3RD INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN ENGINEERING, MANAGEMENT & SCIENCES (ICETEMS-2018)

BRIDGING GAPS THROUGH MULTI-DISCIPLINARY RESEARCH AND INNOVATION

ABSTRACT BOOK

OCTOBER 18-19, 2018

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Farhad Ali

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Muhammad Haroon Khan
Nadeem Ahmad Sheikh
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Arshad Amin
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Imran Khan

ABSTRACT BOOK

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PUBLISHED BY:

City University of Science & Information Technology (CUSIT), Peshawar - Pakistan

ABSTRACTS of the

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"Bridging Gaps through Multidisciplinary Research and Innovation"

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Organized by

City University of Science and Information Technology Peshawar Pakistan

in
Collaboration
with

McWhorter School of Building Science
Auburn University
Auburn, Alabama, USA

Department of Construction Management
College of Technology & Computer Science, East Carolina University
Greenville, North Carolina, USA

Institute of Engineers (IEP), Pakistan

3rd International Conference on Emerging Trends in Engineering Management and Sciences (ICETEMS-2018)

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Foreword

Today, the developing world is faced with multitude of challenges, which include modernizing infrastructures, enhancing technological resources, and developing human assets to attract more Direct Foreign Investment (DFI). Though the Governments are investing a lot of resources to cater with these problems, yet sustainable and cost effective solutions are still not explored. This certainly requires collaborative and integrated efforts of Engineers, Managers, Scientists, Policy makers, industrialists, business community etc. City University of Science and IT initiated a Conference series under "International Conference on Emerging Trends in Engineering, Managment and Science (ICETEM) in collaboration with East Caroilna University and Aubrun University USA in 2014. The first conference of the series *(ICETEMS-2014)* was held on Dec 28-30,2014 at Pak-China Friendship Centre Islamabad.

The second conference of the series was held in Dec 2016, at City University of Science and Information Technology, Peshawar with participation of approximately 200 participants from across the globe. In third conference, we are expecting about 200+ research papers.

It is a mattter of great pleasure for the organizng committee of *(ICTEMS)* that the third Conference of the series *ICETEMS -2018,* is being held at City University Peshawar. ICETEMS, is an endeavor to bring together all major stakeholders of the society for exchange of thoughts and experiences regarding the concepts, trends and practices pertaining to the major areas of Engineering, Management and Sciences. This is also reflected in the theme of the conference ***"Bridging Gaps through Multidisciplinary Research and Innovation"***

In this conference, more than 200 papers relating to Civil Engineering, Electrical Engineering, Management , Computer Sciences, Mathematics, Health Sciences and Education etc will be presented. Key note speakers from USA, UK, Germany, Malaysia, Australia, Afghanistan and Pakistan will share their research and expertise with the audience. It is intended to organize the *ICETEMS* series of conferences worldwide at regular intervals.

We sincerely hope that you will continue to support our these efforts.

Thanks and best regards,

Engr. Prof. Dr. Attaullah Shah
Dr. Farhad Ali
Engr. Dr. Fazal Muhammad
Engr. Dr. Muhammad Mahboob Alam
Dr. Rashid Naseem
Dr. Muhammad Zahid
Mr. Zulfiqar Ali
Mr. Naseer Ahmad Orakzai
Prof. Dr. Muhammad Younes
Prof. Dr. Muhammad Ibrahim

Peshawar, Pakistan, October 18-19, 2018.

Message from Conference Patron in Chief and Governor Khyber Pakhtunkhwa

Mr. Shah Farman

It is a matter of great pleasure for me to know that City University of Science & Information Technology, Peshawar is organizing ***"3rd International Conference on Emerging Trends in Engineering, Management & Sciences (ICETEMS-2018)"*** on October 18-19, 2018.

The interaction of engineers, academicians; and scholars from national and international organizations will go a long way in knowledge sharing in diverse fields for the promotion of research culture in the country. Providing a platform to people and researchers for the promotion of research will immensely benefit young scholars participating in the conference.

I am convinced that the conference will definitely provide a platform to the participating delegates to discuss important issues to develop new knowledge in engineering, Information and Technology, Management and Sciences.

Being patron in chief of the conference I heartily welcome all the distinguished Speakers, scholars and researchers presenting papers and the participants to ***this 3rd International Conference.***

I congratulate the City University President, Vice Chancellor, Teaching Faculty, Students and Administration for organizing this conference and pray for the successful accomplishment of objectives.

Message from President City University of Science and Information Technology, Peshawar

Mr. Mohammad Sabur Sethi

Universities and Higher Education Institutes (HEIs) are known by quality and research. To this end national and international collaboration is essential. Conferences, workshops, seminars and colloquia play pivotal role in generating this integration amongst the academia, researchers, industrialists, entrepreneurs and other major stakeholders. It is a matter of great honor for the students, faculty and staff of City University of Science & Information Technology to host this conference.

When the first branch of Peshawar Model School was established by Mr. Muhammad Zahoor Sethi in 1979, his vision was very clear as he desired to bring qualitative change in the education sector of KPK. The mission was further strengthened in 1998, when first Peshawar Model Degree College was established to provide succession of quality at secondary and higher secondary levels. The basic pillars of our education system are quality, merit and discipline. The establishment of City University in 2001 by the provincial assembly of then N-WFP, as one of the first privately sponsored Universities proved an important development in the education history of KPK. At City University, we have provided highly qualified faculty, State of the Art physical infrastructure, labs, libraries and other students' facilities to bring excellence in higher education. The University with the faculties of Engineering and Technology, Management Sciences, Computer Science & IT, Education, Mathematics and English & Applied Linguistics is endeavoring to nurture the quest of thousands of students for quality knowledge and research.

I am highly indebted to the better team work between the staff of City University and collaborating Institutes for this successful mega event and hope that the conference participants will deliberate on important issues faced by our country. More networking and collaboration will come forward as result of this interaction of academia, researchers, entrepreneurs and other major stakeholder involved in higher education and research. I look forward for your convenient stay with us and hope that you will actively participate in the future events of the City University.

Message from Conference Chair and Vice Chancellor Karakoram International University, Gilgit

Engr. Prof. Dr. Atta Ullah Shah

I am pleased to inform you that City University of Science and Information Technology, Peshawar arranging the subject Conference on Oct 18-19, 2018.

The first conference of the series was held in Dec 2014, at Pak China Friendship Centre Islamabad, where more than 70 research papers were presented in addition to invited talks and keynote speeches by the delegates from US, UK, Sweden, Qatar, Malaysia, Hong Kong, Russia and Pakistan. In second conference, we are expecting about 100 research papers.

The second conference of the series was held in Dec 2016, at City University of Science and Information Technology, Peshawar with participation of approximately 200 participants from across the globe. In third conference, we are expecting about 200+ research papers.

The mission of the ICETEMS conferences is to facilitate communication between multidisciplinary teams, especially those involved in engineering, management and Sciences to share their research on the emerging trends in these areas with special reference to Pakistan.

Governor KPK Patron of the conference, Chief Minister KPK, Federal and provincial ministers, other national & international delegates and functionaries of the Federal and KPK Governments are expected to join at the conference.

Your presence at the conference will be a great honor for us and will motivate the faculty, students and delegates.

Message from Conference Co-Chair and Vice Chancellor City University of Science and Information Technology, Peshawar

Prof. Dr. Anwar Fazil Chishti

On behalf of the International Conference on Emerging Trends in Engineering, Management and Sciences (ICETEMS 2018), jointly organized by City University of Science and Information Technology Peshawar. I am pleased to welcome the intending participants. It is a real honor and privilege for me to serve as the Co-Chair of this conference. ICETEMS has really brought together a tremendous and rich diversity of authors and speakers from universities, government and industry around the globe to share ideas and new perspectives on a wide range of communications, engineering and computing research and technologies, addressing new technical and business issues essential to advancing today's engineering and technological environments.

The popularity of ICETEMS as the premier forum for communications, engineering, business and computing research has started to grow. The ICETEMS has already become a prominent forum, where researchers and practitioners openly exchange ideas and report progress in the exciting area of communications and networking. This year, ICETEMS will deliver a stimulating, informative and delightful program. We greatly value the participations and look forward to the insightful vision and thoughts of the invited speakers. Thanks also go to the distinguished professors, invited talks and participants. I would like to extend my most sincere congratulations to the authors and speakers for their contributions. It is their efforts and vision which provided the impetus to put together this outstanding technical program. The excellence and success of ICETEMS would not have been possible without the support of our sponsors. We greatly appreciate all our sponsors and well-wishers. It is my great honor and pleasure to accept the responsibilities and challenges of Conference Co-Chair. I hope that the conference will be stimulating, informative and enjoyable to all who attend it.

Message from President, The Institution of Engineers, Pakistan

Engr. Dr. Izhar Ul Haq

It is a matter of great pleasure that the City University of Science and Information Technology Peshawar is arranging "**Third International Conference on Emerging Trends in Engineering, Management and Sciences"** on October 18-19, 2018 in collaboration with Institution of Engineers Pakistan Rawalpindi/Islamabad Center, East Carolina University USA and Auburn University USA.

It is also a matter of great satisfaction that renowned experts from within the country and from abroad shall be presenting their valuable papers during the conference. This event will provide the opportunity to young Engineers to benefit from the knowledge of experienced Engineers in their relevant fields.

The City University is working hard for dissemination of knowledge by holding this International Engineering Conference in collaboration with National/International Institutions and universities for the benefit of Engineering profession and development of the Country.

The Chairman, Co Chairman, Program Chairman, Technical Chairman, Conference Secretary and other team Members deserve appreciation for organizing the Conference in Khyber Pukhtunkhwa Capital Peshawar.

I pray for the success of "**Third International Conference on Emerging Trends in Engineering, Management and Sciences"**

Message from Member Board of Governors, City University of Science & Information Technology, Peshawar

Prof. Dr. M.D. Shami, S.I., Ex-Vice President, Islamic World Academy of Sciences, Islamabad

This is exciting to know that City University of Science & IT is collaborating with reputable national and international institutes and has managed to organize conference on **"Emerging Trends in Engineering, Management and Sciences"** on October 18-19, 2018.

Providing platform to scholars where credible institutions like Institute of Engineers Pakistan, East Caroline University and Auburn University (USA) are partners in contributing towards new knowledge in Engineering, Management and Sciences is going to play a major role in creation and sharing of knowledge in relevant fields.

Throughout this conference, I would ask everyone to stay engaged, proactive and contribute towards shaping the future of our generations. My personal respect and thanks goes out to all of you.

I wish you all a very fruitful and rewarding conference.

Message from Member Board of Governors City University of Science and Information Technology, Peshawar and Former Principle, Khyber Medical College, Peshawar

Prof. Dr. Nasir-ud-Din Azam Khan

It gives me great pleasure to send you a very sincere message of support and good wishes at holding **3rd International Conference on "Emerging Trends in Engineering, Management and Sciences (ICETEMS-2018)"** on October 18-19, 2018. I send you this message as an individual who is a friend of Mr. Mohammad Sabur Sethi and many of the participants of this conference. But I send it also as a member of the Board of Governors of City University of Science & Information Technology, Peshawar.

I believe that nothing is more important in the present world than striving for the common good through progression in knowledge and technologies and its implication to the life. In this I appreciate your chosen conference theme **"Emerging Trends in Engineering, Management and Sciences"**.

An interdisciplinary dialogue to inspire and appreciate the Emerging Trends in Engineering, Management and Sciences for the common good and betterment of humanity and the community must be applauded. This relationship must also extend across generations as we are responsible to build a better future for our children.

I wish you all a very fruitful and rewarding conference.

Message from Member Board of Governors, City University of Science & Information Technology, Peshawar and Vice Chancellor, University of Peshawar, Peshawar

Mr. M. Asif Khan T.I.

It is a great pleasure to know that City University of Science and Information Technology (CUSIT) is holding 3rd International Conference on "Emerging trends in Engineering, Management and Sciences on October 18-19, 2018.

As we live in the an era of science and technology the theme of your conference is really contemporary. This conference will bring together researchers and intellectuals who are working in the fields of science, technology and other important disciplines. The aim should be to put emphasis upon the need to improve learning and provide openings to solve future challenges regarding social life, science and technology in the light of emerging sciences. This interdisciplinary dialogue can and will inshaAllah will be a success to provide support to different parties like academia and industries.

I congratulate all the organizers and participants of the conference and wish them a very fruitful and rewarding end to the conference.

Message from Member Board of Governors, City University of Science & Information Technology, Peshawar and Vice Chancellor, Fatima Jinnah Women University

Prof. Dr. Samina Amin Qadir

It is undeniably a great pleasure for me to know that City University of Science & Information Technology, Peshawar, is organizing **"3rd International Conference on Emerging Trends in Engineering, Management & Sciences (ICETEMS-2018)"** on October 18-19, 2018. I extend my warmest wishes to all organizing members and participants.

In many ways, this is not only a favorable event to reflect and think on contemporary challenges and future prospects in the fields of Engineering, Management and Sciences, but also an appropriate time to consider how this Conference can contribute to the advancement of this fast-developing global community. I would be most grateful if this Conference could further promote society through development of emerging technologies.

The Conference theme will provide an ideal opportunity to reflect upon the many contributions that multi-disciplinary coalition-building, understanding and intercultural gathering can provide in identifying effective solutions to global crises and challenges of science and technology and also relate it to our indigenous scenario.

With the warmest wishes for your success!

Message from Member Board of Governors, City University of Science & Information Technology, Peshawar *and CEO, Tariq Sultan & Co.*

Mr. Khalid Sultan Khwaja

It is my pleasure and privilege to send a message of support and best wishes to the organizers and participants of the 3rd International Conference on **"Emerging Trend in Engineering, Management and Sciences (ICETEM-2018)"** to be held on October 18-19-2018.

The theme of the conference **"Emerging Trend in Engineering, Management and Sciences"** is very topical in the present worldwide scenario and a creative way to explore the future. A good conference is always more than just an exchange of papers and ideas. I as a member of the board of governor sincerely wish and hope that this conference achieves success in creating awareness toward out shared responsibility and common destiny in the global village of technologies which we all well in.

I hope and pray that inter disciplinary dialogue at this conference inspire to lead us towards more and more socially and technologically developed worlds.

Wishing you an inspiring conference.

Message from Member Board of Governors City University of Science and Information Technology, Peshawar and Project Director, Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology (PAF-IAST), Mang, Haripur, Khyber Pakhtunkhwa

Nasser Ali Khan PhD

It is pleasing to know that City University of Science and I.T. is holding **"3rd International Conference on Emerging Trends in Engineering, Management and Sciences (ICETEMS-2018)"** on October 18-19, 2018. My message is about lifelong "learning and development". Staying in touch with fresh and emerging evolutionary developments of science and technology.

Irrespective of age, one can dedicate his life to learning, and make this a lasting commitment. In fact, we find that devoting our life to our own happiness alone, loses its charm with the passage of time. Let me assure you that all of us are born with special attributes which can be used to make a difference, all in our unique ways. Today's challenge is to create a new technological world based on our values. At the same time we must transform our economy, governance, education, religion, media, and sciences, so that they reflect our highest standards of ethics.

We must continue to learn from each other, as we are all in this together, challenged with advancing the great transition in technologies and social life.

I wish you all a very fruitful and rewarding conference.

List of Conference Committees

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KEYNOTE SPEAKERS/INVITED TALKS

1. STOCHASTIC FUNCTIONAL DIFFERENTIAL EQUATIONS DRIVEN BY G-BROWNIAIN MOTION WITH MONOTONE NONLINEARITY

Prof. Dr. Faizullah (Faiz) *(Department of Mathematics, Swansea University, United Kingdom)*

By using the Picard iteration scheme, this article establishes the existence and uniqueness theory for solutions to stochastic functional differential equations driven by G-Browniain motion. Assuming the monotonicity conditions, the boundedness and existence-uniqueness results of solutions have been derived. The error estimation between Picard approximate solution $y^k(t)$ and exact solution $y(t)$ has been determined. The L_G^2 and exponential estimates have been obtained. The theory has been further generalized to weak monotonicity conditions. The existence, uniqueness and exponential estimate under the weak monotonicity conditions have been inaugurated.

Bio Data: Dr. Faizullah has completed his postdoc from Centro de Investigacin en Matemticas, A.C. (CIMAT) Jalisco S/N Valenciana A.P. 402 36000 Guanajuato, GTO Mexico (North America) and PhD in Applied Mathematics from Ocean University of China. His research interest is stochastic Analysis, Probability Theory, Stochastic Differential equations, Population Dynamics and Finantial Mathematics. He has published more than 40 research publications in international journals. Currently he is working as a professor in Swansea University United Kingdom.

2. DIFFERENTIAL BETA, FIRM OPACITY AND ASSET PRICING IN THE UK STOCK MARKET

Dr. Muhammad Akbar, *Senior Lecturer in Finance, Birmingham City University (United Kingdom)*

Intervalling effect (frequency dependence) in beta, a significant empirical challenge for CAPM and the beta, has significant implications for portfolio theory in terms of the measurement of risk and return as well as performance measurement, evaluation and attribution. Firm opacity may explain frequency dependency in betas. Intervalling effect in betas and the role of opacity i.e. delay in adjusting to new information in asset pricing have been investigated to provide empirical evidence from the UK equity market and contribute to the body of knowledge in the area of asset pricing theory. The empirical analyses are based on daily, weekly, monthly and quarterly beta estimates of the UK sample stocks. The findings provide support for the unconditional CAPM i.e. no consistent mispricing in the UK equity market. However, the empirical trend in individual betas from descriptive statistics and the regression betas for the portfolios exhibited significant intervalling effect. The intervalling effect was robust and consistent across both equally and value-weighted portfolios as well as the two sub-sample periods and did not vary for betas measured from Scholes-William, Dimson, and Fama-French-Carhart specifications. The results of the panel regression analysis suggested that both firm opacity and delay in adjustment to news explained the cross-sectional variations in differential beta. The findings were robust to the introduction of different control variables i.e. liquidity, bid-ask spread, volume turnover, size, book-to-and market ratio. The findings from empirical estimation of alternative models suggested that only the augmented CAPM was able to consistently and accurately price both opaque and transparent assets at high (daily) frequency i.e. lower beta for transparent stocks and higher beta for opaque stocks.

Bio Data: Dr. Muhammad Akbar has completed his PhD in Finance (Differential Beta, Firm Opacity and Asset Pricing in U.K.) from Cardiff Metropolitan University. He has published more than 40 research publications in international journals. Currently he is working as a Senior Lecturer in Finance in Birmingham City University (United Kingdom)

3. THE IMPOSSIBLE HAS BECOME ACHIEVABLE IN AFRICA

Prof. Dr.Abid Yahya *(Botswana International University of Science and Technology)*

The production of cattle in Africa has barriers to it appearing in the form of cattle diseases such as Foot and Mouth (FMD), quarter evil, anthrax, and contagious abortion. Once attacked by these diseases, cattle are usually seen to possess particular signs and symptoms of diseases, showing a more pronounced effect and in such a case it may be late to treat the suffering cattle for such diseases.

The conventional way of telling the health status of a cow involves observation by farmers or guardians of the animals by visual inspection which is the case in Africa in both diagnosis for diseases and observing the cow for heat period. The proposed system is intended for practice in Africa to observe conditions in the life of cattle such as temperature, heart rate, rumen pH which can be used to deliver the health condition of a cow.

Water borne diseases and sanitation conditions have over 200 million cases reported annually, causing deaths world-wide and particularly in Africa. Water quality monitoring has therefore become vital to the source of clean and safe water. Traditional monitoring processes involve samples collection from several points in the distribution network manually, tracked by laboratory testing and investigation. This procedure has showed to be fruitless since it is difficult, time consuming and lacks real-time results to endorse proactive reply to water contamination. Wireless sensor networks (WSN) have since been considered a encouraging alternative to complement traditional monitoring procedures.

These networks are comparatively reasonable and let measurements to be taken remotely, in real-time and with minimal human involvement. This talk will discuss the application of WSN in environmental monitoring, with precise emphasis on water quality, FMD, Crops monitoring etc, in Africa.

Africa one of the largest telecom sector has come up with a number of digital innovations in the field of ICT, education, health, agriculture, energy, governance, finance and tourism.

Bio Data: Engr. Prof. Dr. Abid Yahya an esteemed scientist graduated with a BSc degree from University of Engineering and Technology, Peshawar, Pakistan in Electrical and Electronic Engineering majoring in telecommunication. Engr. Prof. Abid Yahya began his career on a path that is rare among other Researcher executives and earned his MSc and PhD degree in Wireless & Mobile systems, in 2007 and 2010 respectively, from the Universiti Sains Malaysia, Malaysia. Currently, he is working at Botswana International University of Science & Technology, and as a visiting consultant professor at Regent University College of Science & Technology. He has applied this combination of practical and academic experience to a variety of consultancies for major corporations.

He has over 110research publications to his credit in various Books, research journals of repute and conference proceedings. He supervised number of PhD and Master Candidates. Lately, his new book January 2017 edition “LTE-A Cellular Networks: Multi-hop Relay for Coverage, Capacity and Performance Enhancement” has been published by Springer International Publishing Switzerland.

Engr. Prof. Dr. Abid Yahya rewarding field research and his academic coursework, made a strong contribution to different research centers. During his work experience, he had collaborated with several international Universities and companies.

4. ACTIVE MUD VOLCANOES ALONG THE MAKRAN COASTAL BELT, SW PAKISTAN

Dr. Iftikhar Ahmed Abbasi *(Department of Earth Sciences, College of Science, Sultan Qaboos University, Muscat, Oman)*

The Makran coastal belt is over one thousand km long stretching from Iran to east of Karachi in Pakistan. A major active subduction zone known as Makran subduction zone defined by the underthrusting of the Arabian plate beneath the Eurasian plate runs parallel to the coastline. The subduction zone is associated with a thick accretionary sedimentary wedge deposited in an active fore-arc basin containing very thick detrital sediments contributed by the accretion of the subducting plate since Late Eocene time. The sediments in the fore-arc basin are fine grained usually of clay size fraction deposited in highly fluidized conditions trapping methane gas. The fluidized mud diapirically moves upward along weak zones as mud volcanoes due to high sedimentation rates and escaping gas pressure piercing through the overlying sediment layers. The development of mud volcanoes shows a close relationship between the sedimentation rates, gas escape from sediments and tectonic activity. Mud volcanoes are found in abundance both onshore and offshore Makran Coast. Most of the mud volcano clusters in Makran coastal areas (onshore) are associated with fault zones and are believed to be triggered by tectonic activity. The area to the north of the Makran coastal belt is seismically active where sever earthquakes of magnitude 7 and above is a common phenomenon such as Awaran earthquake of 2013 measuring Mw=7.7 and Mw=8.2 of 1945. The seismic activity of this scale triggers appearance of new islands off the Makran coast in the Arabian Sea such as one that appeared with 2013 major earthquake.

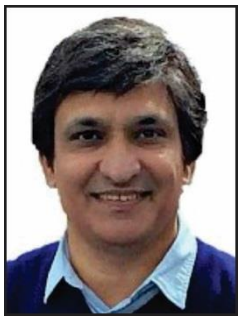
In this presentation we will review major mud volcanoes formed along the Makran coastal region by describing their evolution history and mechanism of their formation. It will also describe the sudden appearance of islands off Makran coast since 1945 major earthquake and their importance in the geological history of the coastal region.

Bio Data: Dr. Ahmad Abbasi has completed his Post-Doc from Department of Geological and Environmental Sciences, State University of New York and his PhD in Earth Sciences from University of Cambridge. His research interest is Geology (Sedimentology & Stratigraphy). He has published more than 60 research publications in international journals. Currently he is working as a professor in Sultan Qaboos University, Muscat, Oman**.**

5. CYBER SECURITY

Dr. Atif Khan (*Information Technology Consultant Princeton, New Jersey, USA)*

Cyber Security is the protection of all internet connected networks and includes all the techniques (technologies, processes and controls) used to protect the usability, reliability, integrity and safety of all the *end-points* i.e. computers, programs and data from unauthorized access, from damage or from cyber-attacks that are aimed for exploitation. On the other hand, **Network Security** is the protection of all *network devices* and includes the techniques to protect the usability, reliability, integrity and safety of the network devices. Almost all enterprises, corporate networks and data centers are connected to the internet either directly or through centralized data centers, hence cyber security and network security is of utmost importance for any company. Cyber Security objectives include (i) Reducing enterprise risk and protecting the business, (ii) Moving from reactive response to proactive mitigation, (iii) Increase visibility over the environment, and (iv) Meeting the compliance/regulatory requirements. One major component of a comprehensive Cyber Security solution is to have a state-of-the-Art Security Operations Centers (SOC). A SOC can protect mission-critical data and assets, can prepare for and respond to cyber emergencies, can help provide continuity and efficient recovery and can fortify the business infrastructure. The SOC's major responsibilities are to monitor, analyze, correlate & escalate Intrusion events, to develop appropriate responses, to protect, detect, respond, to conduct incident management and forensic investigation, to maintain security community relationships and to assist in crisis operations. The SOC must demonstrate compliance with regulations, protect intellectual property and ensure privacy properly, manage security operations effectively and efficiently, provide real-time insight into the current security posture of your organization, provide security intelligence and the impact of threats on the organization and enable an organization to know who did what, when - and prove it (evidence)



Bio Data:

Experienced Vice President Sales with a demonstrated history of working in the information technology and services industry. Skilled in Analytical Skills, Customer Relationship Management (CRM), Relationship Building, Team Building, and Technical Recruiting. Strong human resources professional with a MBA focused in Marketing & Finance from Janhit Institute.

