-156.**

ABSTRACT:

The preparation of a range of glasses based on the ternary system ZnO-MoO_3-P_2O_5 network is reported. The time dependence resistance of these glasses at constant applied voltage reveals the absence of polarization effect. The glasses are characterized by photoconductivity measurements and optical band gaps are deduced from their respective spectral dependence curves under various applied voltages. The normalized photocurrent is found to increase with photon energy and applied voltage. The values of band gap and dark current as a function of applied voltage are deduced. It is

demonstrated that normalized photocurrent arises from electron hopping transport mechanism.

URL:http://link.springer.com/article/10.1134/S1087659614020060

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9. Haider, W., Delahaie, S., Saint-Clair, J. F., Hayat, A., Barillier, D., & Ledauphin, J. (2014). Physicochemical characterization of Pommeau de Normandie: establishing a relationship between metal contents and turbidity of the Pommeau samples. *European Food Research and Technology*, *239*(4), 567-575.

ABSTRACT:

Pommeau is a traditional beverage of France which is elaborated by mixing Calvados and clarified apple must. In this study, this beverage was physicochemically characterized for the first time by different analytical methods. Pommeau contains a mean content of ethanol around 16.3 % (v/v) while pH values are observed between 3.9 and 4.3. Total and volatile acidities are rather low if they are compared to other beverages, and this is correlated with relatively low quantities of malic acid (around 1.5 g/L) and high concentrations of reducing sugars (79–109 g/L). Alkali and alkaline earth metals (K, Na, Ca and Mg) are dominant in concentration as compared to the other metals. Pommeau is a sweet beverage which reflects that producers are selecting higher proportions of sweet apples and lower proportions of acidic apples. The concentration of metals may be correlated to the turbidities of Pommeau samples up to some extent. The statistical analyses have shown the association of metals with more turbid sample.

URL:http://link.springer.com/article/10.1007/s00217-014-2252-6

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10. Hayat, A., Catanante, G., & Marty, J. L. (2014). Current Trends in Nanomaterial-Based Amperometric Biosensors. *Sensors*, *14*(12), 23439-23461.

ABSTRACT:

The last decade has witnessed an intensive research effort in the field of electrochemical sensors, with a particular focus on the design of amperometric biosensors for diverse analytical applications. In this context, nanomaterial integration in the construction of amperometric biosensors may constitute one of the most exciting approaches. The

attractive properties of nanomaterials have paved the way for the design of a wide variety of biosensors based on various electrochemical detection methods to enhance the analytical characteristics. However, most of these nanostructured materials are not explored in the design of amperometric biosensors. This review aims to provide insight into the diverse properties of nanomaterials that can be possibly explored in the construction of amperometric biosensors.

URL:http://www.mdpi.com/1424-8220/14/12/23439/htm

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11. Hayat, A., Bulbul, G., & Andreescu, S. (2014). Probing phosphatase activity using redox active nanoparticles: A novel colorimetric approach for the detection of enzyme activity. *Biosensors and Bioelectronics*, *56*, 334-339.

ABSTRACT:

A new colorimetric assay for the detection of alkaline phosphatase (ALP) activity is reported based on the surface reactivity and optical properties of redox active nanoparticles of cerium oxide, or nanoceria. The method takes advantage of nanoceria color changes after interaction with products of the ALP catalyzed reaction, resulting in charge transfer complexes with very strong absorption characteristics. The developed assay is easy-to-use, robust and cost effective and does not involve labeled reagents, secondary enzymes or soluble dyes. Hydrolytic products of more stable substrates (catechol monophosphate, ascorbic 2-phosphate and hydroquinone diphosphate) that could previously not be used in ALP assays can be conveniently colorimetrically detected with this assay. A detection limit of 0.04 U/L ALP with a linear range up to 2 U/L was obtained with ascorbic 2-phosphate substrate. The proposed assay can eliminate multistep procedures and minimize problems associated with the poor stability of substrates and enzyme labels of conventional ALP assays. The assay has been adapted to a paper platform and has demonstrated functionality for ALP detection in human serum. This sensing concept can find wide applications as a general approach for improving sensitivity and simplifying detection schemes of colorimetric bioassays, e.g. enzyme, gene, immuno and aptamer assays and related affinity sensing methods.

URL:http://www.sciencedirect.com/science/article/pii/S0956566314000050

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12. Hayat, A., & Marty, J. L. (2014). Disposable screen printed electrochemical sensors: Tools for environmental monitoring. ***Sensors*****, *14*(6), 10432-10453.**

ABSTRACT:

Screen printing technology is a widely used technique for the fabrication of electrochemical sensors. This methodology is likely to underpin the progressive drive towards miniaturized, sensitive and portable devices, and has already established its route from "lab-to-market" for a plethora of sensors. The application of these sensors for analysis of environmental samples has been the major focus of research in this field. As a consequence, this work will focus on recent important advances in the design and fabrication of disposable screen printed sensors for the electrochemical detection of environmental contaminants. Special emphasis is given on sensor fabrication methodology, operating details and performance characteristics for environmental applications.

URL:http://www.mdpi.com/1424-8220/14/6/10432/htm

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13. Hussain, T., Jamil, R., Mujahid, A., Shehzad, K., Farooqi, Z. H., Ahmed, E., ... & Shah, A. T. (2014). Enhanced Control on the Electro Deposition Through Magnetic Field Using Reverse Microemulsion as Template. ***Asian Journal of Chemistry*****, *26*(18). 6077-6080.**

ABSTRACT:

Reverse micro emulsion is often used for the synthesis of metal nanoparticles. Such prepared metallic nanoparticles may be used as catalyst for oxidation of methanol occurring in fuel cell. Nickel electrodes were modified by electro chemical deposition of the nickel nanoparticles. In-continuous deposition was occurred on using reverse micro emulsion. This problem was addressed on having the same in the presence of magnetic field. In fact, Lorentz force started playing role in terms of large mass transfer rate when magnetic field perpendicular to the direction of current was applied. Surface analysis of the both types of the modified electrode was done with the help scanning electron microscopy. Electro chemical and catalytic studies of both modified electrodes were done. Results of these studies encouraged the employment of the magnetic field during the electro chemical deposition of the metals.

URL:http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=09707077&AN=101768973&h=bs%2fHu1nVgKjiZp6DNXVX8XCQbQI16%2bqGFKdESvAXWDNqRybyB%2fPN2RzCUGXLpQ%2biIftkAC68xEsxkyCX7pMdZA%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d09707077%26AN%3d101768973

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14. Hussain, T., Munir, H., Mujahid, A., Farooq, M. U., Shehzad, K., Shah, A. T., ... & Asghar, M. T. (2014). Molecular Imprinted Titania Sol–Gel Layer for Conductometric Sensing of p-Nitrophenol. ***Sensor Letters*****, *12*(11), 1682-1687.**

ABSTRACT:

Molecularly imprinted titania based conductometric sensor was developed for selective recognition of *p*-nitrophenol. Titania sol–gel layer imprinted with *p*-nitrophenol was synthesized and characterized for its rebinding efficiency. Fourier transform infrared spectroscopy (FTIR) studies indicated the successful imprinting of template and its subsequent removal on washing. Scanning electron microscope (SEM) images of imprinted film before and after washing showed a significant change in porosity of molecular imprinted polymer (MIP) layer i.e., favoring analyte adsorption. The conductometric response of the developed sensor was tested for *p*-nitrophenol in the range of 0.01–0.1 mM. Non-imprinted titania layer was evaluated to compensate the non-specific binding interactions. Selectivity studies were also conducted by exposing equimolar solutions of para, meta and ortho nitrophenol to MIP layer. Results showed that MIP layer is highly responsive towards its template *p*-nitrophenol as compared to other isomers. The efficiency of regenerated layer was more than 85% of fresh titania layer even after ten rounds of analyses. Finally, imprinted titania layer was fabricated with Ag-nanoparticles for improving sensor response thus, developing composite layer material for enhanced recognition.

URL:http://www.ingentaconnect.com/content/asp/senlet/2014/00000012/00000011/art00019

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15. Haneef, K., Naeem, N., Khan, I., Kabir, N., Jamall, S., Zahid, M., & Salim, A. (2014). Conditioned medium enhances the fusion capability of rat bone marrow mesenchymal stem cells and cardiomyocytes. ***Molecular biology reports*****,** ***41*****(5), 3099-3112.**

ABSTRACT:

Mesenchymal stem cells (MSCs) show accelerated regeneration potential when these cells experience hypoxic stress. This "preconditioning" has shown promising results with respect to cardio-protection as it stimulates endogenous mechanisms resulting in multiple cellular responses. The current study was carried out to analyze the effect of hypoxia on the expression of certain growth factors in rat MSCs and cardiomyocytes (CMs). Both cell types were cultured and assessed separately for their responsiveness to hypoxia by an optimized dose of 2,4,-dinitrophenol (DNP). These cells were allowed to propagate under normal condition for either 2 or 24 h and then analyzed for the expression of growth factors by RT-PCR. Variable patterns of expression were observed which indicate that their expression depends on the time of re-oxygenation and extent of hypoxia. To see whether the growth factors released during hypoxia affect the fusion of MSCs with CMs, we performed co-culture studies in normal and conditioned medium. The conditioned medium is defined as the medium in which CMs were grown for re-oxygenation till the specified time period of either 2 or 24 h after hypoxia induction. The results showed that the fusion efficiency of cells was increased when the conditioned medium was used as compared to that in the normal medium. This may be due to the presence of certain growth factors released by the cells under hypoxic condition that promote cell survival and enhance their fusion or regenerating ability. This study would serve as another attempt in designing a therapeutic strategy in which conditioned MSCs can be used for ischemic diseases and provide more specific therapy for cardiac regeneration.

URL:http://link.springer.com/article/10.1007/s11033-014-3170-1

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16. Hayat, A., & Marty, J. L. (2014). Aptamer based electrochemical sensors for emerging environmental pollutants. ***Frontiers in chemistry*****, 2. 41-49.**

ABSTRACT:

Environmental contaminants monitoring is one of the key issues in understanding and managing hazards to human health and ecosystems. In this context, aptamer based

electrochemical sensors have achieved intense significance because of their capability to resolve a potentially large number of problems and challenges in environmental contamination. An aptasensor is a compact analytical device incorporating an aptamer (oligonulceotide) as the sensing element either integrated within or intimately associated with a physiochemical transducer surface. Nucleic acid is well known for the function of carrying and passing genetic information, however, it has found a key role in analytical monitoring during recent years. Aptamer based sensors represent a novelty in environmental analytical science and there are great expectations for their promising performance as alternative to conventional analytical tools. This review paper focuses on the recent advances in the development of aptamer based electrochemical sensors for environmental applications with special emphasis on emerging pollutants.

URL:http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4071757/

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17. Khan, Z. A., Afzal, N., Hussain, Z., Naqvi, S. A. R., Bari, A., Shahzad, S. A., ... & Ahmad, M. (2014). Synthesis of 2-Aryl-4H-3, 1-Benzoxazin-4-ones: A Class of a-Chymotrypsin Inhibitors. ***Asian J. Chem*****, *26*(15), 4561-4565.**

ABSTRACT:

Twenty one derivatives of 2-aryl-4*H*-3,1-benzoxazin-4-one were synthesized and their potential therapeutically significance and structure-activity relationship were tested against □-chymotrypsin. Majority of synthesized compounds showed significant *in vitro*□-chymotrypsin inhibitory properties having IC_{50} values in the range of 5.42 ± 1.66 – 41.27 ± 1.33 µM, whereas standard inhibitor chymostatin have IC_{50} value 7.13 ± 1.06 µM. In the present series compounds 2-(2-fluorophenyl)-4*H*-3,1-benzoxazin-4-one (**3h**), 2-(2-bromophenyl)-4*H*-3,1-benzoxazin-4-one (**3n**) and 2-(1-naphthyl)-4*H*-3,1-benzoxazin-4-one (**3t**) with IC_{50} values 7.22 ± 0.75, 6.99 ± 0.29 and 5.42 ± 1.66 µM, respectively were found to be most active members of series, even better than standard inhibitor □-chymostatin.

URL:http://www.asianjournalofchemistry.co.in/user/journal/viewarticle.aspx?ArticleID=26_16_6

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18. Khan, I. U., Khan, F. U., Hussain, J., Badshah, S., Muhammad, N., Khan, R. A., ...& Hussain, I. (2014). Asperal: A New Clerodane Diterpene from Sonchus asper. ***Asian Journal of Chemistry*****, *26*(9).2699-2701.**

ABSTRACT:

A new diterpenoid asperal (1) has been isolated from the chloroform soluble fraction of Sonchus asper along with two known compounds, emodin (2) and methyl-(3,8-di-hydroxy-6-methyl-9-oxo-9H-xanthene)-1-carboxylate (3) which were isolated for the first time from this species. The structures of the isolated compounds were assigned on the basis of ID and 2D NMR spectral analysis and by comparison with the reported data.

URL:http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=09707077&AN=99891471&h=8%2bWCYRLyotZWkF0vH35qt%2fXRl654YCv65%2bZExpqUxaeZ9viCb4%2bfH4%2baQAA4H0kwjOpWiuOS3LVg%2fA5uSsXIMg%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d09707077%26AN%3d99891471

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19. Khan, A. F., Saleem, M., Afzal, A., Ali, A., Khan, A., & Khan, A. R. (2014). Bioactive behavior of silicon substituted calcium phosphate based bioceramics for bone regeneration. ***Materials Science and Engineering: C*****, *35(1)*, 245-252.**

ABSTRACT:

Bone graft substitutes are widely used for bone regeneration and repair in defect sites resulting from aging, disease, trauma, or accident. With invariably increasing clinical demands, there is an urgent need to produce artificial materials, which are readily available and are capable of fast and guided skeletal repair. Calcium phosphate based bioactive ceramics are extensively utilized in bone regeneration and repair applications. Silicon is often utilized as a substituent or a dopant in these bioceramics, since it significantly enhances the ultimate properties of conventional biomaterials such as

surface chemical structure, mechanical strength, bioactivity, biocompatibility, etc. This article presents an overview of the silicon substituted bioceramics, which have emerged as efficient bone replacement and bone regeneration materials. Thus, the role of silicon in enhancing the biological performance and bone forming capabilities of conventional calcium phosphate based bioceramics is identified and reviewed.

URL:http://www.sciencedirect.com/science/article/pii/S0928493113006267

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20. Khan, D., Khan, H. U., Khan, F., Khan, S., Badshah, S., Khan, A. S., ...& Muhammad, N. (2014). New Cholinesterase Inhibitory Constituents from Lonicera quinquelocularis. *PloS one*, *9*(4). E94952.

ABSTRACT:

A phytochemical investigation on the ethyl acetate soluble fraction of *Lonicera quinquelocularis* (whole plant) led to the first time isolation of one new phthalate; *bis(7-acetoxy-2-ethyl-5-methylheptyl) phthalate* (**3**) and two new benzoates; *neopentyl-4-ethoxy-3, 5-bis (3-methyl-2-butenyl benzoate* (**4**) *and neopentyl-4-hydroxy-3, 5-bis (3-methyl-2-butenyl benzoate* (**5**) along with two known compounds *bis (2-ethylhexyl phthalate* (**1**) and *dioctyl phthalate* (**2**). Their structures were established on the basis of spectroscopic analysis and by comparison with available data in the literature. All the compounds (**1–5**) were tested for their acetylcholinesterase (AChE) and butyrylcholinesterase (BChE) inhibitory activities in dose dependent manner. The IC_{50} (50% inhibitory effect) values of compounds **3** and **5** against AChE were 1.65 and 3.43 µM while the values obtained against BChE were 5.98 and 9.84 µM respectively. Compounds **2** and **4** showed weak inhibition profile.

URL:http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0094952

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21. Khan, A., Farooq, U., Ullah, F., Iqbal, J., Khan, A. F., Zaib, S., ... & Azarpira, A. (2014). Determination of Biological Activities and Total Phenolic Contents of Flowers of Jasminum humile and roots of Dorema aucheri. *J. Chem. Soc. Pak*, *36*(2), 291-295.

ABSTRACT:

The present study was designed to investigate *in vitro* antioxidant, NO scavenging, and antibacterial activities as well as total phenolic contents of different extracts of flowers

of *Jasminumhumile* and roots of *Dorema aucheri*. The plant extracts showed significant antioxidant activity, having IC50 values comparable to those of references used in each assay and also inhibited accumulation of nitrite *in vitro*. The plant extracts yielded phenolic contents and showed significant antibacterial activity. The observed antioxidant potential and phenolic contents of the extracts showed that flowers of *J. humile* and roots of *D. aucheri* are potential source of natural antioxidants that may help to retard oxidative degradation and microbial growth in food industry.

URL:https://scholar.google.com.pk/scholar?q=Determination+of+Biological+Activities+and+Total+Phenolic+Contents+of+Flowers+of+Jasminum+humile+and+roots+of+Dorema+aucheri&btnG=&hl=en&as_sdt=0%2C5

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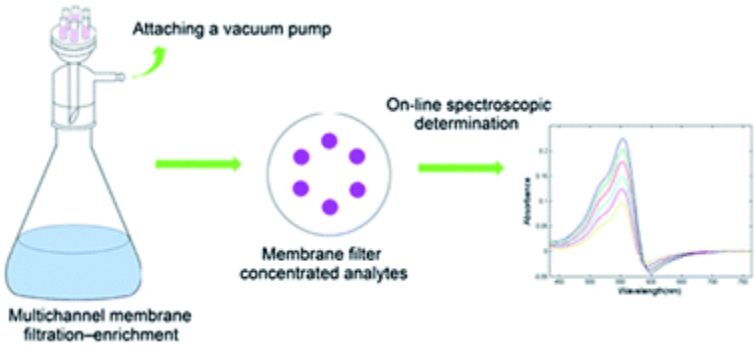
22. Khan, S. Ahmad, M. Muhammad. N, Khan, R. A khan, K. S. A. Yousuf. A.(2014).Genetic diversity of Bemisiatabaci in Pakistan. ***Advances in Environmental Biology*****.8(5). 1339-1344**

Abstract not found

23.Li, W., Wang, L., Tong, P., Iqbal, J., Zhang, X., Wang, X., & Du, Y. (2014). Determination of trace analytes based on diffuse reflectance spectroscopic techniques: development of a multichannel membrane filtration-enrichment device to improve repeatability. ***RSC Advances*****, *4*(94), 52123-52129.**

ABSTRACT:



URL:http://pubs.rsc.org/en/content/articlelanding/2014/ra/c4ra10218e/unauth#!divAbstract

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24. Mehboob, H., Awais, M., Khalid, H., Siddiqi, S. A., & Rehman, I. (2014). Polymer-assisted deposition of hydroxyapatite coatings using electrophoretic technique. ***Biomedical Engineering: Applications, Basis and Communications*****, *26*(06), 1450073.**

ABSTRACT:

Hydroxyapatite (HA) finds use as powder, scaffold, paste, and coatings for orthopedic and dental applications. Plasma spraying is the most commonly used technique to coat HA on metallic implants. However, undesirable phase changes at high temperatures encourage to adopt ambient temperature deposition techniques such as dip coating, electrophoretic, and physical vapor deposition (PVD). Electrophoretic technique is being used extensively to deposit HA, however sintering is required after the deposition to enhance adhesion of coatings to the substrate. In the present work, polyethylene glycol (PEG) modified HA was deposited on 316L Stainless Steel plates using electrophoretic deposition (EPD), which improved the binding strength of the HA to the substrate with increased packing density of HA particles without the need of sintering. PEG is a biocompatible and soluble polymer that helps HA to bond well with the substrate and in addition, prevents the agglomeration and precipitation of HA. Phase identification and crystal structure of the coatings were determined using X-ray diffraction (XRD). The stability of the coatings was assessed by Fourier transform infrared spectroscopy (FTIR), whereas scanning electron microscopy (SEM) was utilized in order to investigate the morphological properties of the deposited coatings. The mechanical properties of the coatings were investigated using the indentation testing that depicted an enhanced level of adhesion of coatingstothesubstrate.

URL:http://www.worldscientific.com/doi/abs/10.4015/S1016237214500732

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25. Mahmood, T., Gilani, M. A., Tabassum, S., Khan, A. F., & Khan, F. A. (2014). DFT Studies of Biphenyl Derivatives, Potential Application as Chiral Dopants for Liquid Crystals. ***Journal of the Chemical Society of Pakistan*****, *36*(3), 498-502.**

ABSTRACT:

High polarization power may be achieved by designing dopants with chiral cores having polar functional groups that are conformationally more restricted when confined to the zigzag binding site of the (smectic) SmC* host. Axially chiral biphenyls having conformationally restricted and unresticted cores were investigated for dipole moment at B3LYP/6-31G(d) method of DFT(density functional theory). It was reflected

from the computed data that the dipole moment of conformationally restricted biphenyl cores containing dioxolane and dithiolane bridge was more compared to the conformationally unrestricted biphenyl core. Overall we have investigated the dipole moment of nineteen biphenyl derivatives having substituents at different positions.

URL:https://scholar.google.com.pk/scholar?q=DFT+Studies+of+biphenyl+derivatives%2C+potential+application+as+chiral+dopants+for+liquid+crystals&btnG=&hl=en&as_sdt=0%2C5

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26. Mir, M., Siddiqi, S. A., Hussain, T., Chaudhry, A. A., Rehman, I. U., Khan, A. S., & Abbas, G. (2014). Synthesis and characterization of calcium deficient apatite granules for drug eluting bone graft applications. ***Ceramics International*****, *40*(7), 10719-10725.**

ABSTRACT:

Antibiotic loaded calcium deficient apatite (CDA) granules were prepared by wet chemical synthesis followed by microwave irradiation. Microporous CDA granules were loaded with three broad spectrum antibiotics (Amoxicillin, Gentamicin and Chloramphenicol). The aim of this study was to evaluate the *in-vitro* performance of locally released antibiotics which has a potential to treat infected osseous defects. *In-vitro* studies of the synthesized material elucidated high drug loading capacity and a drug release profile spanning a period of more than 24 h. The respective antibiotic functional groups were analyzed by Fourier Transform Infrared Spectroscopy (FT-IR). X-ray Diffraction (XRD) was used to study the phase purity of synthesized CDA. Drug release profiles were determined by using UV–vis Spectroscopy. Scanning Electron Microscopy (SEM) was used to investigate granule sizes and porosity. Particle size (2–20 μm) with an average pore diameter of 2.9 μm (±0.5 μm) was achieved without heat-treatment and use of any porogens. Thermal stability was determined using simultaneous Differential Scanning Calorimetry (DSC) and Thermogravimetric Analysis (TGA). The drug release profile showed initial burst release followed by sustained release periodically.

URL:http://www.sciencedirect.com/science/article/pii/S0272884214003976

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27. Mahmood, N., Ahsan, M., Muhammad, I., Afzal, S., Qureshi, Z., Naqvi, S. A. R., ...& Shahzad, S. A. (2014). Molecular Expression Profile Of Different Cellulolytic Enzyme Genes In Aspergillus Niger In Response To Uv Radiation And Chemical Mutagenesis. *Cellulose Chemistry And Technology*, *48*(5-6), 529-533.

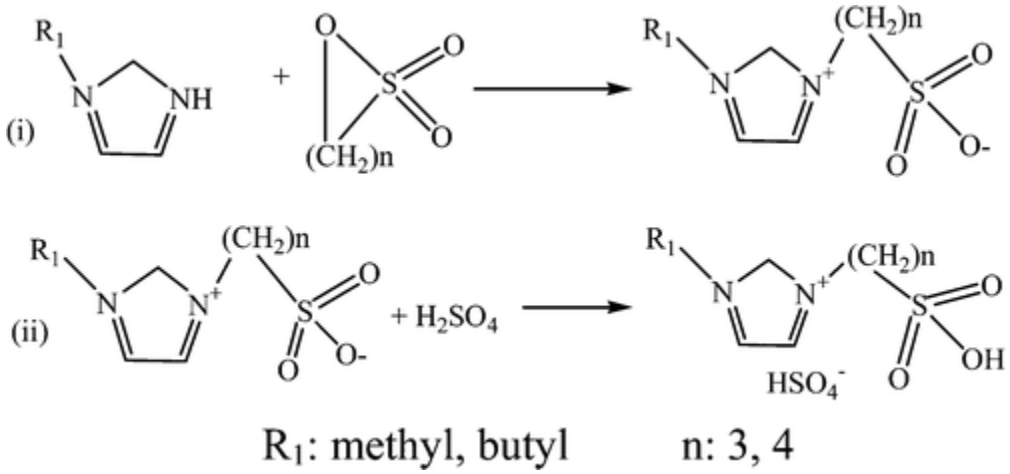
ABSTRACT:

*Aspergillus niger*has several different types of cellulolytic enzyme genes, which are expressed at different levels in response to mutagenesis by UV radiation and chemicals like ethyl methyl sulphonate (EMS). In the present research, the *A. niger*normal (N) strain was subjected to mutagenesis by UV radiation and EMS. The resultant three strains of *A.niger*, i.e. chemically mutated (CM), UV mutated (UM) and normal (N), were subjected to biochemical analysis in the
first stage of the study and to cellulolytic enzyme gene expression profile analysis in the second stage. Total protein contents were found to be highest (12 mg/mL) in the chemically mutated form of *A. niger*. As for the enzyme activity,the greatest amylase and pectinase activity was observed in the UV mutated form of the fungus, while the maximum cellulase enzyme activity was observed in the chemically mutated form. This enzyme activity was measured by determining the diameter of the clear zones in plate assays. For all three strains of *A. niger*, the comparative expression profiles of cellulolytic enzyme genes CbhB, Exo, eglA, eglB, eglC and eng1 were monitored by reverse transcriptase PCR (RT-PCR) with 0.5% carboxymethyl cellulose (CMC) and 0.3% Avicel in the growth medium. While there was no expression for the Eng1 gene transcript in any of the three strains, Egl-C was found to be expressed predominantly in the *A. niger*(UM) strain. The remaining transcripts of the cellulolytic enzyme genes were found to be at higher expression levels in *A. niger*(CM).

URL:https://scholar.google.com.pk/scholar?q=Molecular+expression+profile+of+different+cellulolytic+enzyme+genes+in+Aspergillus+niger+in+response+to+UV+and+chemical+mutagenesis&btnG=&hl=en&as_sdt=0%2C5

28. Muhammad, N., Man, Z., Elsheikh, Y. A., Bustam, M. A., & Mutalib, M. A. (2014). Synthesis and thermophysical properties of imidazolium-based Bronsted acidic ionic liquids. ***Journal of Chemical & Engineering Data*****, *59*(3), 579-584.**

ABSTRACT:



A range of imidazolium-based Bronsted acidic ionic liquids (ILs) have been synthesized by varying the side chain length of the alkyl and alkyl sulfonic group incorporated to the C1 and C3 positions in the imidazolium ring respectively with a fixed HSO_4^- anion. The synthesized ILs were characterized using NMR for structure confirmation and CHNS for elemental analysis. The thermal properties such as thermal decomposition temperature were determined using thermogravimetric analysis, and several key physical properties such as viscosity and density were measured within a temperature range of 20 °C to 80 °C using an Anton Paar viscometer and densitometer. The density measurement results and established equations were used to calculate the molecular volumes, standard entropies, crystal lattice energies, and thermal expansion coefficients of the synthesized ILs.

URL:http://pubs.acs.org/doi/abs/10.1021/je400243j

29. Mujahid, A., Ali, Y., Afzal, A., Hussain, T., Shah, A. T., Shehzad, K., & Farooq, M. U. (2014). Rapid assay of the comparative degradation of acetaminophen in binary and ternary combinations. ***Arabian Journal of Chemistry*****, 7(4), 522-524.**

ABSTRACT:

The study is intended to monitor the comparative degradation rates of acetaminophen in binary and ternary combinations by UV–vis spectroscopy. The drugs were exposed to UV-rays in blister packing. The exposition time was 24, 48 and 72 h for both shorter and longer wavelengths. The problem of overlapping UV bands of aspirin and caffeine with acetaminophen was solved by extracting them in diethylether, therefore, we developed a straightforward, rapid and accurate assay method for measuring acetaminophen concentration in binary and ternary mixtures and to monitor its degradation.

URL:http://www.sciencedirect.com/science/article/pii/S1878535212002432

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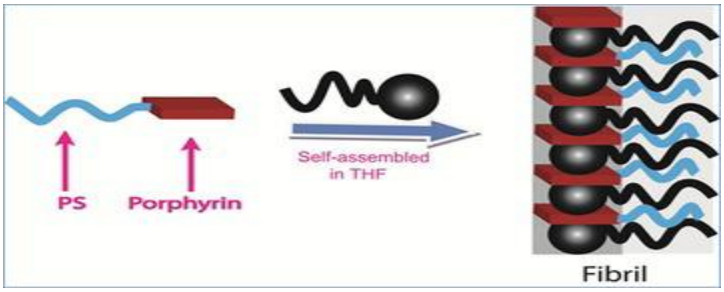
30. Nawaz, M. H., Riaz, S., & Liu, F. (2014). Atomic Force Microscopic Investigations of Fibrils Formed by Complexation of Monochelic Polystyrenic Porphyrin and PEGylated Fullerene (C60). ***Journal of Dispersion Science and Technology*****, 35(5), 753-756.**

ABSTRACT:

Atomic force microscopic studies have been conducted for insight into the morphological aspects of monochelic porphyrin and fullerene complexes forming fibrils of continuous nature. Alternating dark and bright segments could be envisioned clearly, as individual porphyrin-fullerene repeating units. These fibrils also caused a remarkable red shift in the soret band absorption of porphyrin. Dynamic light scattering analysis was also conducted under different solvent conditions, which showed the swelling of fibrils when the solvent was changed from THF to water.



http://www.tandfonline.com/doi/abs/10.1080/01932691.2013.802654

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31. Nunes, G. S., Lins, J. A. P., Silva, F. G. S., Araujo, L. C., Silva, F. E. P. S., Mendonça, C. D., ... & Marty, J. L. (2014). Design of a macroalgae amperometric biosensor; application to the rapid monitoring of organophosphate insecticides in an agroecosystem. ***Chemosphere*****, *111*, 623-630.**

ABSTRACT:

The immobilization of enzymes onto transducer support is a mature technology and has been successfully implemented to improve biocatalytic processes for diverse applications. However, there exists still need to design more sophisticated and specialized strategies to enhance the functional properties of the biosensors. In this work, a biosensor platform based on innovative fabrication strategy was designed, and employed for the detection of organophosphate (OP) in natural waters. The biosensor was prepared by incorporating acetylcholinesterase enzyme (AChE) to the graphite paste modified with tetracyanoquinodimethane (TCNQ) mediator, along with the use of a macroalgae (*Cladaphropsis* membranous) as a functional immobilization support. The novel immobilization design resulted in a synergic effect, and led to enhanced stability and sensitivity of the biosensor. The designed biosensor was used to analyze methyl parathion OP insecticide in water samples collected from a demonstrably contaminated lake of São Luis Island, Maranhão, Northeast of Brazil. Water analysis revealed that the aquatic ecosystem was polluted by sub-ppm concentrations of the OP insecticide, and a good correlation was found between values obtained through biosensor and GC–MS techniques. Our results demonstrated that macroalgae-biosensor could be used as a low-cost and sensitive screening method to detect target analyte.