6. Dr. Muhammad Ashraf Khan (Austrailia MPCATP, PGCB Life Member Lead-AP)

Abstract: Among the significant emerging trends in the professional as well academic realms is the democratization of knowledge. World's leading institutions have begun to shift their approach to open access formats for publications and course contents. In the profession of Architecture specifically there is an emergent interest in participation and inclusion of non-experts in expert level decision-making. Dr. Mohammad Ashraf will briefly share selected illustrative examples from the field of Science dissemination in general and PSD in particular to discuss the implications of this emerging trend for academicians and practitioners in Pakistan.

Bio Data: Dr. Mohammad Ashraf Khan holds a doctorate in participatory spatial design (PSD) from the Sydney School of Architecture, University of Sydney. He has taught at the University of Technology, Sydney and also at NED University of Technology, Karachi. His professional experience includes serving as Project Architect for the 'Self Help Schools Construction Program' of the Aga Khan Foundation, under which he supervised the construction of more than fifty village-level small school buildings in Gilgit and Chitral. Topics of his publications include community participation, locative media and augmented reality. Currently he is on a visit to Pakistan for two years in connection with a project aimed at the introduction of low-cost earthquake-resistant construction in northern regions of Pakistan.

CONTANT

BIOLOGICAL SCIENCES

NANOMEDICINE: AN INTERDISCIPLINARY PLAY TO COMBAT THE DISEASES

(Invited Talk)

Muhammad Ismail *(Institute of Biomedical and Genetic Engineering Islamabad)*

Abstract: Interdisciplinary research has revolutionized the field of medicine and we have witnessed exponential increase in the high-impact research in past few decades. Rapidly developing resistance, modest clinical outcome and off-target effects are some of the major stumbling blocks which have confounded standardization of therapy. Medicinal chemistry and nanotechnology may have the answers to outstanding questions of clinicians and can prove to be efficient in successful translation of therapeutics from bench-top to the bedside. Excitingly, many bioactive ingredients isolated from natural sources having experimentally proven efficacy are currently being tested for improved bioavailability by conjugation with different nanoparticles or by using different nanotechnologically assisted delivery systems.

We work on silver nanoparticles synthesized through microalgae demonstrated considerable anticancer, anti-bacterial and antiviral activity. We also tested different plants for biological activities. Cassia angustifolia was noted to be an effective against different cancer cell lines and microbes. Structures of the bioactive compounds isolated from Cassia angustifolia were elucidated by NMR and ESI-MS spectrometry. Pine roxburgii and Ricinus communis were effective against multi-drug resistant Klebsiella pneumonae. Moreover biological applications of Ce doped CuO nanoparticles, Cu and Mg Doped ZnO Nanoparticles alone or in conjugation with extract from medicinal plants. We have reported significant antibacterial activity displayed by these conjugates. We also provide evidence of targeted killing of Multi-drug Resistant Bacteria by Ni Doped ZnO Nanorods and Ag doped ZnO nanorods. Recently, we have experimentally verified that Sn doping induced enhancement in the activity of ZnO nanostructures against antibiotic resistant S. aureus bacteria. Future studies must converge on a better and considerably improved understanding of the healing effect and toxicological profiling of the nanotechnologically delivered drugs in animal models.

UTILIZATION OF FINGER BASED SENSORS IN GENERATING ECG REPORT TO PROVIDE EASE TO PATIENTS

***(Ref No.** ICETEMS-18-077)*

Azaz Ali *(City University of Science and I.T, Peshawar)*
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Abstract: Electrocardiogram (ECG) plays vital role in diagnosing large number of diseases and disorders related to heart. ECG devices are able to perform multiple parameters by analyzing the patterns of bio signals. The state-of-art ECG machine uses electrodes attached to human body using gel. The whole process agitates the patient resulting in disturbed ECG report by producing noise due to movement, imbalanced electrodes, and heavy objects. The proposed ECG system is portable finger-based system that generates ECG report in minimum time duration with providing ease to users. The system replaces disturbing electrodes by a single bio signal identification sensor. It takes signals from one finger of patient through sensor in approximately 7 seconds. The sensor is followed up by combination of various capacitors and buffers in order to enhance signals. The signals are then transferred to software using USB port for several medical required filtrations and overall noise removal. The result of the process is an ECG signal representing heart condition of patient. The results can be stored for future medical investigations like

improvement or decline in health of patient. The proposed prototype is deployed in several hospitals for testing. The system evaluated through comparison method with current system and results are satisfactory.

Keywords: ECG, Finger Based Sensor, IR Sensor

COMPUTER SCIENCE AND IT

IMPERATIVES OF SOFTWARE ENGINEERING EDUCATION

(Invited Talk)

Sarah Shahzad *(University of Peshawar)*

Abstract: Software Engineering education is the focal point for the future and success of a software development industry. Training and education of software engineering at graduate level is aimed at developing basic software development skills and fundamental theoretical concepts of software development, project management and other supporting areas. It is also meant to prepare the perspective software engineers for real life software development as it is important to understand the environment and setting of professional software development industry, which is quite different in nature as compared to the academic setting. Learning outcome is optimized when imperatives of Software Engineering education are properly understood. Expertise in Software Engineering is two-fold - requiring strong theoretical background of fundamental concepts together with application of these theoretical concepts. This is attained with practice and experience not only on technical side but also requires working with certain soft skills. Hence Software engineering education requires training in multiple dimensions, that is, theory, technology, application, business environment and setup, and soft skills to deal with human factor. The aim of this talk is to broaden the concept of teaching Software Engineering, by extending the scenario from lecture-based class room teaching to using multiple teaching styles - including project- based and game-based teaching.

AN ONTOLOGICAL CASE BASED REASONING AND LEGAL CASE REPRESENTATION

***(Ref No.** ICETEMS-18-011)*

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Wajid Ahmed Channa *(Sukkur IBA University)*

Abstract: There are two concepts of the study; one is to perform case based reasoning by means of deciding matters via relating them with the decisions; the decision, which are made earlier in the same area. Whereas, the other aspect is to explore the idea behind easiness for representation of legal cases, by interpreting them in an ontological interface as well as the computational strategies to represent legal cases. The study is designed to be implemented in judicial system, whereas, the sample of practices is taken from judicial district Sukkur and observed that the Cases are the major factors of the study. The strategies for implementing the said study will start by fetching the idea of current processes adopted by the department, later on going through the identified problems along with their proposed solutions, then sketching an ontological interface and in the last to come up with a fully ontological operational environment.

Keywords: Court ontology, perceived data, reasoning, pattern matching, judiciary

A REVIEW: BIG DATA CONCEPT, CHALLENGES AND TOOLS

***(Ref No.** ICETEMS-18-016)*
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Sehrish Habib (*Department of Computer Science GC University Faisalabad, Pakistan)*
Abdul Ghani (*Department of Computer Science Virtual University of Pakistan)*

Abstract: Abstract: Now a day big data is very hottest topic in research. Many companies face problem to store, analyze and visualize the huge amount of data because data is increasing day by day. Big data have different characteristics like variety, volume, and velocity. Big data is useful for companies or organizations because it help them in gaining more profit and deep understanding and taking a lead over the competitor. When we are adopting or accepting this technology it becomes essential to know that different issues and challenges. In this paper we highlight the fundamental concept of big data, characteristic, challenges, technique and technologies for handling big data.

Keywords: Big data, HAMR, IN memory Analytics, Hadoop

COMPARATIVE ANALYSIS OF EPIDEMIC AND SPRAY & WAIT ROUTING PROTOCOLS IN DELAY TOLERANT NETWORKS OWING TO DIFFERENT MOBILITY MODELS

***(Ref No.** ICETEMS-18-050)*
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Usman Durrani *(The University of Agriculture Peshawar, Pakistan)*

Abstract: Delay Tolerant networking is an approach that pursues to report the problems which reduce communication in disrupted networks. DTN works on Store-Carry and Forward mechanism in such a way that a message may stored by a node for comparatively large amount of time and carry it until a proper forwarding opportunity appears. To address these issues different routing protocols are functioning. DTN routing protocols are majorly categorized in two groups on the basis of their nature. One group has quota based nature while the other one has flooding based nature. The present study aims to compare epidemic routing protocol (Flooding based nature) with spray & wait routing protocol (quota based nature) by deploying it on two different mobility models i.e Random Way Point (RWP) and Shortest Path Map Based Mobility Model (SPMBMM). To evaluate the efficiency and efficacy of said protocols following parameters were considered to calculate the best. a) delivery probability, b) message relayed ratio, c) buffer time average, d) overhead ratio and e) hope count with respect to varying size of buffer. For simulation purpose ONE simulator was used to analyze the performance of both routing protocols. After simulation the results depicted that delivery probability of spray & wait protocol is higher than epidemic protocol with buffer size of 5 MB in SPMBMM. While epidemic has a higher message relayed ratio with buffer size 5 MB in SPMBMM. The major hitch of epidemic protocol is its high overhead ratio in SPMBMM. Research work further investigated that buffer time average of both the epidemic and spray & wait protocol is almost same for 3MB buffer size and 5MB buffer size respectively in RWP. The Hop Count average of epidemic routing protocol having buffer size of 3MB has a high rate as compared to spray and wait protocol in SPMBMM.

Keywords: Delay Tolerant Networks, Epidemic, Spray and Wait, Random way Point, Shortest Path map based model.

MOTIVATION TOWARDS COTS BASED SOFTWARE DEVELOPMENT FOR SMALL AND MEDIUM ORGANIZATION

***(Ref No.** ICETEMS-18-051)*
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Hina Mahmood *(Qurtuba University Peshawar, Pakistan)*

Abstract: COTS (Component off the shelf) based software is a way to build up new system using the commercial products. It is the assortment of the best possible components/modules or units that could best satisfy the user requirements. COTS components can be built in-house, while some may be developed by a third party (organization or programmers) identified as (COTS). Through this research the researcher had agreed to the following major success factors of COTS such as time, cost, and effort reduction. Additionally, it is highly componentized, secure software, can speed up production, reliability and prior testing [Success factors can be defined as activities, functions, artifacts or business practices that bring benefits to organization (economic and social benefit) and customer (requirements satisfy)]. The purpose of this research is to highlight the importance of COTS based software development in KP region by giving their benefits in software organization. The researcher has executed her research in the KP geographical area (software house in dean trade center) and was able to find out the benefits, costs and security of these Commercial off the shelf components by distributing different research paper in different software housed of KP. Moreover, a systematic literature review was conducted as a research methodology.

Keywords: COTS, component based development, re usability, software

A SURVEY ON MACHINE LEARNING ALGORITHMS FOR QUERY BASED TEXT SUMMARIZATION

*(**Ref No.**: ICETEMS-18-080)*
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Sohail Muhammad *(City University of Science and IT, Peshawar)*

Abstract: Extraction of relevant information on specific query from rapidly growing data is a concern for users. A reasonable amount of work is done in this area to overcome extensive searching and to reduce time required. Time consumption is certain in order to scan and analyze data from all the documents for provided query. Therefore, text summarization is paramount research area these days. Text summarization is about to find relevant information from single or multi documents. The knowledge-based and machine learning are the two methods for query-based text summarization. Machine learning approaches are used for calculating probabilistic feature in Natural Language Processing (NLP) for both supervised and unsupervised learning. The goal of this survey is to identify and analyze machine learning approaches for query-based text summarization to reduce time and effort in order to find useful summary for the users as specified by their need. The algorithms for implementation are selected on literature survey. Also, a comprehensive discussion is done to present the internal working mechanism of machine learning approaches used for query-based text summarization.

Keywords: Machine Learning, Query-Based, Text Summarization

A CASE STUDY ON GAME DEVELOPMENT USING DIFFERENT SOFTWARE MODELS WITH THREE PERSON TEAM: RISKS AND BENEFITS

*(**Ref No.** ICETEMS-18-082)*
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Kashif Basir *(City University of Science and IT, Peshawar)*

Abstract: The gaming industry is no longer a niche arena for a certain age group or consumer segment. With the advent of mobile gaming and improvements to hardware used in playing these games, gaming has become a viable form of entertainment for players from all backgrounds and ages. Famous gaming companies like Ubisoft, Rock Star Games, Activation and Blizzard are making millions and billions of dollars worldwide and are bringing all that money to their country and are playing important role in the economy of the country. Developing a game requires a lot of hard work and dedication. It requires a lot of people: designers, developers, artists, programmers to work together to create a playable game. Game Development also requires a proper software development life cycle. With Android and small PC games on arena, it is difficult to hire a large team. Moreover, the time frame to develop android games is very less in order to match the market competition. In this study we have selected a PC and Android game following iterative and incremental SDLC respectively with certain changes to adjust with three-person teams for each game. During development the difficulties faced are recorded in tabular manner. The major risks were faced in phase of tool selection, tool working environments, game performance, integration and testing. This case study provides a summarized discussion to overcome these problems for future developments.

Keywords: Game Development, Android, PC Games

AUGMENTED REALITY FOR ONLINE SHOPPING USING ANDROID BASED MOBILE APPLICATION

*(**Ref No.** ICETEMS-18-084)*
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Abstract: The main objective of this research is to elaborate the significance of augmented reality and find the way how it could provide the comfort to the people. We have taken an online shopping model as scenario. In many circumstances it happens that people do not get chance to select the best item due to shortage if time. Augmented providing a virtual world of shopping. A virtual world that would provide customers all the information related to location of outlets in the mall and the features of the products placed on the outlets. It would also help brands to promote their offers at a very low cost. The research is a complete description of the system it involves analysis of the application from every aspect. Java, PHP, MySQL are the technology used. This research utilize the mobile based application using android system. The system used would utilize the features of GUI and provide a uniform appearance and texture between all the pages and provide an exact map for finding location.

Keywords: augmented reality, virtual reality, GPS, SWOT, agile model

GENERALIZE TECHNIQUES FOR AUTHOR AGE AND GENDER IDENTIFICATION

*(**Ref No.** ICETEMS-18-140)*
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Zarah Zainab *(City University of Science and IT, Peshawar)*
Rashid Naseem *(City University of Science and IT, Peshawar)*

Abstract: Author profiling is part of information retrieval in which different prospective of author are observed by considering various characteristics like native language, gender and age. Different techniques are used to extract the required information using text analysis like identification of author on social media. Author profiling helps in security and marketing purposes for identification and capturing authors writing behavior through messages, post, comments, blogs, tweets, chat logs and other possibilities on online social network. The majority of work in this area has been done for English and other native languages. On the other hand Roman Urdu is also getting attention for author profiling task but it needs to convert roman Urdu to English to extract important feature like Named Entity Recognition (NER) and other linguistic features. The conversion may loss important information while having limitation to convert one language to another language. This research explores generalized techniques that can be use for all languages to overcome the conversion limitation. Vector Space Model (VSM) and Query Likelihood (QL) are used to identify the author's age and gender. Experimental results revealed that QL produces better results in terms accuracy.

Keywords: Author profiling, Information Retrieval ,text analysis,Vector Space Model (VSM),Query Likelihood (QL)

FALL DETECTION TECHNIQUES: A SURVEY

*(**Ref No.** ICETEMS-18-142)*
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Abstract: Fall has become the most imminent health problem in the world. Each year thousands of people over age 65 experience falls. Because of that a large number of elderly people get injured. Even some of them die if not rescued immediately. With such immense increase in the falls that harms the individuals physically and mentally. Researchers found ways to tackle the problem by devising different techniques for the purpose of fall detection. Most of techniques being used relied on Threshold based algorithms (TBA). While some of them brought the Machine Learning (ML) into the field to fight against falls. But still every technique has its advantages and disadvantages. We are doing a research survey in which we are exploring techniques that are totally based on TBA's, ML or the combination of both TBA and ML.

Keywords: Fall Detection, TBA, Detection Techniques

SOFTWARE REMODULARIZATION USING MULTI-FACTORS MULTI-OBJECTIVE FORMULATION

***(Ref. No.** ICETEMS-18-145)*
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Rashid Naseem *(City University of Science and IT, Peshawar)*

Abstract: Usually, software systems are rapidly updated to meet the current requirements. Adding new requirements or updating the system may erode the system architecture which may result in difficulty to understand and maintain the software system. To Remodularized the software system architecture, a number of techniques have been proposed. Moreover, search-based optimization techniques (SBOT) have also been utilized to solve the Remodularization problem. SBOT have been using Single-Objective or Multi-objectives formulation while considering the software architecture function. However, therefore, modularization is applied either to solve the Remodularization problem by using Single-objective across Multi-factors or Multi-objectives across Single-factor. This paper introduces a novel approach by utilizing Multi-factors with Multi-objectives formulation. This is performed using NSGA-III Multi-objectives evolutionary algorithm and better performance of the proposed formulation in term of low coupling and high cohesion is expected.

Keywords: Remodularization, Search base Optimization, Multi-Factors, Multi-Objective, Reverse Engineering.

FACT EXTRACTOR SYSTEM FOR JAVA

*(**Ref. No.** ICETEMS-18-165)*
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Abstract: Software systems are difficult to understand without maintaining proper documentation. Due to rapid changes occur in software systems it rarely happens to update the documentation and sometimes documentation may not be available. This leads to the problems in software maintenance. To understand the system, an attempt can be made by extracting useful information from the source code having without documentation or no updated documentation. The useful information that can be extracted from the source code of the software system is in the form of entities and relationships among them. In this paper, a fact extractor tool is introduced named JAFE (Java Applications Fact Extractor) which extracts a large number of relations among entities from the Java source code automatically.

Keywords: Features Extractions, Java Applications, Entities, Relationship, Reverse Engineering

CROSS-PLATFORM TWO-WAY MEDICINE AUTHENTICATION

*(**Ref No.** ICETEMS-18-167)*
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Falak Sher *(Universiti Teknologi, Malaysia)*

Abstract: Mobile phones are widely used nowadays for communication. Information is spread from one location to other using mobile phones. Smartphone helps to make our everyday life work easier. In this study, a two-way authentication-based application is developed for medicine authentication. The proposed system is a cross platform application which uses scratch-off codes and verification messages. The system was validated and found 94% accurate for authenticating any category of medicine. It authenticates the genuiness of bottles, tubes, Injections, boxes, even strips of the medicines. The only limitation of the proposed system is to authenticate unpacked medicine.

Keywords: Medicine Authentication, Fake Medicine, Scratch-off codes Generation,

IMAGE PROCESSING BASED ON OFFLINE HANDWRITTEN SIGNATURE RECOGNITION AND VERIFICATION SCHEME

*(**Ref No.** ICETEMS-18-193)*
Bibi Amna *(City University of Science & IT, Peshawar)* aamnaaarman11@gmail.com

Abstract: In today's world numerous techniques are used for human identification. These can be classified into vision based and non-vision based. Vision based are eye, face and finger print recognition and iris and retina scanning, whereas the mostly widely used non-vision based techniques are voice recognition and signature recognition and verification. Signature has remained pivotal bio-metric trait as it can be used for a person's identity as every person has a different signature from that of the other, which distinctive characteristic is either physiological or behavioral. Handwritten signature serves as "seal of approval" and is widely used mode for authentication purpose in fields like finance, education, legal transaction and banking etc. Online i.e dynamic and offline i.e static are the two key types of signature recognition and verification techniques. Image processing technique has been used in this study for offline signature identification. Under this system image of a person's signature is obtained and its recognition is made through several techniques including ANN. For training of the system signature as an image is taken as a sample and checked with already stored samples, which requires authentication. Many researches have been carried out on different aspects of this system yielding distinctive results, which aspects are image feature extraction; modified NN approach; global feature extraction using ANN and training. In this paper a brief description of offline handwritten signature recognition and verification scheme is presented.

Keywords: Offline Signature, Artificial Neural Network, Feature Extraction, Pre-processing, Approaches of signature recognition & Verification

PREDICTION OF EARLY DEFECTS IN SOFTWARE USING SOFTWARE MATRICES: A COMPARATIVE STUDY

*(**Ref No.** ICETEMS-18-195)*
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Abstract: A defect in a software product reflects its inability or inefficiency to meet the specified requirements and criteria and subsequently prevent the software application to perform its desired and expected working. If software defects are not at found occurs at right time it will increase the cost of software development. Identification of defects at early stage of development is the best solution. Numerous techniques have been developed for early prediction of software defects, primarily starting from mathematical/statistical formulas to different data mining and now machine learning techniques. In the last few decades, several software defect prediction models have been proposed using software metrics. Software metrics such as traditional software metrics, object-oriented software metrics. In real –time scenario, organization use Pareto analysis for software quality measurement where software metrics are used along with highest metrics value for particular software application. Every software has a unique structure and it's different for software due to which complexity of software increases. To address the complexity issue, non-parametric techniques are presented for software defects prediction, non-parametric techniques such as data mining like k-mean clustering model, Naïve Bayes techniques, Decision tree etc., Deep learning techniques and DNN techniques are discussed in this paper.

Keywords: Early Defects, Software Matrices, Prediction, machine learning

EVALUATING CLOUD TASK SCHEDULING ALGORITHMS USING THREE SYNTHETIC DATASETS

***(Ref No.** ICETEMS-18-205)*
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Abstract: Cloud computing is known for providing dynamic services using very large scalable and virtualized resources over the Internet. The job scheduling plays a crucial role to enhance the performance of the Cloud computing. The scheduling mechanism is required to distribute the dynamic local workload evenly across all the nodes in a manner that optimize the performance of the overall system and minimize the make span. Various research studies have attempted to build an efficient job-scheduling algorithm that is compatible and applicable in Cloud computing environment. Efficient scheduling plays an important role in the better utilization of resources. In this paper, the performance and analysis of various scheduling algorithms have been presented using performance metrics of throughput and make span.

Keywords: Cloud Computing, Task Scheduling, Performance Analysis, Cloud Datasets.

BIG DATA: THREATS, OPPORTUNITIES, TOOLS AND GOOD PRACTICES

*(**Ref No.** ICETEMS-18-272)*
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Muhammad Sajid Rehman

Abstract: Big Data is a collection and combination of huge datasets that are difficult to process using traditional database systems and data processing applications. The creation and processing of data exceeds 2.6 quintillion bytes on a daily basis. The major source of this data comprised of pictures, videos, posts on different social media networks, daily transaction records, intelligent sensors, mobile phones, and GPS signals. All of these come under the umbrella of Big Data. Big Data is the driving force for all innovative, informative and creative things to happen. This paper will focus on different challenges, their solutions and technologies which are used nowadays. Different V's are here to explain the real challenge of big data. These V's includes Volume, Variety, Velocity, Value and Veracity. There are other different challenges which are associated with the term "Big Data" and this research effort will explain all the challenges and its solution for the world in a true sense.

Keywords: Big Data, Big Data Technology, Apache Hadoop, Social Media,

HUMAN COMPUTATION BASED VIOLENCE DETECTION

*(**Ref No.** ICETEMS-18-362)*
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Abstract: Surveillance systems have difficulty in tracking suspicious events because it is difficult for the observer to detect a short sequence of suspicious event in large number of video streams. In this regard we need a system that can automatically detect suspicious activities in such video feeds. In this work, we've aimed to detect violence or suspicious activities in large number of CCTV video streams. Based on the training model, the system detects suspicious activities in the incoming streams. The system then extracts short video clips containing possible violence. It then deeply inspects the extracted videos and classify them as suspicious or non-suspicious. For feature extraction, space time interest point was used. K-means was used to cluster those features. Finally, the data was classified using Linear SVM with an accuracy 70%. Further, PCA was used to identify significant features that could help our model in learning fast by ignoring unimportant features. In this work, human computation is also used to assign proper tags to suspicious videos clips.

Keywords: Computer Vision, SIFT, Violence Detection, Bag of Words, Random Forest Tree, SVM Classifier Linear

CONSTRUCTION
PROJECT MANAGEMENT

TRANSFORMATION OF 3DS JOBS USING BUILDING INFORMATION MODELING (BIM) – A PROSPECTIVE OF MALAYSIAN CONSTRUCTION INDUSTRY

*(**Ref No.** ICETEMS-18-089)*

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Abstract: The construction industry of Malaysia is very dynamic in nature with significant contributions in the economy of this fast growing economic power. However, it is not performing to its full potential. The 3Ds jobs has resulted poor image in the eyes of local potential workforce. The inability to attract and develop the local workforce is one of the challenging tasks for the Malaysian construction industry. Therefore, the transforming the image of this pillar of Malaysian economy is the need of hour. The study aims to propose a development model which is deemed to transform and counter the perception of construction as a "Dirty, Difficult and Dangerous" image of industry. Building Information Modeling (BIM) has been adopted in such development. The implementation of proposed model is expected offset the 3D image, restore the trust and attract the local workforce in the industry ultimately resulting in the prosperity of industry and economy of the country.

Keywords: Malaysian construction industry, 3Ds, workforce, Building information modeling

DISASTER
RISK MANAGEMENT

MOLECULAR AND PATHOPHYSIOLOGICAL ANALYSIS OF CAMEL MILK INSULIN

*(**Ref No.** ICETEMS-18-059)*

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Rais Ahmed *(Government College University Lahore)*

Abstract: Diabetes mellitus (DM) is a big health concern for human beings. Currently, the treatment regimen of diabetes includes various antidiabetic drugs, such as α-inhibitors, glinides, sulfonylurea and biguanides which improves the regulation of glucose but have several negative consequences for patients. Conventional insulin treatment is associated with multiple defects such as hyperinsulinemia, pain and discomfort. Camel milk Insulin is lower in molecular weight comparable to insulin which mimics interaction of insulin with their receptors. The camel milk has been noticed to bring histopathological parameters of the patients towards normal ranges. Genetic studies have reported camel insulin to be positively affecting on enzymes and proteins of vital importance for cardiovascular and hepatorenal consideration. Insulin did control phosphoenolpyruvate carboxykinase (PEPCK) gene transfer that have gluconeogenesis, and played vital role in regularization of enzymes like pyruvate kinase, fatty acid synthases, glucose transferase, carnitine palmitoyl transferase, and insulin receptor substrate. In comparison to cow milk, camel milk holds higher contents of such substances like zinc, which plays a key role on islets of β cells regarding secretory activity of insulin. On the other hands, camel insulin is packaged in nanoparticles that allow it to pass through the stomach and allows its entry in the circulatory system. It also inhibits the elevation of hormones, TNF-α and TGF-β1 levels, which are produced in response to DM. Preservation of milk is necessary aspect but heat treatment may destroy insulin like protein of camel milk. This review, thus, focuses on pathophysiological and molecular analysis of camel milk insulin while previous trials being part as well to give comprehensive profile.

Keywords: Camel milk insulin, nutraceutical, antidiabetic, hepatochemical,

RECENT TREND OF DAIRY MILK STAPHYLOCOCCUS AUREUS' ANTIBIOTIC RESISTANCE, AND ITS MODULATION BY NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

*(**Ref No.** ICETEMS-18-085)*

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Abstract: Milk, unfortunately, is suffering from zoonotic multiple drug resistance bacteria including Staphylococcus aureus. Many antibiotics are currently ineffective, so there is currently an urgent need for new alternative therapies. Current study was planned to estimate the status of milk safety from disease, response of pathogen against antibiotics, and to test non-antibiotics with antibiotic for synergy. Milk samples from bovine were processed for identification of S. aureus using disk diffusion test in Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad. Amikacin and ampicillin resistant isolates were tested against aspirin and Meloxicam in combination with antibiotics. Descriptive statistics found 65% of tested samples positive for subclinical mastitis while 83.33% of these were harboring S. aureus. Frequency distribution indicated 46.08, 30.72, 46.08, and 15.36 times all four quarters, three quarters, two quarters, and single quarter respectively, of dairy animal to be positive for subclinical mastitis. Bacterial isolates were tested against antibiotics responded chloramphenicol, trimethoprim, streptomycin, enoxacin, and ciprofloxacin were 100, 83.8, 42.8, 42.8, and 57.15% in sensitivity range respectively. The selected resistant isolates of S. aureus were tested against combinations of antibiotics with non-antibiotics. The results were promising for amikacin and amoxicillin when they were used in combination with aspirin and meloxicam. The individual zones of inhibition depicted by amoxicillin at 30 and 60mcg/mL increased by 3 and 6 millimeters higher when in combination with 62.5mcg/mL of aspirin and meloxicam, respectively. Amoxicillin at 60mcg/mL in combination with 15.6mcg/mL of meloxicam and aspirin produced 1 and 3 millimeters higher zones of inhibition than to the individual response presented by amoxicillin. Amikacin (30mcg/mL) in combination with aspirin (62.5mcg/mL) also produced a synergistic response. In conclusion, resistance was reversed when a combination of antibiotics and non-steroidal anti-inflammatory drugs were used against multiple resistant S. aureus.

Keywords: Staphylococcus aureus, antibiotic susceptibility, Amoxicillin, Aspirin, Meloxicam

EDUCATION

CLASSROOM MANAGEMENT STRATEGIES AND THE IMPACT ON STUDENT ACHIEVEMENT

***(Ref No.** ICETEMS-18-078)*
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Abstract: The purpose of this study was to examine the effects of Behavioral and Instructional Classroom Management styles on Students' Academic Achievement in Secondary Schools of District Peshawar.The hypotheses were tested in order to explore the impact of two dimensions Behavioral and Instructional management styles of classroom using scales adopted from (Martin & Sass, 2010).The results are based on the survey conducted on 200 SST and SCT teachers from government sector which constituted the sample for this study. The findings of behavioral management style indicates that there were no statistically significant differences between group means as determined by one-way ANOVA ($F(2,197) = .718$, $p = .489$). Similarly, Instructional management style result indicates that there were no statistically significant differences between group means as determined by one-way ANOVA ($F(2,197) = 2.757$, $p = .066$), as well. Behavioral classroom management style at ($t = 1.620$; $p < .107$) was found statistically insignificant while Instructional classroom management style at ($t = 3.547$; $p < .000$) was found statistically significant. Behavioral classroom management style path to PPS was not significant ($\beta1 = 2.650$, $p = .107$); while Instructional classroom management style positively predicted PPS ($\beta2 = 3.197$, at $p < .001$). Constituted variable Classroom management (CM) at ($t = 5.460$; $p < .000$) was found statistically significant. Classroom management (CM) positively predicted PPS at ($\beta = 7.714$, at $p < .001$).

Keywords: Behavioral and Instructional Classroom Management styles, Students Achievement.

THE RELATIONSHIP BETWEEN SELF-EFFICACY AND MOTIVATION OF STUDENTS WITH THEIR ACHIEVEMENT LEVEL IN CHEMISTRY AT SECONDARY LEVEL IN PESHAWAR

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Abstract: The study was undertaken to explore relationship between self-efficacy and motivation of secondary school students on their achievement level in the subject of Chemistry in Peshawar. Self-efficacy of students, their motivational level and their confidence in Content Knowledge were taken as variables. All the secondary schools of Khyber Pakhtunkhwa were the universe of the study. 240 Secondary level students were randomly selected as sample of the study. The data was collected through scales "Motivated Strategies for Learning Questionnaire" (MSLQ) and "Knowledge Confidence Survey" (CKCS) (Xin Wu 2013). The Motivated Strategies for Learning Questionnaire (MSLQ) was used to measure two variables i.e., Self-efficacy (SE) and Motivation (MOT), whereas, Content Knowledge Confidence was used to measure the level of confidence and the same test was used to measure the achievement level of secondary school students (here students' score). Reliability test applied on test items of all three variables confirmed reliability from acceptable to good ranges. The Pearson's correlation results for Self-efficacy and Students' Achievement estimated at $r=.317$ at $p<.001$; while Content Knowledge Confidence with Students'

Achievement estimated at r=0.312 (p<0.001), showing positive relationship. Meanwhile, the results showing a a weak positive relationship of motivation with students' achievement i.e., r= 0.24 (p=0.000).

Keywords: Self-Efficacy, Motivation, Content Knowledge Confidence, Students' Achievement

MEASURING ENVIRONMENTAL ATTITUDE AND PRO-ENVIRONMENTAL BEHAVIOR AT SECONDARY SCHOOL LEVEL

***(Ref No.** ICETEMS-18-098)*

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Abstract: The study was undertaken to explore the relationship between environmental attitude and pro-environmental behavior. All the secondary schools in Khyber Pakhtunkhwa, were the universe of the study. 200 Secondary level students and teachers were randomly selected as sample of the study. The data was collected through an adopted scale by Heyl, Moyano Díaz and Cifuentes's (2013) scale of 'Environmental attitudes' and 'Pro-Environmental Behavior'. The data collected were processed by applying SPSS-23 version. The mean value for all variables indicated agreement of respondents with the questions asked. The results of one sample t-test also give results expressing agreement of a majority of respondents with the questions raised in all three variables. There was a positive relationship between environmental attitude and pro-environmental behavior indicated by the results of Pearson correlation test and chi square test.

TEACHERS' PERCEPTIONS REGARDING LEARNER CENTERED APPROACH OF TEACHING

***(Ref No.** ICETEMS-18-130)*

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Abstract: A critical look at research in education particularly approaches to teaching revealed that generally , the teachers have either opted for learner centered approach (LCA) or teacher centered approach depend on the education system and the country where the research is conducted .In Pakistani context , the dominant mode of teaching is teacher-centered. The people have very little understanding of learner – centered mode. Therefore, the current study aimed to assess the teachers' perceptions regarding learner - centered-approach in City University Peshawar. For this purpose a close ended questionnaire probing teachers' perceptions regarding learner-centered-approach was designed and distributed among the teaching faculty accordingly. The data collected was tabulated and then analysed by applying various statistical tools. The reliability of the test items was determined by Cronbach Alpha indicating the reliability falling in acceptable to good range. The data was processed through SPSS for One-sample t-Test and Descriptive statistics. Deductions were made on the basis of the processed data whereby findings and conclusions were drawn. The Findings showed that overwhelming majority of teachers favored the learner - centered approach of teaching. However, considerable number of teachers suggested improvement in certain areas like class management, ventilation and specific number of students in the class to facilitate learner- centered - approach. The study is important as it will further teachers' understanding about the utility of learner centered approach and hence it will contribute to improve learning and teaching practices.

Keywords: Learner centered approach, Teacher centered approach.

THE RELATIONSHIP BETWEEN TEACHERS' ATTITUDE AND STUDENTS' ACADEMIC ACHIEVEMENT AT SECONDARY LEVEL IN DISTRICT CHARSADDA OF KHYBER PAKHTUNKHWA

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Abstract: This descriptive-correlation research study aimed at determining relationship between teachers' attitude and students' academic achievement at secondary level using quantitative research method. The population of the study consisted of 436 public secondary boys' school teachers in district Charsadda. Random cluster sampling technique was used and a sample of 210 teachers was selected for the study. A data collecting tool, Teachers' Attitude Index (TAI), developed by Schulte et.al. (2005) was used for the study which measures student-centered, professionalism and curriculum centered dimensions of teachers' attitude. The reliability test was also applied to determine its reliability in the Pakistani context through pilot testing and the results indicated a Cronbach Alpha in good range. Students' achievement scores were obtained from the class IX annual examination 2017 results of the Boards of Intermediate & Secondary Education Peshawar. Descriptive statistics like frequency, percentage, mean, standard deviation, and rank order correlation were calculated. One sample t-test, Pearson product movement coefficient of correlation and regression were used for testing of hypothesis and for determining the relationship. The data was analyzed using Microsoft Excel 2013 professional and IBM SPSS statistics 21.0 for windows. Certain recommendations were given based on the findings and conclusions of the study.

Keywords: Professionalism, Teachers attitude, Academic achievement

THE IMPACT OF WOMEN EMPLOYMENT ON THE SOCIAL DEVELOPMENT OF CHILDREN IN PESHAWAR

*(**Ref No.** ICETEMS-18-135)*
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Abstract: The research was undertaken with a view to determine the role of women employment on the social development of their children. It was basically a descriptive research with a blend of both qualitative and quantitative approaches. The target population of the study was all the married school teachers of private schools in Peshawar. Ten private schools were conveniently/ purposely selected. Five married female teachers, their husband and their one child were selected as a sample out of each selected school. The total sample size was 50 female private school teachers, 50 husband and 50 children. Three questionnaires were developed for teachers, husbands and children. The questionnaire consisted of five variables i.e. Financial support to households activities (FSH), Culturalization/ socialization of children (CSH), Provision of various modern facilities at home (PMF), Budgeting time (BT) and Social development of children (SDC). A pilot study was carried out to determine the reliability level of the variables involved; resultantly the Cronbach Alphas came to within acceptable to good range from .77 to .90 which is good range. Descriptive statistics and one sample t-test was applied to the generated data which gave the mean value of all the variables on the agreed side that is positive. This result was also reinforced by the frequency test indicating that all the respondents were on agreement side with a point raised. The main conclusion of

the study is that the employed female teachers do contribute significantly in the social development of their children besides the employed women have a positive role in the social mobility of the family.

Keywords: Financial support, Social development, Social mobility, Women employment.

THE IMPACT OF CLASSROOM MANAGEMENT ON THE ACHIEVEMENT LEVEL OF STUDENTS AT SECONDARY LEVEL IN PESHAWAR

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Abstract: Creation of conducive environment is pre-requisite for effective teaching learning process. Classroom management is an integral part of creating such environment. Generally teachers who do not realized the significance of classroom management. Face problems in the teaching- learning environment. This study was aimed at the assessment of the impact of classroom management on the achievement level of the students at secondary level in Peshawar. Being a descriptive study the express opinion of the respondent's teachers was collected through a questionnaire. The population of the study comprised all the secondary school teachers in Peshawar. 240/secondary school teacher randomly selected, constituted the sample of the study. To determine the reliability and consistency of the questionnaire items reliability test was applied and the Cronbach's Alpha yielded results from acceptable to good ranges. Data was analysis through SPSS applying various statistical tools including one sample t-test, Pearson Correlation and Regression. The main finding of the study is that classroom management & students' achievements are positively correlated. The relationship between Teaching Learning Process and students achievements was also found significant. The study also conform that Classroom Rules play positive role in the achievement level of the students. The study indicated that rewards & punishments contribute towards the students achievements. The study do suggested that future researcher may take up the issue of classroom management at various others level as well.

Keywords: Classroom Management, questionnaire, Secondary School, Teacher's, average score,

THE EFFECTING JOB SECURITY AND WORK LOAD ON JOB SATISFACTION OF TEACHERS AMONG HEIGHER EDUCATION INSTITUTION IN SOUTHERN PUNJAB

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Abstract: This study is aiming to investigate the relationship between job security and workload factors and teachers job satisfaction. This study has used SMART-PLS to analyze the data using quantitative research method. The research will be distributing question among teachers, graduates and different professional. This study was significant for universities, colleges and schools academic and non-academic

staffs. Because this study will help the administration in institute to better understand the needs and demands of their teachers and what will be the factors which could make them satisfied. The finding revealed that there is a significant association between teachers job security, workload and teachers job satisfaction. The influence of these factors calls for the further research. There is also need to carry out a similar but comparative study in rural settings. In addition it is very important to realize the importance of job satisfaction. The greatest and significant method to measure job satisfaction and work load stress is to use the rating rules and workers rates response according to their tasks and work pressure.

Keywords: job security, job satisfaction

THE IMPACT OF SOCIAL DEVELOPMENT ON ACADEMIC ADJUSTMENT OF STUDENTS AT SECONDARY LEVEL IN KHYBER PAKHTUNKHWA

***(Ref No.** ICETEMS-18-429)*

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Abstract: The present study focused on the important aspect of human development known as social development and its impact on the academic adjustment. A successful social development of the student in and out of school is helpful in his academic adjustment. The study took into account the factors of Self-Concept, Total Adjustment which included aspects of adjustment at school, parents, society, teachers, peers, Affective Adjustment and Socio-Economic Status which help in process of social development. The sample comprised of 120 male and 120 female students from 10th class. A questionnaire was adapted from Rogers Self-Concept Scale(1951) having 9 items, 11 items were adapted from Zahid Scale of Total Adjustment(2003), 7 items were adapted from E K Sinha and RP Singh adjustment Inventory for School (AISA)(1993) and 8 items were adapted from Index of Self Esteem ISE by Khurshid (2003). Mean, one sample t-test and regression tests were applied to the collected data. The findings showed a significant effect of social development on academic adjustment of the students at secondary level. The results of regression test showed that where the explanatory variables Self-Concept (SC) , Total adjustment (TA) and Affective Adjustment (AfA) showed statistically significant contribution towards the dependent variable Academic Adjustment (AA) whereas the Socio Economic Status of Parents (SES) variable did not contribute statistically towards the dependent variable AA.

Keywords: Social Development, Academic Adjustment, social development indicators, academic adjustment indicators

ENGINEERING AND TECHNOLOGY

FIBER OPTIC SENSORS (FOS) FOR BIOMEDICAL APPLICATIONS

(Invited Talk)

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Abstract: Given their EM immunity, intrinsic safety, small size & weight, autoclave compatibility and capability to perform multi-point and multi-parameter sensing remotely, optical fibers and fiber optic-based sensors are seeing increased acceptance and new uses for a variety of bio-medical applications-from laser delivery systems, to disposable body temperature sensors, to intra-aortic catheter probes. This discussion will review the benefits, needs and applications of optical fiber sensors in the bio-medical field. The intrinsic physical characteristics of optical fibers make them extremely compatible for their use in biomedical sensing applications. Given the small size of un-cabled optical fibers (< 250 microns) enables them to be inserted directly into hypodermic needles and catheters, so that their use can be both minimally invasive and highly localized. Sensors made with them have the capability to perform multi-point and multi-parameter sensing remotely. Biomedical Fiber Optic Sensor can be categorized into four main types: physical, imaging, chemical and biological. Physical sensor are used to measure a broad variety of different physiological parameters such as body temperature, blood pressure, respiration, heart rate, blood flow, muscle displacement, cerebral activity, etc. Imaging sensors encompass both endoscope devices for internal observation and imaging, as well as more advanced techniques such as Optical Coherence Tomography (OCT), photo acoustic imaging and others, where internal scans and visualization can be made non-intrusively. Chemical sensors rely on fluorescence, spectroscopic and indicator techniques to measure and identify the presence of particular chemical compounds and metabolic variables (pH, blood oxygen, glucose, etc.), detecting specific chemical species for diagnostic purposes, as well as monitoring the body's chemical reactions and activity for diagnostic and therapeutic applications. Biological sensors tend to be more complex and rely on biologic recognition reactions-such as enzyme-substrate, antigen-antibody, or ligand receptor- to identify and quantify specific biochemical molecules of interest. The biomedical sensing market represents a lucrative and growing opportunity for specialty optical fibers, particularly for large volumes of disposable sensing probes. This is so, due to a combination of factors and trends. On the one hand, there is a demand for more patient monitoring devices due to an increasing older population, living longer life spans and requiring health care. On the other hand, there is a trend towards the practice of minimally invasive surgery (MIS) which in turn calls for a variety of minimally invasive medical devices as well as single-use, disposable sensors of small size that can be incorporated into catheters and endoscopes-an ideal fit for fiber optic sensors. Furthermore, there is also an unquestionable opportunity for FOS as EMI compatible sensors to take vital signs during use of MRI (and related techniques), as well as RF treatments.

ANALYSIS AND OPTIMIZATION OF AN EXISTING FACILITY LOCATION

***(Ref No.** ICETEMS-18-025)*

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Abstract: To choose an ideal location for a facility is considered as the most important problem for the organizations seeking to locate or relocate their facilities. A facility can be defined as a building where people, material and machines work together for a specific purpose such as to produce a tangible product or provide a service. In addition, the problem to find an ideal location for a facility carries great significance for the organizations as it bears high costs, difficult to reverse and entail a long-term

commitment. Moreover, it has strong impact on operating costs and revenues of the organization. An ideal location ensures adequate supply of raw materials, market, labor, service etc. and thus contribute largely to the overall success of the organization. In previous studies, it has been found that different approaches, methods and criteria have been discussed which can provide only guidelines to find a location for a facility but none of them fully solve this problem. Moreover, there is no such approach or criteria been discussed in literature which can optimized the location of an existing facility. In our study, we find a list of comprehensive factors which should be considered to find an ideal location for the facility. Furthermore, a location of a facility which is already in operation has been optimized. For this, structured interviews have been conducted with the top management of the various organizations and find out the important factors to be considered for choosing locations for their facilities. After that, location of a facility already in operation is selected and analyzed to find the factors that could be optimized. Data and information related to the factors are collected. A simulation technique based on linear programming simplex method has been used to optimize the location of the existing facility.

Keywords: Facility, Facility Location, Optimization, Linear Programming, Simplex Method.

LIGHTING CONTROL WITH BUILDING AUTOMATION AND MOTION SENSORS FOR ENERGY EFFICIENCY

*(**Ref No.** ICETEMS-18-026)*
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Abstract: This research is based on a very latest technology smart lighting control system to reduce consumption of electrical power and achieve efficiently products, that is advantageous to the nation & for the upcoming generation. Based on Building management system (BMS) or building automation system (BAS) set up in buildings that manage and examine the building mechanical and electrical equipments. Such as airing, illumination, power systems, fire alarm arrangement, and security systems. Light control modes and tools are used for the managing of housing lighting. The aim of the managing of lighting will reduce in power consumption and increase into the valuable life of the luminaries. To evaluate the energy consumption of dimmers for illumination be used equipment for power measurements; through this information was attain algorithms performance of the power consumed, thus being capable to predict the saving of energy according attenuation of the luminaries. Lastly it be concluded that the savings in paying the electricity bill is directly proportional to the level of attenuation of the luminaries. The use of automatic lighting control system allow to decreases lighting expenses in globe and to reach up to major energy savings. The energy performance of control is affected by many factors, and this is very extremely hard to account that problem during the procedure of designing. The aim & objective of this paper is to explain the factors that save energy and control energy performance, to examine how the calculation tools take them into account and finally to propose a easy method to adjust results obtain from the computer simulation software.

Keywords: daylight, lighting control systems, energy savings

DESIGN AND OPTIMIZATION OF DUAL ROTOR WEDGE SHAPE PERMANENT MAGNET FLUX SWITCHING MACHINE

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Abstract: Permanent magnet flux-switching machine (PMFSMs) are comparatively new category of electrical machines having both windings and magnet positioned in stator, and is a combination of the switched reluctance machine (SRM) and the induction machine. In recent two decades machines with high torque densities are imperative for various applications, including aerospace and automotive industries. Moreover, a high electric loading is mostly applied to maximize the torque density. The maximum electric loading of conventional permanent magnet (PM) brushless machines with PM's on the rotor may be limited by the particular temperature increase of the magnets and they need to prevent by partial irreversible demagnetization. The permanent magnet material having strong magnetic properties like magnetic flux linkage and electromagnetic torque prevail now are based on neodymium iron boron (NdFeB) which is a complex metallic alloy having distinguished magnetic energy of (BH max) 512 kJ/m3, but material suffered to cope at elevated temperature above (300oC), and the addition of Dysprosium (Dy) - a high critical and costly element is required to maintain stability at high temperature applications. The proposed dual rotor wedge shape PM flux switching machine provides an alternate to presently existing dual rotor rectangular shape PM FSM used in electric and hybrid electric vehicles. The proposed topology retrieves the cost factor for magnet material by substitution of NdFeB material with samarium cobalt (SmCo) permanent magnet material without degrading performance along with improved flux linkage. The results are validated using J-MAG(V.14) designer comprising magnetic flux linkages, average and instantaneous torques, cogging torque and average torque versus various magnet materials.

Keywords: PMFSMs, NdFeB, SmCo, wedge shape magnet, 2D-FEA.

SYNCHRONIZATION OF CHAOTIC SYSTEM VIA SLIDING MODE CONTROL

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Abstract: In this paper, synchronization is proposed for a general chaotic system while a new control strategy based on Sliding Mode Control with known parameters to be tracking of the desired trajectory achieved with a systematic way. In this model, a complete synchronization is achieved through sliding mode control, the nonlinear control approach that interlaces the appropriate choice of Lyapunov function. The numerical simulation shows that the newly proposed control input to enforce system dynamics to stability and the synchronization error is zero. On the other hand, the system will be asymptotically stable. The simulation results show the applicability to the control system of this synchronization.

Keywords: Nonlinear, Lyapunov, Synchronization, chaos,

COMPLEX COMPLETE SYNCHRONIZATION OF CHAOTIC SYSTEM VIA INTEGRAL SLIDING MODE CONTROL

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Abstract: In this paper, a new control design methodology is presented. To achieve Complete Synchronization (CS) in complex chaotic systems with unknown parameters. The proposed design methodology is based on Adaptive Integral Sliding Mode Control. First, the design methodology is presented for the general case of complex chaotic systems. Then, to illustrate the design procedure, to verify its validity, and to show its effectiveness, the proposed design approach is applied to identical complex Lorenz systems with unknown parameters.

Keywords: Nonlinear, Lyapunov, Synchronization, CCS, sliding mode control

EVALUATING THE EFFECT OF SUGARCANE BAGASSE ASH AS A PARTIAL REPLACEMENT OF CEMENT IN CONCRETE

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Abstract: Construction industry is at its peak throughout the world. Similarly construction industry in Pakistan after earthquake 2005, has also been increased rapidly. The construction industry is consuming huge amount of cement and causes depletion of good quality natural sand (fine aggregates). Which causes scarcity of natural resources, thus compels to explore alternative materials used in construction industry to overcome the problem. Bagasse ash is an industrial by-product which can be used as a replacement of cement. Sugarcane bagasse (SCB) is a fibrous waste which is mostly disposed-off via land filling. Sugarcane Bagasse ash (SCBA) is one of the industrial waste which is produced from sugarcane and consist mainly of SiO2. It is mostly used for generation of power in same sugar industry. Pakistan produces annually 50 million tons of sugarcane and most of it is used for production of sugar. SCBA can be used in concrete to improve its properties and can provide economical concrete as well. This research work is focused on the use of SCBA in concrete as a partial replacement of cement at 5%, 10%, 15% and 20% to determine its effect on properties of fresh and hardened concrete and also to check the pozzolanic potential of SCBA. Initially material testing was carried out which also includes the chemical composition of bagasse ash to check the pozzolanic potential of SCBA followed by fresh and hardened concrete tests. The experimental results gave highest compressive strength and tensile strength at 5% replacement of SCBA. Similarly the experimental result shows that replacement of all percentages of SCBA, the highest compressive strength and tensile strength is obtained at 28 days of curing compare to reference concrete at 7 and 14 days of curing. Beyond 5% replacement of SCBA the decrease in compressive and tensile strength is noted at all stages of curing compare to reference concrete. Incorporation of SCBA in concrete reduces the environmental consequences and also minimize the landfill area required for disposal of SCB. Similarly

SCBA can also be incorporated as an admixture in concrete due to its high content of silica and workability of concrete is also enhanced.