URL:http://www.sciencedirect.com/science/article/pii/S0045653514006626

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32. Ramay, S. M., Rafique, H. M., Aslam, S., Siddiqi, S. A., Atiq, S., Saleem, M., ... & Shar, M. A. (2014). Structural, Morphological, and Magnetic Characterization of Sol-Gel Synthesized MnCuZn Ferrites. ***Magnetics, IEEE Transactions on*****, *50*(8), 1-4.**

ABSTRACT:

Manganese copper ferrites belong to a family of ferrites with specific importance due to their high permeability values and low losses at low frequencies. In this paper, a series of ferrite samples has been synthesized using a novel and low cost sol-gel

autocombustion route in order to systematically investigate the structural, compositional, morphological, and magnetic properties when zinc is substituted by copper in the series. X-ray diffraction reveals that all the samples have characteristic cubic spinel structure. The effect of zinc substitution at the copper site on the chemical bonding of the ferrite samples was investigated by Fourier transform infrared spectroscopy. Energy dispersive X-ray analysis was performed to determine the homogeneity and stoichiometric composition of elements present in the samples. Nanosized, uniformly shaped grains were evident from the images obtained using a scanning electron microscopy, which indirectly confirms the significance of the autocombustion synthesis technique employed in this paper. Magnetic properties determined using a vibrating sample magnetometer exhibited that zinc substitution could enhance the saturation magnetization of the samples, attributed to the substitution of a paramagnetic element (zinc) by a diamagnetic one (copper).

URL:http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6880918&tag=1

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33. Ramay, S. M., Atiq, S., Saleem, M., Mahmood, A., Siddiqi, S. A., Naseem, S., ... & Shahabuddin, M. (2014). Enhanced Magnetization of Sol-Gel Synthesized Pb-Doped Strontium Hexaferrites Nanocrystallites at Low Temperature. ***Journal of Nanomaterials*****, 452468, P.7.**

ABSTRACT:

Effect of Pb doping on the structural and low temperature magnetic properties of ( ), synthesized by sol-gel autocombustion technique, has been investigated. The powder samples were sintered at 800°C for 2 h in order to develop the stable hexagonal phase, characteristic of the SrFe12O19 structure. The consequences of Pb substitution (at iron sites) on various structural parameters like lattice constants, unit cell volume, crystallite size, and porosity have been discussed. Fourier transform infrared frequency bands were utilized to determine the formation of tetrahedral and octahedral clusters of M-type ferrites. Hexagonal texture of the grains, a characteristic of the hexagonal crystal structure of SrFe12O19, was refined by Pb substitution. The magnetic properties, determined using a vibrating sample magnetometer, revealed that saturation magnetization decreased, while coercivity was increased with the increase of Pb contents. However, the increased squareness ratio and hence the energy product motivate the utilization of these ferrite compositions where hard magnetic characteristics are required. The increased values of saturation magnetization were

observed at reduced temperature of 200 K, attributable to the better spin alignments of individual magnetic moments at low temperature.

URL:http://www.hindawi.com/journals/jnm/2014/452468/abs/

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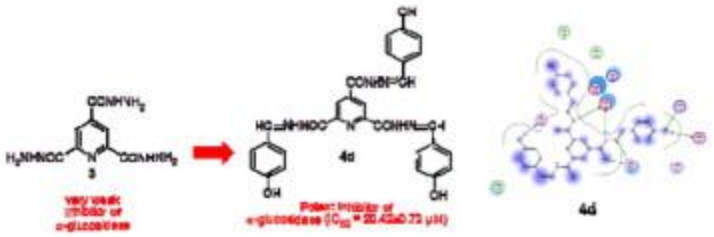
34. Riaz, S., Khan, I. U., Yar, M., Ashraf, M., Rehman, T. U., Shaukat, A., ...& Alves, M. J. (2014). Novel pyridine-2, 4, 6-tricarbohydrazide derivatives: Design, synthesis, characterization and in vitro biological evaluation as α-and β-glucosidase inhibitors. ***Bioorganic chemistry*****, *57*, 148-154.**

ABSTRACT:

A range of novel pyridine 2,4,6-tricarbohydrazide derivatives **(4a–4h)** were synthesized and its biological inhibition towards α- and β-glucosidases was studied. Most of the compounds demonstrate to be active against α-glucosidase, and quite inactive/completely inactive against β-glucosidase. A number of compounds were found to be more active against α-glucosidase than the reference compound acarbose (IC_{50} 38.25 ± 0.12 μM); being compound **4d** with the *p*-hydroxy phenyl motive the most active (IC_{50} 20.24 ± 0.72 μM). Molecular modeling studies show the interactions of compound **4d** with the active site of target α-glucosidase kinase.

Graphical abstract



URL:http://www.sciencedirect.com/science/article/pii/S0045206814001060

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35. Ramay, S. M., Siddiqi, S. A., Atiq, S., Saleem, M., Mahmood, A., & Naseem, S. (2014). Low-Temperature Synthesis by Autocombustion and Investigation of Structural and Magnetic Properties of Mn 0.5 Cu 0.5− x Ni x Fe 2 O 4 Nanocrystallites. ***Magnetics, IEEE Transactions on*****, *50*(8), 1-4.**

ABSTRACT:

A series of single-phase nanocrystalline $Mn_{0.5}Cu_{0.5-x}Ni_xFe_2O_4$ spinel ferrites with x = 0, 0.1, 0.2, 0.3, 0.4 and 0.5 was successfully synthesized by sol-gel autocombustion method, at a temperature as low as 300°C. X-ray diffraction, scanning electron microscopy, and room-temperature vibrating sample magnetometry studies have been carried out in order to understand the structural, morphological, and magnetic properties as a function of nickel concentration. The lattice parameters did not show any consistent decreasing or increasing trend, but crystallite size was decreased due to the incorporation of Ni contents at Cu sites in the structure. Large-sized grains were evident for the composition $Mn_{0.5}Cu_{0.5}Fe_2O_4$; however, the grain size was significantly reduced as the Ni was substituted. It was observed that with increasing nickel concentration, saturation magnetization increased, but coercivity decreased, which could be attributed to the substitution of soft ferromagnetic Ni^{2+} ions in place of diamagnetic Cu^{2+} ions.

URL: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6880905

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36. Shehzad, K., Ahmad, M. N., Hussain, T., Mumtaz, M., Shah, A. T., Mujahid, A., ... & Dang, Z. M. (2014). Influence of carbon nanotube dimensions on the percolation characteristics of carbon nanotube/polymer composites. ***Journal of Applied Physics*****, *116*(6), 064908.**

ABSTRACT:

The effect of carbon nanotube aspect ratio (AR) on the percolation characteristics of their polymercomposites was investigated by melt blending the multi-wall carbon nanotubes(MWCNTs) with different AR with a thermoplastic elastomer. Previously, most studies reported the effect of aspect ratio of MWCNTs only in the context of achieving the maximum electrical conductivity at lower percolation thresholds in the polymercomposites. In this study, our results indicate that aspect ratio can also influence other percolation properties such as the pre-percolation conductivity, percolation conductivity and post-percolation conductivity, shape of the percolation

curve, and the width of the insulator-conductor transition. We have established that AR can be used to tailor the percolation curves from sharp to quasi-linear ones, which can help us fabricate the percolative composites with stable electrical properties. Experimental results suggested that the mathematically calculated nominal AR of the MWCNTs was an unclear parameter to correlate with the percolation characteristics of the composites. Instead, an approach taking into consideration the nominal length (l) and the diameter (d) of the MWCNTs individually rather than as a combined AR (l/d) parameter gave a better explanation of the relation between MWCNT dimensions and percolation characteristics.

URL:http://scitation.aip.org/content/aip/journal/jap/116/6/10.1063/1.4892156

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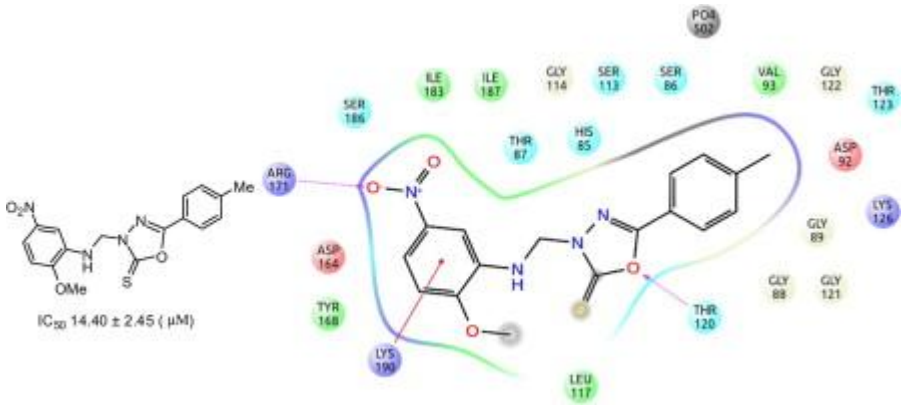
37. Shahzad, S. A., Yar, M., Bajda, M., Jadoon, B., Khan, Z. A., Naqvi, S. A. R., ...& Filipek, S. (2014). Synthesis and biological evaluation of novel oxadiazole derivatives: A new class of thymidine phosphorylase inhibitors as potential anti-tumor agents. ***Bioorganic & medicinal chemistry*****, 22(3), 1008-1015.**

ABSTRACT:

Based on the fact that the thymidine phosphorylase inhibitors are considered potential anti-tumor agents, a range of novel oxadiazole derivatives **3a–3u** was designed and synthesized by a simple and facile synthetic route. The biological assay revealed that majority of compounds displayed modest inhibitory activity against thymidine phosphorylase at low micromolar concentrations (IC_{50} 173.23 ± 3.04 to 14.40 ± 2.45 μM). In the current study the most active compounds were **3h** and **3q** with IC_{50} values 14.40 ± 2.45 and 17.60 ± 1.07 μM, respectively. Molecular docking studies were performed on the most active compounds (**3h**, **3k**, **3o–3q**) to show their binding mode.

Graphical abstract:

Twenty one new 1,3,4-oxadiazole-2-thione derivatives have been synthesized and evaluated for their thymidine phosphorylase inhibitory activity. Compound **3h** showed the most potent inhibitory activity.



URL:http://www.sciencedirect.com/science/article/pii/S0968089613010511

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38. Saleem, M., Atiq, S., Ramay, S. M., Mahmood, A., Siddiqi, S. A., & Shar, M. A. (2014). Phase Pure Synthesis and Morphology Dependent Magnetization in Mn Doped ZnO Nanostructures. ***Advances in Materials Science and Engineering, 670286, P.6.***

ABSTRACT:

Zn0.95Mn0.05O nanostructures were synthesized using sol gel derived autocombustion technique. As-burnt samples were thermally annealed at different temperatures (400, 600, and 800°C) for 8 hours to investigate their effect on structural morphology and magnetic behavior. X-ray diffraction and scanning electron microscopic studies demonstrated the improvement in crystallinity of phase pure wurtzite structure of Mn doped ZnO with variation of annealing temperature. Energy dispersive X-ray elemental compositional analysis confirmed the exact nominal compositions of the reactants. Electrical resistivity measurements were performed with variation in temperature, which depicted the semiconducting nature similar to parent ZnO after 5 at% Mn doping. Magnetic measurements by superconducting quantum interference device detected an enhanced trend of ferromagnetic interactions in thermally annealed compositions attributed to the improved structural morphology and crystalline refinement process.

http://www.hindawi.com/journals/amse/2014/670286/abs/

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39. Sharif, F., De Bakker, M. A., & Richardson, M. K. (2014). Osteoclast-like Cells in Early Zebrafish Embryos. *Cell Journal (Yakhteh)*, *16*(2), 211-224.

ABSTRACT:

Genes involved in bone and tissue remodelling in the vertebrates include *matrix metalloproteinase-9* (*mmp-9*), receptor activator of necrosis factor κ-β (*rank*), *cathepsin-k* (*Ctsk*) and tartrate-resistant acid phosphatase (TRAcP). We examine whether these markers are expressed in cells of zebrafish embryos of 1-5 days post fertilization. We also examine adult scales, which are known to contain mature osteoclasts, for comparison. In this experimental study, *in situ* hybrdisation, histochemistry and serial plastic and paraffin sectioning were used to analyse marker expression.

URL:http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4072079/

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40. Siddique. M., Khan, Romana. F, Ather. K& F. Robina. (2014).Improved Photocatalytic Activity of TiO2 Coupling Ultrasound for Reactive Blue 19 Degradation, *Journal of Chemical Society of Pakistan, 36(1), 37-43.*

ABSTRACT:

The degradation of Reactive Blue 19 (RB 19) using photolysis, photocatalysis and sonophotocatalysis in aqueous solutions was investigated. Emphasis was given on the effects of
different operating conditions viz. catalyst concentration, pH, initial dye concentration, ultrasonic power and reaction time) on RB 19 degradation. The extent of photocatalytic and sonophotocatalytic degradation was increased by decreasing pH, initial dye concentration and increasing catalysts loading and ultrasonic power. Ultrasound combined with photocatalysis was found efficient than the respective individual processes due to the enhanced formation of reactive hydroxyl radicals as well as the possible ultrasound-induced increase of the active surface area of the catalyst. The sonophotocatalytic efficiency was increased in acidic conditions as compare to individual processes at same experimental conditions (100 mg L-1 of dye concentration, 300 mg L-1 of TiO2 concentration, 240 W ultrasonic power and at pH 4). The kinetic study of RB 19 degradation under different experimental conditions apparently followed first order reaction. The intermediates and end products formed during the degradation were identified using gas chromatography/mass spectrometry (GC/MS) and a possible degradation pathway of RB 19 was proposed.

URL:http://www.jcsp.org.pk/ViewByVolume.aspx?v=1195&i=VOLUME%2036,%20NO1,%20FEB-2014

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41. Tetteh, G., Khan, A. S., Delaine-Smith, R. M., Reilly, G. C., & Rehman, I. U. (2014). Electrospun polyurethane/hydroxyapatite bioactive Scaffolds for bone tissue engineering: The role of solvent and hydroxyapatite particles. ***journal of the mechanical behavior of biomedical materials*****, *39*, 95-110.**

ABSTRACT:

Polyurethane (PU) is a promising polymer to support bone–matrix producing cells due to its durability and mechanical resistance. In this study two types of medical grade poly-ether urethanes Z3A1 and Z9A1 and PU-Hydroxyapatite (PU–HA) composites were investigated for their ability to act as a scaffold for tissue engineered bone. PU dissolved in varying concentrations of dimethylformamide (DMF) and tetrahydrofuran (THF) solvents were electrospun to attain scaffolds with randomly orientated non-woven fibres. Bioactive polymeric composite scaffolds were created using 15 wt% Z3A1 in a 70/30 DMF/THF PU solution and incorporating micro- or nano-sized HA particles in a ratio of 3:1 respectively, whilst a 25 wt% Z9A1 PU solution was doped in ratio of 5:1. Chemical properties of the resulting composites were evaluated by FTIR and physical properties by SEM. Tensile mechanical testing was carried out on all electrospun scaffolds. MLO-A5 osteoblastic mouse cells and human embryonic mesenchymal progenitor cells, hES-MPs were seeded on the scaffolds to test their biocompatibility and ability to support mineralised matrix production over a 28 day culture period. Cell viability was assayed by MTT and calcium and collagen deposition by Sirius red and alizarin red respectively. SEM images of both electrospun PU scaffolds and PU–HA composite scaffolds showed differences in fibre morphology with changes in solvent combinations and size of HA particles. Inclusion of THF eliminated the presence of beads in fibres that were present in scaffolds fabricated with 100% DMF solvent, and resulted in fibres with a more uniform morphology and thicker diameters. Mechanical testing demonstrated that the Young's Modulus and yield strength was lower at higher THF concentrations. Inclusion of both sizes of HA particles in PU–HA solutions reinforced the scaffolds leading to higher mechanical properties, whilst FTIR characterisation confirmed the presence of HA in all composite scaffolds. Although all scaffolds supported proliferation of both cell types and deposition of calcified matrix, PU–HA composite fibres containing nano-HA enabled the highest cell viability and

collagen deposition. These scaffolds have the potential to support bone matrix formation for bone tissue engineering.

URL:http://www.sciencedirect.com/science/article/pii/S1751616114001921

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42. Uzarewicz-Baig, M., Koppenwallner, M., Tabassum, S., & Wilhelm, R. (2014). Highly regioselective synthesis of chiral diamines via a Buchwald–Hartwig amination from camphoric acid and their application in the Henry reaction. ***Applied Organometallic Chemistry*****, *28*(7), 552-558.**

ABSTRACT:

In this work the synthesis of new asymmetric diamine ligands from camphoric acid is described. The new diamines can be directly prepared in a regioselective arylation of the less hindered primary amine group of (+)-*cis*-1,2,2-trimethylcyclopentane-1,3-diamine via a Buchwald–Hartwig amination in high yields. The resulting diamines incorporate a secondary and primary amine group and were successfully applied as ligands in a copper-catalyzed Henry reaction.

URL: http://onlinelibrary.wiley.com/doi/10.1002/aoc.3162/full

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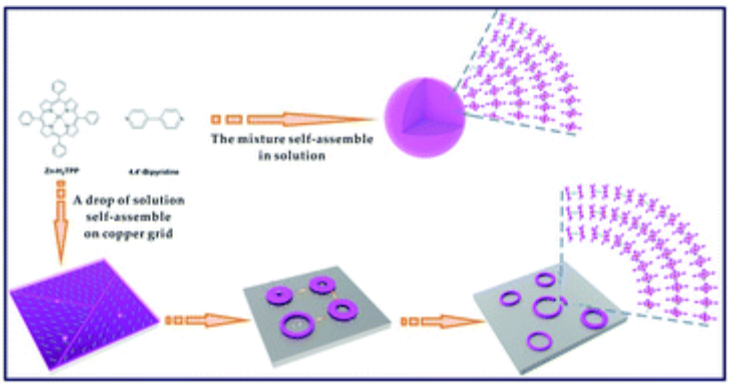
43. Wang, F., Xu, L., Nawaz, M. H., Liu, F., & Zhang, W. (2014). Morphology controlled supramolecular assemblies via complexation between (5, 10, 15, 20-tetrakisphenyl-porphine) zinc and 4, 4′-bipyridine: from nanospheres to microrings. ***RSC Advances*****, *4*(106), 61378-61382.**

ABSTRACT:

We synthesized (5,10,15,20-tetrakisphenyl-porphine) zinc (ZnTPP), and investigated its self-assembly behaviour with 4,4′-bipyridine (Bipy) *via* different self-assembly protocols. The self-assembly experiments were performed in organic solvents and on a carbon-coated copper grid, which gave well-defined nanospheres and microrings, respectively.



URL:http://pubs.rsc.org/en/content/articlelanding/2014/ra/c4ra10087e/unauth#!divAbstrac

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44. Yar, M., Bajda, M., Mehmood, R. A., Sidra, L. R., Ullah, N., Shahzadi, L., ... & Mahmood, N. (2014). Design and Synthesis of New Dual Binding Site Cholinesterase Inhibitors: in vitro Inhibition Studies with in silico Docking. ***Letters in drug design & discovery*****, *11*(3), 331.338.**

ABSTRACT:

Cholinesterases (ChEs) play a vital role in the regulation of cholinergic transmission. The inhibition of ChEs is considered to be involved in increasing acetylcholine level in the brain and thus has been implicated in the treatment of Alzheimer's disease. We have designed and synthesized a series of novel indole derivatives and screened them for inhibition of acetylcholinesterase (AchE) and butyrylcholinesterase (BchE). Most of the tested compounds exhibited inhibitory activity against AchE and BchE. Among them **4f** and **6e** showed the highest AchE inhibitory activity with IC_{50} 91.21±0.06 and 68.52±0.04 µM, respectively. However compound **5a** exhibited the highest inhibitory activity against BchE (IC_{50} 55.21±0.12 µM).

URL: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3977535/

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45. Yar, M,. Khan, Z. A, Naqvi, S. A., Mukhtar, A. Hussain, Z., Shahzad. S. A, Mansha, A.,Ahmad ,M, Zahoor. A. F, Bukhari, I. H., Janjua, A., Mahmood N, (2014). Antioxidant and antibacterial activities of Hibiscus Rosa-sinensis Linn flower extracts,*Pak J Pharm Sci*, 27, 469-474.

ABSTRACT:

Linn was evaluated. The antioxidant activity was assessed by estimation of total flavonoids contents, total phenolic contents, DPPH free radical scavenging activity and percentage inhibition of linoleic acid oxidation capacity. Agar disc diffusion method was used to assess antibacterial potential of crude extract of *H. rosa-sinensis*. The yield of the crude extracts (23.21±3.67 and 18.36±2.98% in 80% methanol and ethanol solvents was calculated, respectively. Methanol and ethanol extract of *H. rosa-sinensis* showed total phenolics 61.45±3.23 and 59.31±4.31 mg/100g as gallic acid equivalent, total flavonoids 53.28±1.93 and 32. 25 ±1 . 21 mg/100g as catechine equivalent, DPPH free radical scavenging activity 75.46 ±4.67 and 64.98±2.11% and inhibition of linoleic acid oxidation potential 75.8±3.22 and 61.6±2.01% respectively, was measured. Antibacterial study against three human pathogens such as *staphlococus sp. Bacillus sp.* and *Escherichia coli* showed growth inhibitory effect in the range of 12.75±1.17 to 16.75±2.10 mm. These results showed *H. rosasinensis* indigenous to Kallar Kahar and its allied areas bear promising medicinal values and could be used for developing herbal medicines to target oxidative stress and infectious diseases.

URL:http://applications.emro.who.int/imemrf/Pak_J_Pharm_Sci/Pak_J_Pharm_Sci_2014_27_3 469_474.pdf

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46. Yar, M., Sidra, L. R., Pontiki, E., Mushtaq, N., Ashraf, M., Nasar, R., ... & Shahzad, S. A. (2014). Synthesis, in vitro lipoxygenase inhibition, docking study and thermal stability analyses of novel indole derivatives. *Journal of the Iranian Chemical Society*, *11*(2), 369-378.

ABSTRACT:

A series of indole derivatives has been synthesized and biologically evaluated to identify potent new lipoxygenase (LOX) inhibitors. All selected indole derivatives were screened for their LOX inhibition studies. Most of compounds showed good in vitro LOX inhibition properties exhibiting IC_{50} values in the range of 53.61 ± 0.14 to 198.61 ± 0.11 µM (mean ± SEM), as compared to the standard inhibitor baicalein with IC_{50} value 22.4 ± 1.3 µM. Structure activity relationship has been discussed and docking

stimulation of most active compound **4f** has also performed. Thermal stability and melting point of indole derivatives have been performed by thermal gravimetric analysis and differential scanning calorimetry analysis under nitrogen atmosphere at heating rate of 20 °C min^{-1}. Compound **4f** bearing bis-phenyl moiety has been found to be the most potent (IC_{50} 53.61 ± 0.14 µM) and thermally most stable among the tested compounds. Imine (C=N) was found to be the key moiety for increasing the thermal stabilities of indole derivatives. FT-IR, NMR and elemental analysis techniques were performed for structural characterization.

URL:http://link.springer.com/article/10.1007/s13738-013-0308-3

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47. Yar, M., Bajda, M., Shahzadi, L., Shahzad, S. A., Ahmed, M., Ashraf, M., ...& Khan, A. F. (2014). Novel synthesis of dihydropyrimidines for α-glucosidase inhibition to treat type 2 diabetes: In vitro biological evaluation and in silico docking. ***Bioorganic chemistry*****, *54*, 96-104.**

ABSTRACT:

A convenient and efficient new method has been established for the synthesis of dihydropyrimidines by inexpensive and non-toxic N-acetyl glycine (NAG) catalysed reaction of aromatic aldehydes with ethyl acetoacetate and urea/thiourea. This method is applicable for various substituted aldehydes as well as urea and thiourea. It has also been used to synthesize bicyclic oxygen-bridged pyrimidine derivatives (**4d**, **4j**). The biological assay revealed that the majority of compounds synthesized displayed modest inhibitory activity against α-glucosidase at low micro-molar concentrations. Molecular docking studies were also performed on the most active compound, **4f** (with IC_{50} value 112.21 ± 0.97 µM), to show the enzyme – inhibitor interactions.

URL:http://www.sciencedirect.com/science/article/pii/S0045206814000340

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48. Zhang, X., Du, Y., Tong, P., Li, W., Iqbal, J., Wu, T., ... & Zhang, W. (2014). Assess the ability of detecting low concentration analyte with near-infrared spectroscopy based on dynamic enrichment. ***Chemometrics and Intelligent Laboratory Systems*****, *134*, 58-66.**

ABSTRACT:

The ability to detect low concentration analyte with near-infrared diffuse reflectance spectroscopy (NIRDRS) based on dynamic enrichment method has been assessed. A special design of fluidized bed enrichment device was used to enrich a large volume of analyte's dilute solution before spectrum detection, in order to improve the detection sensitivity of NIRDRS. A kinetic model, which considers the mass transfer with liquid film diffusion, has been used to characterize the adsorption process in this device. The developed model agreed with the experimental results very well in a wide range of the influent flow rate (F) and solution concentration (C_0). Based on this model, the lowest detectable concentration was estimated, at the same time the effects of liquid fluid rate and operation time on this value were also investigated. Meanwhile, a comparison between this model and the static adsorption model was made. Furthermore, a series of carbaryl aqueous solutions at different concentrations were treated with the enrichment device to verify the estimated lowest concentration. This study reveals that the specially designed fluidized bed device is able to enrich enough amount of analyte in a quite short time, and based on this dynamic adsorption model, it is possible to detect analyte in solution quantitatively at ppm-level by NIRDRS.

URL:http://www.sciencedirect.com/science/article/pii/S0169743914000495

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49. Zheng, K., Zhang, X., Iqbal, J., Fan, W., Wu, T., Du, Y.,& Liang, Y. (2014). Calibration transfer of near- infrared spectra for extraction of informative components from spectra with canonical correlation analysis. ***Journal of Chemometrics*****, *28*(10), 773-784.**

ABSTRACT:

A new calibration transfer method that applies canonical correlation analysis (CCA) to transfer the informative components extracted from a spectral dataset is proposed to reduce the interference of noise, background and non-predicted properties. This method employs the partial least squares method to extract the informative components related to the predicted properties from the raw spectra and then corrects the

informative components based on CCA. The performance of this algorithm was tested using three pairs of spectra batches: two pairs of corn spectra and one pair of tri-component solvent spectra. The results showed that this method can significantly reduce prediction errors compared with CCA and piecewise direct standardization.

URL:http://onlinelibrary.wiley.com/doi/10.1002/cem.2637/full

DEPARTMENT OF MANAGEMENT SCIENCE

Journal Papers

1. Afza, T.,& Rashid, B. (2014). Opportunistic earnings management, debt and diversification: empirical evidence for manufacturing firms of Pakistan.*Sciences International, 25(5), 2489-2494.*

ABSTRACT:

Earnings management (EM) is an activity by which managers manipulate the reported earnings. In this article, the impact of debt and diversification has been investigated on opportunistic earnings management in diversified firms of Pakistan. Data is collected from 72 non-financial manufacturing firms for the period 2006 to 2011. Three categories of debt including short term, long term, and total debt are considered along with the both industrial and geographical diversification, and discretionary accruals are taken as a proxy for measuring earnings management. It is found that short term debt promotes EM while long-term debt and total debt reduces EM activities due to high monitoring by creditors. Secondly, it is found that both industrial and geographical diversification help in mitigating earnings management in Pakistan. Finally, the combined effect of all the categories of debt and diversification shows that geographical diversification helps managers in bypassing creditor's monitoring while industrial diversification does not provide incentive to managers for using debt according to their discretion.

URL:www.researchgate.net/profile/Talat_Afza/publication/270280555_Opportunistic_Earnings_Management_Debt_and_Diversification_Empirical_Evidence_for_Manufacturing_Firms_of_Pakistan/links/54a6441e0cf267bdb9082ec4.pdf

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2. Afza, T.,& N. M. Sajid. (2014). Audit Quality and Firm Value: A Case of Pakistan. *Research Journal of Applied Sciences, Engineering and Technology,* 7(9): 1803-1810.

ABSTRACT:

The present study intends to explore the influence of audit committee characteristics on a firm's financial performance. The corporate governance mechanisms are highly recognized in era of global financial crisis and current economic recession. Audit committee is one of the core mechanisms that ensure good corporate governance in the

firms. Yet, very less evidence found on the impact of audit committee and its characteristics on firm's performance in the context of Pakistani literature. For that reason, four audit committee characteristics were identified namely audit committee size, independence, activity and quality of external audit to study their impact on firm financial performance while using ROA as accounting measure and Tobin's Q as market measure. The results of panel data showed that two audit committee characteristics namely audit committee size and external audit quality has strong and significant positive impact on ROA and Tobin's Q. Another two variables namely audit committee independence and AC activity remains insignificant, which is consistent with mostly previous studies carried in different countries. In short, present study provides an insight to all the regulators, policy makers and stakeholders while adopting certain audit committee characteristics in Pakistan; overall firm's financial performance can be improved. For further research audit committee expertise can be used to determine the improvement in corporate performance by getting data from the company's management.

URL: http://www.maxwellsci.com/jp/issue.php?jid=RJASET&no=410

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3. Afza. T.& B. Nafees. (2014). Relationship between NAV of Equity Funds and Macroeconomic Variables in Pakistan. ***Vidyabharati International Interdisciplinary Research Journal, 3(1),*** **118-134.**

ABSTRACT:

In this paper an attempt has been made to empirically analyze the impact of macroeconomic variable such asCPI, M2, KIBOR and KSE 100 (Karachi Stock Exchange) index on NAV (Net Assets Value) of equity based mutual funds. Co-integration and causality analyses have been applied to determine long and short run relationships. According to the findings, NAVs of majority of equity based mutual funds have long and short run relationship with macroeconomic variables and not with the KSE 100 index. NAVs of all mutual funds analyzed jointly with macroeconomic variables and KSE 100 index have long run relationship except one mutual fund. In case of bivariate causal relation relationship, the macroeconomic variables have causal relationship with NAVs of utual funds and NAVs of few mutual funds have causal relationship with KSE 100 index.Jointly short run relationship do not exist for all mutual fund NAVs except three mutual funds.

URL:http://viirj.org/vol3issue1.html

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4. Amir, H., Khan, M., & Bilal, K. (2014). Role of Educated Labor Force in Economic Growth of Pakistan: A Human Capital Respective. ***International Journal of Empirical Finance, 3,(4),*** **212-224.**

ABSTRACT:

A considerable body of research has concentrated on the role of human capital investment in explaining the level and variation in production and growth and it has been shown that long-term sustainable growth and development across countries is driven to a large extent by productivity growth. Most of the studies in Pakistan measure human capital by using its proxy as enrollment rate of primary, secondary and tertiary level or expenditure on education. This widespread practice has coexisted with longstanding doubts about using school enrollments as a measure of human capital since there exists a gap between school attendance and entrance into the Labor Market. Further, public expenditure on education is not enough proxy in case of Pakistan because of the fact that there is a large private education sector in the country. Taking cognizance of it, instead of using the school enrollments and public expenditure on education as a measure of human capital, this research examines the role of human capital formation described by educated labor force at different level of education in Pakistan which is more direct measure of human capital than school enrollments and public expenditure on education. Data of educated labor force as number of teachers at all education levels and educational infrastructure at all education levels is collected from Pakistan. Time series data is used from the period 1973 to 2013.The data is taken from various issues of Pakistan Economic Survey, Pakistan Labor Force Survey, Federal bureau of statistics, State Bank of Pakistan Annual reports and 50 Years statistics of Pakistan. Johnson's Cointegration, Error Correction model (ECM) and vector error correction method (VECM) Granger Causality statistical tools are used to measure the impact of human capital on economic growth in the long run and short run. Finding shows that all proxy variables of human capital in this study have significant impact on economic growth in the long run, however, some variables are found insignificant in short run. This study concludes that education is a key determinant of Economic growth.

URL:www.rassweb.com/wp-content/uploads/PDF/IJEF/Vol-3/Issue-4/Paper%205.pdf

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5. Amir, M., Mahmood, H.,& Pervaiz, Z. (2014). Technological development through imports of capital goods: time series study of pakistan. ***International Journal of Academic Research*****, *6*(2). 316-320.**

ABSTRACT:

Imports of capital goods can be considered an important determinant of technological development. This study explores a mechanism how imports of capital and intermediate goods enhance the gross domestic capital formation. This study reveals that with increase in imports of capital goods, if domestic investment increases at a faster rate, it means import of capital goods results in technological development. Johenson co-integration technique is used for long run analysis followed by Error Correction Method (ECM) for short run analysis.

URL:http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=20754124&AN=96012132&h=j8FBFkekp9HPtud119z9vg63dDYInhU39N%2fm9RjL0%2bbn0fo77X8bfInDpiwNDc4shXk3aW6gjt10EMLbphtV0w%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d20754124%26AN%3d96012132

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6. Arshad, A.,& Abbasi, A. S. (2014). Impact of spiritual leadership on organizational outcomes in police department of Pakistan: moderating role of psychological ownership. ***Science International*****, *26*(3). 1271-1276.**

ABSTRACT:

In this time of rapid change, there is a growing need for a holistic leadership approach that corporates whole self of people into work, including their body, mind, heart and soul. piritual leadership suggests an approach that integrates these four components of human personality at workplace. This study establishes the impact of spiritual leadership on organizational outcomes, through a mediating role of spiritual wellbeing with a moderating effect of psychological ownership, in police department of Pakistan. By using structural equation modeling (SEM) technique, results depicted positive and significant relationships between these constructs, apart from psychological ownership which has positive impact only at a moderate level. It is recommended to spread organization's vision and purpose among employees and to create culture based on

values of altruistic love, to address the problems of low commitment and productivity in police department of Pakistan.

URL:www.sci-int.com/pdf/6223221721271--1276--AMARA_ABBASI__PU__SS-.pdf

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7. Alvi, A. K., Abbasi, A. S., & Haider, R. (2014). Relationship of perceived organizational support and employee engagement. ***Science International*****, *26*(2). 951-954.**

ABSTRACT:

The aim of current study is to test the impact of perceived organizational support (POS) on employee engagement in banking sector of Pakistan. For this purpose, this study has proposed the single hypothesis. A finding of the current research has confirmed the result of previous researches about the relationship of perceived organizational support and employee engagement. This study also confirms that perceived organizational support is the stronger predictor of employee engagement. Primary data was collected with the help of structured questionnaire. Questionnaire was composed of 21statements.In future researches some important predictors of employee engagement like perceived supervisor support, Job autonomy and job security maybe included.

URL:www.sci-int.com/pdf/1729799903949--952----KHALIQ%20ALVI--.pdf

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8. Arouri, M., Shahbaz, M., Onchang, R., Islam, F.,& Teulon, F. (2014). Environmental Kuznets Curve in Thailand: Cointegration and Causality Analysis. ***Journal of Energy and Development*****, *39*, 149-170.**

ABSTRACT:

The study is aim to explore the existence of environmental Kuznets curve (EKC) in case of Thailand over the period of 1971-2010. The EKC relationship posits that as economy grows, measured by per capita income, at the initial stage energy pollutants increase; but starts falling after a certain threshold income has been achieved. The postulated relation produces an inverted U-curve and has been empirically verified for many nations. The paper implements the ARDL bounds testing approach to cointegration in the presence of structural break for a long run relationship among the series; and the error correction mechanism for the short run dynamics. The results confirm cointegration among economic growth, energy consumption, trade openness, urbanization, and energy pollutants and vindicate the presence of an EKC for Thailand.

Also, energy consumption and trade openness add to energy emissions while urbanization lowers it. This study provides new insights for policymakers looking for sustainable economic growth and clean environment through a comprehensive economic and environmental policy.
URL: www.ipag.fr/wp-content/uploads/recherche/WP/IPAG_WP_2014_204.pdf

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9. Arshad, A.,& Abbasi, A. S. (2014). Spiritual leadership and psychological ownership: mediating role of spiritual wellbeing. ***Science International*****, *26*(3). 1265-1269.**

ABSTRACT:

Spiritual leadership suggests an approach to fulfill the psychological, emotional and spiritual needs of organizational members. This study determines the relationship of spiritual leadership and psychological ownership through a mediating role of spiritual wellbeing in terms of calling and membership. Hypotheses of the study were tested through structural equation modeling (SEM) with sample size of 371 police employees. Findings of this study provide support that spiritual leadership has significant impact on psychological ownership directly and through mediating role of spiritual wellbeing. This study recommends opting the way of spreading a clear vision through empowered and self directed teams, creating a sense of association and involvement through culture of trust, honesty, appreciation, care and concern, to generate a sense of ownership in employees.

URL:www.ciitlahore.edu.pk/Papers/Abstracts/539-8587900650395400808.pdf

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10. Anwar, Z.,& Afza, T. (2014). Impact of terrorism, gas shortage and political instability on fdi inflows in pakistan. ***Science International*****, *26*(1). 507-511.**

ABSTRACT:

The inflows of Foreign Direct Investment (FDI) has been verified as a crucial investment source in developing nations because it assists to decrease unemployment, bridging gap in savings and investment, transferring updated technology and eventually enhancing host countries' level of economic growth. The objective of this study is to empirically investigate the FDI determinants in Pakistan from the year of 1980 to 2010 through utilizing annual time series dataset. This is the first study to test the impact of terrorism, gas shortage and political instability (together with control variables which include

inflation, GDP, trade openness, exchange rate and investors' incentives) on inflows of FDI in Pakistan through utilizing ARMA research model and OLS regression technique. As anticipated, the findings confirmed that political instability and terrorism have negative influence whereas gas generation has positive affect on Pakistan's FDI inflows. The control variables of GDP, incentives offered to investors and trade oppeness have positively affected FDI inflows whereas exchange rate and inflation rate have negative association with FDI inflows.

URL:www.sci-int.com/pdf/1901086039507-511--Zeeshan--SS--SAHIWAL--composed %20PAID .pdf

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11. Bodla, M. A., Afza, T.,& Danish, R. Q. (2014). Relationship between Organizational Politics Perceptions and Employees' Performance; Mediating Role of Social Exchange Perceptions. ***Pakistan Journal of Commerce and Social Sciences*****, *8*(2), 426-444.**

ABSTRACT:

Perceptions of Organizational politics are very important aspect of Organizational life with respect to its members as these influence various processes which ultimately affect performance of employees. Previous studies have investigated impact of political perceptions either on extra role performance of employees (exhibited through organizational citizenship behaviors) or various other attitudes and behaviors. This study investigates the relationship of perceptions of organizational politics with multidimensional performance of employees which is measured through organizational citizenship behavior-individual as well as organizational and in role performance of employees simultaneously. Moreover the process through which these perceptions operate is also investigated in the light of social exchange theory and reciprocity norms. The data was collected through self-administered questionnaires from employees working in different organizations at national level and was used as aggregate. Overall 1360 surveys were distributed among which 1163 useable questionnaires (for a response rate of 85.51%) were returned filled and were entered into SPSS 20 for analysis. AMOS 20 was used for developing structural and measurement model in structural equation modeling and for testing mediation through bootstrap strategy. The standardized indirect effect revealed that perceptions of social exchange fully mediate the relationship between perceptions of organizational politics and employees' performance. The implications, limitations and future directions are also provided

URL:*https://scholar.google.com.pk/scholar?q=Relationship+between+Organizational+Politics+Perceptions+and+Employees%E2%80%99+Performance%3B+Mediating+Role+of+Social+Exchange+Perceptions&btnG=&hl=en&as_sdt=0%2C5*

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12. Bodla, M. A.,& Naeem, B. (2014). Creativity as Mediator for Intrinsic Motivation and Sales Performance. ***Creativity Research Journal*****, 26(4), 468-473.**

ABSTRACT:

Substantial theoretical and empirical literature indicates inconsistent performance implications of intrinsic motivation, suggesting the possibility of some explanatory mechanisms. However, little is known about the factors that might explain intrinsic motivation and sales force performance relation, particularly in highly competitive and demanding fast moving consumer goods (FMCG) marketplace requiring new and useful solutions. Creativity, being a critical yet underutilized weapon in sales force arsenal, has the potential to assume the role. Therefore, this study aims at developing and testing a theory-driven framework in linking intrinsic motivation to sales performance while using sales force creative performance as partial mediator. By employing structural equation modeling, the empirical validity of the proposed mediating model is evaluated against plausible moderating model in a sample of 688 frontline field salespersons of FMCG companies in Lahore (Pakistan). Findings indicated that sales force creative performance is nurtured by intrinsic motivation that, in turn, promotes sales performance. Practical implications of findings for sales force management and suggestions for future research are presented, too.

URL:http://www.tandfonline.com/doi/abs/10.1080/10400419.2014.961783

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13. Ehsan, S., Khalid, M.,& Akhtar, W. (2014). Dividend payouts in firms with growth potential in the presence of insider ownership concentration (a case from emerging economy). Science International, 26(4), 1723 – 1730.

ABSTRACT:

This study tends to evaluate the effect of growth opportunities on dividend payout in the presence of insider ownership concentration with a sample of 100 non-financial companies listed at Pakistan's KSE 100 index. The period selected for the study is of five years from 2007 to 2011 and technique selected for the purpose is OLS (Ordinary Least

Square) regression. Insider ownership and growth opportunities; both are relevant in making decisions about dividend disbursements. Insiders exercise their power to control the various policy decisions of firms including dividends. Results have shown that high insider ownership leads to cuts in dividend payout in the Pakistani listed companies. Moreover, if there is a growth opportunity, insiders prefer these investment opportunities over paying dividends to minority shareholders.

URL:www.sci-int.com/pdf/7638560731723-1730,--sadaf%20Ehsan-cCO-IRFAN--%20(paper% 204) .pdf

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14. Ehsan, M., N.Basharat& Madiha M. (2014). Impact of Word-of-Mouth Communication on Brand Loyalty: Empirical Evidence from Telecom Sector in Pakistan.*American journal of scientific research,100. 68-74.*

ABSTRACT:

Word-of-mouth (WOM) communication is becoming more effective in current dynamic and challenging environment, where traditional media has become obsolete due to emergence of technology. In thrust of keeping the customers loyal in such scenario is focus of marketers. In the same vain, this study predicts that WOM influences brand loyalty of consumers in telecom sector of Pakistan. Data collected through self-administered questionnaire of 192 respondents was analysed through bivariate regression analysis and correlation analysis. Results revealed the strong, positive and significant relationship between WOM and brand loyalty. The study presents implications for theoreticians and marketers.

URL: http://www.americanjournalofscientificresearch.com/issues/AJSR_100.html

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15. Ehsan, M., N. Basharat, Arooshidress.(2014) Whatin Authentic Leadership Drives Sales Force Psychological Capital Facets?. *European journal of scientific research,*116(4), 465-474.

ABSTRACT:

The objective of the study was to empirically ascertain the role ofgroup level authentic leadership sub-constructs (such as self-awareness, relational transparency, internalized moral perspective and balanced processing) in building group level psychological

capitalfacets (such as hope, self-efficacy, optimism and resilience). Structured survey Questionnaire was used to collect the data on the variables of interest. Regression analyses of data of 55 pharmaceutical sales force groups, revealed that self-awareness and balanced processingbut not internalized moral perspective and relational transparency, had significant positive impact on sales force group's self-efficacy, hope and resilience whereas only self- awareness significantly improved group's optimism. Implications of study findings for leadership of pharmaceutical companies and researchers are entailed, too.

URL: http://www.europeanjournalofscientificresearch.com/issues/EJSR_116_4.html

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16. Farhani, S., Shahbaz, M., Arouri, M.,& Teulon, F. (2014). The role of natural gas consumption and trade in Tunisia's output. ***Energy Policy*****, *66*, 677-684.**

ABSTRACT:

This paper examines the impact of natural gas consumption, real gross fixed capital formation and trade on the real GDP in the case of Tunisia over the period 1980–2010. We use an Autoregressive Distributed Lag (ARDL) bounds testing approach to test for cointegration between the variables. The Toda–Yamamoto approach is then used to test for causality. Our findings indicate the existence of a long-term relationship between the variables. Natural gas consumption, real gross fixed capital formation and trade add in economic growth. Natural gas consumption, real gross fixed capital formation and real trade cause real GDP in Tunisia. These findings open up new insights for policymakers to formulate a comprehensive energy policy to sustain economic growth in the long-term.

URL:http://www.sciencedirect.com/science/article/pii/S0301421513011476

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17. Farhani, S., Shahbaz, M., Sbia, R., & Chaibi, A. (2014). What does MENA region initially need: Grow output or mitigate CO 2 emissions?.*Economic modelling*****, *38*, 270-281.**

ABSTRACT:

We contribute to the economic growth–CO_2 emissions literature in the MENA region by focusing on both production and environmental functions. Adopting an original analytical framework, our empirical investigation parallels two approaches. The first

one follows the studies by Lean and Smyth (2010a) and Sadorsky (2012) which examine the dynamic interaction of energy consumption and trade openness using production function. The second one extends the recent works by Halicioglu (2009), Jalil and Mahmud (2009), and Jayanthakumaran et al. (2012) which attempt to introduce energy consumption and trade openness in the environmental function as a solution to circumvent omitted variable bias. Our findings suggest that MENA countries should adopt policies to control the increase of pollution as well as to stabilize the productivity growth. One of these policies is to increase the share of renewable energy relative to non-renewable energy sources.

URL:http://www.sciencedirect.com/science/article/pii/S0264999314000042

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18. Habib, A., Rehman, J. U., Zafar, T.,& Mahmood, H. (2014). Does sustainability hypothesis hold in developed countries? A panel co-integration analysis. *Quality & Quantity*, 1-25.

ABSTRACT:

The present study examines the sustainability hypothesis by examining the co-integration between public revenues and public expenditures for selected 20 developed countries between 1999Q1 and 2011Q4. For this purpose, Hadri panel unit root test have been used to check the stationarity of variables. Bai and Perron multiple structural break point tests have been used to find possible breaks in the data. Pedroni co-integration tests and Westerlund co-integration tests have been used to find long run relationship between public revenues and expenditures after the adjustment of structural breaks in the analysis. Mean group/pooled mean group, fully modified ordinary least squares and dynamic ordinary least squares have been used to find the strength of relationship between said variables and to test the sustainability hypothesis. The result of study finds a unit slope on public expenditures and confirms the sustainability hypothesis for the selected sample. This also verifies the authenticity of present fiscal policy for our selected sample countries.

URL: http://link.springer.com/article/10.1007/s11135-014-0134-4

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19. Haque, A., Naeem, K.,& Qureshi, W. (2014). Impact of internal finances on corporate investment in pakistan textile firms.26(5), 2591-2593.

ABSTRACT:

Most of the researchers emphasized cash flow as an important determinant of corporate investment. However trouble arises while interpreting its exact role in deriving corporate investment. The present study mainly investigates cash flow role in determining corporate investment by using an unbalanced panel data of 159 textile sector KSE firms from 1998-2011. Fixed effect model has been applied to check the impact of cash flow and Tobin's q on corporate investment. The empirical findings illustrate that cash flow is significant and positive in determining corporate investment which implies that managers are inclined to utilize internal finances for investment. Tobin's q is also found to be a positive predictor of corporate investment which suggests that on average textile firms undertake investment whenever there is a growth opportunity.

URL:http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2403513

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20. Imran, A. K.& Muhammad K. (2014) Fundamental Factors and Small Equity Investor Behavior in Pakistan. Caspian Journal of Applied Sciences Research, 3(6), 23-31.

ABSTRACT:

This study examines the influence of fundamental factors on small equity investor behavior in the context of Pakistan. The fundamental factors considered in this study are social, political, environmental, regulatory, technological, economic and legal, known as SPERTEL factors. Primary data is collected from individual equity investors from all three stock exchanges of Pakistan. Confirmatory factor analysis (CFA) is used to test the validity of the survey instrument, and structural equation modeling (SEM) technique is used to test the hypotheses. The study documents that overall, small equity investor's decision making is not influenced by fundamental factors. The study found significant influence of social and political factors on small equity investors' behavior. However, economic, regulatory, technological, environmental and legal factors have no influence on individual equity investor's decision making behavior in Pakistan.

URL:http://www.cjasr.com/volumesandissues/issued-articles/2014/110-06/332-cjasr-vol-3-issue-6-pp-23-31-ref-t107

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21. Imran, A., Nisar, Q. A.,& Ashraf, S. (2014). Exploring Relationship among Organizational Learning Practices, Innovativeness and non-financial performance: A descriptive study on NGOs Sector. ***International Journal of Academic Research in Business and Social Sciences*****, 4(10), 193-209.**

ABSTRACT:

Business markets are now emerging and organizations are welcoming the new changes to keep their selves at competitive corner. Organizational learning practices & innovative culture are considered cornerstones and playing crucial role to enhance the organizational performance and to gain competitive edge. The growing importance of organizational learning and innovativeness motivated us to conduct this research. The purpose of this study is to explore relationship between organizational learning, innovativeness and non financial performance of NGOs. For data collection questionnaire survey method was adopted. A sample of 120 respondents was received out of 150respondentswithin the period of one month by using random sampling technique. Findings reveled that organizational learning practices (employees' empowerment, behavioral & cognitive changes and leadership that reinforce learning) and innovativeness (Innovative culture) have strong positive and significant relationship with non-financial performance of NGOs. This research bestowhelp to have deeper understandings and guidelines for management to create learning zone & innovative culturewithinthe organization with a view to enhance employees and organizational performance. At the last of this article, limitations of research, implications and suggestions for further research have also been included.
URL:*https://scholar.google.com.pk/scholar?q=Exploring+Relationship+among+Organizational+Learning+Practices%2C+Innovativeness+and+non-financial+performance%3A+A+descriptive+study+on+NGOs+Sector&btnG=&hl=en&as_sdt=0%2C5*

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22. Imran, A.(2014).Perceive importance of team work: a comparison of two different origins. Elixir Human Resource Management. 67. 21854-21856.

Abstract not found

23. Imam, A. Sattar A. A, Hassan I. (2014) Why So Many Ethics in Corporate Management? Identifying Answers Using Propositional Analysis & Robustness, *J. Appl. Environ. Biol. Sci.* 4(12): 141-154.

ABSTRACT:
This study is inclined to analyze the different work ethics at the workplace. Ethics are important and essential for any organization as it leads acts and deeds of its human resource. It also guides the behaviors of individuals at the work place. Employees need to know the ethics of organization to help them stay connected on the path of truth and honesty. Employees always need a guided behavior to make organization prosper and successful. Organizations develop and communicate the code of ethics within the organization and expects from the employees to strictly follow it. This type of effort makes the organization to become socially known and on the other hand, creating harmony in the society. There are many business ethics around the globe, but all have the same base. These ethics are based on the virtue and honesty. This study has maintained its argument by using the propositional analysis and robustness to conclude the most robust ethics/practices. This study stated that there is no need to develop so many ethics for organizations around the globe when they all are based on the common ground, as suggested by mapping of different work ethics. Harmony can be created at the workplace and at international level if the standards are established regarding the universal ethics.

URL:http://www.textroad.com/JAEBS-December,%202014.html

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24. Imtiaz, A., Mehmood, H. Z., Akram, W., & Irfan, M. (2014). Impact of Microfinance on Poverty Reduction: A Case Study of District Faisalabad. *Journal of Economics and Sustainable Development*, 5(9), 60-65.

ABSTRACT:

The micro - finance program extends small loans to very poor people for self-employment projects that generate income, allowing them to care for themselves and for their families. Micro-finance enables an entrepreneur to build a business or expand the existing business and create a better change in their lives. The micro-financing institutions (MFIs) provide the opportunity for the people who are living under the poverty lines by investing the affordable funds/capital and somehow by providing their management expertise. This study shows the effect of micro-financing of small business and the implications for poverty reduction. The respondents are the clients of Khushhali Bank Ltd, District Faisalabad. The data were collected with the help of well-

designed and structured questionnaire, which will be analyzed by applying FGT techniques. The results showed that the poverty has been reduced by financing the peoples.

URL:http://iiste.org/Journals/index.php/JEDS/article/view/13214

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25. Irfan M., Daisy Mung Hung Kee, R.W. Qureshi, Rashid Hussain (2014).Measuring Performance Of Smes In Pakistan Using Pls-Sem:Evaluating Mbnqa Criteria As Tqm Framework. ***Sci.Int.*****, 26(4),1707-1718.**

ABSTRACT:

The purpose of this study is to empirically investigate the impact of TQM framework based on MBNQA criteria on operational and organizational performance of manufacturing SMEs of Pakistan. TQM practices are hypothesized as a platform to enhance both operational and organizational performance of SMEs in Pakistan. This study is twofold, first of all it is investigated that TQM practices helps to increase primary performance measures expressed in terms of operational performance and secondly it is investigated that how an effectively implemented TQM system contributes in increasing organizational performance of SMEs. This study uses PLS-SEM method to check the casual relationship between TQM practices, operational and organizational performance. Sample data was collected from four major cities of Pakistan and these cities are considered to be the hub of SMEs in Pakistan. Results of this study indicates that adoption of TQM practices helps to strengthen the internal processes and increase primary performance of SMEs expressed as operational performance and a effectively implemented TQM has strong influence in increasing organizational performance. This study is helpful for the mangers who intend to achieve organizational and business excellence both at local and international level

http://sci-int.com/searchresult.php?author=irfan&title=&year=&x=0&y=0

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26. Irfan, S. M., Kee, D. M. H., Qureshi, W,& Hussain, R. (2014). Identification of critical success factors of tqm implementation in health care sector of Pakistan using pareto analysis approach. ***Science International*****, *26*(5). 2603-2613**

ABSTRACT:

Due to the rising costs of health care, complexities in diseases and in its diagnostics, huge equipment and treatment costs, high customer expectations for quality, has built a tremendous pressure on health care institutions in almost all the developed and developing economies to transform their old fad working system to cost effective, patient focus, efficient and high quality services. Thus to deliver high quality of health care services, to gain patient and their families satisfaction, quality has taken a central position. To ensure quality, patient safety, preventive measures to control infections, and gain patient and their families' satisfaction, there is a growing trends among the health care institutions to implement quality standard and systems. Majority of the well know hospitals around the globe has adopted or adapted quality management systems to address the above issues. Total Quality Management (TQM) is a well proven strategic management system in all sectors of industry to achieve excellence in business by focusing on customer needs and wants for superior quality and cost effective services or products. This study aimed to identify the critical success factors (CSFs) of TQM for the successful implementation of TQM in health care sector of Pakistan. After a careful and comprehensive review of 135 studies on TQM and also considering the importance of contextual factors of hospital settings in Pakistan, this study proposed 9 CSFs of TQM for health care sector: top management commitment and leadership role, human resource focus, process management, supplier quality management, quality data and reporting, strategic quality management, patient focus, continuous quality improvement, and services focus. Descriptive statistics and Pareto analysis were employed to identify the core CSFs of TQM for health care. Suggested CSFs of TQM can be employed in order to achieve excellence in health care services.

URL:http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=103197639&h=asq%2fILFWKDtlHhcUgHGEy4bbiI6RH7rKe2QO7klX%2fK5B5vEHFE%2bc4hkg9YFk4Xdp9pI0R6lgfBMLp8MqP4vvqg%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d103197639

27. Jabbar, S.& T. Afza (2014). Relationship between Intellectual Capital and Financial Performance of Pakistani Non-Financial Firms and A Comparative Study of Textile and Chemical Industry ***Vidyabharati. International Interdisciplinary Research Journal, 3(80), 67-80.***

ABSTRACT:

This study explore the relationship between performance of intellectual capital and profitability measures in non-financial companies listed on KSE for a period of 3 years (2009-2011). And it also conduct a comparative analysis of this relationship between textile industry and chemical industry of Pakistan. Textile industry belongs to old economy and labor intensive, and chemicals belong to the new economy and knowledge intensive. Correlation andfixed effect regression is used for empirical analysis on panel data.This study finds the positive and significant relationship between value-added Intellectual coefficient and both profitability measures (ROA & ROE) in non-financial companies of Pakistan. This empirical evidence proves that Pakistan is also moving toward the knowledge based economy and on the way to get competitive sustainability. Comparative analysis of textile industry and chemical industry also shows the importance of intellectual capital efficiency. VAIC proves strong and positive relationship with firm's profitability (ROA & ROE), almost the same in both industries. But R-square of chemicals is greater than textile industry in every model. So, models with ROA are significant than of ROE.

URL: http://viirj.org/vol3issue1.html

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28. Khan, M., Mahmood, H. Z., Akhtar, S., & Muhmood, K. (2014). Understanding Employment Situation of Women: A District Level Analysis. ***International Journal of Gender and Women's Studies*****, 2 (2), 167-175.**

ABSTRACT:

Women's role in economic development is vital and this role is translated into development process through labour market. However, policy maker need proper analysis of labour market. This paper provides analysis of key labour market indicators of Faisalabad. The analysis of key indicators e.g. employment status, sector, education and wages exhibits that women are under-represented in the labour market as their labour force participation is three times lower than male. Women are largely

concentrated in agriculture sector as contributing family workers and in the informal economy with higher risk of vulnerability. Wages of women for the same job is significantly lower than men, they lack appropriate skills and education to compete in the labour market and ultimately end up employment in agriculture and informal sector with little or no social security. They also face higher degree of risk of being unemployed.

URL: aripd.org/journals/ijgws/Vol_2_No_2_June_2014/9.pdf

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29. Khan, M., & Damalas, C. A. (2014). Factors preventing the adoption of alternatives to chemical pest control among Pakistani cotton farmers. ***International Journal of Pest Management*****, *61*(1), 9-16.**

ABSTRACT:

Providing pest control solutions that are less harmful to the farmers and the environment, while maintaining effectiveness on pests is a major goal in modern crop protection. A survey of randomly selected cotton farmers from two districts of Punjab in Pakistan was conducted to study common crop protection practices and related behaviors of farmers in an attempt to identify factors preventing the adoption of alternatives to chemical pest control in the area. Almost all farmers reported using pesticides extensively as the only way of controlling pests and often by mixing two or more different pesticide products. Most farmers felt that spraying with chemicals is not only highly effective, but it is also the only viable option available at the moment. Thus, despite significant health concerns, they felt forced to use pesticides. Almost half (49%) of the farmers, irrespective of age, showed a tendency toward pesticide overuse by spraying higher quantities of pesticides than those required. To model farmers' behavior toward environmentally sound alternatives of pest control, a binary probit regression model was used expressing behavior as a function of age, education, farm size, income, risk perception levels, adverse health effects by pesticides, and training. Education and training were the main determinants of environmentally sound behavior in pest control, in the sense that high levels of education and training appeared to discourage pesticide use in the study area. In contrast, experience of health problems was not associated with behaviors toward pesticide reduction or adoption of alternative pest control practices. Additionally, governmental policies, such as the outdated extension system and the easy availability of pesticides under a non-existing or poor

regulation system, which encourage farmers to utilize pesticides, should be considered as extra major barriers in the adoption of alternative pest control practices.

URL: http://www.tandfonline.com/doi/abs/10.1080/09670874.2014.984257

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30. Khan, M., & Damalas, C. A. (2014). Occupational exposure to pesticides and resultant health problems among cotton farmers of Punjab, Pakistan. ***International journal of environmental health research*****, 1-14.**

ABSTRACT:

Occupational exposure to pesticides and resultant health problems were assessed among 318 randomly selected cotton farmers from the two districts of Punjab, Pakistan. Heavy dependence of farmers on pesticides for pest control was reported. A large part (23.3 %) of the pesticides belonged to the category highly hazardous, whereas the largest part (54.7 %) belonged to the category moderately hazardous. Some of them (8 %) were reported to be used on vegetables. Common working practices of high exposure risk were: the confrontation of pesticide spills in the stage of spray solution preparation (76.4 %), the use of low-technology and faulty sprayers (67.9 %), and spraying under inappropriate weather (46.5 %). A large proportion (34 %) of the farmers reported multiple intoxication symptoms by pesticide use; the most common were irritation of skin and eyes, headache, and dizziness. Nevertheless, most farmers thought these symptoms were usual; only few reported visiting the doctor. Findings clearly indicated a high level of risk exposure to pesticides among farmers of the study area, calling upon immediate interventions toward increasing awareness about alternative pest control practices with less pesticide use.