Keywords: Ordinary Portland Cement, Pozzolanic Potential, Sugarcane Bagasse ash, Compressive Strength.

STRENGTH PROPERTIES OF MORTAR BLENDED WITH WASTE FOUNDARY SAND(WFS)

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Abstract: The increasing waste materials especially industrial by-products have created an environmental consequences throughout the world, thus attract the attention of the world. Concrete being the most usable material in the world also plays a vital role in ozone depletion because the production of 1 Ton of cement produces 1 Ton of carbon dioxide. The utilization of these materials in concrete will not only helps in making economical concrete but also plays an in important role in reducing environmental consequences. Waste Foundry Sand (SFS) is also an industrial by-product which is produced in huge quantity throughout the world. In this research WFS has been utilized as a partial replacement of fine aggregates. The experimental investigation is performed to evaluate the strength properties of concrete. Fine aggregate was replaced with various percentages i.e. (0%, 5%, 10%, 15%, 20%) of WFS by weight. Compression test, splitting tensile strength test and flexural tests were performed to evaluate the strength properties of concrete at3, 7 and 28days. Test results showed that there is increase in compressive strength, splitting tensile strength and flexural with incorporation of waste foundry sand (WFS) up to 15% replacement. Compressive strength of mortar and concrete mixes were found increased up to 15% of replacement, due to replacement of fine aggregate with foundry sand. The highest compressive strength in cement mortar was found at 15% replacement of fine aggregate with waste foundry sand at all stages of curing. While beyond 15%, the compressive strength started to decrease at all stages of curing. The highest compressive strength of 3081 psi was observed at 28 day of curing. The compressive strength of concrete also increased at all stages of curing with incorporation of waste foundry sand. The highest compressive strength of 3923.51 psi is observed in concrete cylinder at 28 day of curing. Concrete split tensile strength is also observed to increase with incorporation of waste foundry sand with fine aggregate. Splitting tensile strength of all concrete mixes was found to increase with increase in with varying percentage of waste foundry sand. At the age of 28 days, splitting tensile strength of 15% waste foundry sand was found as 672.54 psi while that of reference mortar is 587 psi. Maximum increase in splitting tensile strength was observed at 15% replacement of fine aggregate with waste foundry sand at all age .The modulus of elasticity of reference beam is 3045 psi .The maximum flexural strength of 3245.13 psi is observed at 15% of adding of waste foundary sand. Modulus of elasticity of beam increased at all stages of curing after incorporation of waste foundary sand. Beyond 15% of addition of waste, the flexural strength started to decrease at all stages of curing.

Keywords: Keywords: Mortar, Waste Foundary Sand, Sustainable Concrete

DESIGN OF LOGISTIC AIR VEHICLE (LAV) TO AVOID REAL-TIME OBSTACLES IN LOGISTICS AND BIOMEDICS

*(**Ref No.** ICETEMS-18-063)*

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Abstract: This paper represents autonomous Logistic Air Vehicle (LAV) which is capable of transferring products from one place to another. By following Google maps, the first step in this case is to find obstacles in real world. This is done by locating the coordinates the specific obstacle in order that the specific path as well as direction can be sustained. In this manner, real objects have been tested as obstacles. The LAV is not only capable of locating and to navigate toward destination but also to avoid obstacles during flight as well as image processing for recipient recognition. This strategy helps in determining the location, confirming its coordinates and finally helps in determining the path that has to be traversed afterwards. This work demonstrates the LAV capabilities to deliver products and coming back to its origin where it starts flight or adjusted starting place. The auspicious result of this method of transferring products will allow the future research on using Air vehicle for logistic as well as biomedical purposes, negotiations of which have been undergoing with some technical vendors with significant expertise in the said areas of specializations. Another plan in this connection is to use this machine at home where toddlers and their maneuvering can be monitored on continual grounds, based on the principles of computer vision. The project primary aim was to develop autonomous quad-copter which is capable of transferring products autonomously. This project implemented mathematical modeling and control of a quad-copter. The mathematical model of quad-copter dynamics was presented and the differential equations were derived for further simulation using control system theory. The model was verified by simulating the flight of a quad-copter and also by the simulation of motors with MATLAB. Stabilization of altitude of the quad-copter was done by utilizing a PID controller. A divide & conquer method was developed to control the trajectory of the quad-copter. The PID controller was integrated into the flight controller for better response to disturbances in the flight.The various elements that concern the quad-rotor Unmanned Air Vehicle (UAV) including different sensors, applications and their advantages are simulated and tested. It starts at the basic control structure and describes advanced applications that a quad-rotor can be put to as well. The field of UAVs and specifically quad-rotors has more areas to develop and improve. These areas have lead to major developments in automation and robotics.The improvement in other technologies has given further leads in improving the design and computing power that can be associated with a quad-rotor. Technologies like IC fabrication, chemical materials and programming are not the only fields that affect UAVs, various other fields add up to the improvement and hence the research in this field is never ending. The future work of this project is that we can enhance quad-copter trajectory method and we can also implement Artificial Intelligence to remember the path of trajectory of flight. The image processing part can also be include as a future work to recognize the recipient identity.

Keywords: Air vehicle, quad-copter, GPS controller, integration module

A REALISTIC APPROACH FOR THE EVALUATION OF GREENSHIELDS AND GREENBERG MODELS FOR HETEROGENEOUS TRAFFIC FLOW

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Abstract: The natural trend of velocities towards densities is given by equilibrium velocity distribution. Greenshields laid the foundation of traffic flow studies and developed the first equilibrium velocity distribution model in which a linear relationship between velocity and density is considered. Following the Greenshields model, Greenberg presented a new equilibrium velocity distribution model, a logarithmic relationship between velocity and density is considered. Both the Greenshields and Greenberg models are widely used in traffic flow Modelling. In this paper a pragmatic approach has been adopted to check the validity of the Greenshields and Greenberg models for heterogeneous traffic flow. The simulation results shows the unrealistic behavior of both the models for heterogeneous traffic flow.

Keywords: Greenshields model, Greenberg model, Heterogeneous Traffic Flow, Traffic Flow Modelling.

COMPRESSIVE STRENGTH OF MORTAR BLENDED WITH GLASS MARBLE DUST

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Abstract: The world is facing extreme consequences of production of waste products. Glass is also a waste material produced in adundant amount. However its collection and recycling is not taken into consideration, leaving a very bad impact on environment. On the other hand, the emission of CO2 from cement industries also contributes in making a polluted environment. The use of such wastes having pozzolanic properties is getting fame over a decade in civil engineering for its beneficial influence by partially replacing it with the cement in mortar and concrete. This research focusses on the use of glass waste discarded and dumped into landfills. In this research investigation is carried out on the use of glass powder in cement mortar to check its properties in blended form. The cement was replaced with WGP with 5%, 10%, 15%, 20%, 25%, 30% 35% and 40% by mass to observe the influence of WGP on properties of cement pastes including consistency, intial and final setting time and compressive strength of mortar at various ages. It has been observed that utilization of WGP in cement as partial replacement increased the normal consistency, initial and final setting time of cement paste. As the replacement is increased the properties are enhanced. Similarly results shows that maximum compressive strength is achieved at 25% replacement of WGP. However the strength upto 30% WGP replacement is satisfactory by achieving the required strength activity index. The compressive strength decreased beyond 30% of replacement of WGP.
Keywords: Waste Marble Dust, Environmental Friendly Mortar

EXPERIMENTAL INVESIGATION OF ENERGY DISSIPATION CAPACITY OF UNREINFORCED BRICK MASONRY

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Abstract: The lateral in-plane response of unreinforced masonry structures plays an important role in their seismic behavior which is further dependent on their energy dissipation capacities. This article presents a study on experimental investigation of the energy dissipation capacity of unreinforced brick masonry by testing three full scale walls with different aspect ratios, under in-plane quasi static loading. A constant level of vertical stress resulting from a two storey unreinforced masonry building was applied on the wall. The energy dissipation capacity of the wall specimens with aspect ratios are compared at the end.

Keywords: Brick masonry, Energy Dissipation, In-plane response, Seismic behavior.

PROPOSED IMPROVEMENTS IN TRAFFIC CONTROL DEVICES FOR RURAL HIGHWAYS OF PAKISTAN

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Abstract: Traffic signs, signals and road markings installed on the roads and highways need a lot of improvements in Pakistan. They do not fulfil the fundamental conditions as per international standards i.e. peculiar shapes, sizes and colors. Among all the reasons the most important being the lack of a proper Manual, outlining the warrants and other details essential for putting up proper signs. Moreover, the manual formed by the planning commission of Pakistan back in 1989 is not reviewed since its development. The problem is further being made worse by the lack of qualified traffic engineers, not fully familiar with the art and science of traffic signs. As a result, the field engineers and contractors were left to their own wishes with regard to design and installing of the road signs. Where as in developed countries there are many sign manufacturing firms who are specialized in this particular field. Many international organizations making efforts for the uniformity of markings and road signs in order to increase the road safety and to enhance international road traffic, but in Pakistan not much significant work has been done and is still very much lagging in this industry. This study is aimed to investigate about the improvements that need to be done in traffic signs and markings, there installation and their maintenance.
Keywords: Traffic Control Devices (TCD), Traffic signs, Road marking

EFFECT OF AGGREGATE GRADATION ON RUTTING

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Abstract: In 1993, a new mix design procedure was developed by Strategic Highway Research Program with the title SUPERPAVE mix design procedure, which is an acronym of Superior Performing Asphalt Pavement. Specifications for aggregate gradation under Strategic Highway Research Program consist of maximum density line, restricted zone and control points. Control points serve as a controlling range through which gradation must have to pass, whereas the gradation should not pass through restricted zone, because the gradation compliance with restricted zone fails prematurely before completing its service life. In this research three gradations were considered and evaluated for volumetric requirements and rutting potential. Among the three gradations one was passing through the restricted zone and other two gradations were passing outside the restricted zone. The outcomes shows that the gradation passing through the restricted zone not only satisfy Superpave volumetric requirements but also performs better against rutting as compare to the gradations passing outside the restricted zone.

Keywords: SHRP, SUPERPAVE, Aggregate Gradation, Restricted Zone, Rutting.

LOOK ACROSS A STRUCTURE USING UNIVERSAL INTEGRATED (UI)-SYSTEM

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Abstract: Wi-Fi signals are regular data bearers between the transmitters and receivers. In this paper, a theory is developed to introduce a new form of radar using Wi-Fi frequency. Specifically this proposed system will allow seeing through any closed room. Multi input multi output (MIMO) system along with the reflection of the Wi-Fi signals make it possible to see remotely inside a specific place. By considering the person's body as a source of radio frequency, this proposed mechanism will detect the position of stationary/moving object behind the wall.

Keywords: seeing behind doors and walls, advancing objects, multi input and multi output (MIMO) system. Radar, "inverse synthetic aperture radar" (ISAR).

MECHANICAL AND MICRO-STRUCTURAL PROPERTIES OF CONCRETE MADE WITH USED FOUNDRY SAND (UFS)

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Abstract: Million tons of foundry sand is dumped in waste every year. Foundry sand is used in metal casting industries, which is discarded after using. The discarded foundry sand is termed as Used Foundry Sand (UFS). In this research, an attempt is practiced to use UFS in concrete in order to target environmental and economic consequences. For this purpose, fine aggregates were replaced with ratio 10%, 20%, 30% and 40% UFS in concrete. Control mix with no replacement was also made for comparison purposes. Both fresh and hardened properties were checked. Slump of concrete tends to decrease as foundry sand content is increased. Maximum compressive strength was observed at 20% replacement compared to control mix. Same trend of increase was noted for flexural strength test. Scanning Electron Microscopy (SEM) test was conducted to check micro-structural properties of UFS concrete. SEM shows that C-S-H gel is widely spread in mixes having UFS. The slump variations, good compressive and flexural strength, and studying micro-structural properties leads to use UFS concrete over conventional concrete.

Keywords: foundry sand, environmental, compressive strength, SEM

A REVIEW STUDY ON VEHICLE TO GRID

*(**Ref No.** ICETEMS-18-158)*
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Abstract: A summary of vehicle to grid is presented in this paper. The vehicle to grid (V2G) system allows power run from grid to the battery and back to the grid from the battery. When correct timing is used, batteries are supporting grid quality and reliability. The grid operator will pay for the power to the electric vehicle (EV) owner which is coming from the battery. The main types of electric vehicles are also discussed in this paper. This paper also shows the charging time, discharging power and also the operation of grid to vehicle, vehicle to grid. Vehicle to grid can provide power regulation to keep frequency stable.

Keywords: Electric Vehicle, Plug-in Electric Vehicle, Battery Charging System, Vehicle to Grid

DECISION MAKING ENERGY METER

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Abstract: Electrical energy is one of the most important factors for the domestic, industrial and commercial development of any country. In transmitting electrical energy, conductors and transformers (rating) are selected on the basis of predicted Maximum Demand. Smart Energy Meter is an environmentally friendly energy meter that is used for measuring the electrical energy in terms of KWh. Many of the Electrical Power consumers uses the electrical power more than the Maximum Demand as per their desired, which is also the main reason of load shedding and also damaging of distribution transformers. The purpose of this paper

is to monitor the Maximum Demand of the user and aware them, if it exceed the maximum limit. By using this energy meter we will monitor the power supply of every consumer. If the power consumption exceeds the Maximum Demand (as desired by the user) he/she will receive a messaged to lower the load otherwise the tariff will go high. User will able to receive a warning message by mobile phone to normalize the load, if the consumer does not respond then units will charged a faster rate than the normal, and if the respond is immediately then will receive another confirmation message of the normalized load.

Keywords: Transmitting Electrical Energy, Smart Energy Meter, Maximum Demand, Normalized Load

PROGRESSIVE DEVELOPMENT ON USE OF GRAPHENE-BASED CEMENT COMPOSITE IN CONSTRUCTION INDUSTRY

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Abstract: Weaknesses and shortcomings of cement composite materials were overcome by using nanomaterials in past decades. However, there is a little piece of information available on the use of graphene based cement composite. Recent research on graphene based cement composite materials has been reviewed critically in this article. Various challenges in preparation and application of graphene based cement composite were discussed. Influence of graphene and its derivatives on micro-scale characterization was studied using Thermogravimetric analysis (TGA), X-ray diffractometric analysis (XRD), Fourier transform infrared spectroscopic analysis (FTIR) and Field emission scanning electron microscope images (FESEM). Rheological properties, mechanical properties, self-sensing properties were also described in this paper. Research gaps are highlighted to provide guidance for future studies.

Keywords: Graphene, cement composite, characterization, rheological, application,

EFFECT OF ROOTS AND RUNNERS IN STRAWBERRY ALGORITHM FOR OPTIMIZATION PROBLEMS

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Abstract: It is usually difficult for humans to solve a real world problem. Although for million of years nature has its own ways to look into these problems and solve them. Hence, now a days when man made methods do not work in these situations, they turn to Nature for problem solution. Therefore, the so called Nature inspired algorithms/ Heuristics are developing rapidly. Generally it is difficult to find the optimum solution of the problem by using Heuristic methods. On the other hand these methods are good in approximating the solution in justifiable time. One of such algorithm is known as Strawberry Algorithm (SBA). Here, we propose to investigate the effect of roots and runners in SBA.

Keywords: Nature inspired algorithms, Heuristics, Strawberry Algorithm, roots and runners

ASSESSMENT OF LOW STRENGTH CONCRETE WITH DESTRUCTIVE AND NON-DESTRUCTIVE TESTING METHOD

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Abstract: Abstract Concrete is a world widely used construction material. However, it possesses numerous defects, which provide space for research and development. Compressive strength is an important parameter to assess these defects. In this research article destructive (core cutter and compression test) and non-destructive test (Schmidt hammer and ultrasonic pulse velocity) methods were employed to determine the compressive strength. Main objective was to identify the poor quality of concrete having low compressive strength (1500-1700 Psi). Moreover, factors contributing to poor quality of concrete were also discussed. Test results showed that Schmidt hammer predicted the maximum values whereas core cutter determined most accurate values. Schmidt hammer values were 30% more as compared with standard results. Standard deviation values for Schmidt hammers were maximum, which bring less confidence of interest on this apparatus. Furthermore, careless in sample preparation, labour skills, material characteristics played an important role on quality of concrete.

Keywords: Keywords: Concrete quality; Destructive test, Non-destructive test, Ultrasonic pulse velocity apparatus (UPV), Core cutter

POLY VINYL ALCOHOL (PVA) EFFECT ON WORKABILITY OF CONCRETE

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Abstract: Today concrete is utilized in ample amount around the globe. But to attain desired properties, it needs newly affordable admixtures. Recently adopted research PVA in concrete industry prevents evaporation and raises water preservation capacity of concrete as compared to conventional concrete. This work was designed to investigate the improvement of workability by incorporating 1% and 2% PVA by weight of cement for grade M30. In the present study, the fresh concrete specimen blended with water-soluble PVA polymer at W/C of 0.45 and 0.45 and control specimen at W/C of 0.45 were casted, respectively. The obtained results exhibit that PVA improves the workability of concrete at some percentages. Slump measured of specimen possessing 1% PVA was 2.91 inch and found more workable than slump of 2% PVA and control specimen 2.42 inch and 2.71 inches respectively of similar mix design. However, concrete workability reduces with the increase of polymer in concrete.

Keywords: PVA, concrete, compressive strength, workability

EFFECT OF WASTE FOUNDRY SAND AS A FRACTIONAL REPLACEMENT OF NATURAL CLAYEY SOIL ON THE PROPERTIES OF FIRED CLAY BRICKS

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Abstract: Waste Foundry sand is a by-product of foundry industry. Currently, it is used for landfilling which causes several environmental issues. This research study is aimed to use waste foundry sand in exchange of clayey soil in fired clay bricks. The natural clayey soil was replaced with waste foundry sand by 10, 20, 30, 40, 50 and 60 percent by weight. Physical and mechanical properties such as efflorescence, water absorption, compressive and flexural strength were studied in foundry sand clayey bricks (FSCB). A linear increasing trend in compressive and flexural strength was observed at replacement levels between 10-30%. However, water absorption and efflorescence were found in inverse relation with the content of waste foundry sand. Moreover, the optimum level of fractional replacement was noted as 30%. Hence waste foundry sand provides a sustainable solution for solid waste management and preserving natural resources.

Keywords: Fired Clay Bricks, mechanical properties, physical properties environmental impact.

EFFECT OF MARBLE DUST AS A PARTIAL REPLACEMENT OF NATURAL SAND ON THE PERFORMANCE OF CONCRETE

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Abstract: This paper presents an experimental study for replacement of fine aggregate by marble dust in concrete. Marble dust is intended to increase mechanical aspects of concrete as well as to scrimp and save the cost of fine aggregate. In this study fine aggregate was replaced with marble dust by 10, 20, 30, 40, 50 and 60 percent by weight. The water-cement ratio was maintained at 0.50. Cylinder were casted for compressive strength and tensile strength while prism beams were used to determine the flexural strength. Experimental setup was carried out at an age of 28 days. Snowballing trend was recorded for mechanical characteristics of marble dust concrete (MDC). The compressive strength and splitting tensile strength were enhanced by 18% and 12% respectively with the addition of 50% of marble dust, while 14% increase in flexural strength was observed at 20% replacement. This increase was attributed to large finer particles,

high surface area, specific gravity and filler effect of marble dust. Therefore, marble dust can be used to preserve natural resources without compromising the properties of concrete.

Keywords: Concrete, effect, mechanical properties, physical properties, environmental impact.

FEASIBILITY AND ANALYSIS FOR DEPLOYMENT OF DC MICRO GRID IN SMALL SCALE POWER SYSTEM

*(**Ref No.** ICETEMS-18-208)*

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Abstract: Electricity is an essential commodity for the development of any country. Direct Current (DC) micro grid is one of the promising techniques and plays a vital role in distribution power generation. In this work, we investigate a DC micro grid for power distribution while considering City University of Science and Information Technology (CUSIT), Peshawar as a case study. Alternating Current (AC) distribution is considered an easy way as compared to DC distribution for long distances. Today maximum loads at the distribution side are using DC power; therefore DC distribution is being studied as alternative to AC distribution. DC micro grid at the distribution side has also great advantages of using renewable energy sources directly such as photovoltaic. The proposed DC micro grid is investigated as a case study by comparing with the existing 220V AC system with the DC distribution system for CUSIT, Peshawar. In this work, we compare AC and DC distribution system in terms of efficiency and cost analysis. The results show that DC micro grid is more efficient in term of cost as compared to the AC micro grid.

Keywords: Photovoltaic, Cost Estimation, CUSIT (site for proposed case study), DC micro grid.

AN ANALYSIS OF CONTRIBUTORY FACTORS AND INJURIES TO MOTORCYCLE CRASH VICTIMS IN RAWALPINDI, PAKISTAN

*(**Ref No.** ICETEMS-18-233)*

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Abstract: In Pakistan an astounding growth is observed in motorcycle population in recent years. More than 61% of total registered vehicles in Pakistan constitute motorcycles. Rapid motorcycle growth combined with general disregard of traffic rules and safety has resulted a significant increase in motorcycle crashes. For the current study data consisting of crash specific factors, roadway geometric characteristics and environmental condition are used and a statistical analysis is performed to unfold various contributory factors leading to motorcycle crashes. Crash injuries are categorized into: no injury, minor injury, major injury and fatal injury. Results reveled that out of 5,311 observations there were 3.4% cases having no injuries, 72.5% victims with minor injuries, 23.2% observations with major injuries and 0.94% fatal injuries. It was found that majority of the crash victims were: male (91%), below the age of 35 years (79%), riders with education level of grade 10 and below (78%), in June (10%), in summer season (36%), during

off- peak hours (75%), during dry weather (79%), motorcycles with engine capacity of 70cc (73%), on major arterial roads (38%), on roads with posted speed limit of 70 kmph (51%), on roads with three or more lanes per direction (53%) and in passenger car to motorcycle collision crashes (32%). Fatal and major injury crash victims were found higher: in May, on weekdays, between 9am to 12pm and between 3pm to 6pm, on roads with three and more lanes per direction, on major arterial roads, riders below the age of 35 years, riders with education level of grade 10 and below, in collision of motorcycle with passenger or heavy vehicle. Hence this study provides an overview of the motorcycle crashes in Pakistan therefore efforts are required by the concerned authorities to overcome such alarming number of motorcycle crashes.

Keywords: Motorcycle, Crashes, Injuries, Rawalpindi, Pakistan

EFFECT OF ROAD GEOMETRICAL CHARACTERISTICS ON MOTORCYCLE CRASH INJURIES USING ORDERED PROBIT MODEL

*(**Ref No.** ICETEMS-18-235)*

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Abstract: Among motorized road users motorcyclists are most vulnerable to traffic crashes. They are involved in the highest number of road casualties due to least protection in a crash event. More than 60 percent of the total registered vehicles in Pakistan constitute motorcycles. Such high number combined with low enforcement, lack of education and no use of safety gadgets has posted serious threats to motorcycle safety in Pakistan. Current study is an initiative to explore contributory risk factors to motorcyclists in Peshawar. Crash data for a period of three years has been obtained from Rescue 1122 Peshawar combined with weather data from Pakistan Meteorological department. Binary ordered probit model is estimated to determine significant factors leading to severe motorcycle crashes. Factors found to increase the severity of motorcycle crashes are: higher posted speed limits, posted speed greater than 55kmph, old age riders (41-60 years) and crashes on roads with road width (per direction) greater than 15 feet. Factors found to reduce major injuries are: median divided roads and roads with median width greater than 12 feet. Based upon current study it is suggested that posted speed limits should be reduced to 55kmph in Peshawar along with strict enforcement and education of the road users. It is also recommended to provide proper medians having significant width on all multilane roads. Results also suggest minimizing the number of undivided roads in the city to reduce the number of motorcycle crashes leading to severe injuries in Peshawar. Current study will give some insight to the legislative and enforcement authorities in Peshawar to take proper countermeasures in reducing motorcycle crashes in the city. Also there is a great research space available for future study with the availability of quality data for more in-depth analysis

Keywords: Motorcycle, Crash, Injury, Binary probit, Pakistan

TREATMENT & RECYCLING OF GREY WATER FOR SUSTAINABLE WATER MANAGEMENT

*(**Ref No.** ICETEMS-18-236)*

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Abstract: The world is facing lack of availability of abundant and sustainable fresh water supply. Population growth, house hold, increase in irrigated agriculture and industrial growth are the major factors that require increase in fresh water supply. Growing water demand than actually available, lack of access to fresh water supply and water pollution that restricts its use/reuse, create water scarcity around the globe. Recycling can be one of the best solutions to reduce stress on fresh water sources. Most of the water intake to domestic and commercial units end up in the municipal sewer as wastewater. The wastewater is categorized as black water and grey water. Treating black water is difficult and expensive, whereas, treatment of grey water is easy and inexpensive. Therefore, the aim of the research is to reduce load on fresh water resources through recycling grey water for secondary purposes. A prototype one sink system was designed, which consisted of collector, filtration and disinfection tanks. The performance of the systems was evaluated through testing parameters: Chemical Oxygen Demand (COD), Turbidity, Alkalinity, Hardness, Electrical Conductivity, Total Suspended Solids (TSS) and Total Dissolved Solids (TDS). The results showed 90% of COD, 80% of turbidity, 50% alkalinity, 40% hardness, 65% TSS, 40% TDS removal efficiencies. The treated water can be reused for secondary purposes, such as: toilet flushing, car and floor washing, gardening, and construction operations.

Keywords: Black water, grey water, low cost, waste water recycling

SOLAR DRIVEN DESALINATION SYSTEM (SDDS) FOR SMALL SCALE DECENTRALIZED WATER PRODUCTION

***(Ref No.** ICETEMS-18-240)*
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Abstract: Potable water is the most significant basic necessity for survival. Nevertheless, access to clean drinking water is still a global challenge, thus, there is a call for action in Global Goals 2030. Pakistan is also facing the said problem; combined with current electricity crises, weak economy and infrastructure, there is a dire need of an innovative solution. This study is focused on providing potable water in areas that have water with high Total Dissolved Solids (TDS). A portable Solar Driven Desalination System (SDDS) is developed with the goal that it can be used in remote areas. This system utilizes solar energy captured through photovoltaic (PV) panels to clean water having TDS percentage more than allowable limits. A PV module of 230 watt is connected to a DC coil. The coil warms up through the supply of power from the PV module. Consequently, it raises temperature of water in the first compartment. The vapors produced through heating are dense in the second compartment. Resultantly, the SDDS yields water within allowable TDS percentage of World Health Organization (WHO) limits. The outcomes ranges from 12 mg/L to 100 mg/L. The SDDS showed TDS removal efficiency of 94% to 98%. An average volume of water gathered during 12 tests is 0.482 Liter. Therefore, through this lab scale examination it is demonstrated that a decent scope of proficiency can be accomplished with pragmatic and economical desalination system utilizing solar energy.

Keywords: Clean portable water, Solar-Driven Desalination System (SDDS), Solar Energy, TDS

SIGNIFICANCE OF INFORMATION MODELING IN THE CONSTRUCTION OF REINFORCED CONCRETE STRUCTURES

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Abstract: Information modeling has played a vital role in the evolution of construction industry. It is an idea where a structure is not only modeled simultaneously in 3D and 2D, but also have all the information assigned to the objects assembled in the graphical user interface (GUI). Hence every stake holder of Architectural, Engineering and Construction (AEC) industry can benefit from the information of single model that is shared through a network. This idea is globally known as Building Information Modeling (BIM). The purpose of this study is to recognize the importance of information modeling in the construction of Reinforced Concrete (RC) Structures. In the past decade and a half, such tools have been developed that facilitates in planning, designing, detailing and fabricating an RC Structure. The physical model of an RC Structure having embedded reinforcement bars, that are physically placed, enables the users to get not only the drawing sets but also can use the bar code system for automatic rebar fabrication. The information in the model is not only useful at the planning and construction phase but also very helpful for the facility management of RC Structures in the future.

Keywords: Information modeling, Reinforced Concrete (RC) Structures, rebar fabrication, facility management

EXPERIMENTAL BEHAVIOR INVESTIGATION OF INTERNALLY CONFINED CONCRETE UNDER AXIAL COMPRESSION

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Abstract: Columns are considered the most critical elements in structures. In columns or compression members, lateral reinforcement in the form of hoops, cross-ties, or spirals play an important role in safeguarding the columns, especially when they are subjected to strong earthquakes or accidental lateral loads. They are required in any column-whether they are parts of a moment resistant frame or the gravity system in order for them to deform laterally and provide the required ductility. The development of reinforced concrete structures is continuously studied to improve the strength, ductility, and durability of the component members. It has long been recognized that the strength as well as deformability of concrete substantially increase wherever amount of confinement in the form of closed ties (hoops) is increased. Addressing only the confinement requirements of the above, transverse reinforcement in this case Lateral Confining Reinforcement (LCR) tend to increase the strength and ductility of RC members. It also keeps longitudinal reinforcement in place while concrete is poured. When an axial concrete element (column) is laterally reinforced (e.g. by ties, hoops or spirals) and subjected to axial compression, expansion of the element in the plane perpendicular to the axial compression activates the lateral reinforcement which exerts

tri-axial compression increasing members capacity to sustain large compressive stresses and deformations. The locally produced concrete is usually of low strength but the design standards i.e. ACI 318-08 and other modern standards have a minimum strength of 3000 psi. Most of research on confined concrete done lately mainly focuses on normal to high strength concrete, which is not easily achieved in our national context due Quality of workmanship, Quality of material and its source and non-engineered design of concrete and structures. The result has shown that the strength capacity of column as well as ultimate concrete compression strain has increased in low strength concrete due to internal confinement

Keywords: Confined concrete, axial Capacity, Ultimate Strain

EVALUATION OF IN-PLANE STRENGTH OF DHAJJI WALL HAVING VARIOUS CONFIGURATIONS OF TIMBER- BRACINGS USING NUMERICAL METHOD

***(Ref No.** ICETEMS-18-245)*

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Abstract: This paper presents the evaluation of In-Plane strength of Dhajji wall (Timber-Braced rubble masonry wall) having various configurations of timber bracings. Dhajji structures are mainly composed of vertical and horizontal timber posts which are braced using diagonal bracings. Timber members are connected to each other by Tenon and Mortise joints which are then supplemented with mild steel nails to fix the connections. Openings left are then filled with random rubble masonry in loose mortar. These types of structures are known for their high seismic resistance due to lighter weight and more deformation capability of timber posts. These structures are mostly found in Kashmir and its surrounding areas both in Pakistan and India where their local name is Dhajji-Dewari. After the devastating earthquake of October 2005, a number of various tests are carried out on these structures in Earthquake Engineering Centre (EEC) of University of Engineering and Technology, Peshawar to explore more about seismic behavior of these structures. These tests involved In-Plane cyclic load test of Dhajji wall and shake table testing of reduced scale single and double storey Dhajji models. In this study a numerical model of Dhajji wall was prepared based on the experimental work involving In-Plane cyclic load test, using SeismoStruct software and Non-Linear Static Push-Over analysis was performed. It was found that the lateral deformation capacity curve (Drift Vs Lateral Load) obtained from the numerical model was in good agreement with the experimental capacity curve. This numerical model was then used to evaluate and compare the lateral strengths of Dhajji walls with three different configurations of bracings. Based on this comparison a Dhajji wall with a particular bracing configuration can be suggested keeping in view both the lateral strength, deformation capability and quantity of timber used in construction which might be helpful to economize the construction of these structures.

Keywords: Dhajji-Dewari, SeismoStruct, Numerical Model, Timber-Braced frame

EVALUATION STUDY AND IMPLEMENTATION OF ANALOG AND DIGITAL CLASS AMPLIFYING SYSTEM TOPOLOGIES

***(Ref No.** ICETEMS-18-246)*

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Abstract: Class D amplifying systems are preferable to all other classes of amplifying systems due to their low power dissipation and high efficiency. Interesting challenges are there in designing Class D amplifying systems due to their characteristics of high–frequency switching. In this research study different design strategies of analogue as well as digital class D amplifying system have been implemented and analyzed. For analogue systems all working blocks (Modulation, Switching-Output and Filter) have been implemented by using various approaches. An innovative design for gate driver for has been proposed in switching output block. Inside modulation block all types of modulations that are used for analogue class D systems (Pulse Width Modulation, Pulse Density Modulation, and Three State Modulation) have been discussed and analyzed. Similarly implementation of Digital class D amplifying systems has also been presented by using UPWM, DAC (N-Bit Digital to analog Converter), Direct Digital Modulation, Open loop Approach, Local closed loop Approach, Fully Closed Loop Approach. In this paper all simulations have been presented on MATLAB Simulink, Proteous, and Multisim along with the experimental outputs.

Keywords: Class D, PWM, Mosfets, Gate Driver, UPWM

CNC BASED 3D AUTOMATIC PCB DRILLING MACHINE

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Abstract: Automation has an important role in the economy of world and in daily practice. Main factor of automation is to eliminate the human factor from the process in order to reduce the error rate and also for the better time utilization which primarily increases quality and quantity of the manufacturing process. The idea behind this project is to fulfill the desire for a desktop sized CNC machine. While it would have been nice to purchase an off the shelf unit the issue of price as well as size proved prohibitive. With this in mind we endeavored to design and build a three axis CNC machine by using, simple tools, low cost, easy to source parts, Ability to cut ply-wood. In this project we use the parallel port to interface the machine with the computer. The PCB pattern of the circuit schematic diagram is drawn on the monitor screen, with the help of software such as Express PCB (software), from this software we extract the DXF file then this file is converted into Excellon file with the help of LinkCAD (software), this Excellon file is then import in the KCAM software and it will send it to the microcontroller and then controller will send the information to driven circuit through parallel port which further control the motors movement.
Keywords: Computerized Numerical Control, Printed Circuit Board

A COMPARATIVE STUDY OF LOCAL HYBRID POWER GENERATION SYSTEM

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Abstract: Renewable energy resources especially biomass, solar & wind can play a key role to electrify the remote areas in the country. This description is fulfilled by renewable resources which have been mainly ignored in the past and is also available in enough quantities to deal with the energy crisis existing in the country. This paper presents a comparative study of the hybrid energy generation system, particularly solar cells, wind energy and biomass with renewable and distributed hybrid generation system. The model can analyze all available power technologies individually and in hybrid configurations to identify the least costly solutions to power needs. The result of simulation and optimization gives the best optimized result of Sizing of fuel cell, photovoltaic system and biomass production.

Keywords: Renewable Energy Resources; Photovoltaic System; Wind; Distributed Hybrid Generation; Solar; Biomass.

PERFORMANCE ANALYSIS OF ADAPTIVE FILTER AND FIR WIENER FILTER FOR NOISE CANCELLATION IN AUDIO SIGNALS

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Abstract: Speech has always been one of the most important carriers of information for people and has become a challenge to maintain its high quality. When the speech signal and noise both change continuously, then arises the need for algorithm that will form best estimation of noise signal. In Adaptive Noise Cancellation and Wiener Noise Cancellation two inputs - primary and reference signals are used. The primary input receives signal from the signal source which has been corrupted with a noise uncorrelated to the signal. The reference input receives noise signal uncorrelated with the signal but correlated in some way to the noise signal in primary input. The reference input is filtered to obtain a close estimate of primary input noise which is then subtracted from the corrupted signal at the primary input to produce an estimate of a clean uncorrupted signal. The audio signal corrupted with noise is used as a primary input and a noise signal is used as reference input. Computer simulations are carried out using MATLAB and illustrated.

Keywords: Adaptive Noise Cancellation, Wiener Noise cancellation, uncorrelated signal, correlated signal.

COMPENSATION OF DFIG STATOR OUTPUT VARIATION USING BUCK-BOOST CONVERTER FOR STABLE BATTERY CHARGING

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Abstract: The increasing demand of power for consumers can be met by utilizing both the renewable as well as non-renewable energy resources. Among the renewable energy resources, wind energy is the second

largest source for the conversion to electrical energy. Due the variation in wind speed, the output voltage and power of the wind turbine is not constant. Some loads are too much sensitive to the variation in voltage, obtained from the stator of Doubly Fed Induction Generator (DFIG), of the wind generator or turbine. In this research, we propose to develop a new model in MATLAB/Simulink using buck-boost converter connected at the input of lithium-ion battery charging system(LIBCS) to compensate the continuous variation of wind to reduce the fluctuations of the output power of wind turbine. The parameter of wind turbine along with our proposed model including buck-boost converter and battery are change such that to achieve the stable output from the system.The model is very effective regarding the reduction in output power fluctuation which leads to very best substitute for local of grid user to use this green energy technology. The results are discussed with and without buck-boost converter. To get constant output using buck-boost converter.

Keywords: Wind Turbine (WT), Doubly Fed Induction Generator (DFIG), Lithium Ion Battery Charging System (LIBCS), Buck-Boost Converter (BBC).

USE OF NANO SILICA AS A PARTIAL REPLACEMENT OF CEMENT IN CONCRETE

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Abstract: Concrete is a composite, the most abundant and the most important construction material. Concrete is mainly made of aggregates, water and binding material. Its production involves batching, mixing, transporting, proper placing, compacting and finishing. To achieve a good quality concrete the constituents of concrete should satisfy the international or local standards. Many researchers have done on the replacement of waste materials as an aggregate and binding material in concrete. Cement is used in concrete as a binding material which is not only expensive but the production of cement in a plant also effects the environment very intensively. It is justified that the production of cement evolves 7% CO2 gas to the atmosphere. The owner of industries and Govt should think about the problem and find out its possible solution as soon as possible. It is important to use locally available material as partial replacement of cement, which is economical as compare to ordinary Portland cement and also environmental friendly without decreasing the concrete strength. Different additive Cementous materials are used in concrete as a partial replacement of cement. Nano silica is one of the pozzolanic materials which have been used in a recent year as a partial replacement of cement to increase the strength and durability of concrete. In this research Nano silica was used as a partial replacement of cement in concrete to find the effect of Nano silica on durability and strength of concrete. According to ACI 124 design the ratio of 1:2:4 was selected in all concrete samples with water to cement ratio of 0.55 was kept constant. For comparison a control sample having zero Nano silica was prepared and concrete sample with different percentage of Nano silica as a cement replacement was compared with control sample. The results indicate that the addition of Nano silica as a cement replacement in a concrete increases the durability, compressive and tensile strength of concrete at 28, 56 and 90 days. The maximum strength at 28 days was achieved by 15% replacement of Nano silica in concrete. After that the strength was decreased by increasing Nano silica content beyond 15% as a cement replacement, thus 15% is the optimum amount of Nano silica in concrete. Key words— Nano silica, Compression test, SEM tests.

Keywords: Nano silica, Compression test, SEM tests

STUDY OF RECYCLED AGGREGATE USED AS A PARTIAL REPLACEMENT OF VIRGIN AGGREGATE IN CONCRETE

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Abstract: Concrete is a composite, the most abundant of all man made materials and are among the most important construction materials. Concrete is mainly made of aggregates, water and binding material. Its production involves batching, mixing, transporting, proper placing, compacting and finishing. To achieve a good quality concrete the constituents of concrete should satisfy the international or local standards. Many researches have done on the replacement of waste materials as an aggregates and binding material in concrete. Recycled aggregate can be obtained by crushing concrete that have been already used in construction. Due to increasing construction industry globally, and concrete being a main structural part, researchers are interested in replacement of concrete ingredients by waste materials which has a positive effect on the structural consideration of concrete. Recycling of aggregates can prevent the wastage of potentially used materials and reduce the consumption of virgin raw materials thereby reducing: energy usage, air pollution and water pollution from land filling. This work presents the performance of Recycled aggregate as partial replacement of coarse aggregates in concrete in a controlled environment. The purpose of this work is to solve the environment issue, to reduce the use of natural resources, to make the concrete economical and up to the desired strength of normal concrete. Concrete with 10%, 20%, 30% and 40% replacement of recycled aggregates as a coarse aggregate are produced and compared against normal concrete sample with zero replacement. Cylinder specimens are cast, cured and tested for compression at 14 and 28 days. The experiments show that for replacing recycled aggregates with 10%, 20%, 30% and 40% as a coarse aggregate in concrete increases compression strength against normal concrete and also shows good workability, smooth finish and observation on outer side. The Recycled aggregate is cheaply available everywhere as compared to natural coarse aggregate. By using waste Recycled aggregates as a coarse aggregate in concrete reduces the quantity of natural aggregates and environmental issue.

Keywords: Recycled aggregate, replacement, concrete

CONGESTION MITIGATION OF TAXILA INTERSECTION

*(**Ref. No.** ICETEMS-18-278)*
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Abstract: Pakistan has experienced a rapid motorization in last one decade as motorized vehicle population. Aging transportation infrastructure of cities like Taxila, is unable to meet the enhanced traffic demand due to increased motorization. A well-planned, efficient and sensible transportation system is necessary to

ensure the better traffic movement and operational condition of road system. In this research, the traffic congestion of Taxila intersection was analyzed at different alternative using Synchro software. Among all the alternative the best economical solution is to transfer the heavy vehicle traffic to use bypass. The Level of service is improved form E to B, Intersection delay is also improved from 78.7sec to 18.2 sec and volume to capacity ratios is decreased from 1.72 to 0.68.

Keywords: Intersection, Congestion mitigation, ICU, LOS

FINITE ELEMENT ANALYSIS OF PILED-RAFT FOUNDATION IN CLAYEY SOIL

*(**Ref No.** ICETEMS-18-295)*

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Abstract: Foundations design related problems are generally becoming common due to increasing demand of high rise buildings. Piled-raft foundations (PRF) has been used for high rise building for reducing settlement and to enhance the load carrying capacity of underlying soils. These advantages are indorsed to the involvement of raft to the loading capacity and to efficient use of piles to reduce the settlement. The use of piled raft foundations for tall buildings has been increasing in this decade as it is an economical alternative to conventional piled foundations. Piled rafts are composite structures comprised of the piles, raft and soil and so soil-structure interaction is important in computing the behavior of the foundation. The evaluation of performance of pile raft foundation is important due to the complex behavior of such mechanism. This paper present finite element analysis on piled-raft foundation with studying the effect of some important design parameters such as shear strength of soil, diameter and length of piles, and effect of raft thickness. The results of piled raft foundation were compared with unpiled raft foundation and conclusions were made accordingly.

Keywords: piled raft foundation, settlement, finite element method

STRENGTHENING OF EXISTING STRUCTURE FOR VERTICAL EXTENSION

*(**Ref No.** ICETEMS-18-333)*
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Abstract: This paper presents strengthening techniques of an existing single storey structure for vertical extension having pre-stressed double tee unit slab. The structure is utilized as cafeteria at City University of Science & IT, Peshawar. It is a frame structure that carries total load of the building and transfers it to the foundation. In first phase of this project different tests have been conducted for the assessment of existing structure that includes strength capacity of double tee unit beam, soil bearing capacity, non-destructive testing, existing frame analysis. In the second phase, various strengthening techniques have been proposed. For strengthening of structural members, the jacketing method is ideal that is wrapping beams with CFRP sheets in order to increase its strength capacity while for foundation, that the underpinning technique through continuous strip footing is recommended.

Keywords: Civil

REMEDIAL MEASURES FOR REDUCING RATE OF ROAD ACCIDENTS

*(**Ref No.** ICETEMS-18-162)*
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Abstract: This paper focus on remedial measures for reducing rate of road accidents. Every day more than 3000 peoples killed in road accidents. There is a fundamental semantic and educational importance to this. There has been considerable debate around the question of whether accident or collision/crash are more appropriate terms, which hinges around the idea of whether someone has a crash as a result of a deliberate act or as a result of an unexpected event. The argument for using crash or collision, more or less returns to the point that blame is apportioned for the latter terms, and should be as most crashes are the result of a human error. A traffic accident on a public road may involve. A vehicle in a collision between a vehicle and one or more vehicles, a pedestrian, an animal, and/or fixed objects. The accident may involve an injury to a person fatal, serious or slight or damage. With enormous increase in vehicles, improvements in the performance and speed of vehicles and shortage of time with people, the graph of road accidents have gone very high. Problem of accident is very acute in highway transportation due to complex flow patterns of vehicular traffic presence of mixed traffic and pedestrians.

Keywords: Road Accidents, Crash or Collision, Remedial Measures

ENGINEERING MANAGEMENT

PROPOSED CHEMICAL PLANT FOR THE PRODUCTION OF NATURAL HYDROXYAPATITE (100 KG PER DAY) MINERAL BY USING WASTE BOVINE BONES AS A RAW MATERIAL

*(**Ref No.** ICETEMS-18-062)*

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Abstract: Each year thousands of people lose or break bones due to accidents, chronic diseases, and dental surgeries. Surgeons mostly extract bone tissues of the same patient and then reutilize for reconstruction of the defective bones. Sometimes bone tissues are collected from donors, however, both of these methods are not preferred because of several difficulties. Fortunately, material scientists have discovered that hydroxyapatite (HA) crystals can be used to heal the broken bones. Presently, the import cost of the artificial bone material is far expensive for our nation (Korean grade HA for dental application is around RKR 10,000/cm3). Therefore, we have prepared a preliminary process design report to figure out the potential of indigenously prepared hydroxyapatite (HA) material. In general, the cost of the raw material (waste bovine bones) in our country is very cheap and therefore we believe that a huge revenue may be saved and also generated. Broadly, the proposed chemical plant will consist of dryer, double roll crusher, grinder, sieve shaker, ball mill, autoclave, heat exchangers, filter press, and furnace. The total capital investment including a world class quality control laboratory will be around 40 million PAK rupees, whereas the production cost of HA will be less than PKR 1,000 per kg.

Keywords: Keywords: Hydroxyapatite (HA), process design, and cost estimates.

ENGLISH AND APPLIED LINGUISTICS EDUCATION

THE IMPACT OF CULTURAL SYMBOLS ON IDENTITY AND MEANING FORMATION: A SYMBOLIC INTERACTIONIST APPROACH TO CHINUA ACHEBE'S THINGS FALL APART

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Abstract: The present paper makes an attempt to examine how George Herbert Meade 's theory explains people's use of symbols as a sense-making tool to elucidate the socialization process, role performance, identity, and meaning formation within the Igbo society to explain various aspects of human life in the novel Things Fall Apart. This study is significant as it deals with character analysis of Okonkwo, to see how various roles of son, warrior, husband, father and a clansman are defined in Igbo culture during different phases of family and social life to clarify how Symbolic Interactionism has given a new impetus to see society, culture, psychology, and relationships. It argues that the physical setting is significant to human behavior and human actions can be interpreted by the critical analysis of cultural symbols and the way they are deployed. It concludes that human behavior is based upon assigning meanings and their symbolic interpretations of the objects that surround them. The SI analysis of the novel clearly indicates that Okonkwo's self and meaning formation is built on perceptions of the reactions of his clansman and his self-concept functions to direct his behavior. The development of different roles changes role and behavior patterns. The internal and external happenings influence role performance, conflict, and struggle and affect the nature, attitude, and self-image of Okonkwo. Moreover, it also affirms that the cultural symbols for honor, respect, and manliness etc. are not fixed naturally rather these are the constructions of the mind and are given meaning through an interaction of people.

Keywords: Symbolic Interactionism, Language, Culture, Symbols, Self, Identity

MANAGING YOUNG LEARNERS' MOTIVATION TOWARDS LANGUAGE LEARNING THROUGH THE APPLICATION OF LANGUAGE ACQUISITION THEORIES

*(**Ref No.** ICETEMS-18-254)*
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Abstract: Managing young learners' motivation towards language learning through the application of Language Acquisition Theories Abstract In this study, different theoretical dimensions have been assessed with special reference to English language acquisition among children at primary level in KP as the research has provided with evidence that children are fast learners. In this regard, many researchers have proposed different theories, which could have far-reaching results on the process of language acquisition of learners. In this paper, key aspects of Krashen's Monitor Model in general and Input hypothesis in particular have been assessed, and its relation with Output theory (Swain, 1985), interaction theory (Long ,1981,83)) and Vygotsky (1978) concept of ZPD have been discussed with special reference to English language teaching at primary level in KPK. Some eight English medium schools were visited in which 9 classrooms of grade 1, 2 and 3 were observed thrice. Communication Supporting Classrooms Observation Tool adapted from

Dockrell et al was employed and data was analysed through SPSS.

Keywords: Young leaders, theories of L2 acquisition, motivation.

CRITICAL DISCOURSE ANALYSIS OF ARTFUL AND POLITICAL LANGUAGE OF "SCAR" IN THE ANIMATED MOVIE "THE LION KING"

*(**Ref No.** ICETEMS-18-255)*
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Abstract: Abstract This paper examines the persuasive strategies of Scar, a character from the animated movie The Lion King which was released in 1994. It also decodes the ideologies underlying the conversation of Scar in three different scenes picked for analysis. It analyses the conversations based on the concept of Fairclough in critical discourse analysis. Fairclough (1995) asserts that the ideologies are in general hidden in the unsaid which is implicit proposition and is difficult to detach from the text. Moreover, the discursive event outlines the discursive structure which is open to interpretation. The results of the study indicated the embedded ideologies and persuasive components in the discourse of Scar.

AN ANALYSIS OF FOREIGN CULTURAL INFLUENCES IN MOHSIN HAMID'S MOTH SMOKE

*(**Ref No.** ICETEMS-18-091)*
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Abstract: This paper presents postcolonial study of Mohsin Hamid's novel Moth Smoke and examines the pernicious influence of foreign culture on a Pakistani society. It attempts to explain that exposure to foreign culture blots human reasoning and corrupts human emotions. Study shows that the inhabitants of this society specially the elites are under the imperium of superior powers. The novel circles round the inhabitants standing at a cross culture who are living in a murky environment. Elite or working-class, old or young, men or women, all are under the influence of superior powers due to foreign education which has affected their social roles and responsibilities. Focusing on the struggle between the existing and acquired culture faced by the characters the paper highlights the neo colonizing effects. This study encircles the incidents that happen to the major characters and their responses to those situations after acquiring foreign education. This study also attempts to uncover those complexes which are ensnaring the youth of the country and turning them into a generation pressed under cultural complexes.