URL:http://www.tandfonline.com/doi/abs/10.1080/09603123.2014.980781

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31. Mahmood,. H. Z., I, Sana, Khan, M. Khan, Fakhar-un-Nisa.(2014). Irrigation and Food Security: A Quest for Distribution, Ranking and Relationships in the districts of the Punjab Province, Pakistan. ***Journal of Agriculture and Environmental Sciences*****, 3(2), 11-25.**

ABSTRACT:

It is stylized fact that irrigation plays pivotal rolein crop husbandry, enhances many folds yields per acreand this may, consequently, have augmented food security. This study was devised to observe the irrigation distribution / inequalities in the districts of the Punjab province of Pakistan. These districts were ranked as per irrigation distribution / inequalities, ratios of water availability through various modes of irrigation including canal, Tubewell, canal plus Tubewell and overall irrigated area to total cultivated area. Moreover,impacts of target variables were quantified onfood insecure population (%). In this regard, cros-sectional data were collected form Punjab Agriculture Census Report 2010 (Government of Pakistan 2012) and food insecurity in Pakistan 2009 (SDPI, SDC, WFP 2009). Irrigation distributions / inequalities were estimated by using Gini Coefficient while ascending and descending orders were used for ranking of the districts for the target variables as per nature of the values of the indicators had been determined by using different tools. Moreover, econometric modeling was done using Multiple Linear Regression by taking food insecure population (%) as an endogenous while Gini values of irrigation distribution /inequalities, ratios of water availability for crop rearing per cultivated area including some control variables like Gini of operational farm holdings, farmers' literacy rates, farms using chemicals (%) and livestock population per acre in the districts. Results were found as expected that food insecurity increases with rise in Gini of irrigation distribution and vice ver. Moreover, food security increases with rise in water availability through various modes of irrigation.

URL:http://jaesnet.com/vol-3-no-2-june-2014-abstract-2-jaes#j_menu

32. Mahmood, H. Z., Hussain, I., Iftikhar, S., Khan, M., & Nisa, F. R. (2014). Role of Livestock in Food Security: An Ascertainment from Punjab Pakistan. ***International Journal of Academic Research in Business and Social Sciences*****, 4(8), 458-470.**

ABSTRACT:

Livestock production plays a major role in the life of farmers in developing countries like Pakistan. As crops and livestock rearing in rural areas directly affects food security condition of the nations. This study has been devised to observe the impact of Livestock on food security. In this regard data was collected from Food Insecurity Report 2009 (SDPI, SDC and World Food Program 2009), Punjab Development Statistics (Government of Punjab 2009) and Agriculture Census Report 2010 (Government of Punjab 2010). Generalized Linear Model was used to find out the relationship between livestock and food security. Results show that there is positive relationship between the work animal per hectare, milk animal per person and food security, whereas meat animal per hectare and milk animal per person are negatively related with food security. The study finding has important policy implications for food security recommended that livestock rearing needs to be encouraged.

URL:https://scholar.google.com.pk/scholar?hl=en&q=Role+of+Livestock+in+Food+Security%3A+An+Ascertainment+from+Punjab+Pakistan&btnG=&as_sdt=1%2C5&as_sdtp=

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33. Mahmood, H. Z., Qasim, M., Khan, M., & Husnain, M. I. U. (2014). Re-examining the inverse relationship between farm size and productivity in pakistan. ***JAPS, Journal of Animal and Plant Sciences*****, 24(5), 1537-1546.**

ABSTRACT:

The purpose of this study is to analyze the relationship between farm size and productivity and its various correlates like total and partial factor productivity, cropping intensity, gross margins, on and off farm incomes, credit availability with reference to different farm sizes in the irrigated perennial areas of district Gujrat and Mandi Bahauddin. To achieve theobjectives,213 respondents were randomly selected and interviewed.Cobb-Douglas production functionwas employed to observe the productivity trends using various exogenous farm inputs while monetary values of output had been used as endogenous variable in the model. The cropping intensity and study specific total and partial factor productivities were also calculated. Results

confirmed the inverse relationship between farm size and productivity, however, this relationship was found weak. Furthermore, cropping intensity, yield and gross margins per hectare were found higher at small farms as compared to larger ones.

URL:https://scholar.google.com.pk/scholar?q=Re-Examining+the+Inverse+Relationship+ between + Farm +Size+and+Productivity+in+Pakistan.&btnG=&hl=en&as_sdt=0%2C5

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34. Mahmood, H. Z., Khan, R., Mehmood, B.,& Khan, K. (2014). Efficiency analysis of conventional vs. Islamic microfinance: An appraisal for sustainability in Pakistan. ***International Journal of Empirical Finance*****, 3(4), 192-201.**

ABSTRACT:

Microfinance has emerged as an impressive tool for poverty alleviation in global developing economies of all of the continents. Critiques have questioned some of the features of conventional system of microfinance which gave room to Islamic mod of micro-financing (IMF) to the poor. But sustainability of Islamic microfinance is questioned by pyramids of microfinance proponents. Therefore, this study has been devised to compare the efficiency of the conventional vs IMF institutions in Pakistan. A non-parametric approach i.e. Data Envelopment Analysis was rendered to gauge the efficiency of the target institutions. In this regard, panel data of 9 Conventional microfinance institutions and 3 IMF institutions were used spanning over a period of 4 years i.e. 2008 to 2011. The results revealed that 2 out of 3 IMF institution and 2 out of 9 conventional MFIs were found on efficient frontier. Therefore, the sustainability of IMF institutions can be rated as high in Pakistan and this mod of financing should be encouraged by policy makers.

URL:www.rassweb.com/wp-content/uploads/PDF/IJEF/Vol-3/Issue-4/Paper%203.pdf

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35. Mahmood, H. Z., Khan, M., ul Husnain, M. I.,& Iftikhar, S. (2014). Education Infrastructure, Literacy and Food Security Matrix in Pakistani Punjab: A District Level Analysis. ***Journal of Social Science for Policy Implications*****, 2(2), 253-265.**

ABSTRACT:

Hunger and education are top listed in the millennium development goals and their significance cannot be ignored to achieve high living standards and economic development of the nations. Illiteracy has been termed as economic backwardness which is major cause of conflicts (Do and Iyer, 2009) leading to immobility of the people due to dread and resultantly cause food insecurity amongst them. Ample education infrastructure, definitely, helps to promote Literacy rate which is one of the key component of Human Development indicators. Unfortunately, Pakistan ranks 141 out of 158 countries in Human Development Index over the globe (Kugelman and Hathaway, 2010) due to its low education spending which is just 2.1 percent of its GDP share (Government of Pakistan, 2010). Moreover, education is one of the key determinant of poverty in Pakistan and 10 million people of this country were added to inadequate food intake in just two years from 2006-2008 (Kugelman and Hathaway, 2010). The current study has been devised to observe the relationships between education infrastructure, literacy rate and food security in thirty four districts of the Punjab province of Pakistan. Crossectional data were extracted from two different sources i.e. Punjab Development Statistics (Governemnt of Punjab 2009) and Food Insecurity in Pakistan (SDC, SDPI and WFP, 2009). Semi log econometric model was rendered to study the relationships between independent (i.e number of boys and girls schools, separately, population per primary and Middle school, separately, and number of adult literates in the area) and a dependent variable (i.e. food insecurity). The econometric model delineated positive relationships between boys and girls school infrastructure, population per primary and Middle school with food insecure population at district level. However, the trends exhibited by adult literates and food insecurity were found negative as per expectations and witnessed by literature. As per results of the study it is recommended that provincial and district governments must make some structural changes in the education systems by focusing on schools infrastructure to increase literacy rates to achieve targets of food security.

URL:aripd.org/journals/jsspi/Vol_2_No_2_June_2014/13.pdf

36. Malik, M. E., Naeem, B., & Bano, N. (2014). Role of optimism subculture in promoting job satisfaction Evidence from Beverage Industry of Pakistan. ***Pakistan Economic and Social Review*****, 52(2), 127-139.**

ABSTRACT:

The core objective of this research endeavour is to assess empirically to what degree perceptions of optimism subculture are associated with overall job satisfaction and its dimensions. Structured survey questionnaire was employed to test the study hypotheses. Hierarchical regression analyses reveals that perceived optimistic cultural values, at group or team level, fosters not only satisfaction to overall job but also its intrinsic and extrinsic components of sales persons employed by beverage companies in Pakistan while controlling the effects of important demographic variables such as gender, age, company and selling tenures. Practical implications of study findings and future research suggestions
are presented, too.

URL:https://scholar.google.com.pk/scholar?q=Role+of+Optimism+Subculture+in+Promoting+Job+Satisfaction%3A+Evidence+from+Beverage+Industry+of+Pakistan&btnG=&hl=en&as_sdt=0%2C5

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37. Mirza, H. H., & Afza, T. (2014). Impact of Corporate Cash Flow on Dividend Payouts: Evidence from South Asia. ***Middle-East Journal of Scientific Research*****, 19(4), 472-478.**

ABSTRACT:

Present study investigated the impact of free cash flow on corporate dividend policy in four emerging economies of South Asia i.e. Bangladesh, India, Pakistan and Sri Lanka. The data of 250 listed companies collected form published annual reports from 2006-10. Based on the estimated results it was evident that liquidity plays major role in distribution of cash dividend and in order to pay regular dividends firm needs to maintain strong cash reserves. The results showed that cash flow from operations is an important factor affecting the firm's ability to pay dividends especially in India and Pakistan. However, the dividend payout of firms from Sri Lanka and Bangladesh was not affected much from the cash flow from operations.

URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2403513

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38. Naeem, B., Malik, M. E.,& Bano, N. (2014). Nurturing organizational citizenship behaviours by optimism subculture: Empirical Evidence from Pakistan. ***Pakistan Economic and Social Review*****, 52(2), 175-186.**

ABSTRACT:

The main purpose of this study is to assess empirically to what extent sales force perceptions of optimism subculture are related to their Organizational Citizenship Behaviours directed towards organization (OCB-O) in the context of pharmaceutical industry of Pakistan. Survey methodology with descriptive research design is used to test the hypotheses. The results of hierarchical regression analyses of one hundred and ninety seven pharmaceutical sales persons' responses revealed that optimism subculture had significant positive effect on OCB-O and its
dimensions such as civic virtue and conscientiousness, with exception of sportsmanship, controlling the effects of gender, education, age and selling experience of sales force. Practical implications of study findings and future research suggestions are presented, too.

URL:https://scholar.google.com.pk/scholar?q=Nurturing+Organizational+Citizenship+Behaviors+by+Optimism+Subculture%3A+Empirical+Evidence+from+Pakistan&btnG=&hl=en&as_sdt=0%2C5

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39. Polat, A., Shahbaz, M., Rehman, I. U., & Satti, S. L. (2014). Revisiting linkages between financial development, trade openness and economic growth in South Africa: fresh evidence from combined cointegration test. Quality & Quantity, 49(2), 785-803.

ABSTRACT:

This study revisits the impact of financial development on economic growth in South Africa by incorporating trade openness in the production function. The paper covers the period of 1970–2011. We apply the Bayer–Hanck combined cointegration approach to examine the long run relationship between the variables. Our results indicate that financial development stimulates economic growth. Capital use adds in economic growth but trade openness impedes economic growth. The demand-side hypothesis is

validated in South Africa. This paper suggests that government should redirect trade policies to reap optimal fruits of financial development for long run economic growth.

URL:http://link.springer.com/article/10.1007/s11135-014-0023-x

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40. Rehman, I. U., & Shahbaz, M. (2014). Multivariate-based Granger causality between financial deepening and poverty: the case of Pakistan. ***Quality & Quantity*****, International Journal of Methodology,** ***48*****(6), 3221-3241.**

ABSTRACT:

This paper deals with the empirical investigation of causal relationship between financial deepening, economic growth and poverty reduction using quarter frequency data in case of Pakistan over the period of 1972–2011. We applied the autoregressive distributed lag model bounds testing approach by incorporating structural breaks stemming in the series. The order of integration of the variables is examined by applying structural break unit root test. Our empirical exercise indicated that the long run relationship between financial deepening, economic growth and poverty reduction exists in case of Pakistan. The causality analysis implied that causality results are sensitive with the use of proxy for poverty reduction.

URL:http://link.springer.com/article/10.1007/s11135-013-9952-z

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41. Satti, S. L., Hassan, M. S., Mahmood, H.,& Shahbaz, M. (2014). Coal consumption: An alternate energy resource to fuel economic growth in Pakistan. ***Economic Modelling*****, 36, 282-287.**

ABSTRACT:

This study is an attempt to revisit the causal relationship between coal consumption and economic growth in case of Pakistan. The present study covers the period of 1974–2010. The direction of causality between the variables is investigated by applying the VECM Granger causality approach. Our findings have exposed that there exists bidirectional Granger causality between economic growth and coal consumption. The Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUMSQ) diagrams have not found any structural instability over the period of 1974–2010.

URL:http://www.sciencedirect.com/science/article/pii/S0264999313004069

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42. Satti, S. L., Farooq, A., Loganathan, N.,& Shahbaz, M. (2014). Empirical evidence on the resource curse hypothesis in oil abundant economy. ***Economic Modelling*****, 42, 421-429.**

ABSTRACT:

This present study investigates the relationship between natural resource abundance and economic growth for Venezuelan economy. We have applied the ARDL bounds testing approach to cointegration developed by Pesaran et al. (2001) to examine its long run relationship amid the variables. The VECM Granger causality is applied to test the direction of causality among the variables. This study covers the period of 1971–2011. Our empirical evidence indicated that variables are found to be cointegrated. The results confirm that natural resource abundance impedes economic growth. Financial development, capital stock and trade openness enhance economic growth. The feedback hypothesis is also found between natural resource abundance and economic growth.

URL:http://www.sciencedirect.com/science/article/pii/S0264999314002752

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43. Sbia, R., Shahbaz, M., & Hamdi, H. (2014). A contribution of foreign direct investment, clean energy, trade openness, carbon emissions and economic growth to energy demand in UAE. ***Economic modelling*****, 36, 191-197.**

ABSTRACT:

This paper investigates the relationship between foreign direct investment, clean energy, trade openness, carbon emissions and economic growth in case of UAE covering the period of 1975Q1–2011Q4. We have tested the unit properties of variables in the presence of structural breaks. The ARDL bounds testing approach is applied to examine the cointegration by accommodating structural breaks stemming in the series. The VECM Granger causality approach is also applied to investigate the causal relationship between the variables. Our empirical findings confirm the existence of cointegration between the series. We find that foreign direct investment, trade openness and carbon emissions decline energy demand. Economic growth and clean energy have positive impact on energy consumption.

URL:http://www.sciencedirect.com/science/article/pii/S0264999313004070

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44. Shabbir, M. S., Shahbaz, M., & Zeshan, M. (2014). Renewable and nonrenewable energy consumption, real GDP and CO2 emissions nexus: a structural VAR approach in Pakistan. Bulletin of Energy Economics, 2(3), 91-105.

Abstract:

A rise in real GDP crafts higher energy demand in Pakistan. This short-term rising energyequirement is fulfilled with the help of nonrenewable and renewable energy consumption. Therise in nonrenewable energy consumption lifts real GDP up in short-run. Forecast error variancedecomposition illustrates nonrenewable energy consumption alone passes 87% variation in theCO2 emissions. This verifies that fossil fuels are accountable for environmental degradation inPakistan. The CO2 emissions worsen economic activity, real GDP falls but renewable energyconsumption largely grows. This elevation in renewable energy consumption is the proof ofstabilizing efforts that are being initiated by official authorities as CO2 emissions reach to analarming level. The rise in renewable energy consumption boosts economic activity, and realGDP breeds. Most of times, an increase in renewable energy consumption is an effort to substitute it for nonrenewable energy consumption, resulting in lower level of CO2 emissions.

URL:https://scholar.google.com.pk/scholar?q=Renewable+and+Nonrenewable+Energy+Consumption%2C+Real+GDP+and+CO2+Emissions+Nexus%3A+A+Structural+VAR+Approach+in+Pakistan&btnG=&hl=en&as_sdt=0%2C5

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45. Shahbaz, M., Tiwari, A. K., Jam, F. A.,& Ozturk, I. (2014). Are fluctuations in coal consumption per capita temporary? Evidence from developed and developing economies. *Renewable and Sustainable Energy Reviews*, *33*, 96-101.

ABSTRACT:

This paper investigates the unit root properties of coal consumption per capita for the 47 developed and developing countries for 1965–2010 period. To examine the stationary properties of coal consumption per capita, Lagrange multiplier (LM) unit root test with one break and two breaks Crash model has been utilized. According to empirical results, the coal consumption is stationary in almost all the countries analyzed. Thus, if the coal consumption is mean (or trend) reverting, then it follows that the series will return to its mean value (or trend path) and it might be possible to forecast future movements in the coal consumption based on past behaviors of the series. For the

policy makers, it is not necessary to pay attention to coal consumption excepting for Indian and Italian. However, for the researchers it is important to take into account the stationarity property of coal consumption and also structural breaks (should be modeled) in their future studies.

URL:http://www.sciencedirect.com/science/article/pii/S1364032114001099

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46. Shahbaz, M., Nasreen, S., Ling, C. H.,& Sbia, R. (2014). Causality between trade openness and energy consumption: What causes what in high, middle and low income countries. ***Energy policy*****, *70*, 126-143.**

ABSTRACT:

This paper explores the relationship between trade openness and energy consumption using data of 91 high, middle and low income countries. The study covers the period of 1980–2010. We have applied panel cointegration to examine long run relationship between the variables. The direction of causal relationship between trade openness is investigated by applying Homogenous non-causality, Homogenous causality and Heterogeneous causality tests. Our variables are integrated at I(1) confirmed by time series and panel unit root tests and cointegration is found between trade openness and energy consumption. The relationship between trade openness and energy consumption is inverted U-shaped in high income countries but U-shaped in middle and low income countries. The homogenous and non-homogenous causality analysis reveals the bidirectional causality between trade openness and energy consumption. This paper opens up new insights for policy makers to design a comprehensive economic, trade and policies for sustainable economic growth in long run following heterogeneous causality findings.

URL:http://www.sciencedirect.com/science/article/pii/S0301421514001761

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47. Shahbaz, M., Tahir, M. I., Ali, I.,& Rehman, I. U. (2014). Is gold investment a hedge against inflation in Pakistan? A co-integration and causality analysis in the presence of structural breaks. ***The North American Journal of Economics and Finance*****, *28*, 190-205.**

ABSTRACT:

The last few years have witnessed overwhelming investments in the gold market. Numerous studies have discussed how investment in gold is a hedge against inflation. The current study investigates whether a gold investment is a hedge against inflation in case of Pakistan. In doing so, we have used time series data on gold prices; economic growth and inflation are used for the period of 1997Q1–2011Q4. The study has applied the ARDL bounds testing approach to co-integration for the long run, and innovative accounting approach (IAA) to examine the direction of causality in variables. Our findings reveal that "investment in gold is a good hedge against inflation" not only in the long-run but also in the short-run. The implications and applications of the study are discussed in detail.

URL:http://www.sciencedirect.com/science/article/pii/S1062940814000321

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48. Shahbaz, M., Sbia, R., Hamdi, H., & Ozturk, I. (2014). Economic growth, electricity consumption, urbanization and environmental degradation relationship in United Arab Emirates. ***Ecological indicators*****, *45*, 622-631.**

ABSTRACT:

The present study explores the relationship between economic growth, electricity consumption, urbanization and environmental degradation in case of United Arab Emirates (UAE). The study covers the quarter frequency data over the period of 1975–2011. We have applied the ARDL bounds testing approach to examine the long run relationship between the variables in the presence of structural breaks. The VECM Granger causality is applied to investigate the direction of causal relationship between the variables. Our empirical exercise reported the existence of cointegration among the series. Further, we found an inverted U-shaped relationship between economic growth and CO_2 emissions i.e. economic growth raises energy emissions initially and declines it after a threshold point of income per capita (EKC exists). Electricity consumption declines CO_2 emissions. The relationship between urbanization and CO_2 emissions is positive. Exports seem to improve the environmental quality by lowering

CO_2emissions. The causality analysis validates the feedback effect between CO_2 emissions and electricity consumption. Economic growth and urbanization Granger cause CO_2 emissions.

URL:http://www.sciencedirect.com/science/article/pii/S1470160X14002246

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49. Shahbaz, M., Khraief, N., Uddin, G. S.,& Ozturk, I. (2014). Environmental Kuznets curve in an open economy: A bounds testing and causality analysis for Tunisia. ***Renewable and Sustainable Energy Reviews*****, *34*, 325-336.**

ABSTRACT:

The environmental Kuznets curve hypothesis posits that in the early stages of economic growth environmental degradation and pollution increase. However, as a nation reaches a certain level of income, measured in per capita terms, the trend reverses. The postulated relationship thus produces an inverted U-shaped curve. The topic has drawn much academic interest in the context of developed and emerging nations. The aim of this paper is to investigate the existence of environmental Kuznets curve (EKC) in case of Tunisia using annual time series data for the period of 1971–2010. The ARDL bounds testing approach to cointegration is applied to test long run relationship in the presence of structural breaks and vector error correction model (VECM) to detect the direction of causality among the variables. The robustness of causality analysis has been tested by applying the innovative accounting approach (IAA). The findings of this paper confirmed long run relationship between economic growth, energy consumption, trade openness and CO_2 emissions. The results also indicated the existence of EKC confirmed by the VECM and IAA approaches. The study has significant contribution for policy implications to curtail energy pollutants by implementing environment friendly regulations to sustain economic development in Tunisia.

URL: http://www.sciencedirect.com/science/article/pii/S136403211400183X

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50. Shahbaz, M., & Mafizur Rahman, M. (2014). Exports, financial development and economic growth in Pakistan. ***International Journal of Development Issues*****, *13*(2), 155-170.**

Purpose

– This paper aims to explore the relationship between exports, financial development and economic growth in case of Pakistan.

Design/methodology/approach

– The autoregressive distributed lag bounds testing approach to cointegration and error correction model are applied to test the long-run and short-run relationships, respectively. The direction of causality between the variables is investigated by the vector error correction model Granger causality test and robustness of causality analysis is tested by applying innovative accounting approach.

Findings

– The analysis confirms cointegration for the long-run relation between exports, economic growth and financial development in case of Pakistan. The results indicate that economic growth and financial development spur exports growth in Pakistan. The causality analysis reveals feedback hypothesis that exists between financial development and economic growth, financial development and exports, and, exports and economic growth.

Originality/value

– This study provides new insights for policy makers to sustain exports growth by stimulating economic growth and developing financial sector in Pakistan.

URL:http://www.emeraldinsight.com/doi/abs/10.1108/IJDI-09-2013-0065

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51. Shahbaz, M., Loganathan, N., Tiwari, A. K.,& Sherafatian-Jahromi, R. (2014). Financial Development and Income Inequality: Is There Any Financial Kuznets Curve in Iran?.*Social Indicators Research*, 1-26.

ABSTRACT:

This paper deals with the investigation of the relationship between financial development and income inequality in case of Iran. In doing so, we have applied the ARDL bounds testing approach to examine the long-run relationship in the presence of structural break in the series. The unit root properties have been tested by applying Zivot and Andrews (in J Bus Econ Stat 10:251–270, 1992) and Clemente et al. (in Econ Lett 59, 175–182, 1998) structural break tests. The VECM Granger causality approach is used to detect the direction of the causal relationship between financial development and income inequality. Moreover, Greenwood–Jovanovich (GJ) hypothesis has also been tested for Iranian economy. Our results confirm the long run relationship between the variables. Furthermore, financial development reduces income inequality. Economic growth worsens income inequality, but inflation and globalization improve income

distribution. Finally, GJ hypothesis is found as well as U-shaped relationship between globalization and income inequality in case of Iran. This study might provide new insights for policy makers to reduce income inequality by making economic growth more fruitful for poor segment of population and directing financial sector to provide access to financial resources of poor individuals at cheaper cost.

URL:http://link.springer.com/article/10.1007/s11205-014-0801-9

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52. Shahbaz, M., Uddin, G. S., Rehman, I. U., & Imran, K. (2014). Industrialization, electricity consumption and CO 2 emissions in Bangladesh. ***Renewable and Sustainable Energy Reviews*****, *31*, 575-586.**

ABSTRACT:

This paper investigates the relationship between industrialization, electricity consumption and CO_2 emissions in case of Bangladesh using quarter frequency data over the period of 1975–2010. The ARDL bounds testing approach is applied to examine cointegration in the presence of structural breaks stemming in the series. The causal relationship among the variables is explored by applying the innovative accounting approach (IAA). Our results indicate that the variables are cointegrated for a long run relationship. We find that financial development adds in energy pollutants. Electricity consumption contributes to CO_2 emissions. Trade openness also has a positive impact on energy pollutants. The results unveil that EKC is existed between industrial development and CO_2 emissions in case of Bangladesh. Our causality analysis shows that electricity consumption Granger causes energy pollutants, industrial growth and financial development. The unidirectional causality exists running from financial development to trade openness and trade openness Granger causes industrial development. This study opens up new insights for policy makers in formulating a comprehensive economic, financial and trade policy to sustain industrialization by improving the environmental quality.

URL:http://www.sciencedirect.com/science/article/pii/S1364032113008423

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53. Shahbaz, M., Rehman, I. U., & Mahdzan, N. S. A. (2014). Linkages between income inequality, international remittances and economic growth in Pakistan. ***Quality & Quantity*****, *48*(3), 1511-1535.**

ABSTRACT:

This paper explores the dynamic linkages between income inequality, international remittances and economic growth using time series data over the period of 1976–2006 in case of Pakistan. The cointegration analysis based on the bounds test confirms the existence of a long-run relationship between income inequality, international remittances and economic growth. Our results reveal that income inequality and international remittances enhance economic growth. The causality analysis based on innovative accounting approach shows bidirectional causal relationship between income inequality and economic growth and same is true for international remittances and income inequality. International remittances are cause of economic growth but not vice versa. Although we find support for Kuznets hypothesis but Pakistan is yet to benefit, in terms of reducing the gaps of income inequality, from the international flow of remittances and economic growth. The paper argues that, from a policy perspective, there is an urgent need for policy makers in Pakistan to reduce the widening gap of income inequality by focusing on income redistribution policies and to go beyond the traditional factors in balancing income inequality.

URL:http://link.springer.com/article/10.1007/s11135-013-9850-4

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54. Shah, F, T,. Imam. A R.W. Qureshi,& Hanif, S. (2014), Comparison Of Microfinance Institutions: Akhuwat Foundation Vs Grameen Bank.Sci.Int, 26(4),1851-1854

ABSTRACT:

Microfinance provides small loans to poor. It is the best key to reduce poverty. The basic purpose of this research is to discover the challenges and opportunities of microfinance sector in Pakistan. These challenges and opportunities are explored by comparing Akhuwat Foundation (A Pakistani Microfinance Institution) with Grameen Bank (A Bangladeshi Microfinance Institution). Today, microfinance sector has been growing rapidly in the world especially in Pakistan. Despite of it, many challenges like improper regulations, increasing competition, profitability, limited management capacity, MFIs are operating very well in both countries. On the other side, poverty has

increased rapidly in Pakistan even people are rundown of their basic rights (shelter, income generation, self-employment). Pakistan is an attractive market for Microfinance Institutions and can create many opportunities for the needy ones. Comparison of both institutions reveals that Akhuwat Foundation is working with expertise in the MFI. Their system is far better than the Grameen Bank. Recommendations are also presented for the MFIs.

http://sci-int.com/searchresult.php?author=faisal&title=&year=&x=0&y=0

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55. Shah, F. T., Idrees, M. F., Imam, M. A., Khan, M. T. A., & Mariyam, M. A. (2014). Impact of Job Satisfaction on Organizational Commitment in IT Sector Employees of Pakistan. *J. Appl. Environ. Biol. Sci*, *4*(8), 190-197.

ABSTRACT:

Human Resource plays an important part for organization, which makes it an asset for organizations. Organizations are must interested in retention of employees. This need of organization makes job satisfaction and organizational commitment as more interested concepts to judge the behavior of employees who are essential for the organization. Job satisfaction and organizational commitment are the important concepts that determine the attitudes of employees at the workplace. These are the positive outcomes that help organizations to reap its benefits in terms of performance and organizational productivity. Apart from performance and productivity of the organizations, turnover intentions are also a major concern of the organization. These importance attitudes of employees at workplace determine their intention to stay in the organization. The population for this study was the professionals working in the IT Industry of Pakistan. Systematic Random Sampling was used to identify the study sample. This study reported the impact of job satisfaction on organizational commitment in IT professionals of Pakistan. This study also found that there exists a positive relationship between job satisfaction and organizational commitment in employees of IT industry, which strengthen the impact of one employee attitudinal outcome on the other in a same direction, i.e., increase in job satisfaction increases the organizational commitment. Survey was conducted through the questionnaires, which was developed from the various studies. Questionnaires were floated through personal visits and emails. Personal visits were conducted to improve the response rate of IT professionals. Reliability analysis was done along with correlation, and regression

analysis in SPSS-17th edition. Limitations of the study are also presented along with future research recommendations.

URL:*www.jespk.net/publications/186.pdf*

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56. Uddin, G. S., Shahbaz, M., Arouri, M.,& Teulon, F. (2014). Financial development and poverty reduction nexus: A cointegration and causality analysis in Bangladesh. ***Economic Modelling*****, *36(1)*, 405-412.**

ABSTRACT:

This paper contributes to the literature by investigating the relationship between financial development, economic growth and poverty reduction in Bangladesh using quarter frequency data over the period of 1975–2011. This issue is of importance for developing economics given the role of financial sector in mobilizing and allocating savings into productive investments. We use an innovative empirical approach based on ARDL cointegration with structural breaks. Our findings show that a long-run relationship between financial development, economic growth and poverty reduction exists in Bangladesh. Financial development helps to reduce poverty, but its effect is not linear.

URL:http://www.sciencedirect.com/science/article/pii/S0264999313004185

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57. Yosuf, M. N. (2014). An analysis of faculty evaluation by students a case of COMSATS university lahore. ***Science International*****, *26*(2), 939-948.**

ABSTRACT:

Education has identified the need for teacher evaluations and it is mandatory in universities and education Institutes like "COMSATS Institute of information technology Lahore Campus" (CIIT Lahore). The purpose of the study is to analyze the results of faculty evaluation by students, in CIIT Lahore. In the current study there is an in depth analysis of the outcomes of all the Quality factors included in evaluation form. The contents of the evaluation instrument based on different group dimensions related to teachers, like; course content and additional subject material, teachers' knowledge of the subject, teaching style, ethical behavior, teachers' regularity and punctuality and course organization. The outcomes of this study gave a holistic view of the faculty

evaluation feedback in CIIT Lahore. Results showing that excellent category for any of the group of questions have maximum percentage of 62% and poor category for any of the group of question has minimum percentage of 3.0%.

URL:www.sci-int.com/pdf/448970734939-948---NAILA-.pdf

DEPARTMENT OF MATHEMATICS

Journal Papers

1. Abid, M., Karimov, K. S.,& Wajid, H. A. (2014) Numerical and Experimental Analysis of a Spiral Horizontal Axis Wind Turbine. Iranica Journal of Energy & Environment 5 (1), 13-17.

ABSTRACT:

This paper presents results of design, analysis, manufacturing and testing of a spiral horizontal axis wind turbine. In first step, modeling and computational fluid dynamic (CFD) analysis was performed. Helix blades angle for spiral rotors of outer and inner diameter of 0.85 and 0.45m, respectively was optimized. In the second step, as per optimized spiral rotor dimensions, a prototype was manufactured. Experiments were carried out for torque and power calculations; obtained results are discussed.

URL: 10.5829/idosi.ijee.2014.5.1.513

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2. Abid, M., Noon, A. A.,& Wajid, H. A. (2014). Erosion study of tunnel 1 of tarbela damIranian Journal of Science and Technology–Trans of ME, *38*(M1), 253-261.

ABSTRACT:

In this paper, turbulent flow causing erosion in Tunnel 1 of Tarbela Dam using Reynolds Stress Model considering the effect of sediment particles is discussed. Velocity, pressure and erosion rate results are presented for three different water heads in the reservoir i.e., considering summer, winter and average seasons both for one-way and two-way/full coupling. Erosion rate is concluded the maximum at main bend and outlets at high head at full coupling. Numerical results are compared with the experimental erosion results for the scale down model of almost similar geometrical components. In addition, maximum loss of mass at T section in the loop with time is concluded.

URL:https://scholar.google.com.pk/scholar?hl=en&q=Erosion+study+of+Tarbela+Dam+Tunnel-1&btnG=&as_sdt=1%2C5&as_sdtp=

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3. Ahmad, S., Anwar, I.,& Qureshi, A. A. (2014). On Characteristic Poset and Stanley Decomposition. ***Analele stiintifice ale universitatii ovidius constanta-seria matematica*****, *22*(2), 21-28.**

ABSTRACT:

Let J _ I be two monomial ideals such that I=J is Cohen Macaulay.By associating a _nite posets Pg I=J to I=J, we show that if I=J is a Stan-ley ideal then gI=J is also a Stanley ideal, where gI=J is the polarization of I=J. We also give relations between sdepth and fdepth of I=J and gI=J.

URL:https://scholar.google.com.pk/scholar?q=On+Characteristic+Poset+and+Stanley+Decomposition&btnG=&hl=en&as_sdt=0%2C5

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4. Akram, M., Alsherei, N. O., Shum, K. P., & Farooq, A. (2014). Application of bipolar fuzzy soft sets in k-algebras. 32, 533-546.

ABSTRACT:

On the basis of the concept of bipolar fuzzy soft sets, a new kind of *K*-algebra is introduced in this paper. The concepts of bipolar fuzzy soft *K*-algebras are described and some related properties are investigated. The notion of a generalized bipolar fuzzy soft *K*-algebra is also introduced and discussed.

URL:https://scholar.google.com.pk/scholar?q=Application+of+bipolar+fuzzy+soft+sets+in%C2%A0K-algebras.&btnG=&hl=en&as_sdt=0%2C5

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5. Akram, M., Farooq, A., Saeid, A. B.,& Shum, K. P. (2014). Certain types of vague cycles and vague trees. ***Journal of Intelligent & Fuzzy Systems: Applications in Engineering and Technology*****, *28*(2), 621-631.**

ABSTRACT:

Fuzzy models are becoming useful because of their aim of reducing the differences between the traditional numerical models used in engineering and sciences and the symbolic models used in expert systems. A vague graph is a generalized structure of a fuzzy graph that gives more precision, flexibility, and compatibility to a system when

compared with systems that are designed using fuzzy graphs. In this paper, we introduce various types of vague bridges, vague cut-vertices, vague cycles and vague trees in vague graphs, and investigate some of their interesting properties. Most of these various types are defined in terms of levels. We also describe comparison of these types.

URL: http://dl.acm.org/citation.cfm?id=2729783

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6. Ali, K., Hussain, M., Shaker, H.,& Javaid, M.(2014). Super edge-magic total labeling of subdivided stars. *Ars Combin*. 116 -177-183

ABSTRACT:

An *edge-magic total labeling* of a graph *G* is a one-to-one map ¸ from *V* (*G*) [*E*(*G*) onto the integers *f*1; 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*)) =*f*1; 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 *K*1;*p;* for *p* ¸ 5

URL:https://scholar.google.com.pk/scholar?q=Super+edge+magic+total+labeling+of+subdivided+star&btnG=&hl=en&as_sdt=0%2C5

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7. Arshad, S., Lupulescu, V.,& O'Regan, D. (2014). L P-solutions for fractional integral equations. *Fractional Calculus and Applied Analysis*, *17*(1), 259-276.

ABSTRACT:

In this article, we examine L^p-solutions of fractional integral equations in Banach spaces involving the Riemann-Liouville integral operator. Using a compactness type condition, we obtain local and global existence of solutions. Also other types of existence and uniqueness results are established. At the end, an application is given to illustrate the main result.

URL:http://link.springer.com/article/10.2478/s13540-014-0166-4

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8. Ashraf, S. (2014). Fuzzy dissimilarity and generalization of Valverde's theorem on T-indistinguishability relations. ***Fuzzy Sets and Systems*****.**

ABSTRACT:

Similarity and dissimilarity between fuzzy sets are popular notions in decision making problems. This paper studies the representations of ϵ -fuzzy dissimilarity relations as the counter part of ϵ -fuzzy equivalence relations. It is proved that these newly defined ϵ -fuzzy dissimilarity relations satisfy the axioms of self dissimilarity and symmetry along with certain inequalities which transform into Valverde's representation theorem in the particular case when the given relation is 1-fuzzy transitive.

URL:http://www.sciencedirect.com/science/article/pii/S0165011414004540

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9. I. Anwar , H. Mahmood , M. A. Binyamin& M. K. Zafar (2014) On the Characterization of f-Ideals, Communications in Algebra, 42:9, 3736-3741.

ABSTRACT:

In this paper, we give the characterization of unmixed f-ideals of degree $d \geq 2$ generalizing the results given in [1].

URL:http://dx.doi.org/10.1080/00927872.2013.792092

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10. Javaid, M. (2014). On super edge-antimagic total labeling of subdivided stars. ***Discussiones Mathematicae Graph Theory*****, 34(4), 691-706.**

ABSTRACT:

In 1980, Enomoto et al. proposed the conjecture that every tree is a super (a, 0)-edge-antimagic total graph. In this paper, we give a partial sup- port for the correctness of this conjecture by formulating some super (a, d)- edge-antimagic total labelings on a subclass of subdivided stars denoted by $T(n, n + 1, 2_n + 1, 4_n + 2, n_5, n_6, \ldots, n_r)$ for different values of the edge- antimagic labeling parameter d, where $n \geq 3$ is odd, $nm = 2m-4(4n+1)+1$, $r \geq 5$ and $5 \leq m \leq r$.

URL:http://www.degruyter.com/view/j/dmgt.2014.34.issue-4/dmgt.1764/dmgt.1764.xml

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11. Jawad, A. (2014). Cosmological reconstruction of pilgrim dark energy model in f (T, T G) gravity. ***Astrophysics and Space Science*****, *356*(1), 119-127.**

ABSTRACT:

In this paper, we study $f(T,T_G)$ gravity in FRW spacetime taking into account correspondence scheme. For this purpose, we assume pilgrim dark energy model with event horizon as infrared cutoff. We construct $f(T,T_G)$ model to analyze the behavior of the model as well as evolution trajectories of some cosmological parameters. That is, we study equation of state parameter, squared speed of sound and w_{PDE}–\(w'_{\mathit{PDE}}\) analysis taking into account two cases of model parameter. The equation of state parameter in this scenario shows consistency with pilgrim dark energy phenomenon with quintom behavior. The squared speed of sound exhibits stability and instability of the model corresponding to model parameter. We also attain the thawing and freezing regions as well as ΛCDM limits through w_{PDE}–\(w'_{\mathit{PDE}}\) plane. Also, we construct a solution by taking ΛCDM model in underlying gravity.

URL:http://link.springer.com/article/10.1007/s10509-014-2191-5

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12. Jawad, A. (2014). Cosmological reconstruction of pilgrim dark energy model in f (T, T G) gravity. ***Astrophysics and Space Science*****, *356*(1), 119-127.**

ABSTRACT:

In this paper, we study $f(T,T_G)$ gravity in FRW spacetime taking into account correspondence scheme. For this purpose, we assume pilgrim dark energy model with event horizon as infrared cutoff. We construct $f(T,T_G)$ model to analyze the behavior of the model as well as evolution trajectories of some cosmological parameters. That is, we study equation of state parameter, squared speed of sound and w_{PDE}–\(w'_{\mathit{PDE}}\) analysis taking into account two cases of model parameter. The equation of state parameter in this scenario shows consistency with pilgrim dark energy phenomenon with quintom behavior. The squared speed of sound exhibits stability and instability of the model corresponding to model parameter. We also attain the thawing

and freezing regions as well as ΛCDM limits through w_{PDE}–\(w'_{\mathit{PDE}}\) plane. Also, we construct a solution by taking ΛCDM model in underlying gravity.

URL:http://link.springer.com/article/10.1007/s10509-014-2191-5

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13. Jawad, A. (2014). Reconstruction of f (\ tilde R) models via well-known scale factors. ***The European Physical Journal Plus*****, *129*(10), 1-10.**

ABSTRACT:

We explore the reconstruction scheme of new holographic dark energy and modified $f(R)$ Horava-Lifshitz gravity \((f(\tilde R))\) in the presence of three well-known scale factors such as the emergent, logamediate and intermediate ones. We analyze the behavior of reconstructed \(f(\tilde R)\) models corresponding to these scale factors. We also present the analysis of the equation of state parameter which shows consistency with the present cosmological scenario. The squared speed of sound is also developed in this framework for analyzing the instability of the reconstructed \(f(\tilde R)\) models for all scale factors.

URL:http://link.springer.com/article/10.1140/epjp/i2014-14207-y

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14. Jawad, A.&Debnath, U.(2014).Correspondence of $f(R,\nabla R)$ Modified Gravity with Scalar Field Models, ***Advances in High Energy Physics*****,11/594781**

Abstract not found

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15. Kashif, A., Anwar, I.,& Raza, Z. (2014). On The Algebraic Study of Spanning Simplicial Complexes of r-cyclic Graphs. ***ARS COMBINATORIA*****, *115*, 89-99.**

Abstract not found

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16. Kerre, E.,& Ashraf, S. (2014). Group Decision Making by Using Incomplete Fuzzy Preference Relations Based on T- Consistency and the Order Consistency. *International Journal of Intelligent Systems*, *30*(2), 120-143.

ABSTRACT:

The existing group decision making techniques may not satisfy the order consistency for aggregation in some cases. The algorithm proposed in this paper overcomes the weaknesses of the existing techniques. The method determines the unknown preferences for group decision making in such a manner that the resulting matrix is *T*-consistent and order consistent simultaneously.

URL:http://onlinelibrary.wiley.com/doi/10.1002/int.21691/full

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17. Mahmood, H., Anwar, I.,& Zafar, M. K. (2014). A construction of Cohen–Macaulay f-graphs. *Journal of Algebra and Its Applications*, *13*(6), 1450012.

ABSTRACT:

In this paper, we define and characterize the *f-graphs*. Also, we give a construction of *f-graphs* and importantly we show that the f-graphs obtained from this construction are Cohen–Macaulay.

URL:http://www.worldscientific.com/doi/abs/10.1142/S0219498814500121?journalCode=jaa

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18. Noureen, I.,& Zubair, M. (2014). On dynamical instability of spherical star in f (R, T) gravity. *Astrophysics and Space Science*, *356*(1), 103-110.

ABSTRACT:

This work is based on stability analysis of spherically symmetric collapsing star surrounding in locally anisotropic environment in $f(R,T)$ gravity, where R is Ricci scalar and T corresponds to the trace of energy momentum tensor. Field equations and dynamical equations are presented in the context of $f(R,T)$ gravity. Perturbation scheme is employed on dynamical equations to find the collapse equation. Furthermore, condition on adiabatic index Γ is constructed for Newtonian and post-Newtonian eras to address instability problem. Some constraints on physical quantities are imposed to

maintain stable stellar configuration. The results in this work are in accordance with *f*(*R*) gravity for specific case.

URL:http://link.springer.com/article/10.1007/s10509-014-2202-6

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19. Raza, Z.,& Ahmad, M. (2014). On the structure of the unitary subgroup of the group algebra 2qD2n. ***Journal of Algebra and Its Applications*****, *13*(04), 1350139.**

ABSTRACT:

We discuss the structure of the unitary subgroup $V_*(\square_{2^q}D_{2^n})$ of the group algebra $\square_{2^q}D_{2^n}$, where $D_{2^n} = \langle x, y \mid x^{2^{n-1}} = y^2 = 1, xy = yx^{2^{n-1}-1}\rangle$ is the dihedral group of order 2^n and $\square_{2^q}$ is any finite field of characteristic 2, with 2^q elements. We will prove that $V_*(\mathbb{F}_{2^q}D_{2^n}) \cong C_2^{(3\cdot 2^{n-2}-1)q} \rtimes C_2^q$, see Theorem 3.1.

URL:http://www.worldscientific.com/doi/abs/10.1142/S0219498813501399

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20. Sohail, A., Maqbool, K.,& Hayat, T. (2014). Painlevé property and approximate solutions using Adomian decomposition for a nonlinear KdV-like wave equation. ***Applied Mathematics and Computation*****, *229*, 359-366.**

ABSTRACT:

In this paper, we have discussed the integrability of a nonlinear partial differential equation, with a focus on the Painlevé property, the compatibility condition and the Bäcklund transformation. Afterwards, the Adomian decomposition method, which accurately computes the series solution, has been used to obtain an approximate solution. The convergence analysis based on the wave number and nonlinearity parameter has also been performed using graphical interface of a numerical solver.

URL:http://www.sciencedirect.com/science/article/pii/S0096300313013398

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21. Sharif, M.,& Jawad, A. (2014). Dark energy model with generalized cosmological horizon. ***Journal of Experimental and Theoretical Physics*****, *119*(4), 668-676.**

ABSTRACT:

We discuss the evolution of the newly proposed dark-energy model with a generalized event horizon (a generalized form of the holographic dark-energy model with a future event horizon) in the flat and nonflat universes. We consider the interacting scenario of this model with cold dark matter. We use the well-known logarithmic approach to evaluate the equation of state parameter and explore its present values. It is found that this parameter shows phantom crossing in some cases of the generalized event horizon parameters. The ω-ω′ plane is also developed for three different cases of the generalized event horizon parameters. The corresponding phase plane provides thawing and freezing regions. Finally, the validity of a generalized second law of thermodynamics is explored which holds in certain ranges of constant parameters.

URL:http://link.springer.com/article/10.1134/S1063776114100100

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22. Sohail, A., Wajid, H. A, & Rashid, M. M. (2014) "Numerical Modeling Of Capillary–Gravity Waves Using The Phase Field Method." ***Surface Review and Letters,5(1)*** **13-17.**

ABSTRACT:

In this paper, we present a numerical model based on the widely used finite element formulation to analyze in detail the effect of surface active agents on capillary–gravity wave parameters such as phase velocity and wave amplitude. Moreover, the effect of a physicochemical parameter, which is the ratio of surface concentration to surface tension is also considered. For a number of fluid samples covering a range of concentrations from 0 to 0.01 molar, the phase speed of waves propagating on the surface of the liquid is found to decrease monotonically as the concentration of the solution considered is increased up to a limit of 0.004 molar. This is attributed to the corresponding increase in capillary number. It is shown numerically that the Marangoni effects contribute to the interfacial dynamics for fluid with physicochemical parameter value greater than 0.5. Moreover, a grid refinement study shows accuracies and convergence orders of the numerical model.

URL:http://www.worldscientific.com/doi/abs/10.1142/S0218625X1450036X

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23. Tomescu, I.,& Javed, S. (2014). Extremal bicyclic 3-chromatic graphs. ***Graphs and Combinatorics*****, 31(4), 1043-1052.**

ABSTRACT:

A partial order relation in the set G(n,k) of graphs of order n and chromatic number k can be defined as follows: Let G and H be two graphs in G(n,k). G is said to be less than H if $ci(G) \leq ci(H)$ holds for every i, $k \leq i \leq n$ and at least one inequality is strict, where $ci(G)$ denotes the number of i-color partitions of G. These numbers are the coefficients of the chromatic polynomial in factorial form. In (J Graph Theory 43:210–222, 2003) the first $\lceil n/2 \rceil$ levels of the diagram of the partially ordered set of connected 3-chromatic graphs of order n were described. In this paper the previous work is continued and a description of the ($\lceil n/2 \rceil$+1)-st level is given; it contains $n/2$+1 bicyclic graphs for even n and $(n-1)/2$ bicyclic graphs for odd n. Some consequences concerning ordering chromatic polynomials of these graphs are deduced.

URL:http://link.springer.com/article/10.1007/s00373-014-1421-5

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24. Wajid, H. A., Abid, M.,& Sohail, A. (2014). Compact Schemes for the Simulations of Wave Propagations. ***MATEMATIKA*****, *30*, 85-89**.

ABSTRACT:

In this paper, a general frame work for the development of compact schemes in particular for time harmonic wave equation is presented. The salient features this frame work offers are (a) exact values of numerical solutions at the nodes of the spatial grid irrespective of one or higher dimensions are obtained; (b) compact schemes preserves same stencil structure as that of the standard finite difference and finite element schemes; (c) requirement of fine mesh size to enjoy desired level of accuracy is removed which is real trouble in the case of high wave numbers.

URL:http://www.matematika.utm.my/index.php/matematika/article/view/741

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25. Wajid, H. A., Ahmed, N., Iqbal, H.,& Arshad, M. S. (2014). Modified Finite Difference Schemes on Uniform Grids for Simulations of the Helmholtz Equation at Any Wave Number. ***Journal of Applied Mathematics*****, 3. 001-009.**

ABSTRACT:

We construct modified forward, backward, and central finite difference schemes, specifically for the Helmholtz equation, by using the Bloch wave property. All of these modified finite difference approximations provide exact solutions at the nodes of the uniform grid for the second derivative present in the Helmholtz equation and the first derivative in the radiation boundary conditions for wave propagation. The most important feature of the modified schemes is that they work for large as well as low wave numbers, without the common requirement of a very fine mesh size. The superiority of the modified finite difference schemes is illustrated with the help of numerical examples by making a comparison with standard finite difference schemes.

URL:http://dx.doi.org/10.1155/2014/673106

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26. Zada, A., Arshad, S., Rahmat, G., & Khan, A. (2014). On the Dichotomy of Non-Autonomous Systems Over Finite Dimensional Space .*Appl. Math*, *9*(4), 1941-1946.

ABSTRACT:

In this article we study the dichotomy of the q periodic system $\dot{X}(t) = A(t)X(t)$ in terms of the boundedness of the solutions of the following Cauchy problems $\dot{X}(t) = A(t)X(t)+ei\square tPb$, $t \geq 0$ $X(0) = 0$, and $\dot{X}(t) = -X(t)A(t)+ei\square t\,(I-P)b$, $t \geq 0$ $X(0) = 0$, where $A(t)$ is a square size matrix of order m, $\square\ \square$ is any real number$b$ is a non zero vector in Cm and P is an orthogonal projection.

URL:https://scholar.google.com.pk/scholar?q=On+the+Dichotomy+of+Non-Autonomous+ Systems+Over+Dimensional+Spaces+&btnG=&hl=en&as_sdt=0%2C5

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27. Zubair, M., & Waheed, S. (2014). Energy conditions in f (T) gravity with non-minimal torsion-matter coupling. ***Astrophysics and Space Science*****, *355*(2), 361-369.**

ABSTRACT:

The present paper examines the validity of energy bounds in a modified theory of gravity involving non-minimal coupling of torsion scalar and perfect fluid matter. In this respect, we formulate the general inequalities of energy conditions by assuming the flat FRW universe. For the application of these bounds, we particularly focus on two specific models that are recently proposed in literature and also choose the power law cosmology. We find the feasible constraints on the involved free parameters and evaluate their possible ranges graphically for the consistency of these energy bounds.

URL:http://link.springer.com/article/10.1007/s10509-014-2181-7

DEPARTMENT OF PHYSICS

Journal Papers

1. Abbas, G., Raza, R., Ashfaq, M., Chaudhry, M. A., Khan, A., Ahmad, I.,& Zhu, B. (2014). Electrochemical study of nanostructured electrode for low- temperature solid oxide fuel cell (LTSOFC). ***International Journal of Energy Research, 38*****(4), 518-523.**

ABSTRACT:

Zn-based nanostructured $Ba_{0.05}Cu_{0.25}Fe_{0.10}Zn_{0.60}O$ (BCFZ) oxide electrode material was synthesized by solid-state reaction for low-temperature solid oxide fuel cell. The cell was fabricated by sandwiching NK-CDC electrolyte between BCFZ electrodes by dry press technique, and its performance was assessed. The maximum power density of 741.87 mW-cm^{-2} was achieved at 550°C. The crystal structure and morphology were characterized by X-ray diffractometer (XRD) and SEM. The particle size was calculated to be 25 nm applying Scherer's formula from XRD data. Electronic conductivities were measured with the four-probe DC method under hydrogen and air atmosphere. AC Electrochemical Impedance Spectroscopy of the BCFZ oxide electrode was also measured in hydrogen atmosphere at 450°C. Copyright © 2013 John Wiley & Sons, Ltd.

URL:http://onlinelibrary.wiley.com/doi/10.1002/er.3090/full

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2. Ablikim. M. et al.(2014). Search for the rare decays J/ψ→D−sρ+ and J/ψ→D¯0K¯*0. ***Phys. Rev. D 89, 07110.***

ABSTRACT:

A search for the rare decays of $J/\psi \to D-s\rho++$c.c. and $J/\psi \to D^{-}0K^{-}*0+$c.c. is performed with a data sample of 225.3-million J/ψ events collected with the Beijing Spectrometer III detector. No evident signal is observed. Upper limits on the branching fractions are determined to be $B(J/\psi \to D-s\rho++\text{c.c.})<1.3\times10-5$ and $B(J/\psi \to D^{-}0K^{-}*0+\text{c.c.})<2.5\times10-6$ at the 90% confidence level.

URL: http://journals.aps.org/prd/issues/89/7

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3. Ablikim. M. et al. .(2014). Measurement of χcJ decaying into η′K+K−*Phys. Rev. D 89, 074030*

ABSTRACT:

Using (106.41±0.86)×106 $\psi(3686)$ events collected with the BESIII detector at BEPCII, we study for the first time the decay $\chi cJ \to \eta' K+K-$ (J=1, 2), where $\eta' \to \gamma\rho 0$ and $\eta' \to \eta\pi+\pi-$. A partial wave analysis in the covariant tensor amplitude formalism is performed for the decay $\chi c1 \to \eta' K+K-$. Intermediate processes $\chi c1 \to \eta' f0(980)$, $\chi c1 \to \eta' f0(1710)$, $\chi c1 \to \eta' f2'(1525)$ and $\chi c1 \to K*0(1430)\pm K\mp$ ($K*0(1430)\pm \to \eta' K\pm$) are observed with statistical significances larger than 5σ, and their branching fractions are measured.
http://journals.aps.org/prd/issues/89/7

4. Ablikim. M. et al. (2014). Search for the weak decays J/ψ→D(*)−se+ve+*c.c. Phys. Rev. D 90(11) 112014.*

ABSTRACT:

Using a sample of 2.25×108J/ψ events collected with the BESIII detector at the BEPCII collider, we search for the J/ψ semileptonic weak decay $J/\psi \to D-se+\nu e$+c.c. with a much higher sensitivity than previous searches. We also perform the first search for $J/\psi \to D*-se+\nu e$+c.c. No significant excess of a signal above background is observed in either channel. At the 90% confidence level, the upper limits are determined to be B($J/\psi \to D-se+\nu e$+c.c.)<1.3×10−6 and B($J/\psi \to D*s-e+\nu e$+c.c.)<1.8×10−6, respectively. Both are consistent with Standard Model predictions.

URL:http://journals.aps.org/prd/issues/90/11

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5. Ablikim. M., Achasov, M. N., Ai, X. C., Albayrak, O., Albrecht, M., Ambrose, D. J., ...& Dong, J. (2014). Observation of electromagnetic Dalitz decays J/ψ→ P e+ e−. *Physical Review D*, *89*(9), 092008.

ABSTRACT:

Based on a sample of (225.3±2.8)×106J/ψ events collected with the BESIII detector, the electromagnetic Dalitz decays of J/ψ→Pe+e−(P=η′/η/π0) are studied. By reconstructing the pseudoscalar mesons in various decay modes, the decays J/ψ→η′e+e−, J/ψ→ηe+e−, and J/ψ→π0e+e− are observed for the first time. The branching fractions are determined to be B(J/ψ→η′e+e−)=(5.81±0.16±0.31)×10−5,

B(J/ψ→ηe+e−)=(1.16±0.07±0.06)×10−5, and B(J/ψ→π0e+e−)=(7.56±1.32±0.50)×10−7, where the first errors are statistical and the second ones systematic.

URL: http://journals.aps.org/prd/abstract/10.1103/PhysRevD.89.092008

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6. Ablikim, M., Yang, H. X., Zhang, Z. P., Hussain, T., Yu, H. W., Held, T., ... & Wang, D. (2014). Measurement of the D→ K− π+ strong phase difference in ψ (3770)→ D0D¯ 0. *Physics letters B*, *734*, 227-233.

ABSTRACT:

We study D0D¯¯¯0 pairs produced in e+e− collisions at s√=3.773 GeV using a data sample of 2.92 fb −1 collected with the BESIII detector. We measured the asymmetry ACPKπ of the branching fractions of D→K−π+ in CP -odd and CP -even eigenstates to be (12.7±1.3±0.7)×10−2 . ACPKπ can be used to extract the strong phase difference δKπ between the doubly Cabibbo-suppressed process D¯¯¯0→K−π+ and the Cabibbo-favored process D0→K−π+ . Using world-average values of external parameters, we obtain cosδKπ=1.02±0.11±0.06±0.01 . Here, the first and second uncertainties are statistical and systematic, respectively, while the third uncertainty arises from the external parameters. This is the most precise measurement of δKπ to date.

URL:http://repo.scoap3.org/record/3209

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7. Ablikim, M., Achasov, M. N., Ai, X. C., Albayrak, O., Ambrose, D. J., An, F. F., ...& Dong, L. Y. (2014). Precision measurements of B (D+→ μ+ ν μ), the pseudoscalar decay constant f D+, and the quark mixing matrix element| V cd|. *Physical Review D*, *89*(5), 051104.

ABSTRACT:

We report a measurement of the branching fraction B(D+→μ+νμ)=[3.71±0.19 (stat)±0.06 (sys)]×10−4 based on 2.92 fb−1 of data accumulated at s√=3.773 GeV with the BESIII detector at the BEPCII collider. This measurement, in conjunction with the Cabibbo-Kobayashi-Maskawa matrix element |Vcd| determined from a global Standard Model fit, implies a value for the weak decay constant fD+=(203.2±5.3±1.8) MeV. Additionally, using this branching fraction measurement together with a lattice QCD prediction for fD+, we find |Vcd| =0.2210 ±0.0058±0 .0047. In either case, these are the most precise results for these quantities to date.

URL:http://journals.aps.org/prd/abstract/10.1103/PhysRevD.89.051104

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8. Abo-Madyan, Y., Aziz, M. H., Aly, M. M., Schneider, F., Sperk, E., Clausen, S., ...& Glatting, G. (2014). Second cancer risk after 3D-CRT, IMRT and VMAT for breast cancer. ***Radiotherapy and Oncology*****, *110*(3), 471-476.**

ABSTRACT:

Second cancer risk after breast conserving therapy is becoming more important due to improved long term survival rates. In this study, we estimate the risks for developing a solid second cancer after radiotherapy of breast cancer using the concept of organ equivalent dose (OED). Computer-tomography scans of 10 representative breast cancer patients were selected for this study. Three-dimensional conformal radiotherapy (3D-CRT), tangential intensity modulated radiotherapy (t-IMRT), multibeam intensity modulated radiotherapy (m-IMRT), and volumetric modulated arc therapy (VMAT) were planned to deliver a total dose of 50 Gy in 2 Gy fractions. Differential dose volume histograms (dDVHs) were created and the OEDs calculated. Second cancer risks of ipsilateral, contralateral lung and contralateral breast cancer were estimated using linear, linear-exponential and plateau models for second cancer risk. Compared to 3D-CRT, cumulative excess absolute risks (EAR) for t-IMRT, m-IMRT and VMAT were increased by $2 \pm 15\%$, $131 \pm 85\%$, $123 \pm 66\%$ for the linear-exponential risk model, $9 \pm 22\%$, $82 \pm 96\%$, $71 \pm 82\%$ for the linear and $3 \pm 14\%$, $123 \pm 78\%$, $113 \pm 61\%$ for the plateau model, respectively. Second cancer risk after 3D-CRT or t-IMRT is lower than for m-IMRT or VMAT by about 34% for the linear model and 50% for the linear-exponential and plateau models, respectively.

URL:http://www.sciencedirect.com/science/article/pii/S0167814013006439

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9. Akhtar, M. N., Nasir, N., Kashif, M., Yahya, N., Ahmad, M., Murtaza, G., ...& Khan, S. N. (2014). Mn 0.8 Zn 0.2 Fe 2 O 4 nanoparticulates spinel ferrites: An approach to enhance the antenna field strength for improved magnitude versus offset (MVO). ***Progress in Natural Science: Materials International*****, *24*(4), 364-372.**

ABSTRACT:

Electromagnetic signals in deep reservoir are very weak so that it is difficult to predict about the presence of hydrocarbon in seabed logging (SBL) environment. In the present work, $Mn_{0.8}Zn_{0.2}Fe_2O_4$ nanoferrites were prepared by a sol–gel technique at different

sintering temperatures of 450 °C, 650 °C and 850 °C to increase the strength of electromagnetic (EM) antenna. XRD, FESEM, Raman spectroscopy and HRTEM were used to analyze the phase, surface morphology and size of the nanoferrites. Magnetic properties of the nanoferrites were also measured using an impedance network analyzer. However, nanoferrites sintered at 850 °C with initial permeability of 200 and *Q* factor of 50 were used as magnetic feeders with the EM antenna. Lab scale experiments were performed to investigate the effect of magnetic field strength in scale tank. SPSS and MATLAB softwares were also used to confirm the oil presence in scale tank. It was observed that the magnitude of the EM waves for the antenna was increased up to 233%. Finally, the correlation values also show 208% increase in the magnetic field strength with the presence of the oil. Therefore, antenna with $Mn_{0.8}Zn_{0.2}Fe_2O_4$ nanoferrites based magnetic feeders can be used for deep water and deep target hydrocarbon exploration.