Keywords: Colonialism, Neocolonialism, Post-colonial Societies, Education, Culture and imperialism.

HEALTH SCIENCES

THE EFFECTIVENESS OF COGNITIVE BEHAVIORAL THERAPY (CBT) WITH GENERAL EXERCISES VERSUS GENERAL EXERCISES ALONE IN THE MANAGEMENT OF CHRONIC LOW BACK PAIN

(Invited Talk)

Muhammad Khan *(Director Physio & Rehab LRH, Peshawar)*

Abstract: To evaluate the effectiveness of Cognitive Behavioural Therapy (CBT) along with General exercises and General exercises alone in chronic low back pain. Back pain could arise from many sources that include vertebral joints and disk degeneration, sacroiliac joint, muscle tightness and weakness, neural structures, thoracolumbar fascia, stomach, kidneys and other abdominal organs. According to CBT theory, inappropriate cognitions and poor pain coping behaviors may interact with biological factors and social, environmental consequences. This interaction may produce unwanted outcomes, which includes higher pain intensity, pain-related disability, and utilization of health care resources. Total 54 patients with chronic low back pain who fulfilled inclusion criteria were recruited from Physiotherapy, Department of Alain Poly Clinic Karachi and Institute of Physical Medicine & Rehabilitation Dow University of Health Sciences Karachi. Selected patients were equally divided and randomly assigned into two groups with simple randomisation method. The Cognitive Behavioural Therapy (CBT) and General exercises group received Operant model of CBT and General Exercises whereas General exercises group received General exercises only. Both groups received a home exercise program as well. Patients in both groups received 3 treatment sessions per week for 12 consecutive weeks. Clinical assessment was performed using Visual Analogue Scale (VAS) and Ronald Morris Disability Questionnaire at baseline and after 12 weeks. Both study groups showed statistically significant improvements in both outcome measures p=0.000. However, mean improvements in post intervention VAS score and Ronald Morris score was better in CBT and exercises group as compared to General exercise group. In CBT and exercises group, mean VAS score reduced to 2.66±1.39 post interventions which was 6.51±1.34 on base line. Ronald Morris score also reduced to 5.33±2.67 post interventions, which was 13.77±2.53 on base line. In General exercise group mean VAS score reduced to 5.25±1.19 post interventions, which was 7.03±1.25 on base line. Ronald Morris score also reduced to 9.88±1.84 post interventions which was 12.92±2.09 on base line. In conclusion, both interventions are effective in treating chronic low back pain however; CBT & General exercises are clinically more effective than General exercises alone.

INTERPROFESSIONAL COLLABORATION AMONG REHABILITATION PROFESSIONALS IN STROKE REHABILITATION

(Invited Talk)

Dr. Muhammad Naveed Babur *(Isra University, Islamabad)*

Abstract: To determine the Interprofessional Collaboration among rehabilitation professionals in stroke rehabilitation. The study design os a Comparative cross sectional survey. Data was collected from all major cities of Pakistan in 12 months. A structured questionnaire of interprofessional collaboration was filled by Physiatrists, Physical Therapists, Occupational Therapists, Speech-language Pathologists and Prosthetists/Orthotists having two years of professional experience into total sample size of 139. Post Hoc analysis for comparison between the occupations shows that there is significant difference for Communication, accomodation and isolation between the rehab physicians and all other occupations included in the study with the p-value less than 0.05. The benefits of interprofessional collaboration cannot be denied in developing countries and barriers to development of multidisciplinary team are huge. We need to step forward to overcome these barriers and play our role in development of multidisciplinary teams so that our patients and team members get benefit from this which is already research proven approach.

PRODUCTION OF ETHANOL FROM NON-CONSUMABLE MATERIALS

*(**Ref No.** ICETEMS-18-168)*
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Qaisar Shah *(City University of Science IT, Peshawar)*

Abstract: Experiments were conducted to produce ethanol from the raw material (cellulose, barley diastase in dilute acid digestion. The temp was moderate and time one hour. The encouraging results were achieved and the yield was 445ml as compared to other cellulose batch about 132ml. intimal in both batch the initial raw material quantity was one kg. it was noted that with the increase of barely ratio and yeast, promising result can achieve further experiments are to be conducted with change of raw material ratio percentage production can be increased.

Keywords: ethanol,non-consumable materials,445ml , 132ml

ASSOCIATION OF NOVEL POLYMORPHISM IN AR GENE WITH AN INCREASED RISK OF PROSTATE CANCER AND DISEASE SURVIVAL

***(Ref No.** ICETEMS-18-186)*
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Raisa Bano *(Capital University of Science and Technology, Islmabad)*
Muhammad Ismail *(Institute of Biomedical and Genetic Engineering, Islamabad)*
Hamid Rashid *(COMSATS University Sahiwal)*

Abstract: AR gene can express in multiple organs including male accessory sex organs, the sites primarily affected by different types of genetic changes in AR signaling. The aim of this study was to investigate any possible correlation of the genetic variants in the AR gene with prostate cancer risk and disease free survival in Pakistani population. Genomic DNA was extracted from 1000 prostate cancer samples of different ethnic backgrounds along with an equal number of age matched controls. All the samples were amplified with primers specifically designed for AR gene. Band shifts detected by SSCP were used for sequencing analysis. The data was then analyzed with the help of Bioinformatics techniques to establish their pathogenicity and annotations and was statistically analyzed for the association of observed genetic variants through logistic regression. A novel variant in the 3' UTR region of AR gene was identified in this study. The variant was located at position g. 67724021 (T>C) and showed significant difference between PCa patients and controls and was found significantly associated with increased disease risk in all the models with highest OR of 3.74 (95%CI =1.98-7.07; P<0.001) in the CC vs TT model. The survival analysis carried out through Kaplan-Meier curve showed that the T<C variant in 3'UTR of AR gene is associated with decreased disease-free survival time of PCa patients. In conclusion, the T<C variant of AR gene at g.67724021 has a significant association with an increased risk of disease progression as well as a reduced disease-free survival time in Pakistani men. These results suggested that the T<C at g.67724021 is an important variant in the 3′-UTR of AR, which may aid in the screening of high-risk patients.

Keywords: AR gene, prostate cancer, SNP, Association

THE EFFECTIVENESS OF BENT LEG RAISE TECHNIQUE IN PATIENTS WITH RADIATING LOW BACK PAIN

*(**Ref No.** ICETEMS-18-279)*

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Abstract: Background: Low back pain (LBP) is a common musculoskeletal condition experience by most of the people in their life, most of them are radiating. Radiating low back pain can be upto thighs, upto knees or upto feet. Different treatment protocols are using for radiating low back pain among which Mulligan Bent Leg Raise (BLR) also using as treatment option. Objective of the study: The objective of our study was to identify effectiveness of Bent Leg Raise technique in Patients with radiating LBP. Methodology: In this Qausi experimental study we included 32 patients in the study which fulfill the inclusion criteria and were randomly assigned into two groups using sealed envelope method. Group 1 patients received treatment of Mulligan Bent Leg Raise technique along with conventional treatment and group 2 received only conventional treatment. Both the groups received five treatment sessions each week for four weeks. Questionnaire was filled before and after treatment on visual Analogue Scale for pain, Oswestry low back pain disability index questionnaire for disability, Goniometer for hip SLR ROM. Results: After statistical analysis using SPSS version 20, Group 1 showed improvement in their pain, Functional Disability and Hip ROM. Statistical analysis showed p value > 0.05 pre and post treatment effect on group 1 and on each scale and that of group 2 showed p value of < 0.05 which showed no significant difference. Also statistically p value > 0.05 between two groups post treatment effect which showed there was significant difference between two treatment options. Conclusion: This study showed that the Group 1 intervention of bent leg raise technique for treatment of radiating low back pain is effective in pain relief and increase in hip ROM and decrease functional disability in comparison with conventional therapy treatment for low back pain.

Keywords: Manual Therapy, NPRS, Mullagin mobilization, BLR, Bent leg raise.

STATUS OF BRCA GENE AND ITS EPIGENETIC ALTERNATIONS IN BREAST CANCER OF PAKISTANI POPULATION

*(**Ref No.** ICETEMS-18-287)*

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Raisa Bano *(Capital University of Science and Technology, Islamabad Pakistan)*
Mohammad Haroon Khan *(City University of Science and IT, Peshawar)*
Hamid Rashid *(COMSATS University Islamabad, Sahiwal Campus, Sahiwal Pakistan)*

Abstract:
Breast cancer is a multifactorial and serious challenge to public health across the globe. It is caused by both genetic and epigenetic alternations. The incidence rate of Breast Cancer in Pakistani population is 2.5 times higher than the neighboring countries. It accounts for 34.6% of all female cancers. Epigenetics also play key role in onset of breast cancer. Pathogenic mutations in the BRCA1 gene substantially increase the lifetime risk of developing breast cancer. Epigenetic is the change in the gene expression without change in the DNA sequence. Epigenetics regulations involve three basic events –DNA methylation, histone modifications and nucleosomal remodeling. Change in the gene expression due to epigenetics alternations in breast cells initiate tumor. In Pakistan this area is not much explores yet. The aims of this study were to scan BRCA1 gene for the possible genetic changes in Pakistani population and to focus on the epigenetic base transformation of breast cancer in Pakistani population with the help of bioinformatics and by using computational tools. According to the results higher rates of breast cancer incidence (45.42%) have been

observed in age groups of 45-49 years. A total of thirteen variants were identified in the present study in BRCA1 including three novel variants in Pakistani population.

Keywords: Breast Cancer, Pakistani population, epigenetics

COMPARISON OF BRCA1 GENE MUTATION OF PAKISTANI POPULATION WITH EUROPEANS

***(Ref No.** ICETEMS-18-298)*
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Hamid Rashid *(COMSATS University Islamabad, Sahiwal Campus)*
Farrukh Jamil *(COMSATS University Islamabad, Sahiwal Campus)*

Abstract:
Breast Cancer is a most chronic type of cancer that is common in Pakistani females. Most common risk factors include rising trend of western life style including smoking, alcohol consumption, and western diet habit in developing countries including Pakistan. Studies have shown that the BRCA1 and BRCA2 are the key genes involve in the development of breast cancer throughout the world. This study aims to identify the interactions between BRCA1 and BRCA2 in Pakistani population. This study will provide the valuable information about novel mutations, interactions and possible roles of BRCA1 and BRCA2 in the development of BC in Pakistani females.

Keywords: Breast Cancer, BRCA1, BRCA2

MANAGEMENT SCIENCES

AN INVESTIGATION INTO CORPORATE SOCIAL RESPONSIBILITY (CSR) OF PUBLIC SECTOR UNIVERSITIES IN KPK

(Invited Talk)

Shahid Jan Kakakhel *(Islamia College Peshawar)*

Abstract: The purpose of this research is to review the notion of corporate social responsibility (CSR) and explain the importance of corporate social responsibility concept for public sector universities and higher education institutes in Khyber Pakhtunkhwa. Moreover, it attempts to inquire what stakeholders feel about universities and what they want universities to be. After literature review, gaps framework is used to identify the differences between perceptions and expectations of stakeholders regarding major social issues that universities address or can address. A structured questionnaire containing three demographic items and twenty items related to social responsibility of universities - there were broadly categorized into five dimensions. Significant differences were found in what stakeholders' of universities in KPK perceive and expect on five dimensions of CSR. Gap framework also indicated negative weighted scores on different dimensions. "Education does not mean teaching people to know what they do not know; it means teaching them to behave as they do not behave." John Ruskin (1819-1900) English critic. The notion of corporate social responsibility (CSR) is always been discussed in connection with private sector business enterprise but very rarely it is heard as a slogan of educational institutes (Jimena, 2011), specifically universities or higher education institutes. Universities are responsible to disseminate knowledge and to conduct research that helps society cope with many problems it faces and as a matter of fact it might be assumed that they are already working for a social cause, so there is no point left considering other things. But despite the fact that universities are engaged in addressing a social phenomenon of educating masses, many in the developed world are taking proactive instance to entertain social responsibility paradigm - universities in UK, for example, explicitly express itself as the one which carries CSR as a strategy to be competitive. The research on the issue of CSR in developing countries is far more less than developed countries (Dobers & Halme, 2009) and it's not discussed in context of public sector universities in developing world, particularly Pakistan. The time has long been gone when people were not that much aware of the problems around them. It is time when universities like other institutions and private corporation have to take certain steps to address social concerns of a wide set of stakeholders. This research primarily focuses on the current state of social responsibility in public sector universities of KPK in particular and universities in general. There is need to know the importance of considering interests of stakeholders by universities and to assess, how far Universities have contributed to society? Who are the most influential stakeholders of public sector universities in KPK? What are or could be the drivers of taking social actions? Does being responsible contribute to university success and reputation?

STANDARD AND CONDITIONAL CAPITAL ASSET PRICING MODEL: EMPIRICAL EVIDENCE FROM PAKISTAN STOCK EXCHANGE

*(**Ref No.** ICETEMS-18-001)*

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Adiqa Kousar Kiani *(Federal Urdu University of Arts, Science & Technology, Islamabad)*
Muhammad Umar *(Federal Urdu University of Arts, Science & Technology, Islamabad)*

Abstract: Theory of modern finance is based on two pillars, time value of money and risk management. Therefore, the importance of fair valuation of risk of underlying assets cannot be negated. Capital Asset Pricing Model (CAPM) got paramount importance in the field of asset pricing due to its simplicity for

measuring the market risk. The aim of this is to compare the empirical applicability of the standard Capital Asset Pricing Model (CAPM) and the conditional Capital Asset Pricing Model for the developing equity market and study carries a specific objective of analyzing empirical validity of the said models for the Pakistan Stock Exchange (PSE).Fama-MacBeth regression is used for estimation procedure monthly stock returns for 350 individual stocks have been used from January 2005 to December 2017. The empirical findings do not support the standard Capital Asset Pricing Model whereas findings of conditional Capital Asset Pricing Model is more supportive. In a nutshell, the conditional CAPM is more explanatory as far as Pakistan stock exchange is concerned and confirms the hypothesis that market has time-varying risk premium. Stock market players can get an overview about returns of their investments and it may help in future decisions about investing in the studied stocks.

Keywords: CAPM, PSE, FM Regression, SBP

THE EFFECT OF SOCIAL MEDIA COMMENTS ON CONSUMERS' ATTITUDE TOWARDS BRAND

***(Ref No.** ICETEMS-18-006)*

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Abstract: Social media for brand promotion is easy, cheap, fast and effective but being open to customers and public, brands are exposed to negative and positive comments which may affect negatively or positively these brands. These effects have rarely been explored in the Pakistani user's context where such types of comments have always extraordinary effects on consumers mind. This study is aimed to explore the effect of such type of comments on the social media users in the context of Pakistan. Responses of 200 newly enrolled students in the year 2016, randomly selected from four different institutions of Peshawar were asked through a questionnaire with five levels Likert scale, after they were initially exposed to negative and positive comments on Facebook, regarding four brands of mobile phone sets (Samsung, IPhone, Motorola, and Sony). Data analyzed showed that positive comments on social media had positive effect on the attitude of consumers while negative comments had a negative effect. Positive comments were more persuasive than negative comments. For familiar brands, positive comments were more convincing than negative comments while negative comments didn't affect the attitude of consumers for unfamiliar brands when compared with positive comments. The study is limited to students' community of a specific geography for specified brands, on Facebook. Future research can examine the salaried class for different brands in different geographies for other platform of social media. The study identifies the role of social media comments in the Pakistani context, on the attitude of consumers for brands and guides that how could effective social media campaign be launched. The study contributes to marketing manager understanding of how could an effective social media campaign be launched to cope with diverse type of comments regarding their brands.

Keywords: Negative & Positive Comments, Consumer Attitude, Brand Image, Social media

THE ROLE OF FINANCIAL AND NON-FINANCIAL FACTORS IN

PREDICTING FINANCIAL DISTRESS

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Abstract: The prevalence of financial distress incidents has led to an increasing interest of the researchers in financial distress prediction models since 1960s. Most of the early literature reviews on this subject are now either too narrowly focused or outdated. Thus, a systematic review study is conducted to address this issue by critically reviewing the literature to provide an extensive evaluation of different variables used in the financial distress prediction models to identify factors that can serve this purpose more effectively, which previous studies have overlooked. The prediction accuracy of financial variables (profitability ratios: return on investment ratio, return on asset ratio, Earning before interest & tax to total asset ratio; liquidity ratio: quick ratio, net cash flow / average total assets ratio; solvency ratio: equity ratio, debt ratio; efficiency ratio: sales to total assets ratio; market prospect ratio: market to book value ratio, asset growth rate), non-financial variables such as firm specific factors (firm's board size, firm's age, ownership structure, ownership concentration, CEO duality) and macroeconomic factors (consumer price index, product price index, industrial product price index, gross domestic product, interest and tax rate) is found to be marginally better when they are jointly used. In addition, two new non-financial factors are identified i.e. protectionism (tariffs, import quotas, subsidies) and environmental dynamism (oil and gas prices, political instability, interest rate) in context of Pakistan that could be used in future for modeling financial distress. This review could potentially be the most comprehensive review of the literature on the underlying subject matter, hence addressing the problem of variable choice in developing an effective model of financial distress for empirical application, which will be equally important to investors, creditors, corporate policy makers and government to timely predict financial distress in order to avoid any crises that may come in future.

Keywords: Financial distress, Financial ratios, Firm specific factors, Macroeconomic factors

DESCRIPTIVE STUDY: INDUSTRY 4.0 EVOLUTION AND EXPECTED CONSUMER BEHAVIOR IN PAKISTAN

*(**Ref No.** ICETEMS-18-217)*
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Abstract: Abstract Industry 4.0 is the biggest emerging industry now days. The smart cities, smart factories and smart product are being introduced everywhere. The consumers of smart connected devices are increasing day by day. We can say this type of consumer smart consumer. The requirements and expectation of smart consumers towards industry is increasing very rapidly. In this paper basic focus is on smart consumer behavior from Pakistan for coming industrial revolution. Basically this paper consists of two portions. At first Hawkins Best and Coney model 2004 about consumers buying behavior is consider. This model is used and discussed most of the researches conducted to ensure consumer buying behavior. This model is developed for past industries. The feature of automation is added in this model as a moderator to use this model for future technologies and smart consumers. At the second stage a survey is conducted to evaluate the behavior of consumer. Descriptive study of consumer behavior is done. For this purpose, One

research instrument as a questionnaire is selected among best available four questionnaires. The survey is conducted among smart customer. As a population post graduate students of management and IT department of universities in Pakistan are preferred. It is observed that there is a great scope for smart products in Pakistan.

Keywords: Industry 4.0, consumer behavior, automation, descriptive study, smart customer

DISCLOSING GREEN FINANCE PRACTICES AND INITIATIVES IN PAKISTAN BANKING INDUSTRY: A CONTENT ANALYSIS APPROACH

***(Ref No.** ICETEMS-18-024)*

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Abstract: The importance of green finance in attaining sustainability alongside economic development has grown many folds in the 21st century due to the industrial revolution not only for developing economies but for the whole world. The current study aims to explore the phenomenon of reporting green finance practices in annual reports of Pakistan banking industry. The study focused on the sample size of top nine commercial and non-commercial banks of Pakistan. The selected period of the study is 2015 to 2017. The data regarding green finance and its related activities is collected from the annual reports of these firms. The sentence count methodology through content analysis procedure is utilized to judge the depth of green finance disclosures in companies' annual reports. The findings of the study suggest that in somehow these banks are involved in generating and utilization green finance strategies throughout the years. However, still, the reporting of these practices is low. Hence, it is recommended that the banking sector and other regulatory bodies of Pakistan should re-strategize their policies and more efforts to contribute to the broader categories of green finance. The findings bring significant implications for the different stakeholders and regulatory bodies.

Keywords: Green Finance, Banking Industry, Content Analysis, Pakistan

BEHAVIOUR OF INDIVIDUAL INVESTOR TOWARDS INVESTMENT DECISION

***(Ref No.** ICETEMS-18-164)*

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Abstract: Trading behaviour of the individual investor is based on a human operating system that is a combination of internal and external factors. Behavioural finance has highlighted these factors that form influence investor's decision and predicts trading behaviour with efficient strategies. Therefore, the objective of this study was to identify the effect of different behavioural biases on the financial decision-making of individual investor. The major behavioural biases studied were herding bias, overconfidence bias, disposition effect, anchoring, financial literacy and home bias. Data for this research has been collected from questionnaires through survey technique. 121 potential respondents were identified through

snowballing-non probability sampling approach and interviewed. Regression analysis was used to investigate the relationship between investment decision and behavioural biases and correlation analysis was done to examine the strength of the relationship between variables. This study revealed that Disposition and financial literacy are highly influential factors in the trading behaviour of an individual investor. However, overconfidence and herding biases arose insignificant factors among investors of Peshawar. Anchoring is correlated at a moderate level. Investors preferred to invest in the less risky financial instrument while expecting uncertainty in their future returns. This study will facilitate practitioners to endeavour specialised policies that lead to an unbiased investment decision. It will help the financial institutions to transform their strategies to decrease the level of behavioural biases in an investment decision.

Keywords: Behavioral Finance, Investment, Decision, Biases

A COMPARISON OF CLASSICAL AND ROBUST ESTIMATION PROCEDURES IN THE REGRESSION: EMPIRICAL EVIDENCE FROM PAKISTAN'S ECONOMIC GROWTH ON MACROECONOMIC FACTORS

*(**Ref No.** ICETEMS-18-035)*
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Abstract: This study aims to compare the two methods of estimation- the classical OLS and the robust MM- estimation method in order to select the best set of macroeconomic factors that affect economic growth of Pakistan during 1973-2016. Simultaneous equation model is used for modeling the relationship between the response and explanatory variables. Stationarity of each individual indicator is checked by Augmented Dickey-Fuller (ADF) and correlogram. Therefore, two-stage least square (2SLS) techniques are used for the unknown parameters estimation. Further, the real data sets often contain outliers making classical estimation inefficient and inconsistent. Alternatively, robust technique (MM-estimator) is used for robust fitting of the proposed model to mitigate the influence of outliers, if any, in the data. It is observed that the definitional or identity model of Gross Domestic Product (GDP) in the second stage found is highly significant in both classical and robust regression procedures. Empirical results reveal that robust estimates are more efficient and viable than OLS estimates. Finally, the best set of statistically significant indicators in both classical and robust regression models are identified.

Keywords: 2SLS; robust regression; MM-estimator; GDP

PERSONAL CHARACTERISTICS AND INVESTORS BEHAVIORS: A STUDY IN PAKISTANI CONTEXT

*(**Ref No.** ICETEMS-18-054)*
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Abstract: Investor's behavior is affected by various behavioral factors during investment decision making. Personal characteristics such as gender, age and education of the investor also influence such behavior. The study aims to examine the moderating role of personal characteristics that affect individual investor's decision making in the light of behavioral factors i.e. herding, anchoring, mental accounting, overconfidence and investment return. For data collection, a structured questionnaire was designed using convenience sampling technique from a sample of 300 investors in Pakistan stock exchange. The results of structural equation modelling using Smart PLS reveal that anchoring, herding and mental accounting significantly while overconfidence insignificantly influences investment returns. The moderating results reveal that age positively while education negatively moderates the relationship between anchoring and investment return. Similarly, age negatively while educations positively moderates between the relationship of overconfidence and investment returns. Interestingly, some of the directions change in an insignificant way. The findings of the study contribute to the limited literature of behavioral finance particularly in Pakistani context and have significant implications for the investors, regulatory bodies and policymakers.

Keywords: Behavioral finance, behavioral factors, personal characteristics

RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND TRUST AND THEIR EFFECT ON KNOWLEDGE SHARING

*(**Ref No.** ICETEMS-18-056*)
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Abstract: Knowledge sharing among faculty members is of vital importance for the survival of higher education institutions in the changing technological era. The main aim of the current study, on one hand, is to investigate the relationship between transformational leadership and trust and on the other hand, studying their impact on knowledge sharing among employees of private sector universities in KPK. Six private universities, recognized by HEC were taken as target population. Faculties, serving these universities were taken as sample respondents. Questionnaires from previous literature were used to collect primary data. 150 questionnaires were distributed among respondents to ascertain their views. Simple random sampling technique was used for the study. The overall response rate for the study is 87%.Transformational Leadership, with four facets and Trust with two facets were taken as independent variables, whereas knowledge sharing was taken as an dependent variable. Regression and correlation tests were used to testify the hypothesis. As per result of regressions, it is revealed that presence of trust among faculty triggers the process of knowledge sharing, under the umbrella of transformational leadership style. Key words: Transformational leadership, Affect based trust , competence based trust, idealized influence.