URL:http://www.sciencedirect.com/science/article/pii/S1002007114000835

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10. Akhtar, M. N., Khan, M. A., Raza, M. R., Ahmad, M., Murtaza, G., Raza, R., ...& Nazir, M. S. (2014). Structural, morphological, dielectric and magnetic characterizations of Ni 0.6 Cu 0.2 Zn 0.2 Fe 2 O 4 (NCZF/MWCNTs/PVDF) nanocomposites for multilayer chip inductor (MLCI) applications. ***Ceramics International*****, *40*(10), 15821-15829.**

ABSTRACT:

Structural, Morphological, Dielectric and Magnetic Characterizations of Ni 0.6 Cu 0.2 Zn 0.2 -Fe 2 O 4 (NCZF/MWCNTs/PVDF) Nanocomposites for Multilayer Chip Inductor (MLCI) Applications, Ceramics International, http://dx.doi.org/10.1016/j.ceramint.2014.07.109 This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

URL:http://www.researchgate.net/publication/264416212_Structural_morphological_dielectric_and_magnetic_characterizations_of_Ni0.6Cu0.2Zn0.2Fe2O4_%28NCZFMWC

NTsPVDF%29_nanocomposites_for_multilayer_chip_inductor_%28MLCI%29_applications

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11. Akhtar,N. M., Yahya, N., Sattar, A., Ahmad, M., Idrees, M., Hasan Asif, M., & Azhar Khan, M. (2014). Investigations of Structural and Magnetic Properties of Nanostructured Ni0. 5+ xZn0. 5- xFe2O4 Magnetic Feeders for CSEM Application. ***International Journal of Applied Ceramic Technology*****, *12*(3), 625-637.**

ABSTRACT:

Marine CSEM is a new technique for detection of deep target hydrocarbons. Aluminum EM antenna was developed, and nanostructured NiZn magnetic feeders were used to increase the field strength from EM antenna for deep hydrocarbons. The doping of Ni^{2+} was aimed at the optimization of initial permeability and magnetic losses. $Ni_{0.5+x}Zn_{0.5-x}Fe_2O_4$ (x = 0.3) samples sintered at 950°C presented highest initial permeability (106.23) and low magnetic loss (0.0002) as compared to other samples. Due to better magnetic properties, $Ni_{0.5+x}Zn_{0.5-x}Fe_2O_4$ (x = 0.3) samples were used as magnetic feeders for EM antenna. Magnitude of EM waves from the antenna increased up to 186%.

URL:http://onlinelibrary.wiley.com/doi/10.1111/ijac.12222/full

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12. Akhtar, M. N., Khan, M. A., Ahmad, M., Murtaza, G., Raza, R., Shaukat, S. F., ... & Raza, M. R. (2014). Y 3 Fe 5 O 12 nanoparticulate garnet ferrites: Comprehensive study on the synthesis and characterization fabricated by various routes. ***Journal of Magnetism and Magnetic Materials*****, *368*, 393-400.**

ABSTRACT:

such as sol–gel (SG), self combustion (SC) and modified conventional mixed oxide (MCMO) on the structure, morphology and magnetic properties of the ($Y_3Fe_5O_{12}$) garnet ferrites have been studied in the present work. The samples of $Y_3Fe_5O_{12}$ were sintered at 950 °C and 1150 °C (by SG and SC methods). For MCMO route the sintering was done at 1350 °C for 6 h. Synthesized samples prepared by various routes were investigated using X-ray diffraction (XRD) analysis, Field emission scanning electron microscopy (FESEM), Impedance network analyzer and transmission electron microscopy (TEM). The structural analysis reveals that the samples are of single phase structure and shows variations in the particle sizes and cells volumes, prepared by various routes. FESEM and TEM images depict that grain size increases with the increase of sintering temperature from 40 nm to 100 nm.Magnetic measurements reveal that garnet ferrite

synthesized by sol gel method has high initial permeability (60.22) and low magnetic loss (0.0004) as compared to other garnet ferrite samples, which were synthesized by self combustion and MCMO methods. The *M–H* loops exhibit very low coercivity which enables the use of these materials in relays and switching devices fabrications. Thus, the garnet nanoferrites with low magnetic loss prepared by different methods may open new horizon for electronic industry for their use in high frequency applications.

URL:http://www.sciencedirect.com/science/article/pii/S0304885314005198

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13. Akhtar, M. N., Yahya, N.,& Nasir, N. (2014). New EM Transmitter with Y3Fe5O12 based Magnetic Feeders Potentially Used for Seabed Logging Application. In *Advanced Materials Research*. 667, 10-23).

ABSTRACT:

Sea bed logging (SBL) is a new technique for detection of deep target hydrocarbon reservoir. Powerful electromagnetic (EM) transmitter is required for the transmission of EM signal underneath the seabed. New aluminum transmitter with yttrium iron garnet ($Y_3Fe_5O_{12}$) based magnetic feeders was used in a scale tank to increase the magnitude of the magnetic field. Yttrium iron garnet samples were prepared using self combustion technique at different sintering temperatures of 750°C, 950°C and 1150°C. Characterizations of $Y_3Fe_5O_{12}$ samples were done by using XRD, RAMAN, FESEM and Impedence network analyser. X-ray diffraction results revealed that yttrium iron garnet phase with good crystallinity appeared at sintering temperature of 1150°C. Nanoparticles size ranging from 60 to 110 nm was investigated. Raman results also confirmed garnet structure of yttrium iron garnet at sintering temperature of 1150°C. Field emission scanning electron microscopy (FESEM) was used to image the morphology of the $Y_3Fe_5O_{12}$ nanoparticles. Magnetic properties of Y3Fe5O12 magnetic feeders illustrates that $Y_3Fe_5O_{12}$ has high Initial permeability (58.054), high Q-factor (59.842) and low loss factor (0.0003) at sintering temperature of 1150°C. $Y_3Fe_5O_{12}$ magnetic feeders with high Q factor were chosen for new aluminum EM transmitter. Experiments with a scale factor of 2000 were carried out in scaled tank. It was found that Al transmitter with $Y_3Fe_5O_{12}$ magnetic feeders increased magnitude of magnetic field strength up to 180%.

URL:http://www.scientific.net/AMR.667.10

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14. Aslam, M. N.,& Qaim, S. M. (2014). Nuclear model analysis of excitation functions of proton and deuteron induced reactions on 64 Zn and 3 He-and α-particle induced reactions on 59 Co leading to the formation of copper-61: Comparison of major production routes. ***Applied Radiation and Isotopes*****, *94*, 131-140.**

ABSTRACT:

Cross section data for formation of the medically important radionuclide ^{61}Cu ($T_{½}$=3.33 h) in proton and deuteron induced reactions on enriched ^{64}Zn and in ^{3}He- and α-particle induced reactions on ^{59}Co were analyzed by using the nuclear model calculational codes, EMPIRE and TALYS. A well-defined statistical procedure was then employed to derive the recommended excitation functions, and therefrom to obtain integral yields. A comparison of major production routes of ^{61}Cu was done.

URL:http://www.sciencedirect.com/science/article/pii/S0969804314003029

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15. Aslam, M. N.,& Qaim, S. M. (2014). Nuclear model analysis of excitation functions of proton, deuteron and α-particle induced reactions on nickel isotopes for production of the medically interesting copper-61. ***Applied radiation and isotopes*****, *89*, 65-73.**

ABSTRACT:

Excitation functions of the ^{61}Ni(p,n)^{61}Cu, ^{62}Ni(p,2n)^{61}Cu, ^{60}Ni(d,n)^{61}Cu and ^{58}Ni(α,p)^{61}Cu reactions were analyzed with respect to the production of ^{61}Cu ($T_{½}$=3.33 h), a promising radionuclide for PET imaging. The nuclear model codes EMPIRE and TALYS reproduced the experimental data of all reactions well, except those for the (d,n) process. The fitted excitation functions were employed to calculate the integral yield of ^{61}Cu in all reactions. The amounts of the possible impurities ^{62}Cu and ^{60}Cu were assessed. A validation of the evaluated (p,xn) data was attempted.

URL: http://www.sciencedirect.com/science/article/pii/S0969804314000529

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16. Ahmad, M. A., Akram, N., & Raza, R. (2014). Structural and electrical characterisation of nanostructure electrodes for SOFCs. ***International Journal of Hydrogen Energy*****, *39*(30), 17487-17491.**

ABSTRACT:

This paper reports the effects of sintering temperature on structure, particle size and conductivity of electrodes ($Sn_{0.2}Zn_{0.8}Fe_{0.2}O$ & $Sn_{0.8}Zn_{0.2}Fe_{0.2}O$). The electrode material was prepared by the chemical method combining a solid state reaction. Structural analyses were performed using X-ray diffraction and scanning electron microscopy. The particle size of the material obtained using Scherrer's formula was 50–60 nm and the nanostructure's surface was studied using electrochemical characterisations tools. Electrical conductivity was determined using the 4-probe DC method, which was compared with the 4-probe AC method. These results suggest a promising substitute for the conventional electrodes of solid oxide fuel cells (SOFCs). It is known that a sintering temperature above 1000 °C causes an increase in density and a reduction of porosity. Therefore, we optimised the sintering temperature at 1000 °C and obtained electrical conductivity of about 5 S cm^{-1}. Thus, this electrode could play a vital role in the development of high performance SOFCs at intermediate temperatures.

URL:http://www.sciencedirect.com/science/article/pii/S0360319913026396

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17. Amjad, R. J., Sahar, M. R., Shaukat, S. F., Mahmood, H., Sattar, A., Dousti, M. R.,& Nawaz, F. (2014). Plasmon enhanced scattering and fluorescence in amorphous matrix. ***International Journal of Materials Research*****, *105*(11), 1136-1139.**

ABSTRACT:

A melt-quench method is used to synthesize a series of tellurite glasses containing fixed concentration of Er_2O_3, with and without silver nanoparticles. The existence of metallic nanoparticles (average diameter ~24–36 nm) inside the glass is confirmed by transmission electron microscope imaging. From UV–Vis absorption spectroscopy, a surface plasmon resonance band is detected in the visible region (~484 nm). Furthermore, the intensity of both fluorescence and Raman scattering is found to be enhanced by embedding silver nanoparticles inside the glass matrix. These enhancements are attributed to the surface plasmon resonance effect in which direct plasmon excitation enhances the local field at the surface of the nanostructures. Enhanced fluorescence influenced by silver nanoparticles may contribute towards the

development of optical displays, laser and optical memory devices whereas amplification of the Raman signal is promising for Raman amplifiers.

URL:http://www.hanser-elibrary.com/doi/abs/10.3139/146.111128

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18. Amjad, R. J., Dousti, M. R., Sahar, M. R., Shaukat, S. F., Ghoshal, S. K., Sazali, E. S.,& Nawaz, F. (2014). Silver nanoparticles enhanced luminescence of Eu 3+-doped tellurite glass. *Journal of Luminescence*, *154*, 316-321.

ABSTRACT:

A series of silver nanoparticles (NPs) embedded zinc–tellurite glass is prepared by the melt-quench method. In order to nucleate and reduce the silver ions (Ag^{+}) to silver NPs (Ag^{0}) heat treatment with different time intervals above the glass transition temperature is carried out. The transmission electron microscopy (TEM), differential thermal analyses (DTA), UV–vis-NIR absorption spectroscopy and photoluminescence (PL) spectroscopy are used to study the annealing time dependent optical properties. The glass transition temperature (T_g) from DTA for an as prepared sample is 296 °C. TEM image displays the homogeneous distribution of silver NPs with average diameter ~8 to 27 nm. From UV–vis-NIR spectra, the observed localized surface plasmon resonance (LSPR) bands are found to be located within the range 487–501 nm for the samples with AgCl. Furthermore, under an excitation of 395 nm, four bands are observed at 585, 612, 650, 698 nm which corresponds to the $^{5}D_{0}$-$^{7}F_{0;1;2;3;4}$ transitions of Eu^{3+} ions. Moreover, luminescence intensity of all the bands is increased due to the presence of silver nanostructures. The hypersensitive transition $^{5}D_{0}$-$^{7}F_{2}$ of Eu^{3+} is much more enhanced (~1.9 times) mainly due to the local field effect of silver NPs.

URL:http://www.sciencedirect.com/science/article/pii/S0022231314002920

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19. Asif, M. (2014). Theoretical Calculation of Effective Ionic Charge with Lithium Limiter on HT-7 Tokamak. *Journal of Fusion Energy*, *33*(4), 444-448.

ABSTRACT:

In this work we have described calculation of effective ionic charge, Z_{eff} through anomaly factor (a) with liquid lithium limiter and graphite limiter on HT-7 Tokamak. This theoretical calculation of effective ionic charge, $\mathbf{Z_{eff}}$with liquid lithium limiter on

HT-7 Tokamak, is lower than as compared with graphite limiter. It is also estimated through 7-channel visible bremsstrahlung and compare with theoretical.

URL: http://link.springer.com/article/10.1007/s10894-014-9676-7

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20. Asif, M. (2014). Study of Energy Confinement Time by the Analytical Solution of Grad–Shafranov Equation with Lithium Limiter for Circular Cross-Section Tokamak. ***Journal of Fusion Energy*****, 33(4), 449-452.**

ABSTRACT:

In this work we calculated the energy confinement time by analytical solution of Grad–Shafranov equation (GSE) with Lithium limiter for circular cross-section HT-7 tokamak. A generalized Grad–Shafranov-type equation has been used. Specific functional forms of plasma internal energy and current are used. For this, the Shafranov parameter (asymmetry factor) and poloidal beta were obtained from by analytical solution of GSE. Than we can find the plasma energy confinement time. It is observed, the energy confinement time obtained from the analytical solution of GSE by using liquid lithium limiter is longer than that using graphite limiter, which shows that the plasma performance was improved.

URL:http://link.springer.com/article/10.1007/s10894-014-9678-5

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21. Asif, M. (2014). Study of Plasma Current Density and Q-profiles for Circular Cross Section Tokamak. ***Physical Science International Journal*****, 4(4), 649.**

ABSTRACT:

In this paper the current density J(r) and safety factor q(r), profiles are obtained for circular cross section HT-7 tokomak. For this purpose discrete poloidal magnetic probes along with the diamagnetic loop can be utilized for the measurement. Here Plasma internal inductance ($i\ l$) is studied by theoretical and experimental approach for circular cross section HT-7 Tokamak plasmas. Moreover, a few approximate values of the internal inductance for the different possible profiles of the plasma current density are also calculated. From the results, current density and q-profiles are obtained.

URL:http://search.proquest.com/openview/eb4c73cd14e3416fffe88ba62b0c51c4/1?pq-origsite=gscholar

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22. Asif, M. (2014). Normalized Thermal Energy and Resistivity with Anisotropic Pressure. ***Middle-East Journal of Scientific Research*****, *21*(12), 2247-2249.**

ABSTRACT:

The relationships between Normalized Thermal Energy [*p*, *t*] and resistivity, with anisotropic pressure and no particle sources in cylindrical tokamak geometry are derived. The relationships,
are obtained. These relationships, are a generalization of the usual Bennett relation and it is of importance for tokamak confinement and heating.

URL:https://www.google.com/search?q=DOI%3A+10.5829%2Fidosi.mejsr.2014.21.12.570&ie=utf-8&oe=utf-8

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23. Arshad, K., Ehsan, Z., Khan, S. A., & Mahmood, S. (2014). Solar wind driven dust acoustic instability with Lorentzian kappa distribution. ***Physics of Plasmas (1994-present)*****, *21*(2), 023704.**

ABSTRACT:

In a three species electron-ion-dust plasma following a generalized non-Maxwellian distribution function (Lorentzian or kappa), it is shown that a kinetic instability of dust-acoustic mode exists. The instability threshold is affected when such (quasineutral) plasma permeates through another static plasma. Such case is of interest when the solar wind is streaming through the cometary plasma in the presence of interstellar dust. In the limits of phase velocity of the waves larger and smaller than the thermal velocity of dust particles, the dispersion properties and growth rate of dust-acoustic mode are investigated analytically with validation via numerical analysis.

URL:http://scitation.aip.org/content/aip/journal/pop/21/2/10.1063/1.4865573

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24. Bukhari, S. H., Aslam, S., Mustafa, F., Jamil, A., Khan, S. N., & Ahmad, M. A. (2014). Entangled coherent states for quantum information processing. ***Optik-International Journal for Light and Electron Optics*****, *125*(15), 3788-3790.**

ABSTRACT:

Entangled coherent states (ECSs) with relative phase equal to the phase shift between two coherent states are constructed. We study the degree of entanglement and the

nonclassical features exhibited by the so-constructed states keeping in view their role in quantum information processing (QIP).

URL: http://www.sciencedirect.com/science/article/pii/S0030402614005233

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25. Din, M. F., Ahmad, I., Ahmad, M., Farid, M. T., Iqbal, M. A., Murtaza, G., ...& Khan, M. A. (2014). Influence of Cd substitution on structural, electrical and magnetic properties of M-type barium hexaferrites co-precipitated nanomaterials. ***Journal of Alloys and Compounds*****, *584*, 646-651.**

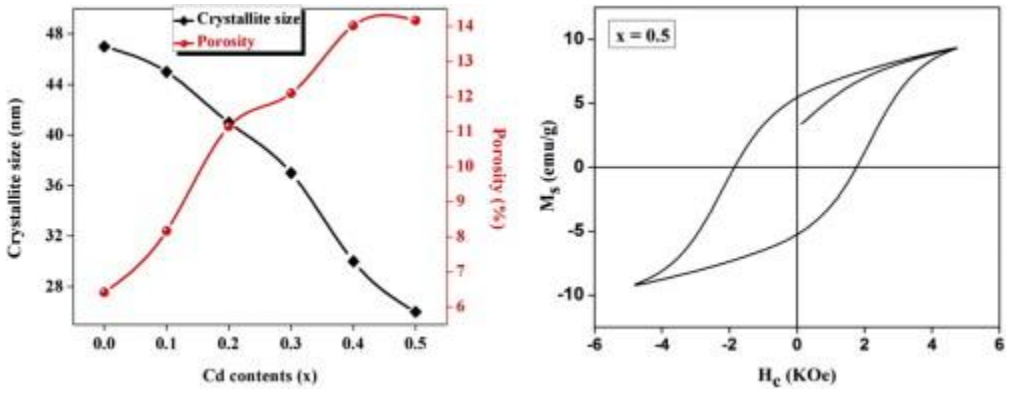
ABSTRACT:

Nanocrystalline M-type hexagonal ferrites with the nominal chemical composition $Ba_{0.5}Co_{0.5-x}Cd_xFe_{12}O_{19}$ (where x = 0–0.5) have been synthesized by the co-precipitation method and sintered at high annealing temperature (1250 °C) to study their structural, electrical and magnetic properties. The aim of the present work is to increase the DC electrical resistivity and coercivity of these M-type hexaferrites nanomaterials by the substitution of cadmium (Cd^{2+}) ions at Co^{2+} site. The analysis of X-ray diffraction (XRD) patterns indicates single M-type hexaferrite phase. The parameters such as lattice constants (a and$c$), cell volume (V), X-xay density (D_x), bulk density (D_b), crystallite size (D) and percentage porosity (%P) were calculated from XRD data. The crystallite size is found in the range of 26–47 nm and this size is small enough to obtain a suitable signal-to-noise ratio for application in the magnetic recording media. The room temperature DC electrical resistivity increases from 2.31×10^9 Ω cm to 6.42×10^9 Ω cm with the increased Cd contents. The magnetic properties such as saturation magnetization (M_s), coercivity (H_c), remanence (M_r) and squareness ratio (M_r/M_s) were calculated from hysteresis loops. The coercivity increases from 155 Oe to 1852 Oe while the saturation magnetization decreases from 33.5 to 9.2 emu g^{-1} as the concentration of Cd increases. The electrical and magnetic properties such as DC electrical resistivity, coercivity and remanence suggested the synthesized materials suitable candidate for high frequency applications and recording media.

Graphical abstract:

Nanocrystalline M-type hexagonal ferrites ($Ba_{0.5}Co_{0.5-x}Cd_xFe_{12}O_{19}$) prepared by co-precipitation route exhibited the increased % porosity and decreased crystallite size from 47 to 26 nm upon the substitution of Co with Cd. The dc-electrical resistivity and magnetic parameters (M_s and H_c) were also greatly influenced by increased Cd

contents, which clearly suggested the possible utilization of these nanomaterials for recording media and high frequency devices fabrications.



URL:http://www.sciencedirect.com/science/article/pii/S0925838813021828

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26. Dousti, M. R., Sahar, M. R., Rohani, M. S., Samavati, A., Mahraz, Z. A., Amjad, R. J., ... & Arifin, R. (2014). Nano-silver enhanced luminescence of Eu 3+-doped lead tellurite glass. ***Journal of Molecular Structure*****, *1065*, 39-42.**

ABSTRACT:

Eu^{3+}-doped lead sodium tellurite glasses containing silver nano particles (NPs) were synthesized by melt-quenching technique and annealed for different time intervals at above the glass transition temperature. The glasses were characterized by UV–Vis–IR absorption, photoluminescence spectroscopy and transmission electron microscope imaging. Four absorption peaks of Eu^{3+} ion were observed due to transitions from ground state to different excited states in 400–600 nm region. The surface plasmon resonance (SPR) peak of silver NPs was probed at 632 nm. Five emission lines were recorded at 568, 587, 614, 650 and 704 nm which were intensified in the order of ~1.9 times for heat-treated samples containing silver NPs. The average size of NPs was estimated to be ~10 nm. Different mechanisms for interaction of light with metal and luminescent ions are discussed. Such enhancements are attributed to the strong local electric field induced by SPR of silver NPs as the major factor, and energy transfer from surface of silver NP to Eu^{3+} ion. The glasses show promising properties for optical applications.

URL:http://www.sciencedirect.com/science/article/pii/S0022286014002063

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27. Dousti, M. R., Amjad, R. J., Salehi, M., & Sahar, M. R. (2014). Photoluminescence study of Sm 3+–Yb 3+ co-doped tellurite glass embedding silver nanoparticles. ***Journal of Luminescence*****, *159*, 100-104.**

ABSTRACT:

We report on the upconversion emission of Sm^{3+} ions doped tellurite glass in the presence of Yb^{3+} ions and silver nanoparticles. The enhancement of infrared-to-visible upconversion emissions is achieved under 980 nm excitation wavelength and attributed to the high absorption cross section of Yb^{3+} ions and an efficient energy transfer to Sm^{3+} ions. Further enhancements are attributed to the plasmonic effect via metallic nanoparticles resulting in the large localized field around rare earth ions. However, under excitation at 406 nm, the addition of Yb^{3+} content and heat-treated silver nanoparticles quench the luminescence of Sm^{3+} ions likely due to quantum cutting and plasmonic diluent effects, respectively.

URL:http://www.sciencedirect.com/science/article/pii/S0022231314006310

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28. Fatima, M., Fakhar-e-Alam, M., Atif, M., Shakoor, M. N., Afzal, M., Waseem, M.,& Aziz, M. H. (2014). Apoptotic effect of α-Fe2O3 and SiO2 nanoparticles in human rhabdomyosarcoma cell line. ***Laser Physics*****, *24*(12), 125602.**

ABSTRACT:

Nanotechnology provides the opportunity for the development of new materials in the nanometer size range, with many potential applications in biological sciences and clinical medicine. It has been reported that RD (muscle cancer cell line) is the most common soft tissue sarcoma in children originating from immature cells, comprising 2.9% of all malignancies in patients younger than 20 years old, with 350 cases diagnosed annually in the United States. Soft tissue is the most common target organ for nanoparticles after they gain significant entry into the target site through any of the possible routes. RD cell lines have been used as an experimental biological model in this article. A suitable environment was provided until 75% of RD cell confluence was reached. Prior to determination of toxicity of hematite (α-Fe_2O_3) and SiO_2 nanoparticles, the sizes and shapes were confirmed using scanning electron microscopy (SEM), and the sizes were about 66 and 250 nm respectively. Moreover, 10–80 $\mu g\ ml^{-1}$ of α-Fe_2O_3 and SiO_2 nanoparticles dispersed in solution were labeled for each row of 96 well plates. The present study evaluates the suppression factor of the said particles, which leads to

cell killing phenomena. After successful measurements in the above mentioned experiment, the author will be able to give the actual cause of cell killing effects. The given study has provided valuable insights into a feasible mechanism of apoptosis caused by *a*-Fe_2O_3 and SiO_2 nanoparticles. An underlying promising mechanism of apoptosis due to *a*-Fe_2O_3 and SiO_2 nanoparticle exposure should be further investigated at the *in vivo* level.

URL:http://iopscience.iop.org/1555-6611/24/12/125602

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29. Hammad Aziz, M., Fatima, M., Waseem, M., Afzal, M.,& Nadeem Shakoor, M. (2014). Tumoricidal Effect of Hematite (α-Fe2O3) and SiO2 Nanoparticles in Human Rhabdomyosarcoma Cell Line. In *Advanced Materials Research*. 974, 235-240.

ABSTRACT:

Nanotechnology provides the opportunity for the development of new materials in the nanometer size range with many potential applications in biological sciences and clinical medicine. RD (muscle cancer cell line) was seeded out in 25 cm^2 plastic tissue culture flasks (NuncWiesbaden Germany) individually, in Minimum Essential Medium (MEM) with Hanks salts, containing 10% fetal bovine serum (FBS) and 2 mM L-Glutamine along with some nonessential amino acids and were incubated for 24 h for proper attachment to the substratum and kept at a 96 wells plate, incubated at 37°C and 5% CO_2. SEM was employed to the nanoparticles and size of α-Fe_2O_3 and SiO_2 nanoparticles were about 66 nm and 250 nm. Moreover 10-80µg/mL of Hematite (α-Fe_2O_3) and SiO_2 nanoparticles dispersed solution were labeled for each row of 96 wells plate. The present study evaluates the different parameters, e.g. time of incubation, cytotoxicity and cellular viability of the Human Rhabdomyosarcoma cell line (RD) as an experimental model. The viability of cells was determined by means of neutral red assay (NRA) after the cell-exposition to different concentrations of Hematite (α-Fe_2O_3) and SiO_2 nanoparticles into mentioned tumoricidal cells

URL:http://www.scientific.net/AMR.974.235

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30. Hussain, S. Q., Oh, W. K., Kim, S., Ahn, S., Le, A. H. T., Park, H., ...& Yi, J. (2014). Study of Low Resistivity and High Work Function ITO Films Prepared by Oxygen Flow Rates and N2O Plasma Treatment for Amorphous/Crystalline Silicon Heterojunction Solar Cells. ***Journal of nanoscience and nanotechnology*****, *14*(12), 9237-9241.**

ABSTRACT:

Pulsed DC magnetron sputtered indium tin oxide (ITO) films deposited on glass substrates with lowest resistivity of 2.62×10^{-4} Ω·cm and high transmittance of about 89% in the visible wavelength region. We report the enhancement of ITO work function (Φ_{ITO}) by the variation of oxygen (O_2) flow rate and N_2O surface plasma treatment. The Φ_{ITO} increased from 4.43 to 4.56 eV with the increase in O_2 flow rate from 0 to 4 sccm while surface treatment of N_2O plasma further enhanced the ITO work function to 4.65 eV. The crystallinity of the ITO films improved with increasing O_2 flow rate, as revealed by XRD analysis. The ITO work function was increased by the interfacial dipole resulting from the surface rich in O^- ions and by the dipole moment formed at the ITO surface during N_2O plasma treatment. The ITO films with high work functions can be used to modify the front barrier height in heterojunction with intrinsic thin layer (HIT) solar cells.

URL:
http://www.ingentaconnect.com/content/asp/jnn/2014/00000014/00000012/art00065

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31. Hussain, S. Q., Oh, W. K., Ahn, S., Le, A. H. T., Kim, S., Iftiquar, S. M., ...& Yi, J. (2014). Highly transparent RF magnetron-sputtered indium tin oxide films for a-Si: H/c-Si heterojunction solar cells amorphous/crystalline silicon. ***Materials Science in Semiconductor Processing*****, *24*, 225-230.**

ABSTRACT:

We prepared highly transparent magnetron-sputtered indium tin oxide (ITO) films deposited at various RF powers for a-Si:H(p)/c-Si heterojunction solar cell applications. The surface morphology of ITO films improved in terms of an increase in grain size as the RF power increased. Rapid growth of the (400) plane was observed with increasing RF power, while the (222) plane remain unchanged. The ITO film deposited at 100 W showed the lowest resistivity of 3.8×10^{-4} Ω cm and highest visible transmittance of 90.19%. The deposition rate and optical bandgap of ITO films were varied from 20 to 100 nm/min and from 3.68 to 3.77 eV for RF power from 50 to 250 W, respectively.

Highly transparent ITO films were utilized as the front anti-reflection layer in heterojunctions with intrinsic thin-layer (HIT) solar cells showed the efficiency of 16.3% for RF power of 100 W. The HIT solar cells deposited at RF power of 100 W also exhibited higher carrier lifetime and implied voltage.
URL: http://www.sciencedirect.com/science/article/pii/S1369800114001152

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32. Hussain, S. Q., Kim, S., Ahn, S., Park, H., Le, A. H. T., Lee, S., ...& Yi, J. (2014). RF magnetron sputtered ITO: Zr thin films for the high efficiency a-Si: H/c-Si heterojunction solar cells. ***Metals and Materials International*****, *20*(3), 565-569.**

ABSTRACT:

ITO and ITO:Zr films with various thicknesses were prepared on glass substrates by RF magnetron sputtering. We observed a decrease in sheet resistance with increasing film thickness that in good agreement with Fuchs-Sondheimer theory. The ITO films doped with ZrO_2 (~0.2 wt%) showed improvement in some of the electrical and optical properties of ITO films. The surface roughness of ITO:Zr films increased with increasing film thickness. ITO:Zr films with thickness of 120 nm showed highest work function of 5.13 eV, as estimated from XPS data. The ITO:Zr films were employed as front electrodes in HIT solar cells; the best device performance was found to be: V_{oc} = 710 mV, J_{sc} = 34.44 mA/cm^2, FF = 74.8%, η = 18.30% at a thickness of 120 nm. A maximum quantum efficiency (QE) of 89% was recorded for HIT solar cells at a wavelength of 700 nm for 120 nm thick ITO:Zr films.

URL: http://link.springer.com/article/10.1007/s12540-014-3001-x

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33. Hussain, S. Q., Kim, S., Ahn, S., Balaji, N., Lee, Y., Lee, J. H., & Yi, J. (2014). Influence of high work function ITO: Zr films for the barrier height modification in a-Si: H/c-Si heterojunction solar cells. ***Solar Energy Materials and Solar Cells*****, *122*, 130-135.**

ABSTRACT:

We report the influence of magnetron sputtered zirconium-doped indium tin oxide (ITO:Zr) films with high mobility and work function on the heterojunction with intrinsic thin layer (HIT) solar cell. The addition of oxygen (O_2) to argon (Ar) flow ratio during the deposition process improves the Hall mobility of the ITO:Zr films while the carrier concentration decreased. The small amount of oxygen resulted in an enhancement of work function while excess amount of O_2 was not suitable for the

electrical and surface properties of ITO:Zr films. The increase of O_2/Ar flow ratio from 0% to 0.4% improved the work function from 5.03 to 5.13 eV while the conductivity of ITO:Zr films remained about the same. The ITO:Zr films were employed as a front anti-reflection layer in a HIT solar cell and the best photo-voltage parameters were found to be V_{oc}=710 mV, J_{sc}=33.66 mA/cm^2, FF=72.4%, and η=17.31% for the O_2/Ar flow ratio of 0.4%. The increase of ITO:Zr work function leads to an increase in open circuit voltage (V_{oc}) and fill factor (FF) of the device. Therefore, the ITO:Zr films with high work function can be used to modify the front barrier height in the HIT solar cell.

URL: http://www.sciencedirect.com/science/article/pii/S0927024813006156

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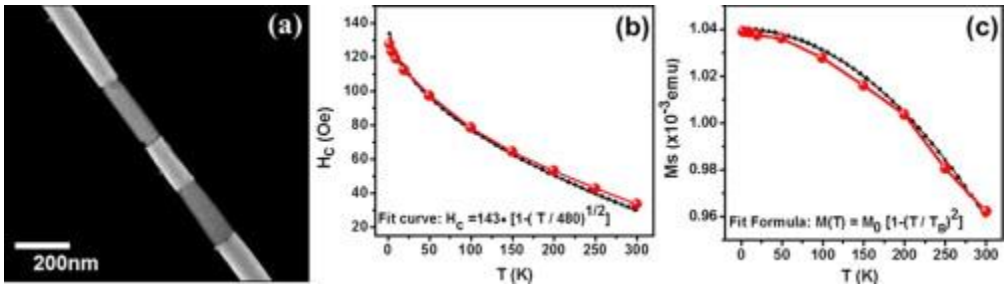
34. Ishrat, S., Maaz, K., Lee, K. J., Jung, M. H.,& Kim, G. H. (2014). Fabrication and temperature-dependent magnetic properties of one-dimensional multilayer Au–Ni–Au–Ni–Au nanowires. ***Journal of Solid State Chemistry*****, *210*(1), 116-120.**

ABSTRACT:

Multilayer Au–Ni–Au–Ni–Au nanowires with a controlled diameter of ~100 nm were synthesized by electrochemical deposition in porous alumina templates. The length of each Ni-segment was controlled up to ~230 nm, while the length of the Au segment sandwiched between two Ni segments was ~180 nm. X-ray diffraction patterns and energy-dispersive X-ray spectra confirmed the formation of purely crystalline nanowires. The magnetic properties of the multilayer Au–Ni–Au–Ni–Au nanowires were investigated in the temperature range 2–300 K. Room-temperature magnetic hysteresis confirmed the ferromagnetic nature of the nanowires. The plot of coercivity as a function of temperature (from 2 to 300 K) followed law applicable for ferromagnetic nanostructures. The magnetization tended to increase as the temperature decreased, following the modified Bloch's law similar to ferromagnetic nanoparticles.

Graphicl abstract

(a) SEM image of Au–Ni–Au–Ni–Au nanowire with 230 nm Ni segment length and 180 nm Au sandwiched between Ni segments (b) Kneller's law (c) Bloch's law



URL:http://www.sciencedirect.com/science/article/pii/S0022459613005422

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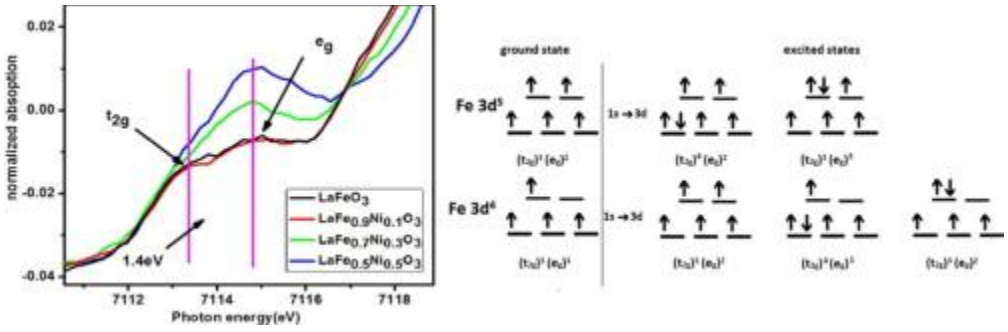
35. Idrees, M., Nadeem, M., Sung, N. E., Asanova, T.,& Shin, T. J. (2014). On the oxidation state of 'Fe'in LaFe 1− x Ni x O 3. ***Chemical Physics Letters*****, *612*, 262-265.**

ABSTRACT:

The electrical and magnetic properties of rare earth orthoferrites are strongly dependent upon the electronic structure of Fe cations. This study investigates the electronic structure of Fe as a function of composition in $LaFe_{1-x}Ni_xO_3$ using Fe K-edge X-ray absorption spectroscopy at room temperature. Analysis of the Fe K-edge X-ray absorption spectra indicates the presence of Fe^{3+} and Fe^{4+} in $LaFe_{1-x}Ni_xO_3$. The concentration of Fe^{4+} increases with increasing Ni content in $LaFe_{1-x}Ni_xO_3$. Variations in the oxidation state of Fe have been correlated to those in the electrical and magnetic characteristics of $LaFe_{1-x}Ni_xO_3$.

Graphical abstract

Relatively greater increase in the intensity of the 'e_g' pre-edge spectral feature in the Fe K-edge XAS spectra of $LaFe_{1-x}Ni_xO_3$ (left) indicates increase of Fe^{4+} cations having an additional electron hole available for electron transition in the 'e_g' band as compared to Fe^{3+} (right).



URL:http://www.sciencedirect.com/science/article/pii/S0009261414007180

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36. Jamil, M., Mir, Z., Asif, M., & Salimullah, M. (2014). Jeans stability in collisional quantum dusty magnetoplasmas. ***Physics of Plasmas (1994-present)*****, *21*(9), 092111.**

ABSTRACT:

Jeans instability is examined in detail in uniform dusty magnetoplasmas taking care of collisional and non-zero finite thermal effects in addition to the quantum characteristics arising through the Bohm potential and the Fermi degenerate pressure using the quantum hydrodynamic model of plasmas. It is found that the presence of the dust-lower-hybrid wave, collisional effects of plasma species, thermal effects of electrons, and the quantum mechanical effects of electrons have significance over the Jeans instability. Here, we have pointed out a new class of dissipative instability in quantum plasma regime.

URL:http://scitation.aip.org/content/aip/journal/pop/21/9/10.1063/1.4895664

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37. Jamil, M., Rasheed, A., Rozina, C., Moslem, W. M., & Salimullah, M. (2014). Beam driven upper-hybrid-wave instability in quantized semiconductor plasmas. ***Physics of Plasmas (1994-present)*****, *21*(2), 020704.**

ABSTRACT:

The excitation of Upper-Hybrid waves (UHWs) induced by electron beam in semiconductorplasma is examined using quantum hydrodynamic model. Various quantum effects are taken into account including recoil effect, Fermi degenerate pressure, and exchange-correlation potential. The bandwidth of the UHWs spectrum shows that the system supports purely growing unstable mode. The latter has been studied for diversified parameters of nano-sized GaAs semiconductor.

URL:http://scitation.aip.org/content/aip/journal/pop/21/2/10.1063/1.4866911

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38. Jamil, A., Skiba-Szymanska, J., Kalliakos, S., Schwagmann, A., Ward, M. B., Brody, Y., ...& Shields, A. J. (2014). On-chip generation and guiding of quantum light from a site-controlled quantum dot. ***Applied Physics Letters*****, *104*(10), 101108.**

ABSTRACT:

We demonstrate the emission and routing of single photons along a semiconductor chip originating from carrier recombination in an actively positioned InAsquantum dot. Device–scale arrays of quantum dots are formed by a two–step regrowth process. We precisely locate the propagating region of a unidirectional photonic crystal waveguide with respect to the quantum dotnucleation site. Under pulsed optical excitation, the multiphoton emission probability from the waveguide's exit is 12% ± 5% before any background correction. Our results are a major step towards the deterministic integration of a quantum emitter with the wave guiding components of photonic quantum circuits.

URL:http://scitation.aip.org/content/aip/journal/apl/104/10/10.1063/1.4868428

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39. Jung, Y. D., Rasheed, A.,& Jamil, M. (2014). Renormalization screening and collision-induced quantum interference in dense plasmas. ***Physics of Plasmas (1994-present)*****, *21*(7), 074503.**

ABSTRACT:

The influence of renormalization screening and collision-induced quantum interference in electron-electron collisions is investigated in partially ionized dense hydrogen plasmas. The effective interaction potential with the total spin-states of the collision system is considered to obtain the differential electron-electron scattering cross section. The results show that the renormalizationplasma screening effect suppresses the electron-electron scattering cross section, including the quantum interferenceeffect, especially, except for the forward and backward scattering directions. It is also shown that the renormalizationplasma screening effect on the scattering cross section decreases with increasing collision energy. However, the renormalization screening effect is found to be important for the forward directions in the scattering cross section neglecting the quantum interferenceeffect. The variations of the renormalization screening and collision-induced quantum interferenceeffects are also discussed.

URL:http://scitation.aip.org/content/aip/journal/pop/21/7/10.1063/1.4891438

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40. Khan, M. A., Raza, R., Lima, R. B., Chaudhry, M. A., Ahmed, E., Khalid, N. R., ...& Nasir, N. (2014). Effect of titania concentration on the grain boundary conductivity of calcium-doped ceria electrolyte. ***Ceramics International*****, *40*(7), 9775-9781.**

ABSTRACT:

A solid-state technique was used to synthesize ceria-based (CDC−xT, in which x=0–1 mol%) solid electrolyte ceramics. The effects of doping the ceramic solid electrolyte (CDC) with titanium oxide were studied with regard to densification, crystal structure, morphology, electro-impedance spectroscopy and fuel cell performance. TiO_2 doping afforded materials a 95% relative density at 940 °C, approximately 200 °C lower than the temperature required without titanium oxide. The addition of titanium oxide (TiO_2) reduced the CDC sintering temperature and significantly improved the grain boundary conduction. The minimum grain boundary resistivity was obtained at 0.8 mol% TiO_2. X-ray diffraction (XRD) results showed that the lattice parameters enhanced with increased titanium oxide concentrations up to 0.8 mol%, revealing the solubility limit for Caria's fluorite structure. The optimum doping level (0.8 mol%) is provided maximum conductivity. Conductivities were measured using EIS (Electrochemical Impedance Spectroscopy) with a two-probe method, and the activation energies were calculated using the Arrhenius plots. The maximum power density (660 mW/cm^2) was achieved with CDC−0.8T electrolyte at 650 °C using LiCuZnNi oxide electrodes.

URL:http://www.sciencedirect.com/science/article/pii/S0272884214002636

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41. Khan, S. A., Ilyas, M., Wazir, Z., & Ehsan, Z. (2014). Linearly coupled oscillations in fully degenerate pair and warm pair-ion astrophysical plasmas. ***Astrophysics and Space Science*****, *352*(2), 559-564.**

ABSTRACT:

In this paper we study the coexisting low frequency oscillations in strongly degenerate, magnetized, (electron-positron) pair and warm pair-ion plasma. The dispersion relations are obtained for both the cases in macroscopic quantum hydrodynamics approximation. In pair-ion case, the dispersion equation shows coupling of electrostatic and (shear) electromagnetic modes under certain circumstances with important role of ion temperature. Domain of existence of such waves and their relevance to dense degenerate astrophysical plasmas is pointed out. Results are analyzed numerically for typical systems with variation of ion concentration and ion temperature.

URL:http://link.springer.com/article/10.1007/s10509-014-1925-8

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42. Khan, M. A., Khan, K., Mahmood, A., Murtaza, G., Akhtar, M. N., Ali, I., ...& Warsi, M. F. (2014). Nanocrystalline La 1− x Sr x Co 1− y Fe y O 3 perovskites fabricated by the micro-emulsion route for high frequency response devices fabrications. ***Ceramics International*****, *40*(8), 13211-13216.**

ABSTRACT:

Nanocrystalline $La_{1-x}Sr_xCo_{1-y}Fe_yO_3$ (x=0.00–0.60) perovskites were fabricated by a cheap economic route (i.e. micro-emulsion method) and characterized by thermogravimetric analysis (TGA), X-ray diffraction (XRD), fourier transform infrared (FTIR) spectroscopy, and scanning electron microscopy (SEM). TGA analysis showed ~35% weight loss. The crystallite size determined by XRD and SEM ranged from 30 to 80 nm and ~30 to 50 nm, respectively. The dielectric behavior was evaluated in the range of 1.0×10^6 Hz to 3.0×10^9 Hz at 298 K, the dielectric parameters resulting appreciably enhanced by co-doping with Sr and Fe. The maximum dielectric parameters (ε'=103.35, ε''=58.92 and tan δ=0.57) were observed for $La_{0.4}Sr_{0.6}Co_{0.4}Fe_{0.6}O_3$ at 15×10^6 Hz. Results suggest the potential use of these nanocrystalline perovskites in GHz-operated microwave devices.

URL:http://www.sciencedirect.com/science/article/pii/S0272884214007500

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43. Liao, Q., Liu, Y., Yan, Q.,& Ahmad, M. A. (2014). Entanglement dynamics and uasiprobability distribution for the degenerate Raman process. ***Optik-International Journal for Light and electron Optics*****, *125*(6), 1739-1744.**

ABSTRACT:

In this paper, we consider the model which consists of a degenerate Raman process involving two degenerate Rydberg energy levels of an atom interacting with a single-mode cavity field. The influence of the atomic coherence on the von Neumann entropy of the atom and the atomic inversion is investigated. It is shown that the atomic coherence decreases the amount of atom-field entanglement. It is also found that the collapse and revival times are independent of the atomic coherence, while the amplitude of the revivals is sensitive to this coherence. Moreover, the Q function and the entropy squeezing of the field are examined. Some new conclusions can be obtained.

URL:http://www.sciencedirect.com/science/article/pii/S0030402613013338

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44. Latif, H., Rafique, M. S., Khaleeq-ur-Rahaman, M., Sattar, A., Anjum, S., Usman, A., ...& Rawat, R. S. (2014). Surface modification of platinum by laser-produced X-rays. *Radiation Effects and Defects in Solids*, *169*(11), 942-953.

ABSTRACT:

Laser-induced plasma is used as an X-ray source for the growth of hillocks like nanostructures on platinum surface. To generate X-rays, plasma is produced by Nd:YAG laser, which is operated at second harmonics (λ = 532 nm, E = 400 mJ). Analytical grade 5 N pure Al, Cu and W are used as laser targets for X-rays production. X-rays produced from Al, Cu and W plasmas are used to irradiate three analytical grade (5 N pure) platinum substrates, respectively, under the vacuum ~10^{-4} torr. XRD analysis shows considerable structural changes in the exposed platinum. The decrement in reflection intensities, increment in dislocation line density, change in d-spacing and disturbance in the periodicity of planes evidently prove these structural changes. Atomic force microscope AFM topographic analysis of the platinum exposed to X-rays emitted from Al, Cu and W targets showed that nanometer-size hillocks are produced on the platinum surface irrespective of the source. It has also been observed that due to these hillocks, the roughness of the surface has increased. Conductivity of hillocks produced from X-rays produced by Al, Cu and W targets is compared and it is shown that the hillocks produced by Al target X-rays have better conductivity compared to the hillocks produced by X-rays from Cu and W targets.

URL:http://www.tandfonline.com/doi/abs/10.1080/10420150.2014.972398#.VdwuAX2ddh8

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45. Murtaza, G., Ahmad, R., Hussain, T., Ayub, R., Ali, I., Khan, M. A., & Akhtar, M. N. (2014). Structural and magnetic properties of Nd–Mn substituted Y-type hexaferrites synthesized by microemulsion method. *Journal of Alloys and Compounds*, *602*(25), 122-129.

ABSTRACT:

Nd–Mn substituted hexaferrites of composition $Sr_{2-x}Nd_xNi_{0.5}Co_{1.5}Fe_{12-y}Mn_yO_{22}$ (x = 0.0, 0.02, 0.04, 0.06, 0.08, 0.10, 0.20, 0.30, y = 0.0, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75) were synthesized using microemulsion method. The synthesized materials are characterized

using different techniques including X-ray diffraction (XRD), scanning electron microscopy(SEM), atomic force microscopy (AFM), Fourier transform Infrared spectroscopy (FTIR), Inductance capacitance resistance (LCR) meter and Vibrating sample magnetic magnetometer (VSM). For all samples, a single Y-type phase was established and the lattice constants have been calculated.XRD patterns reveal the significant increase in line broadening which indicates a decrease of grain size. The samples exhibit well defined crystallization; all of them are hexagonal platelet grains. With the increasing substitution level of Nd–Mn, the average grain diameter decreases. The dielectric constant ε′ε′ and dielectric loss factor ε'' are found to decrease initially with an increase in frequency and reached a constant value at higher frequency, exhibiting a frequency-independent behavior at higher frequencies. The dielectric loss tangent $\tan\delta$tanδ was found to decrease with an increase in the frequency. The H_c decreases remarkably with increasing Nd and Mn ions content. It was found that the particle size could be effectively decreased and coercivity H_c could easily be controlled by varying the concentration (x) without significantly decreasing saturation magnetization.

URL:http://www.sciencedirect.com/science/article/pii/S092583881400526X

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46. Mumtaz, H., Hayashi, S., Shaukat, S. F., & Sekkat, Z. (2014). Estimation of optical constants of a bio-thin layer (onion epidermis), using SPR spectroscopy. ***Journal of Optics*****, *16*(12), 125014.**

ABSTRACT:

We estimate the optical constants of a biological thin layer (*Allium cepa*) by surface plasmon resonance (SPR) spectroscopy. For this study, the fresh inner thin epidermis of an onion bulb was used and stacked directly on gold (Au) and silver (Ag) film surfaces in order to identify the shift in SPR mode of each metal film at an operating wavelength of 632.8 nm. The thickness and dielectric constants of the biological thin layer were determined by matching the experimental SPR curves to theoretical ones. The thickness and roughness of bare Au and Ag thin films were also measured by atomic force microscopy (AFM); the results of which are in good agreement with those obtained through experiment. Due to the high surface roughness of the natural onion epidermis layer, AFM could not measure the exact thickness of an onion epidermis. It is estimated that the value of the real part of the dielectric constant of an onion epidermis is between the dielectric constants of water and air.

URL:http://iopscience.iop.org/2040-8986/16/12/125014

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47. Naim, H., Bashir, M. F.,& Murtaza, G. (2014). On the drift magnetosonic waves in anisotropic low beta plasmas. ***Physics of Plasmas (1994-present)*****, *21*(10), 102112.**

ABSTRACT:

A generalized dispersion relation of obliquely propagating drift magnetosonic waves is derived by using the gyrokinetic theory for anisotropic low beta plasmas. The stability analysis applicable to a wide range of plasma parameters is performed to understand the stabilization mechanism of the drift magnetosonic instability and the estimation of the growth rate is also presented. It is noted that the growth rate of the drift instability enhances for small anisotropy ($A_{e,i} = T_{\perp e,i}/T_{\| e,i} < 1$) whereas it is suppressed for large anisotropy ($A_{e,i} > 1$).

URL:http://scitation.aip.org/content/aip/journal/pop/21/10/10.1063/1.4897370

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48. Rozina, C., Tsintsadze, N. L., Jamil, M., Rasheed, A.,& Ali, S. (2014). Electromagnetic wave instability in a relativistic electron-positron-ion plasma. ***Astrophysics and Space Science*****, *353*(2), 485-491.**

ABSTRACT:

By employing the anisotropic plasma distribution function, the stability of circularly polarized electromagnetic (EM) waves is studied in a relativistically hot electron-positron-ion (e-p-i) plasma, investigating two specific scenarios. First, linear dispersion relations associated with the transverse EM waves are analyzed in different possible frequency regimes. The expression of the aperiodic hydrodynamic instability is obtained and numerically the transverse EM modes are shown to grow exponentially. Secondly, we have found that the transverse electromagnetic wave interact with a collisionless anisotropic e-p-i plasma and damp through the nonlinear Landau damping phenomena. Taking the effects of the latter into consideration, a kinetic nonlinear Schrödinger equation is derived with local and nonlocal nonlinearities, computing the damping rates. The present work should be helpful to understand the linear and nonlinear properties of the intense EM waves in hot relativistically astrophysical plasmas, e.g., pulsars, black holes, neutron stars, etc.

URL:http://link.springer.com/article/10.1007/s10509-014-2047-z

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49. Rasheed, A., Jamil, M., Khan, A. A., & Moslem, W. M. (2014). Shielding with the dynamics of electron-acoustic wave in multi-electron plasmas. ***Astrophysics and Space Science*****, *354*(2), 395-399.**

ABSTRACT:

Shielding potential of a test charge is investigated in the presence of electron-acoustic waves in two species magnetoplasma, whose constituents are immobile ions and two-electron species with different temperatures. The obtained potential profile deviates from the standard potential due to the presence of magnetic field and hot electrons. The numerical analysis is done using the observational data of the Auroral region.

URL:http://link.springer.com/article/10.1007/s10509-014-2098-1

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50. Rasheed, A., Jamil, M., Siddique, M., Huda, F.,& Jung, Y. D. (2014). Beam excited acoustic instability in semiconductor quantum plasmas. ***Physics of Plasmas (1994-present)*****, *21*(6), 062107.**

ABSTRACT:

The instability of hole-Acoustic waves due to electron beam in semiconductor quantum plasmas is examined using the quantum hydrodynamic model. The quantum effects are considered including Bohm potential, Fermi degenerate pressure, and exchange potential of the semiconductor quantum plasma species. Our model is applied to nano-sized GaAs semiconductor plasmas. The variation of the growth rate of the unstable mode is obtained over a wide range of system parameters. It is found that the thermal effects of semiconductor species have significance over the hole-Acoustic waves.

URL:http://scitation.aip.org/content/aip/journal/pop/21/6/10.1063/1.4883224

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51. Rashad, M., Pan, F., Asif, M., Hussain, S., & Saleem, M. (2014). Improving properties of Mg with Al–Cu additions. ***Materials Characterization*****, *95*, 140-147.**

ABSTRACT:

The present work reports improvement in tensile properties of the Mg matrix reinforced with micron-sized copper–aluminum particulate hybrids. The Al–Cu particulate hybrids were incorporated into the Mg matrix through powder metallurgy method. The synthesized alloys exhibited homogeneously dispersed Mg_2Cu particles in

the matrix, therefore leading to a 110% increase in yield strength (221 MPa) and a 72% enhancement in ultimate tensile strength (284 MPa) by addition of 1.0 wt.%Al–0.6 wt.%Cu particle hybrids. Optical microscopy, scanning election microscopy, transmission electron microscopy and X-ray diffraction were used to investigate the microstructure and intermetallic phases of the synthesized alloys.

URL:http://www.sciencedirect.com/science/article/pii/S1044580314001971

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52. Raza, R., Ahmad, M. A., Iqbal, J., Akram, N., Gao, Z., Javed, S., & Zhu, B. (2014). Ce0. 8 (SmZr) 0.2 O2- carbonate nanocomposite electrolyte for solid oxide fuel cell. ***International Journal of Energy Research*****, *38*(4), 524-529.**

ABSTRACT:

A nanocomposite Zr/Sm-codoped ceria electrolyte coated with K_2CO_3/Na_2CO_3 was synthesized by a coprecipitation method. The electrochemical study of the two-phase nanocomposite electrolytes with carbonate coated on the doped ceria shows high oxygen ion mobility at low temperatures (300–600 °C). The interface between the two constituent phases was studied by electrochemical impedance spectroscopy. Ionic conductivities were also measured with electrochemical impedance spectroscopy. The morphology and structure of composite electrolyte were characterized using field-emission scanning electron microscopy and X-ray diffraction. The fuel cell power density is 700 mW cm^{-2}, and an open-circuit voltage of 1.00 V is achieved at low temperatures (400–550 °C). This codoped approach with a second phase provides a good indication regarding overcoming the challenges of solid oxide fuel cell technology.

URL:http://onlinelibrary.wiley.com/doi/10.1002/er.3150/full

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53. S. Nisar et al. (2014). Amplitude Analysis of the D+→K0Sπ+π0 Dalitz Plot. ***Phys.Rev*****. 89 (5), 052001.**

ABSTRACT:

We perform an analysis of the D+→KS0π+π0 Dalitz plot using a data set of 2.92 fb−1 of e+e- collisions at the ψ(3770) mass accumulated by the BESIII experiment, in which 166694 candidate events are selected with a background of 15.1%. The Dalitz plot is found to be well represented by a combination of six quasi-two-body decay channels [KS0ρ+, KS0ρ(1450)+, K^-*0π+, K^-0(1430)0π+, K^-(1680)0π+, κ^-0π+] plus a small

nonresonant component. Using the fit fractions from this analysis, partial branching ratios are updated with higher precision than previous measurements.

URL:http://inspirehep.net/record/1277070

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54. S. Nisar et al. (2014). Observation of a charged (DD*bar)- mass peak in e+e- --> pi+ (DD*bar)- at Ecm=4.26 GeV. *Phys.Rev.Lett.*112 (2) 22001.

ABSTRACT:

We report on a study of the process $e^+e^-\to\pi^\pm(D\bar{D}^*)^\mp$ at $\sqrt{s}=4.26$ GeV using a 525 pb^{-1} data sample collected with the BESIII detector at the BEPCII storage ring. A distinct charged structure is observed in the $(D\bar{D}^*)^\mp$ invariant mass distribution. When fitted to a mass-dependent-width Breit-Wigner line shape, the pole mass and width are determined to be $M_{pole}=(3883.9\pm1.5(stat)\pm4.2(syst))$ MeV/c^2 and $\Gamma_{pole}=(24.8\pm3.3(stat)\pm11.0(syst))$ MeV . The mass and width of the structure, which we refer to as $Z_c(3885)$, are 2σ and 1σ , respectively, below those of the $Z_c(3900)\to\pi^\pm J/\psi$ peak observed by BESIII and Belle in $\pi^+\pi^-J/\psi$ final states produced at the same center-of-mass energy. The angular distribution of the $\pi Z_c(3885)$ system favors a $J^P=1^+$ quantum number assignment for the structure and disfavors 1^- or 0^- . The Born cross section times the $D\bar{D}^*$ branching fraction of the $Z_c(3885)$ is measured to be $\sigma(e^+e^-\to\pi^\pm Z_c(3885)^\mp)\times B(Z_c(3885)^\mp\to(D\bar{D}^*)^\mp)=(83.5\pm6.6(stat)\pm22.0(syst))$ pb . Assuming the $Z_c(3885)\to D\bar{D}^*$ signal reported here and the $Z_c(3900)\to\pi J/\psi$ signal are from the same source, the partial width ratio $(\Gamma(Z_c(3885)\to D\bar{D}^*)/\Gamma(Z_c(3900)\to\pi J/\psi))=6.2\pm1.1(stat)\pm2.7(syst)$ is determined.

URL:http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.112.022001

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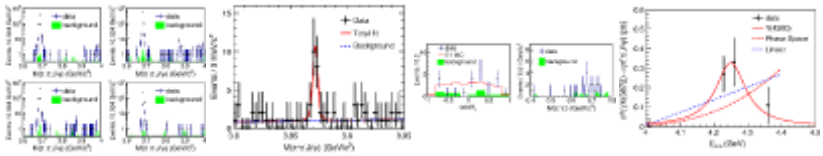
55. S. Nisar et al. (2014). Observation of e+ e−→ γ X (3872) at BESIII. *Physical review letters*, *112* (9), 092001.

ABSTRACT:

With data samples collected with the BESIII detector operating at the BEPCII storage ring at center-of-mass energies from 4.009 to 4.420 GeV, the process $e^+e^-\to\gamma X(3872)$ is observed for the first time with a statistical significance of 6.3σ. The measured mass of the $X(3872)$ is $(3871.9\pm0.7stat\pm0.2syst)$ MeV/c^2, in agreement with previous

measurements. Measurements of the product of the cross section $\sigma[e+e-\rightarrow\gamma X(3872)]$ and the branching fraction $B[X(3872)\rightarrow\pi+\pi-J/\psi]$ at center-of-mass energies 4.009, 4.229, 4.260, and 4.360 GeV are reported. Our measurements are consistent with expectations for the radiative transition process $Y(4260)\rightarrow\gamma X(3872)$.



URL:http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.112.092001

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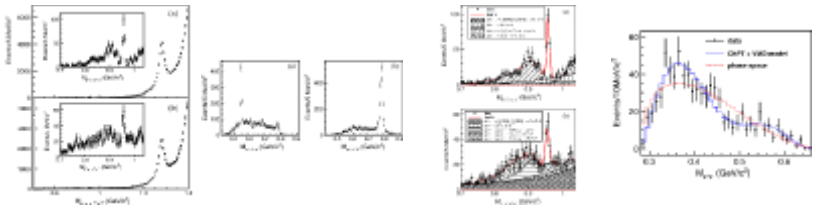
56. S. Nisar et al. (2014). Observation of η′→ π+ π− π+ π− and η′→ π+ π− π 0 π 0. *Physical review letters*, *112*(25), 251801.