Keywords: Knowledge Sharing, Transformational leadership, Trust, affective trust

DETERMINANTS OF SYSTEMATIC RISK IN COMMERCIAL BANKS OF PAKISTAN

*(**Ref No.** ICETEMS-18-058)*
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Alam Rahman *(National University of Modern Languages, Islamabad)*
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Abstract: Controlling risk taking in deposit institutions is directly related with the protection of financial system and depositors of these institutions. Numerous attempts have been made in this regard to explain and quantify the risk taking including systematic risk of financial institutions. We examine the determining factors affecting systematic risk of banking firms in Pakistan. The study is based on the data of twelve commercial banks listed on Pakistan Stock Exchange which hold around 81.3% market share of the customer deposits in banking sector of Pakistan. We collected data for the period 2010 to 2017 for dependent variables i.e. Value at risk and stock beta and set of independent variables including asset quality, liquidity, firm size, firm growth, business mix, return on assets, loan growth and operating efficiency. The results show that asset quality, liquidity, firm size and return on assets have significant impact on systematic risk of banks in Pakistan, while Business mix reports insignificant impact on systematic risk of banks. Loan growth, operating efficiency and firm growth has given mixed results. Loan growth and operating efficiency has insignificant impact on stock beta while significant impact on VaR. On the other hand, firm growth has insignificant impact on VaR and significant impact on stock beta. It is concluded from these findings that model 1 where VaR is used as measure for systematic risk outperform model 2 where stock beta is used as measure for systematic risk. This study is a significant contribution in understanding and measuring the systematic risk and it is a kind of exposures for commercial banks in Pakistan. The research provides an insight to understand the dynamics of market risk for policy makers, investors and risk managers of commercial banks in Pakistan.

Keywords: Systematic risk, Stock beta, Value at risk, Commercial banks

DO FIRMS' SPECIFIC CHARACTERISTICS AFFECT THEIR FINANCIAL PERFORMANCE? EMPIRICAL EVIDENCE

*(**Ref No.** ICETEMS-18-070)*
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Abstract: This study investigates the impact of a few firms' specific characteristics like age, size, and leverage on their financial performance measured by ROE. By employing a stratified random sample of the non-financial Malaysian listed companies, it is revealed that firms' size has a significant positive while leverage has a significant negative association with ROE. However, unexpectedly, the results also showing that firms' age exerts a significant negative effect on ROE. This posed some serious questions over the strategies and approach of already established firms in the market. The study contributes to the scarce literature with incongruent results. Also, the study updates managers, the board of directors and all other stakeholders regarding the importance and role of firms' specific characteristics in relation to their financial performance and profitability.
Keywords: Age, Size, Firm Financial Performance, Non-financial Malaysian Listed Companies

MEDIATING ROLE OF ECONOMIC BENEFITS IN RELATIONSHIP

BETWEEN DISTRIBUTIVE JUSTICE AND EMPLOYEE PERFORMANCE- A CASE STUDY OF CALL CENTER INDUSTRY OF PAKISTAN

*(**Ref No.** ICETEMS-18-095)*
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Abstract: Abstract The paper examined the influence of distributive justice on employee's performance with the mediating role of career incentives or economic benefits. A total of 120 call center employees have participated in this study but only 112 responses were considered good and reliable enough for further analysis. The participants were selected on random basis from 10 call centers operating in the twin – cities (RWP-ISB) of Pakistan. Hierarchical regression analysis, descriptive analysis and correlation analysis were used for analysis of data and testing of hypotheses. The overall findings of the study evaluated that there is a strong positive correlation between the distributive justice and employee's performance. It was also evaluated that the career incentives or economic benefits partially mediated the relationship between distributive justice and employee's performance. It is recommended that future researches should examine both the individualistic and organizational characteristics to understand the impact of career incentives over performance of employees of an organization. Hence, an organization needs to implement a highly competitive compensation plan and remuneration package and other employee's benefit plans in close proximity with the best practices of distributive justice to achieve consistent and long term sustainability in its performance.

Keywords: Career Incentives, Economic Benefits, Distributive Justice, Employees Performance, Cellular Industry employees.

RESISTANCE TOWARDS CHANGE; ITS CAUSES, IMPACTS AND CONSEQUENCES IN PAKISTANI UNIVERSITIES

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Abstract: The current study aims at exploring the potential of educational repatriates' in bringing the change, and the obstacles being faced by them. This narrative-com-exploratory study employed qualitative method by gathering responses through interviews of 13 respondents from different universities of Pakistan. The data obtained from interviews was analyzed through NVivo to obtain the thematic categories by thematic analysis. And the findings show that educational repatriates are the carriers of up-to-date knowledge that is the best source for introducing change and gaining competitive advantage. But the change though being intended towards positive outcomes, yet faces resistance from the members of the institutions. The resistance is mainly because they do not want to leave their familiar comfort zone, power or autonomy, developed habits and job security. And they do not want to face economic consequences and oldness of their knowledge and skills for which they start resisting blindly without having any logic or reason behind that. But the change can effectively be managed by educating them about the change, making them the part of change, addressing their genuine reservations and by manipulating or co-opting according to the available circumstances. Because competitive advantage can only be gained and sustained by changing with the time and adopting or adapting to the latest knowledge that is the need of the hour, else the institution

will soon be out. Since, Pakistan is passing through the phase of development in higher education sector (HEC, Vision for 2030), the current study is timely conducted to highlight the opponent forces towards change.

Keywords: Change, blind resistance, educational repatriates

WORK RELATED STRESS AND ITS IMPACT ON EMPLOYEES' JOB PERFORMANCE: A CASE STUDY OF TELECOM SECTOR

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Abstract: The purpose of this study was to investigate the relationship between works related stress and employees' job performance. This study was conducted in telecom sector. Quantitative research techniques were used and Questionnaires were distributed as research instruments for gathering the required information. Data of 153 respondents was analyzed using statistical tools reliability, descriptive statistics, linear regression analysis, for concluding deduction as well as for finding an answer to the research questions and pre-defined hypothesis. Results showed that elements like, working condition, interpersonal relationship, work life balance, work over load, and conflicting roles were significantly related to occupational stress. Change, organizational climate, lack of control, career and achievement, were found insignificant. Thus the results indicated that occupational stress significantly impacting employees' job performance in telecom sector. Limitations, scope for future research programs in this area have been incorporated in this research study.

Keywords: Work-life, Stress, Workload, Performance

THE IMPACT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE: EVIDENCE FROM PAKISTAN

*(**Ref No.** ICETEMS-18-120)*
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Abstract: The purpose of this study was to investigate the impact of capital structure on firm performance. A whole population of 155 Non-financial textile sector companies listed at Karachi Stock Exchange (KSE) were taken as census for data analysis for the period 2007-2012. For this purpose, data was collected through Financial Statement Analysis (FSA) report given on the SBP website. After the collection of Time series, Panel data two different tests correlation and regression analysis were run as a statistical tool for data analysis. Correlation test was conducted to check the percentage of association between dependent and independent variables. While regression analysis was conducted to check the impact of capital structure on firm performance. Econometrics model was run through regression. In the model, dependent variable return on assets was regressed on two independent variables debt and equity, Data analysis was done through SPSS. Results showed a statistical significant association between independent variables debt and equity

with dependent variable return on assets. Hence, it was concluded that capital structure is linked firm performance.

Keywords: Capital Structure, Firm, Performance, Textile Sector, Pakistan

EFFECT OF NON-FINANCIAL REWARDS ON EMPLOYEE`S MOTIVATION "THE CASE STUDY OF ISLAMIC BANKS OF PAKISTAN"

*(**Ref No.** ICETEMS-18-027)*

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Abstract: The study is all about the role of non-financial rewards in motivation process specifically focusing the employees of Islamic banks where the employee has joined the organization due to certain liking and affiliations with religion other than worldly rewards. For this purpose, 385 respondents were selected randomly from five full-fledged Islamic banks in the state of Islamic Republic of Pakistan. Pearson's correlation and ordinary least square regression analysis is used to test the evidences. The primary aim of this research is to investigate the important non-financial rewards that are essential in motivating employee. Empowerment is not motivating the employees of operation department in these banks. However, positively significant evidences were studied against training and development, appreciation and recognition, career advancement opportunities and work life balance. Moreover, the employees of these Islamic banks are satisfied from their social life because they may have sufficient time for their social activities. Working Environment is a mediating variable in this research study after analyzing the results of Sobel test it has been concluded that the association between appreciation & recognition, career advancement, work life balance are significantly effect by the intervening of the mediator. The over-all conclusion of the study focuses on the improvement of non-financial rewards strategy to enhance the performance of the employees. The findings can be generalized to the over-all Islamic banking industry. Motivation, non-financial rewards, work life balance, mediator, career advancement, & appreciation & recognition.

Keywords: Motivation, non-financial rewards, work life balance, mediator, career advancement, & appreciation & recognition.

INVESTOR SENTIMENT IN STOCK MARKET: A CASE OF PAKISTAN SUPER LEAGUE IN PAKISTAN STOCK EXCHANGE

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Abstract: This study investigates whether sentiments play any role while investors make financial decisions which results in the stock returns. The paper analyzes the major two sports events (2016-2017) of Pakistan Super League (PSL). The study utilizes the stock market data from the Pakistan Stock Exchange (PSX)-100 index for the period of two financial years starting from June 2015 to July 2017. PSL T20 data is collected from the official PSL website. The empirical results of the study show that PSL sports events are highly statistically significant and imply that the events trigger investor sentiments (optimistic and pessimistic behaviors) in the PSX. When the whole PSL games were played on United Arab Emirates (UAE) grounds in 2016, later on, which badly affected the investor moods and resulted in a negative abnormal return in PSX-100 index. While in case of PSL event in 2017, in which only final match of the event was held in Lahore, Pakistan and resulted in a positive abnormal return in PSX-100 index. The study provides implications for different authorities such as Pakistan Cricket Board (PCB), PSX and other development authorities in order to promote such activities for the overall economic and social benefits. While founding no previous studies concerning the subject in the Pakistani context, the Scholar selected the issue to conduct a research and make a considerable contribution for investors in Pakistan with respect to PSL events and its impact on PSX.

Keywords: Investor Sentiments, Stock returns, behavioral finance, Pakistan Super League, Pakistan Stock Exchange

THE IMPACT OF INTERNAL FACTORS AND THEIR EFFECT ON PROFITABILITY: A CASE STUDY OF LIFE INSURANCE COMPANIES OF PAKISTAN

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Abstract: This research is about "The impact of internal factor & their effect on profitability's: A case study of life insurance companies in Pakistan" for a period of five years from 2012 to 2016. The data for this purpose is acquired from an official website of the life insurance companies, which are formally registered with "Securities & Exchange Commission of Pakistan (SECP). The independent variable of the study is Leverage, Tangibility, Liquidity, Size, Age, and Growth while ROE consider as dependent variable. The research is based on descriptive study and deductive approach has been used to set the theory. The quantitative data is obtained from secondary data analyzed by using SPSS tool is used for the regression analysis to run panel analysis common coefficient model; the findings show that overall model is significant. The finding of the analysis show that firms Leverage, Liquidity and Growth have negative and statistically insignificantly affect with the Profitability of the firms, whereas as Tangibility, Size and Age

have positive affect with profitability while Size is statistically insignificant and tangibility, age having significant affect with profitability of Life Insurance Companies of Pakistan. Moreover, there is a positive and direct relationship between independent variable as Tangibility, Size and Age with Profitability while negative and insignificant relationship between Leverage, Liquidity and Growth with the Profitability of Life Insurance Companies of Pakistan.

Keywords: Insurance companies, Profitability, Leverage

HEXACO MODEL OF PERSONALITY AS A PREDICTOR OF ACADEMIC ENTITLEMENT

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Abstract: Academic entitlement is considered a major concern in secondary and higher education. It is treated as documented problem however the causes are not well addressed. Recently, the role of personality has received an increasing attention in explaining academically entitled behaviors. The aim of this study was to identify personality traits that best predict academic entitlement. Population of this study included 5746 students from Management department of different Universities of Peshawar. A sample of 361 was selected arbitrarily using proportional and allocation method. However, only 269 individuals responded to the call (response rate=76.6%). All variables were measured using adapted questionnaires. Reliability of all the scales was tested using Cronbach's alpha coefficient. To test the hypotheses of the study multiple regression technique was used. Results reveal that HEXACO model is significantly related only with entitled expectations, a component of academic entitlement. This implies that academic entitlement was somewhat predicted by HEXACO model, that is, only extraversion was a significant predictor of academic entitlement. Overall, results stated that academic entitlement is somewhat predicted by HEXACO model of personality. It is recommended that as academic entitlement exists in higher education students, so precautionary measures should be adapted. Keywords: Personality, HEXACO, Academic entitlement.

Keywords: Personality, HEXACO, Academic entitlement.

INVESTIGATING THE RELATIONSHIP BETWEEN HEXACO MODEL OF PERSONALITY AND ETHICAL LEADERSHIP

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Abstract: The purpose of this study was to investigate the relationship between HEXACO model of personality and ethical leadership. Uptil now, ethical leader's behavior variation and its linkage to HEXACO model is not clear and therefore further investigation is required in this regard. An important focus of the study is to apprehend the strongest predictor of ethical leadership in personality traits of

HEXACO. Population of this study included 131 leaders/ officer rank employees working in four educational organizations of Peshawar. A sample of 97 respondents was drawn using an arbitrary approach. The data was collected through questionnaires filled by leaders themselves (self-rated). The HEXACO personality traits (Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience) were measured through self-ratings using the HEXACO Personality Inventory Revised (HEXACO-PI-R). Ethical leadership behavior of the leader was measured using the ethical leadership scale by Brown et.al. (2005). Reliability of all scales was tested using Cronbach alpha coefficient and all scales were found reliable. All hypotheses were tested using linear regression. The findings reveal low but significant relationship between HEXACO personality traits and ethical leadership. As anticipated, conscientiousness appeared as one of the two strongest correlates of ethical leadership. Agreeableness was found to be the other significant positive predictor of ethical leadership. In contrast, Emotionality, openness to experience and extraversion were found unrelated to ethical leadership. Recommendations for research and practice have also been provided.

Keywords: Personality Inventory (PI), HEXACO model, Ethical leadership, Five Factor model.

WORKPLACE POLITICS AND EMPLOYEE PERFORMANCE: AN EMPIRICAL STUDY OF EDUCATION SECTOR IN PAKISTAN

*(**Ref No.** ICETEMS-18-174)*

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Abstract: Presence of intensely competitive and complex business environment has completely changed the way of organizations used to interact and conduct their businesses. As complexity in business globe is increasing, so is the competition in the companies to enhance their performance and meet their goals within defined timespan. However, it is considered that increase competition and lot of pressure on organizations is leading toward lot of organizational politics. This research paper completely revolves around investigating and examining the Impact of organizational politics on the performance of employee in educational sector. Johnson and Scholes Cultural Web Theory 1992 is used in this paper. The research is quantitative in nature, and after in-depth analysis and consideration, questionnaire has been adopted in order to collect data from the respondents. The respondents of the study are employees that are teachers and management staff of the colleges and universities of Lahore, Sialkot, and Gujranwala. Probability random sampling has been adopted and the total sample size is 257 respondents. The data have been deeply analyzed through the implication of regression and correlation analysis for the model testing by using SPSS. Main predicators of model summary are organizational politics, political behavior, decision making and employee performance. The findings of this research highly recommend that by changing the attitudes and make the participatory role high for the employee gives them liberty to raise their voice, share their opinions and the transparency will take place which decrease the negative aspects of the organizational politics. Future recommendations are given in this research paper.

Keywords: Organization politics, Political Behavior, Decision Making, Employee Performance.

DEPENDENCE OF SUKUK INDEX ON CONVENTIONAL STOCK INDICES OF PAKISTAN

***(Ref No.** ICETEMS-18-212)*

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Abstract: Sukuk are a growing portion of the Pakistan Stock exchange and a source of Shariah compliant securities for faith conscious investors in Pakistan. Sukuk market started only a few years ago in Pakistan and is still in early phase of growth. For this reason, we need to focus our research on this growing segment of securities market and help to explore new growth opportunities along with influencing factors within Pakistan's Stock Market. In this research we tried to find out if a relation exists between Shariah Compliant stock market and other non Shariah compliant indices like KSE30 and KSEAll. We took 5 years of daily stock index returns data from these indices and used it under multiple linear regression analysis to find out existence of correlation among these markets and the strength of this correlation accordingly. Results were found consistent with provided hypothesis that there exists a significant relationship among KMI Index and the KSE Indices and the dependence of KMI 30 index over KSE indices was proven. The research suggested a multiple regression equation to calculate fluctuations in KMI30 index if the KSE 30 and KSE All index had a rise or fall.

Keywords: KMI, KSE, Stocks, Sukuk, Correlation

IMPACT OF ABUSIVE SUPERVISION ON TASK PERFORMANCE: ROLE OF WORK FAMILY CONFLICT AND SELF-EFFICACY

***(Ref No.** ICETEMS-18-225)*

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Abstract: Supervision is the capability through which an individual and subordinate get influenced by supervisors for particular course of action. In any organization, an individual has to work in groups, teams and under the supervision of leader. Abusive supervision in an organization reduces individual level as well as organizational level performance. The purpose of this research study is to investigate the relationship between abusive supervision and task performance along with the mediating role of work family conflict and moderating effect of self-efficacy. Abusive supervision is a multi-dimensional construct that revealed the attention towards organizational performance and individual growth. A survey based questionnaire is used in this research study to collect data from employees of hospitals. It is concluded in this research study that negative relationship exists between abusive supervision and task performance. Work family conflict also reduces the task performance and self-efficacy plays a vital role to overcome the influence of work family conflict on task performance. In order to improve the task performance, managers have to make working environment free from abusive supervision.

Keywords: Abusive Supervision, Task Performance, Work Family Conflict, Self-Efficacy

RELATIONSHIP BETWEEN BORROWERS' PERSONALITY AND LOAN REPAYMENT: EVIDENCE FROM BANKING SECTOR

*(**Ref No.** ICETEMS-18-231)*
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Abstract: The increased rate of bank default rate has emphasized the need for the creation of new tools to access expected default rate in borrowers. The article offers an assessment of borrower's personality as one such tool. The research is about the relationship between borrowers' personality and loan repayment. We have selected a sample size of 500 borrowers from the banking sector of Pakistan. The borrowers belong to five different banks i.e., ZaraiTaraqiati Bank Limited, Meezan Bank Limited, Habib Bank Limited, United Bank Limited and National Bank of Pakistan. 50% regular borrowers and 50% defaulters have been selected. Questionnaire survey has been used to collect data related to personality of the borrowers. The two sets of borrowers (i.e., regular and defaulter) have been compared using one-way ANOVA. The results depict significant difference between regular borrowers and defaulters on various dimensions. The low education level, low income, increased number of dependents, high extroversion, and high neuroticism has been found associated with default rate. While increased education level, high income, less number of dependents, high conscientiousness, high agreeableness, and high openness to experience have been found associated with regular repayment. The financial institutions can decrease the default rate by considering the personality traits of borrowers at the time of issuing of loans.

Keywords: Borrower, Defaulter, personality traits, Loan repayment

IMPACT OF KNOWLEDGE MANAGEMENT AND LEARNING ORGANIZATIONS ON COMPETITIVE ADVANTAGE: A STUDY OF SOFTWARE HOUSES OPERATING IN PAKISTAN

*(**Ref No.** ICETEMS-18-232)*
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Shahzdah Fahed Qureshi *(Bahauddin Zakariya University)*
Hina Hafeez Hashmi *(National College of Business Administration & Economics)*

Abstract: This study aimed to develop a comprehensive model regarding knowledge management and learning organization and their impact on competitive advantage. The interrelationship among knowledge management, learning organization and competitive advantage was investigated. This study has tried to enlarge existing literature by making numerous considerable contributions by conducting a research on software houses operating in major cities of Pakistan. The evidences verified that the proposed theoretical model is practicable in the perspective of developing countries like Pakistan. While majority of software houses operating in Pakistan are of small and medium scale. The findings also verify that software houses are actively engaged in the knowledge management activities and their firms' support a learning culture and environment for their workforce on individual and collective basis.

Keywords: Knowledge management, Learning organization, Competitive advantage, Software house

AN INQUIRY INTO EMOTIONAL EXPERIENCES DURING ORGANIZATIONAL CHANGE: A LEADER AND FOLLOWERS PERSPECTIVE

*(**Ref No.** ICETEMS-18-234)*
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Abstract: Whenever there is any change in leadership, it has an impact on the employees. The purpose is to explore the 'lived' emotions in relation to a particular context of the changes brought by a leader and the way followers interpret those changes. This research explored emotions of the leader as well as the followers during the time of change through qualitative research methods. Twenty semi-structured in-depth interviews were conducted out of which one was a leader and nineteen were followers from a public sector university. Data was analyzed through thematic analysis. The informants reported mixed emotions to the changes during the interviews. Leader experienced "happiness" "challenged" other time "frustrated" and "uneasiness". However followers reported "uncertainty", "joy", "burden", "happy" and "frustration". Results also showed that most of the respondents were contented with the changes and were satisfied with the leaders' style of leadership. Positive impacts of well-managed leadership changes as perceived by employees resulted in profitability, better environment, better organization to work in, new ideas and individual growth. Whereas, employees who had encountered negative impacts of the changes experienced stress, uncertainty, burden, frustration and job insecurity. This is a rare qualitative study of emotional change experiences of the leader and followers where the informants were interviewed within specific organizational and change contexts. The leadership literature is far less rich in showing the emotional experience during times of change of both the leader and followers that this paper contributes.

Keywords: Emotions, organizational change, leadership, follower's perception

WHAT DETERMINES EMPLOYEES EXIT FROM MANUFACTURING ORGANIZATION? ANALYZING THE CAUSES

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Abstract: This study explored and analyzed causes of employee turnover at manufacturing organizations of Site area Kotri, and the industry-wise difference among the responses of participants in the study. This is a cross-sectional research study, semi-structured interviews were conducted as pilot study and a survey was conducted through closed-ended questionnaires subsequently. Sample consists of 342 employees working at 12 different — oil, flour, textile and paper — mills situated in Site Area Kotri. There are ten variables, turnover intention is dependent on factors identified as its determinants namely; demographic factors, poor reward & benefits, job insecurity, unfavorable workplace environment, unconducive management style, alternate job opportunities, overtime unavailability and attraction to gratuity withdrawal. Turnover intention has employee turnover as a dependent variable. Data were analyzed with the use of SPSS 24.0, AMOS 24.0. Different statistical techniques were applied namely; Frequency Distribution, ANOVA, and Structural Equations Modelling. This study has provided a comprehensive model comprising causes and of employees' turnover, and the structural model is satisfactory in terms of fit indexes. Seven hypotheses were supported out of the nine hypotheses. The factors determined as significant causes of

turnover intention should be improved by the management of organizations for mitigating the detrimental consequences of employee turnover.

Keywords: Causes, intention, exit

INVESTIGATING THE ROLE OF NETWORKING IN ORGANIZATIONAL RESILIENCE: MODERATING ROLE OF ORGANIZATIONAL INERTIA

***(Ref No.** ICETEMS-18-182)*

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Abstract: The objective of this study was to investigate the role of networking (i.e. organizational culture, level in organization, personality, attitudes towards workplace politics) in organizational resilience. Other idea was to look at the moderating role of organizational inertia.

This research is based on organizational work environment in which supervisory role and team care can change the dynamics of organizations during risk management. Work environment bridging organizational resources and provide ways for individuals in organizations to make it in a positive way. Success of an organization is primarily associated with risk management and performance outcomes. The study targeted permanent workers of commercial banking sectors of Peshawar region by convenient sampling technique. Questionnaires were used to collect responses; 300 questionnaires were floated to the banking employees of public and private sector. Out of 300 questionnaires, 200 responses were received with response rate of 78%. Correlation and regression were tested by using SPSS (17th version).

Results identify that role of networking are positively correlated with organizational resilience. Whereas role of risk management and organizational resilience showed negative relationship and team care did not show any significant effect on risk management. The results also revealed that work environment has positive relationship with organizational inertia.

However, moderating role of organizational inertia can bring positive results with the role of networking. Employees in organizations which shows positive attitude towards workplace politics has negative correlation with organizational resilience. Work environment has effective role during risk management and support resilience in an organization which can better cope with external environment and provide opportunities through which organizations create competitiveness and more dynamic networking for the success of an organization.

CRITICAL SUCCESS & RISK FACTORS OF AGILE SOFTWARE DEVELOPMENT: A SYSTEMATIC LITERATURE REVIEW

***(Ref No.** ICETEMS-18-048)*

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Abstract: In software industry, success and risk factors play important role in the development of software. The productivity and performance of software is dependent upon these factors which are necessary for projects using Agile software development (ASD) methodologies. Most of the current researches are limited to risk and success factors of ASD which are available in scattered form. This motivated the researcher to conduct a research comprised of detailed SLR in order to highlight the risk and success factors of ASD. On the basis of this the current research divided the success and risk factors into four different

classes. i.e., People, Process, Technology and Organization. However, further classification and detail about these factors are also part of this research.

Keywords: risk factors, success factors, systematic literature review, agile, ASD

IMPACT OF INTELLECTUAL CAPITAL ON ORGANIZATION PERFORMANCE; AS A MEDIATION OF KNOWLEDGE SHARING IN PHARMACEUTICAL COMPANIES OF PESHAWAR

*(**Ref No.** ICETEMS-18-250)*

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Muhammad Asif, Assistant Professor *(City University of Science & IT, Peshawar)*

Abstract: The objective of the study was to examine different effects of intellectual capital on organizational performance by taking knowledge sharing as a mediating factor. Intellectual capital was used as an independent variable which includes; Human capital, structural capital and relational capital; however Organizational performance was select as the dependent variable. Knowledge sharing was selected to check the mediation effect between intellectual capital and organizational performance. Employees working at Pharmaceutical companies in Peshawar has targeted population which includes managers and sales representations. 120 employees were selected as responded by using convenient sampling technique. Likert Scale questionnaire was used for data collection. Analysis includes; reliability of the scale, regression analysis and Baron and Kenny (Mediation effect). The results suggest that there is a positive significant impact of intellectual capital on firm performance and knowledge sharing has also a positive impact on the performance of pharmaceutical companies. Finally, the study concludes that knowledge sharing shows positive mediating effect in-between the relationship between intellectual capital and organizational performance. The study is beneficial for the employees and also employers of pharmaceutical companies.