ABSTRACT:

Using a sample of 1.3×109 J/ψ events collected with the BESIII detector, we report the first observation of $\eta'\rightarrow\pi+\pi-\pi+\pi-$ and $\eta'\rightarrow\pi+\pi-\pi0\pi0$. The measured branching fractions are $B(\eta'\rightarrow\pi+\pi-\pi+\pi-)=[8.53\pm0.69(\text{stat.})\pm0.64(\text{syst.})]\times10-5$ and $B(\eta'\rightarrow\pi+\pi-\pi0\pi0)=[1.82\ \pm0.35\ (\text{stat.})\pm0.18(\text{syst.})]\times10-4$, which are consistent with theoretical predictions based on a combination of chiral perturbation theory and vector-meson dominance.



URL:http://dx.doi.org/10.1103/PhysRevLett.112.251801

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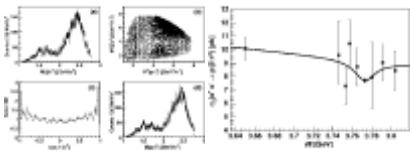
57. S. Nisar et al.. (2014). Study of e+ e−→ p p^{-} π 0 in the vicinity of the ψ (3770). *Physical Review D*, *90*(3), 032007.

ABSTRACT:

The process $e+e-\rightarrow pp^{-}\pi0$ has been studied by analyzing data collected at $s\sqrt{}=3.773$ GeV, at $s\sqrt{}=3.650$ GeV, and during a $\psi(3770)$ line shape scan with the

BESIII detector at the BEPCII collider. The Born cross section of $pp^{-}\pi 0$ in the vicinity of the $\psi(3770)$ is measured, and the Born cross section of $\psi(3770)\rightarrow pp^{-}\pi 0$ is extracted considering interference between resonant and continuum production amplitudes. Two solutions with the same probability and a significance of 1.5σ are found. The solutions for the Born cross section of $\psi(3770)\rightarrow pp^{-}\pi 0$ are 33.8±1.8±2.1 pb and 0.06+0.10+0.01−0.04−0.01 pb (<0.22 pb at a 90% confidence level). Using the estimated cross section and a constant decay amplitude approximation, the cross section $\sigma(pp^{-}\rightarrow\psi(3770)\pi 0)$ is calculated for the kinematic situation of the planned P^{-}ANDA experiment. The maximum cross section corresponding to the two solutions is expected to be less than 0.79 nb at 90% confidence level and 122±10 nb at a center-of-mass energy of 5.26 GeV.



URL:http://dx.doi.org/10.1103/PhysRevD.90.032007

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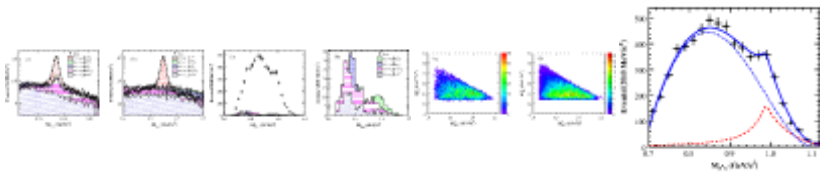
58. S. Nisar et al.. (2014). Observation of J/ψ→ p p^{-} a 0 (980) at BESIII. ***Physical Review D, 90*****(5),052009.**

ABSTRACT:

Using 2.25×108J/ψ events collected with the BESIII detector at the BEPCII storage rings, we observe for the first time the process $J/\psi\rightarrow pp^{-}a0(980)$, $a0(980)\rightarrow\pi 0\eta$ with a significance of 6.5σ (3.2σ including systematic uncertainties). The product branching fraction of $J/\psi\rightarrow pp^{-}a0(980)\rightarrow pp^{-}\pi 0\eta$ is measured to be (6.8±1.2±1.3)×10−5, where the first error is statistical and the second is systematic. This measurement provides information on the $a0$ production near threshold coupling to pp^{-} and improves the understanding of the dynamics of J/ψ decays to four-body processes.



URL:http://dx.doi.org/10.1103/PhysRevD.90.052009

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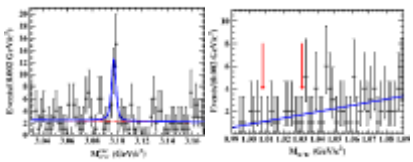
59. S. Nisar et al. (2014). Search for C-parity violation in J/ψ→ γ γ and γ ϕ. *Physical Review D*, *90*(9), 092002.

ABSTRACT:

Using 1.06×108 $\psi(3686)$ events recorded in $e+e-$ collisions at $s\sqrt{}=3.686$ GeV with the BESIII at the BEPCII collider, we present searches for C-parity violation in $J/\psi\to\gamma\gamma$ and $\gamma\phi$ decays via $\psi(3686)\to J/\psi\pi+\pi-$. No significant signals are observed in either channel. Upper limits on the branching fractions are set to be $B(J/\psi\to\gamma\gamma)<2.7\times10-7$ and $B(J/\psi\to\gamma\phi)<1.4\times10-6$ at the 90% confidence level. The former is one order of magnitude more stringent than the previous upper limit, and the latter represents the first limit on this decay channel.



URL:http://dx.doi.org/10.1103/PhysRevD.90.092002

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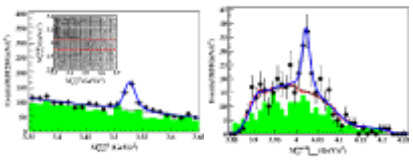
60. S. Nisar et al. (2014). Observation of e+ e−→ π 0 π 0 h c and a Neutral Charmoniumlike Structure Z c (4020) 0. *Physical review letters*, *113*(21), 212002.

ABSTRACT:

Using data collected with the BESIII detector operating at the Beijing Electron Positron Collider at center-of-mass energies of $s\sqrt{}=4.23$, 4.26, and 4.36 GeV, we observe $e+e-\to\pi0\pi0hc$ for the first time. The Born cross sections are measured and found to be about half of those of $e+e-\to\pi+\pi-hc$ within less than 2σ. In the $\pi0hc$ mass spectrum, a structure at 4.02 GeV/$c2$ is found. It is most likely to be the neutral isospin partner of the $Zc(4020)\pm$ observed in the process of $e+e-\to\pi+\pi-hc$ being found. A fit to the $\pi0hc$ invariant mass spectrum, with the width of the $Zc(4020)0$ fixed to that of its charged isospin partner and possible interferences with non-$Zc(4020)0$ amplitudes neglected, gives a mass of (4023.9±2.2±3.8) MeV/$c2$ for the $Zc(4020)0$, where the first error is statistical and the second systematic.



URL:http://dx.doi.org/10.1103/PhysRevLett.113.212002

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61. Saleem, M., Fang, L.,Ashfaq Ahmad, M., Raza, R., Wu, F., Li, W. J., ...& Xue, S. J. (2014). Synthesis, characteristics and applications of zno nanowires in dye-sensitized solar cells via water bath method. ***nano*****, *9*(06), 1450061.**

ABSTRACT:

Zinc oxide (ZnO) nanowire (NW) films were synthesized at low temperature (95°C) through amine-assisted solution process and used as photoanode for the fabrication of dye-sensitized solar cells (DSSCs). It was found that with the addition of polyethyleneimine (PEI) and ammonium hydroxide (NH_4OH) in growth solution, the NWs were smaller in diameter and longer in length by prolonging the growth time without refreshing the growth solution. A reasonable overall conversion efficiency of 1.25% was achieved with photoanode based on ZnO NWs containing PEI and NH_4OH. However, DSSC fabricated with ZnO NWs not containing PEI and NH_4OH showed low conversion efficiency of 0.58%. All the DSSCs exhibited almost similar values of open circuit voltage (V_{OC}) and fill factor (FF). Interestingly, DSSC based on ZnO NWs with PEI and NH_4OH obtained two times higher short circuit current density (J_{SC}) compared to ZnO NWs photoanode without PEI and NH_4OH. The increase in efficiency and J_{SC} with the length of NWs is attributed to the increase in internal surface area for sufficient dye loading and light harvesting.
URL: http://www.worldscientific.com/doi/abs/10.1142/S1793292014500611

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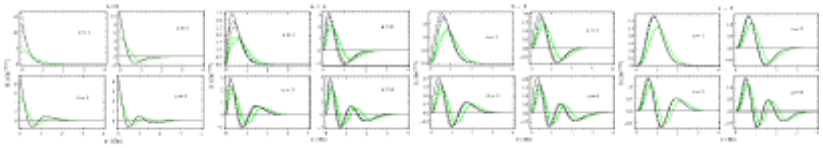
62. Sultan, M. A., Akbar, N., Masud, B.,& Akram, F. (2014). Higher hybrid charmonia in an extended potential model. ***Physical Review D*****, *90*(5), 054001.**

ABSTRACT:

The quark potential model for mesons and its extension for hybrid mesons are used to study the effects of radial excitations on the masses, sizes, and radial wave functions at the origin for conventional and hybrid charmonium mesons. These nonrelativistic

quark potential models are also used to calculate the $E1$ and $M1$ radiative partial widths for conventional meson to meson and hybrid to hybrid transitions. Relativistic corrections in masses and radiative widths are calculated by applying leading-order perturbation theory. To numerically solve the required Schrödinger equation for the radial wave functions, to be relativistically improved, we use the shooting method. We compare our results with the experimentally observed and theoretically predicted results of the other models. Our results have implications for scalar form factors, energy shifts, and polarizabilities of conventional and hybrid mesons. The comparison of masses of conventional and hybrid charmonium mesons with the masses of recently discovered XYZ particles is also discussed. Thus, our results can help in experimentally recognizing hybrid mesons.



URL:http://journals.aps.org/prd/abstract/10.1103/PhysRevD.90.054001

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63. S. nisar et al. (2014). Study of e (+) e (-)-> p (p) over-bar in the vicinity of psi (3770).Physics Letters B. 735. 101-107

ABSTRACT:

Using 2917 pb(-1) of data accumulated at 3.773 GeV, 44.5 pb(-1) of data accumulated at 3.65 GeV and data accumulated during a psi(3770) line-shape scan with the BESIII detector, the reaction e(+)e(-) -> p (p) over bar is studied considering a possible interference between resonant and continuum amplitudes. The cross section of e(+)e(-) -> psi(3770) -> p (p) over bar, sigma(e(+)e(-)-> psi(3770) -> p (p) over bar), is found to have two solutions, determined to be (0.059(-0.020)(+0.070) +/- 0.012) pb with the phase angle phi = (255.8(-26.6)(+39.0) +/- 4.8). (< 0.166 pb at the 90% confidence level), or sigma(e(+)e(-) -> psi(3770) -> p<(p)over bar>) = (2.57(-0.13)(+0.12) +/- 0.12) pb with phi = (266.9(-6.3)(+6.1) +/- 0.9)degrees both of which agree with a destructive interference. Using the obtained cross section of psi(3770) -> p (p) over bar, the cross section of p (p) over bar -> psi(3770), which is useful information for the future PANDA experiment, is estimated to be either (9.8(-3.9)(+11.8)) nb (< 27.5 nb at 90% C.L.) or (425.6(-43.7)(+42.9))

DEPARTMENT OF STATISTICS

Journal Papers

1. Hussain, I., Shakeel, M., Faisal, M., Soomro, Z. A., Hussain, M., & Hussain, T. (2014). Distribution of total dissolved solids in drinking water by means of bayesian kriging and gaussian spatial predictive process. ***Water Quality, Exposure and Health*****, 6(4), 177-185.**

ABSTRACT:

High level of total dissolved solids (TDS) in drinking water may cause problems in human body such as, stiffness of the joints, kidney stones, gallstones, and it may also cause hardening of arteries and sometime blockage of arteries in severe conditions. The TDS level of groundwater with spatial domain Punjab province, Pakistan is considered as response variable (random field) in present paper. Model-based ordinary kriging (OK), Bayesian ordinary kriging (BOK), and Gaussian spatial predictive process are used to model the spatial distribution of response variable. These methods ultimately estimate predictions maps and probabilities with specified threshold limit. The BOK performs better than OK and Gaussian spatial predictive process in terms of root mean square prediction error. This study reveals that the elevated TDS level crossing WHO permissible limit (1,000 mg/l) found in 24 % sample. Bahawalpur, Dera Ghazi Khan, Hafizabad, Khushab, Nankana Shaib, Okara, and Toba Tek Singh districts of Punjab province are observed of great concern.

URL:http://link.springer.com/article/10.1007/s12403-014-0123-9

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2. Ismail, M., Momina Saleem and Khurram Shahzad. (2014).Environmental Kuznets Curve and SO2 Emission in Pakistan. Research Journal of Environmental and Earth Sciences.6(4) 195-200.

ABSTRACT:

In this study, the Environmental Kuznets Curve (EKC) is hypothesized to examine the connection among SO_2 emission, economic growth, trade liberalization, energy consumption and population density in Pakistan with annual data from 1970-2008. The co integration analysis using Auto Regressive Distributed Lag (ARDL) bounds testing approach is used. The outcomes support the hypothesis both in short-run and long-run

and inverted U shaped relationship is found between SO_2 emission and growth. Interestingly we found trade support the environment positively and population contributes to environmental degradation in Pakistan. The energy consumption and growth are the major explanatory variables which contribute to environmental pollution in Pakistan. Moreover, the time series data analysis is utilized and the stability of variables in estimated model is also evaluated.

URL:http://maxwellsci.com/jp/abstract.php?jid=RJEES&no=422&abs=03

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3. Imam,. A. Shafique, M. Shah, F. T.(2014). Mediating Relationship of Job Satisfaction between Social Capital and Organizational Commitment in Employees: A Study of Banking Sector of Pakistan. ***J. Appl. Environ. Biol. Sci.*** **2014 4(12): 274-283.**

ABSTRACT

Social Capital is an employee family, friends and associates that help employees to overcome the hurdles that came in way of their job tenure. Job satisfaction and organizational commitment are the important HR concepts that determine employee attitudes. Social capital along with these important employee attitudinal outcomes creates prosperity for the organization. This study was a cross-sectional study and investigate how social capital contributes towards job satisfaction and organizational commitment and how job satisfaction enhance the impact of social capital and organizational commitment among employees in banking industry of Pakistan. This study found that the job satisfaction partially mediates the relationship between social capital and organizational commitment of the banking sector employees. Findings revealed that if there is a social capital present for employees, then their job satisfaction enhance its impact along with social capital in creating and ornamenting the organizational commitment of employees especially in the scenario of banking sector of Pakistan. The research work was done through survey questionnaire. Questionnaire was developed from empirical studies. Information and data regarding study variables were obtained from the employees' at all three levels of management in banking industry. Random sampling technique was used for data collection. Analysis was done through SPSS, using the techniques of correlation, multiple regression analysis to find the extent of relationship between the study variables

URL:http://www.textroad.com/JAEBS-December,%202014.html

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4. Ismail, M., Shahbaz, Q.Shahbaz, S. Rashad, M. & Hanif M. (2014). On Computing Mean Square Error of Ratio Estimator. ***Research Journal of Applied Sciences, Engineering and Technology*****.7(9),1896-1899.**

Abstract:
Mean Square Error (MSE) of estimators in survey sampling is generally derived by considering terms to O (n^{-1}). In this study we propose a general method to compute the mean square error of classical ration estimator up to any degree of accuracy. The method has been proposed for ratio estimator in single phase and two phase sampling. We have used the proposed method to compute mean square error to various degree of approximation. Numerical example has also been given for illustration.

URL:http://www.maxwellsci.com/jp/abstract.php?jid=RJASET&no=410&abs=28

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5. Shahbaz, S. Zubair, M. Butt, N. S.& Ismail, M..(2014). A New Regression Estimator Based on Two Auxiliary Variables, Research Journal of Applied Sciences, Engineering and Technology, 8(2), 251-252.

ABSTRACT:

A multiple regression estimator has been developed by using information on "k" auxiliary variables. The mean square error has been obtained of the Multiple Regression estimator and comparison has been made with existing estimators for estimation of population characteristic.

URL:http://www.maxwellsci.com/jp/issue.php?jid=RJASET&no=454

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6. Ismail, M., Aslam, M. I., Ch, A. F.,& Zubair, M. (2014). Effect of traditional and modern performance instruments on selected companies from pakistan. Sci.Int. 26(5),2617-2619.

ABSTRACT:

The objective of this study is to examine the performance of listed companies in Karachi Stock Exchange by using economic value added and market value added. To estimate

performance of seven industrial sectors in Pakistan economic value added (EVA) is used along with growth of earnings per share, return on capital employed, operating cash flow, net operating profit after tax, net income, residual income, return on assets, return on equity and return on investment. Multiple regression models are applied on cross sectional data of thirty five firms from seven sectors of Pakistan for year 2010 and 2011. Results and their analysis are portraying the actual picture for economic value added in Pakistan indicating that ability of economic value added to explain market value added is not significant.

URL:https://scholar.google.com.pk/scholar?q=Effect+Of+Traditional+And+Modern+Performance+Instruments+On+Selected+Companies+From+Pakistan.&btnG=&hl=en&as_sdt=0%2C5

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7. Irfan, S. M., Kee, D. M. H., Waheed Qureshi, R.,& Hussain, R. (2014). Identification of critical success factors of tqm implementation in health care sector of pakistan using pareto analysis approach. ***Science International*****, *26*(5), 2603-2616.**

ABSTRACT:

Due to the rising costs of health care, complexities in diseases and in its diagnostics, huge equipment and treatment costs, high customer expectations for quality, has built a tremendous pressure on health care institutions in almost all the developed and developing economies to transform their old fad working system to cost effective, patient focus, efficient and high quality services. Thus to deliver high quality of health care services, to gain patient and their families satisfaction, quality has taken a central position. To ensure quality, patient safety, preventive measures to control infections, and gain patient and their families' satisfaction, there is a growing trends among the health care institutions to implement quality standard and systems. Majority of the well know hospitals around the globe has adopted or adapted quality management systems to address the above issues. Total Quality Management (TQM) is a well proven strategic management system in all sectors of industry to achieve excellence in business by focusing on customer needs and wants for superior quality and cost effective services or products. This study aimed to identify the critical success factors (CSFs) of TQM for the successful implementation of TQM in health care sector of Pakistan. After a careful and comprehensive review of 135 studies on TQM and also considering the importance of contextual factors of hospital settings in Pakistan, this study proposed 9 CSFs of TQM for health care sector: top management commitment and leadership role, human

resource focus, process management, supplier quality management, quality data and reporting, strategic quality management, patient focus, continuous quality improvement, and services focus. Descriptive statistics and Pareto analysis were employed to identify the core CSFs of TQM for health care. Suggested CSFs of TQM can be employed in order to achieve excellence in health care services.

URL:http://web.b.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=103197639&h=asq%2fILFWKDtlHhcUgHGEy4bbiI6RH7rKe2QO7klX%2fK5B5vEHFE%2bc4hkg9YFk4Xdp9pI0R6lgfBMLp8MqP4vvqg%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d103197639

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8. Khan, H., Sanaullah, A., Khan, M. A., & Siddiqi, A. F. (2014). Improved exponential ratio type estimators for estimating population mean regarding full information in survey sampling. ***World Applied Science journal*****, 26(5), 1897-1902.**

ABSTRACT:

This paper suggests a general class of exponential ratio and product type estimators for estimating finite population mean in single phase sampling. The expression for the mean square error (MSE) and bias of the first and second order approximation of the proposed class of estimators are given. The properties of the proposed estimators have been analyzed for independent units under simple random sampling without replacement (SRSWOR). It has been shown that the proposed ratio and product exponential type estimators are more efficient than Simple random sampling, classical ratio, Bhal, Tutaja [1] and Solanki et al. [2].

URL:https://scholar.google.com.pk/scholar?q=Improved+Exponential+Ratio+type+Estimators+for+Estimating+Population+Mean+Regarding+Full+Information+in+Survey+Sampling&btnG=&hl=en&as_sdt=0%2C5

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9. Mohsin, M., Kazianka, H., Pilz, J.,& Gebhardt, A. (2014). A new bivariate exponential distribution for modeling moderately negative dependence. ***Statistical Methods & Applications*****, *23*(1), 123-148.**

ABSTRACT:

This paper introduces a new bivariate exponential distribution, called the Bivariate Affine-Linear Exponential distribution, to model moderately negative dependent data. The construction and characteristics of the proposed bivariate distribution are presented along with estimation procedures for the model parameters based on maximum likelihood and objective Bayesian analysis. We derive Jeffreys prior and discuss its frequentist properties based on a simulation study and MCMC sampling techniques. A real data set of mercury concentration in largemouth bass from Florida lakes is used to illustrate the methodology.

URL:http://link.springer.com/article/10.1007/s10260-013-0246-3

10.Noor-ul-Amin, M., Sanaullah, A.,& Hanif, M. (2014). Generalized exponential estimators for double sampling. ***Science International*****, *26*(5), 2419-2428.**

ABSTRACT:

This study presents the exponential type estimators under double sampling design using the information from two auxiliary variables. This paper deals with the nested samples and non-nested samples. The estimators in each case of double sampling are discussed for partial information and full information situation. The optimum properties and special cases of the estimators are discussed. An empirical study is conducted to examine the efficiency of the proposed estimators with respect to some estimators available in literature.

URL:http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=10135316&AN=103197725&h=7GcaFLYZgoD%2forVR4opqKB9A%2boPh9wbDndx%2f2%2f%2f3jzmgFDObt9gzZgWRqOO52mVzbXZaSBGO7h2DEUCGGG3Bnw%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d10135316%26AN%3d103197725

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11. Sarwar, A., Mansoor, Z.,& Butt, N. S. (2014). Investor's behavior in pakistan mercantile exchange (PMEX). ***Science International*****, *26*(3). 1371-1377.**

ABSTRACT:

This study is conducted to study the investor's behavior in Pakistan Mercantile Exchange. Primary data was collected from a sample of 224 investors of PMEX through a structured questionnaire. Cronbach's Alpha value confirmed reliability ofthe questionnaire (Cronbach's Alpha=0.8). Descriptive analysis was performed for data screening and distribution assessment of the study variables.Major components that explained the behavior of investors in PMEX were identified through Exploratory Factor Analysis. Group differences were tested through t-Tests and ANOVA based on profile of investors and their behavior in Pakistan Mercantile Exchange. The major components that explained 70.865% of the total variance in investor behavior in PMEX were: 'overconfident behavior', 'herd behavior', 'price anchoring behavior', 'representativeness bias', 'loss averse behavior', 'panic attitude' and 'risk tolerance'. No significant relationship was found between different elements of investor's profile and their behavior in PMEX.

URL:https://scholar.google.com.pk/scholar?q=Investor%27s+Bhhavior+in+Pakistan+Mercantile+Exchange%28PMEX%29&btnG=&hl=en&as_sdt=0%2C5

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12. Shah, F. T., Idrees, M. F., Imam, M. A., Khan, M. T. A., & Mariyam, M. A. (2014). Impact of Job Satisfaction on Organizational Commitment in IT Sector Employees of Pakistan. ***J. Appl. Environ. Biol. Sci*****, *4*(8), 190-197.**

ABSTRACT:

Human Resource plays an important part for organization, which makes it an asset for organizations. Organizations are must interested in retention of employees. This need of organization makes job satisfaction and organizational commitment as more interested concepts to judge the behavior of employees who are essential for the organization. Job satisfaction and organizational commitment are the important concepts that determine the attitudes of employees at the workplace. These are the positive outcomes that help organizations to reap its benefits in terms of performance and organizational productivity. Apart from performance and productivity of the organizations, turnover intentions are also a major concern of the organization. These importance attitudes of employees at workplace determine their intention to stay in the organization. The population for this study was the professionals working in the IT

Industry of Pakistan. Systematic Random Sampling was used to identify the study sample. This study reported the impact of job satisfaction on organizational commitment in IT professionals of Pakistan. This study also found that there exists a positive relationship between job satisfaction and organizational commitment in employees of IT industry, which strengthen the impact of one employee attitudinal outcome on the other in a same direction, i.e., increase in job satisfaction increases the organizational commitment. Survey was conducted through the questionnaires, which was developed from the various studies. Questionnaires were floated through personal visits and emails. Personal visits were conducted to improve the response rate of IT professionals. Reliability analysis was done along with correlation, and regression analysis in SPSS-17th edition. Limitations of the study are also presented along with future research recommendations.

URL:https://scholar.google.com.pk/scholar?q=Impact+of+Job+Satisfaction+on+Organizational+Commitment+in+IT+Sector+Employees+in+Pakistan&btnG=&hl=en&as_sdt=0%2C5

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13. Shah, F. T. Arshad, A. Imam, A. Arshad, J.(2014). Impact of SERVQUAL on Client Satisfaction under the Mediating Effect of Disconfirmation: A Study of Social Security Hospitals of Punjab. J. Appl. Environ. Biol. Sci., 4(11)1-6.

ABSTRACT

This study is intended to investigate the level of quality of health services being provided in social security hospitals and its relation with customer satisfaction with a mediating role of disconfirmation related to perceived quality by customers in security hospitals of Pakistan. In order to explore this problem, face to face interviews and a developed questionnaire is used comprising of six dimensions of quality which include empathy, responsiveness, timeliness, assurance, administrative systems and social responsibility. The role of Disconfirmation is measured as a mediating variable and is found partially significant in this particular case. This research was conducted on patients admitted in the hospitals, most of the patients were found satisfied with overall services of hospital. The patients were found satisfied because of right diagnosis of doctors, free of cost treatment and their lower expectations for service quality. However the need is hospitals should focus on improving their service quality as it has to deal with and affect the significant population of workers and their dependents.

URL:http://www.textroad.com/JAEBS-November,%202014.html

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14. Shah, F. T. Akram, A. *(2014).*An Assessment of Service Quality Practices and Moderating Effect of Customer Focus in Hospitality Industry.Research Journal of Recent Sciences. 3(8) 25-32.

Abstract not found

15.Noor-ul-Amin, M. Hanif M.& Kadilar, C.(2014).Improved Exponential Type Estimators using the Information of Two Auxiliary Variables. Middle-East Journal of Scientific Research 19 (12): 1711-1715.

ABSTRACT:

In this paper, ratio-cum-ratio and product-cum-product exponential type estimators have been
proposed for estimating the finite population mean of the study variable using the information of two auxiliary variables. The expressions for mean square errors and biases of the proposed estimators have been derived. The generalized form of the proposed estimators has also been developed. It is shown that the proposed estimators are more efficient as compared to the sample mean estimator, classical ratio and product estimators, estimators of Singh [10] and estimators of Bahl and Tuteja [1] under specified conditions. Empirical study has also been carried out to demonstrate the performance of proposed estimators.

URL:DOI: 10.5829/idosi.mejsr.2014.19.12.1905

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16. Riaz, N. Noor-ul-Amin, M. & Hanif, M. (2014).Regression-Cum-Exponential Ratio Type Estimators for the Population Mean, Middle-East Journal of Scientific Research 19 (12): 1716-1721,

ABSTRACT:

This paper proposes regression-cum-exponential ratio type estimators under simple random sampling without replacement for estimating the finite population mean of study variable by using the information of two auxiliary variables. The mean square

error and bias expressions have been derived. The theoretical comparison of proposed estimators has been made with existing estimators. Empirical study is conducted to evaluate the efficiency of proposed Estimators.
URL:http://www.idosi.org/mejsr/mejsr19%2812%2914.htm

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17. Shah, F. T. Imam, I. R.W. Qureshi& Hanif S. (2014). Comparison of microfinance institutions: akhuwat foundation vs grameen bank.Sci.Int(Lahore),26(4),1851-1854.

ABSTRACT:

Microfinance provides small loans to poor. It is the best key to reduce poverty. The basic purpose of this research is to discover the challenges and opportunities of microfinance sector in Pakistan. These challenges and opportunities are explored by comparing Akhuwat Foundation (A Pakistani Microfinance Institution) with Grameen Bank (A Bangladeshi Microfinance Institution). Today, microfinance sector has been growing rapidly in the world especially in Pakistan. Despite of it, many challenges like improper regulations, increasing competition, profitability, limited management capacity, MFIs are operating very well in both countries. On the other side, poverty has increased rapidly in Pakistan even people are rundown of their basic rights (shelter, income generation, self-employment). Pakistan is an attractive market for Microfinance Institutions and can create many opportunities for the needy ones. Comparison of both institutions reveals that Akhuwat Foundation is working with expertise in the MFI. Their system is far better than the Grameen Bank. Recommendations are also presented for the MFIs.

URL:http://sci-int.com/searchresult.php?author=faisal&title=&year=&x=0&y=0

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18. Irfan, S. M.kee, D. M. H, R. W. Qureshi, Hussain, R. (2014). Measuring Performance Of Smes In Pakistan Using Pls-Sem:Evaluating Mbnqa Criteria As Tqm Framework. Sci.Int.(Lahore),26(4),1707-1718.

ABSTRACT:

The purpose of this study is to empirically investigate the impact of TQM framework based on MBNQA criteria on operational and organizational performance of manufacturing SMEs of Pakistan. TQM practices are hypothesized as a platform to

enhance both operational and organizational performance of SMEs in Pakistan. This study is twofold, first of all it is investigated that TQM practices helps to increase primary performance measures expressed in terms of operational performance and secondly it is investigated that how an effectively implemented TQM system contributes in increasing organizational performance of SMEs. This study uses PLS-SEM method to check the casual relationship between TQM practices, operational and organizational performance. Sample data was collected from four major cities of Pakistan and these cities are considered to be the hub of SMEs in Pakistan. Results of this study indicates that adoption of TQM practices helps to strengthen the internal processes and increase primary performance of SMEs expressed as operational performance and a effectively implemented TQM has strong influence in increasing organizational performance. This study is helpful for the mangers who intend to achieve organizational and business excellence both at local and international level

URL: http://sci-int.com/searchresult.php?author=irfan&title=&year=&x=0&y=0

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19. Syed, Z., Khan, A. M., & Shah, F. T. Evaluating Passenger's Perception and Behavioural Intentions in Airline Services: a case of PIA. ***Science International,*** **26(4), 1749-1755.**

ABSTRACT:

SERVQUAL has always remained a best and strong tool to identify the discrepancies in customer expectation and their actual experience about the quality of service provided by the company and their satisfaction. Passenger's perception, their satisfaction and behavioral intentions can be properly judged by using the SERVQUAL. This study measures airline service quality based on data collected at a Pakistani International Airline through survey. Analysis is done using independent sample t-test. Study reveals that flight category is significant variable for measuring passenger perception and satisfaction. The results demonstrated that both domestic and international passengers perceive the service value equally and also likely to travel with same airline in the future but their satisfaction level differs. Additionally, with respect to flight category SERVQUAL perceptions on Responsiveness, Assurance and Empathy remain same but on Tangibles and Reliability dimensions it significantly varies. Future recommendations for researchers and managers are also presented.

URL:http://sci-int.com/searchresult.php?author=faisal&title=&year=&x=0&y=0

AUTHOR INDEX

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