Keywords: Intellectual Capital, Organizational performance, Knowledge sharing

EXAMINING THE EFFICIENCY OF LEATHER PRODUCTS EXPORTS DETERMINANTS: EVIDENCE FROM PAKISTAN

*(**Ref No.** ICETEMS-18-269)*

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Abstract: Leather products manufactured in Pakistan is widely accepted in the international market. After the detailed literature review, this research paper attempt to identify the major relationship affecting the leather export performance of Pakistan using the monthly time series data over the period of July 2003 to December 2017, released by State bank of Pakistan. The data analysis technique involved in empirical investigation includes (a) unit root test, (b) optimal lag selections, (c) bound test and (d) autoregressive distributed lag (ARDL). The finding of this study indicates that leather import related activities and exchange rate index has a positive and significant impact on leather export performance in the long-run whereas export promotion program showed insignificant impact. Result estimates are useful for leather exporters in minimizing financial risk.

Keywords: leather export, leather import, exchange rate index, ARDL model.

AN EXAMINATION OF THE DETERMINANTS OF CONSUMER LOYALTY IN INTERNET BANKING PERSPECTIVE

*(**Ref No.** ICETEMS-18-275)*
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Abstract: With the global brisk development in the field of information & communication technology, banking industry also presented Internet based banking services due to larger interest of consumers in online systems. The consumer e-loyalty to websites for availing services being offered has been a dominant factor in increased profitability for banks. However, there has been limited research conducted in analyzing the impact of determinants on consumer e-loyalty of Internet banking in Pakistan. The objective of this research is to investigate direct impact of consumer e-satisfaction, consumer e-trust, and website quality features on consumer e-loyalty. Data was collected through questionnaires using judgment sampling method from consumers of Internet banking as employees of private/public sector companies of Pakistan. The findings of this research show that all determinants have positive significant impact on consumer e-loyalty of Internet banking. Implications from this research would assist in increasing consumer loyalty of Internet banking.

Keywords: Internet banking, e-loyalty, e-satisfaction, e-trust, website quality, consumer loyalty

FROM CRITICAL SUCCESS FACTORS TO CRITICAL SUCCESS LEVELS FOR TRANSFER OF KNOWLEDGE; A REVIEW OF LITERATURE

*(**Ref No.** ICETEMS-18-302)*
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Abstract: Organizations are interested in creation and transfer of knowledge for achieving sustained competitive advantage in the market. Literature has identified several critical success factors (CSF) and critical success areas (CSA) that influence the process of transfer of knowledge i-e either by facilitating/accelerating the transfer process or by creating bottle necks in the process. The identified CSF and CSA are not only overlapping but are wide spread in terms of their scope of applications, e.g some are applied to individuals' others make more sense in organizational or societal context. Thus, it is difficult for managers to pin the areas within the organization that needs more attention for application of knowledge management strategy. Furthermore, like organizational strategies, knowledge management strategy (transfer included) is developed for different levels i-e unit, department and organizational etc. Thus, if managers are planning to design and implement knowledge management strategy to accelerate transfer of knowledge within/among organization/departments/individuals they need to view the critical factors and areas (facilitators + barriers) through the lens of strategy design and implementation levels. Therefore, there is a need to convert the CSF and CSA into critical success levels (CSL) for implementation knowledge management strategy. In the given (brief) backdrop the study systematically reviewed the literature with following objectives in view; a) Enlist (available in literature) critical success factors and critical success areas for transfer of knowledge with clear distinction (based on theoretical definitions) and eliminate overlapping factors and areas, b) divide the identified CSF and CSA in critical success levels for successful knowledge management strategy implementation.

Keywords: Critical Success Factors (CSF), Critical Success Levels (CSL), Knowledge Management (KM), Transfer of knowledge (ToK).

IMPACT OF INTELLECTUAL ENTREPRENEURSHIP ON THE BUINSESS PERFORMANCE OF SMES

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Abstract: In business environment, the small and medium enterprises (SMEs) are facing complex and dynamic challenges. The aim of this study is to determine the impact of intellectual entrepreneurship on the business performance of SMEs operating in Malaysia. To achieve the objective of this study, 140 participants were involved. Participants were selected through purposive sampling technique. Smart PLS was used to test the proposed research hypotheses.

Keywords: Intellectual entrepreneurship, high-tech SMEs, practical challenges, business success, Pakistan

FACTORS AFFECTING IT IMPLEMENTATION SUCCESS IN SMALL AND MEDIUM ENTERPRISES OF PAKISTAN: THE MEDIATING ROLE OF USER INVOLVEMENT

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Abstract: Small and Medium Enterprises (SMEs) are an integral part of any economy and assume even more importance in economic growth of developing countries. Although the recent boom in information technology (IT) has provided many benefits for SMEs, successful implementation of IT in SMEs requires them to adopt certain changes to remain competitive in the market. The key objective of this study was to assess the impact of factors known in literature to contribute towards IT implementation success in specific context of Pakistan. Top management support, customer networking, supplier networking and individual information technology capital were hypothesized as independent variables while user involvement was hypothesized as mediating variable for predicting IT implementation success in SMEs. The study was grounded in positivist philosophical and methodological tradition. Several hypotheses driven from literature review were tested using a deductive approach. Using a cross-sectional survey design, data was collected on modeled variables through a structured questionnaire generated using 'Google Forms' application. A Sampling frame of 2400 registered SMEs for the study was obtained from the databases of SME Development Authority (SMEDA) and Lahore Chamber of Commerce and Industry (LCCI). 448 individually filled questionnaires were received back from 112 randomly selected SMEs (4 responses per SME). As the unit of analysis was 'organization', responses from individuals from any single SME were summated and considered 'facts' reported on the organization by the individual members. In this way, responses from IT professionals were converted into data on modeled variables at organizational level. Correlation and multiple regression analyses were performed though structural equation modeling (SEM)

using Amos 24. Results indicated that top management support, customer networking and supplier networking were significantly related with IT implementation success and user involvement partially mediated the relationship among independent variables and dependent variable. However, the Individual IT capital was uncorrelated with IT implementation success. It was found that customer networking was the single most important factor for IT implementation success followed by top management support supplier networking. However, these factors led to IT implementation success at least partially through user involvement in IT implementation process. We conclude that top management support for involvement of internal users in IT implementation process and customer networking and supplier networking process involving internal users of IT increases the chances of IT implementation success in SMEs. Keywords: Top management support, customer networking, supplier networking, individual IT capital, user involvement, IT implementation success, SME's in Pakistan.

Keywords: Top management support, customer networking, supplier networking, individual IT capital, user involvement, levels of computer experience, IT implementation success, SMES Pakistan.

IMPACT OF CUSTOMER ORIENTATION IN SERVICES INDUSTRY OF PAKISTAN: A CASE OF TRANZUM COURIER SERVICE PESHAWAR PAKISTAN

*(**Ref No.** ICETEMS-18-335)*

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Abstract: The aim of this research was to determine the relationship between customer orientation and service industry. The study was conducted in the logistic sector. For this reason, the variables were selected by using the SERVQUAL Model and the methodology used for studying this relationship was regression model. According to this model, the significance and insignificance of the selected variables was discovered, which showed the variables which had a stronger impact and the ones that did not have a strong impact on Customer Orientation of TCS Peshawar. A survey was conducted by using the tool of constructing the questionnaire. The study has used the non-probability sampling and the sample of 230 respondents was selected out of which 210 responded. The statistical tool used for this research was the regression model which was used to study the impact of independent variables on the dependent variable. The result of the analysis showed that the customers were satisfied with the services, packages, the behavior of staff and the security offered by TCS. The results also showed that the prices offered by TCS are comparatively high and this factor was an advantage for the competitors so for gaining competitive advantage, TCS should reduce their prices. Other suggestions were about the number of outlets of TCS in Peshawar. It is suggested for TCS to increase the number of outlets for the customers so that they have the outlet at an arm's reach.

Keywords: Customer Orientation, Logistics, Competitive Advantage, Outlets, Regression.

EFFECT OF NON-CASH WORKING CAPITAL ON THE PROFITABILITY OF NON-FINANCIAL FIRMS OF PAKISTAN

*(**Ref No.** ICETEMS-18-336)*
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Abstract: Working capital management is very valuable for the profitability of the firm, therefore it is important to manage it. The core motive of this research was to investigate the impact of non-cash working capital management on the profitability of non-financial firms. An optimal working capital is necessary for smooth operations to get profitability. Ordinary Least Squares (OLS) regression model was used to estimate the relationship based on 10 firms that were registered in Pakistan Stock Exchange (PSX) for 2011-2015. The results showed that the number of day's account payables was positively and the number of day's account receivables was negatively related with profitability, which showed that, firms can perform better, when manage their receivables and as well as pay their creditors on time. Inventory management was positively related to profitability which showed those firms that properly manage their inventories suffer less from its deficiency. Besides this, the cash conversion cycle was positive and insignificant with profitability. Based on results, firms, and even governments should get a better understanding of this relationship. More studies should be done in the future by increasing the sample size to get better and effective estimates of the panel. Beside above mentioned non-financial institutions, there are many other institutions where this study could be relevant. It was also recommended to invest more in all the profit-generating activities in order to increase the income as well as the reserves.

Keywords: NON-CASH WORKING CAPITAL, CASH CONVERSION CYCLE, PROFITABILITY.

ROLE OF MICRO FINANCE ON THE DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES (SMEs)

*(**Ref No.** ICETEMS-18-338)*
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Abstract: This work has tries to investigate the impact of micro finance on the development of Small and Medium Enterprises (SMEs). The primary data was collected through questionnaires from SMEs in Peshawar. The results show that micro finance plays a vital role in the revenue and profit growth of SMEs and reveals that SMEs with higher financial risk and lower level of productivity are more likely to seek micro credit. Furthermore, the results suggest that firm characteristics including product innovation efforts and managerial and entrepreneurial attitudes are the key determinants of the likelihood of receiving micro finance. The main problems identified were lengthy documentation process, lack of information about the micro credit other security requirements.

Keywords: SME's, micro finance

REVISITING ORGANIZATIONAL LIFE CYCLE (OLC)

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Abstract: Organizational Life Cycle (OLC) is a concept which has taken as a unique phenomenon to discuss the pattern of an organization as a life of living being explained over the time period. As the concept is derived from the biological life cycle, it is assumed that OLC is a generalizable, sequential and predictable phenomenon that can be applied to every organization regardless of its type and existing differences. This study has targeted these assumptions to suggest contingent models of OLC representing the different types of organizations operating in different environments by pursuing variety of strategies. As organizations vary in their goals, strategies, systems, operations etc, therefore a traditional model of OLC is no more applicable. Therefore, concept of OLC is described in the light of organizational environment in this study to propose contingent OLC models despite of a single OLC model. The proposed OLC models are derived conceptually in this study which still needs to be tested empirically. According to the study organizations operating as closed systems may experience simple and stable Environment. While in dynamic environment OLC movement is no more smooth rather an abrupt growth and decline in OLC. All such possibilities have altered the traditional movement of OLC and proposed new OLC models in this study. The study suggests the future researches to see OLC as a contextual domain rather than a traditional one and predict the organization's life cycle on the basis of their actions rather dictating their actions.

Keywords: Organizational environment, organizational change, organizational strategy

PERCEPTIONS AND EXPECTATIONS OF STUDENTS REGARDING LIBRARY SERVICES PROVIDED IN THE UNIVERSITY OF PESHAWAR

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Abstract: The study was designed to explore the services provided by the library staff of different departments/institutes in the University of Peshawar. Moreover, the quality of library services provided in University of Peshawar was another key objective. All those students who studied in the University of Peshawar session 2015-2016 were taken as a sample population for the study. Stratified random sampling was used and divided the faculty into six stratums. The sample size was fixed 399 from all 42 departments/institute in the University of Peshawar out of total 14456 populations. SERVQUAL data collection instrument was adopted to analyze the perceptions and expectations of library borrowers. The study was found that highest expectation observed i.e. about welcoming and positive attitude of library staff towards borrowers & readers, lack of attractive physical appearance of library holdings & not properly arrange library material, and lack of proper orientation about library material & library services. The result showed that the respondents had good perceptions regarding library services in the University of Peshawar. The study further recommends that in order to improve the welcoming and positive attitude of library staff towards library readers, proper training/instructions may be initiated, library material may be properly arranged, exhibit new arrivals which attract readers in order to promote reading habits. Keywords: Perceptions, Expectations, Library Services

Keywords: Perceptions, Expectations, Library Services

ROLE OF LEADER SECURE BASE SUPPORT ON EMPLOYEE'S PROACTIVE WORKPLACE BEHAVIOR WITH THE MECHANISM OF AUTONOMOUS MOTIVATION AT WORK AND MODERATING ROLE OF ISLAMIC WORK ETHICS: A STUDY OF BANKING SECTOR OF PAKISTAN

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Abstract: The Leader Secure Base Support in the terms of (leader availability, encouragement and non-interference) positively supports employee's workplace behavior. The current study examines the impact of Leader Secure Base Support (availability of leader, encouragement to growth and non-interference) on proactive workplace behavior of employees with the mechanism of autonomous motivation and moderation of Islamic Work Ethics. Data from 286 employees were collected from the banking sector of Pakistan through convenience sampling technique. Later the data was tested through SPSS and one-way ANOVA and different tests were performed. The results show that the leader secure base support has positive significant effect on the proactive workplace behavior of employees. Autonomous motivation also proves a significant underlying mechanism between leader secure base support and proactive workplace behavior. Furthermore, the Islamic Work Ethics does not moderate the relationship of leader secure base support with autonomous motivation. It is concluded that leader secure base support is very helpful to enhance the proactive workplace behavior of employees in banking sector which leads to banking growth. The other outcomes of the leader secure base support can be discussed in the future study in IT industry.

Keywords: Leader Secure Base Support, Proactive Workplace Behavior, Autonomous Motivation, Islamic Work Ethics

DETERMINANTS OF ENTREPRENEURIAL INTENTION: THE MEDIATING EFFECT OF ENTREPRENEURIAL EDUCATION

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Abstract: Entrepreneurial Intention (EI) at corporate level significantly influenced not only by attitude toward entrepreneurial behavior, personality traits, and perceived entrepreneurial behavioral control, but also by entrepreneurial education for creation of new business. EI is the key factor that explains the company's ability to engage in entrepreneurial actions. This study hypothesized direct relationships of entrepreneur's attitude towards entrepreneurial behavior, personality traits, perceived entrepreneurial behavioral control, and entrepreneurial education with EI. Moreover, this study hypothesized the mediation of entrepreneurial education between attitude toward entrepreneurial behavior and EI and the mediation of entrepreneurial education between perceived behavioral control and EI. The current study collected data from the university students who have already study entrepreneurship course. A self-administered survey questionnaire was used to collect 300 questionnaires from the students. PLS-SEM software is used for data analysis. Results supported the direct relationship of determinants of EI except attitude toward

entrepreneurial behavior with EI. In addition, the study supported the direct relationship of determinants of entrepreneurial education with EI. This study supported the mediation of entrepreneurial education between perceived behavioral control and EI. However, the mediation of entrepreneurial education between attitude toward entrepreneurial behavior and EI is not supported. This indicated that attitude towards entrepreneurial behavior directly related with EI even without entrepreneurial education. This study suggested to the policy makers that for planning the education careers of students particularly incorporating important determinants of entrepreneurial intentions that they should consider the age of entrepreneur, training, and experience factor while investigating determinants of EI.

Keywords: Entrepreneurial Intention (EI), Perceived Behavioral Control (PBC), Entrepreneurial Education, Attitude Toward Entrepreneurial Behavior, Personality Traits.

EQUANIMITY, A SOLUTION TO INVESTORS' BEHAVIORAL BIASES

*(**Ref No.** ICETEMS-18-346)*

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Abstract: The focus of behavioral finance is to explore the reasons of investor's irrational investment behavior that may leads towards losses and inability of investor's aim to maximize wealth. These biases are outcome of the way people collect and process information (cognitive and social biases respectively) while taking investment decisions. Investment world is not free of volatilities, uncertainties and producing unexpected outcomes for the investors; in such a situation investors need an approach that can help them to accept the investment outcomes without having any bad feelings about their losses. Decisions involving emotional or cognitive biases may not produce desired and may lead towards undesired results. Considering the volatile nature of financial markets, today's investor needs more vigilant, clarity and control over emotions that can be attained through even minded mental state termed as equanimity. Equanimity is considered an important characteristic for successful investment, a prized quality for investors to keep themselves calm during phase of low returns and even in negative returns. Although all behavioral biases are not controllable but equanimity can address many of these. Using equanimity in investment provides a right investment strategy, a key to success and its impact can be seen in long term success of the investment decisions. In existing literature on investor behavior, and studies on behavioral finance has not addressed the significance of equanimity for the investors; considering this gap the study aims to explore this concept. The study has discussed equanimity in context of investment decisions, it has also identified the role of equanimity a solution to some of behavioral biases. Moreover, the propositions of the study have implications for the investors to improve their decisions in financial market.

Keywords: Equanimity, Behavioral biases, investment decision, Emotional and cognitive biases

IMPLEMENTATION OF FAMA AND FRENCH FIVE FACTOR MODEL: A CASE OF PAKISTAN STOCK EXCHANGE

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Abstract: The continuous development in the asset pricing is providing new empirical models and techniques to check the relationship between risk and return on stocks but it might be challenging to pick one model to use for the users. Investors and investment portfolio managers are always in search of such financial models that may quantify risk in an appropriate manner and can translate the risk into expected returns on equity investment options. Different models and techniques have been applied by the researchers and analysts from time to time to analyze this relationship; among them CAPM is the most famous and widely used technique. Later on, Fama and French (1993) extended the CAPM by adding two more factors in it; Size and Value. Subsequently, Fama and French (2015) introduced Five-Factors Pricing Model (FF5F); which is a development of the earlier models, by adding two new factors; investment level and profitability position. This study is intended to investigate whether a Fama and French five factor asset pricing model (FF5F) can explain average returns of stocks on Pakistan stock exchange (PSX) in better way than the three factor model (FF3F) and CAPM. The study will be conducted on a sample of all listed non-financial firms' stock with persistent trading on the PSX for the period of at least 15 years by constructing portfolios based upon size, value and returns. The analysis will be performed by regression analysis. This study will be helpful to the investors, investment advisers and fund managers to entrench their operating strategies and methodologies by adding the expounding power of size, beta, and value along with the momentum of portfolio returns to allow them to devise some trading policies to minimize losses and to maximize returns. In addition to this, policy makers can ensure that some proper measures are already in place to improve market liquidity and viability to improve the breadth and depth of the whole market.

Keywords: CAPM, Risk, Return, Beta, Size, Value, Investment, Profitability

HEDONIC PRICE ESTIMATION FOR AN INLAND FISH: A CASE STUDY OF DISTRICT FAISALABAD, PAKISTAN

*(**Ref No.** ICETEMS-18-260)*
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Abstract: Fisheries as a sub-sector of agriculture play an important role in the national economy and towards food security of the country. This study attempts to examine the factors affecting prices of fish in district Faisalabad using primary source of data. A representative sample of 120 consumers was selected using stratified random sampling technique. Hedonic price model was estimated employing linear-log form of regression analysis to determine the impact of major factors affecting prices of fish. The estimated model was found correctly specified as the value of adjusted R2 was 0.46 and the F-value was 8.0. The estimated model revealed that prices of Inland fish was significantly affected by skin condition, gills appearance, smell and belly swelling of fish whereas eye colour of fish showed insignificant impact. The study suggests that wholesale markets and whole supply chain of fish should be equipped with modern technologies like provision of cold storage facilities to keep fish in fresh form for longer period.

MATHEMATICS AND COMPUTATION

HEAT AND MASS TRANSFER OF MICROPOLAR NANO FLUID FLOW OVER AN INCLINED SURFACE WITH CHEMICAL REACTION AND HEAT GENERATION

(Invited Talk)
Muhammad Imran Anwar (University of Sargodha, Sargodha)

Abstract: In this paper, MicropolarNanofluid boundary layer flow over inclined surface by considering the effects of chemical reaction and heat generation is investigated. Nanofluid model is based on Buongiorno model for the thermal efficiencies of the fluid flows in presence of Brownian motions and thermophoresis effects. The nonlinear problem for MicropolarNanofluid flow over inclined channelis modeled by considering portent flow parameters to intensified boundary layers, to study the heat and mass transfer phenomenon. The governing nonlinear partial differential equations are reduced to nonlinear ordinary differential equations and then solved numerically by means of the Keller-Box method. A comparison of the obtained results in the absence of the incorporated effects is performed with the published results of Khan and Pop and found in a good agreement. Numerical and graphical results are also presented in tables and graphs. It is found that Skin friction coefficient, reduced Nusselt number and reduced Sherwood number are suppressed by the incorporated physical parameters.

ANALYSIS AND MODELLING OF PERISTALTIC FLOWS

(Invited Talk)
Muhammad Qasim (COMSATS, Islamabad)

Abstract: The purpose of present talk is to model and analyze the peristaltic motion. Flow configuration will be considered in tubes, curved and planer channels with flexible walls. Significance of dimensionless analysis for emerging linear/non-linear differential equations will be highlighted. Structure of mathematical modelling will be discussed in detail under potential liable assumptions. Possible solution methodologies will be underlined. Utilization of solution outcomes in nanotechnology, entropy generation and MHD will be synchronized by plotting graphs. Finally, physical interpretations will be done by discussing parameters impacts in detail.

ANALYSIS OF JEFFERY NANOFLUID IN A ROTATING FRAME: A FRACTIONAL MODEL

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Abstract: In present article, a comparative analysis has been discussed for electrically conducted Jeffery nanofluid past over a porous medium in a rotating frame, using two different types of time fractional operators with non-singular kernel that is Caputo-Fabrizio and Atangana-Baleanu. The silver nanoparticles are spread uniformly in Kerosene oil which is considered as base fluid. The closed form solutions are obtained through the Laplace transform technique for both the fractional models. The effects of different parameters are shown graphically which involves in the momentum and energy equation. Furthermore, the solutions for time fractional model are reduced to classical model and for the authentication of the present

solutions, limiting case is also discussed. Finally, the variation in Nusselt number due to the variation in various parameters is shown in tabular form.

Keywords: Jeffery nanofluid, Rotating flow, Caputo-Fabrizio, Atangana-Baleanu, Laplace Transform Technique

A GENERALIZED MODEL OF BRINKMAN-TYPE NANOFLUID IN A ROTATING FRAME AND ITS APPLICATIONS IN SOLAR COLLECTORS

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Abstract: In the present era, one of the best renewable energy source is solar energy. It turns out that solar energy is not only good for the environment, but also has advantages over conventional fossil fuels and other renewable energy systems for society. For this purpose, various kinds of solar collectors are introduced in the market. Flat-plate solar collectors are the most used devices, which harness the sun's energy and convert it into electricity which help in reducing the global warming. The heat caring competence and working ability of these collectors depends on their working fluid, if the working fluid is more thermal conductive, it can absorb the sun radiation more effectively and hence the rate of heat transfer will be improved. Therefore, the basic purpose of the present investigation is to model a problem to augment the thermal conductivity and heat transfer rate of the working fluid by using the nanoparticles. Present work considered a free convection Brinkman-type water-based nanofluid in a rotating frame under the influence of transverse magnetic field and two cases are discussed. (i) being fixed to the fluid (ii) being fixed to the plate . Thermal radiation and concentration are also taken into account. The fluid model is solved using the new definition of non-integer ordered derivative, known as Atangana-Baleanu (AB) fractional derivative. The effect of different nanoparticles and fluid parameter are discussed graphically. The enhancement in heat transfer rate has discussed in tabular form. The current investigation concluded that by adding SWCNT in the working fluid can augment the heat transfer rate of water up to 36.61% while other nanoparticles like MWCNT, and can enhance the heat transfer rate up to 32.31%, 20.55%, 12.82% and 7.35% respectively. These results show that using water-based nanofluid with SWCNT as a working fluid, can enhance the absorption power of solar radiation of the flat-plate solar collectors.

Keywords: MHD flow, CNTs nanoparticles, AB fractional derivative

HELIXES OF GENERALIZED BURGER FLUID IN CIRCULAR CYLINDER: AN ANALYTIC ANALYSIS VIA CAPUTO FRACTIONAL DERIVATIVE

*(**Ref No.** ICETEMS-18-023)*
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Abstract: This paper is analyzes incorporates the cylindrical nature of the helix on generalized Burger fluid flow for infinite helically moved cylinder. The analytical solutions are investigated for velocity and shear stress profiles by utilizing mathematical Hankel and Laplace transforms with their inversions. The expressions of analytical solutions have been established in the layout of H_(a,b+1)^(1,a) (z) Fox-H function. The general solutions satisfy initial and boundary conditions and reduced for limiting / particularized solutions of Burger, Oldroyd-B, Maxwell, Second grade fluids. The helical flows of four models as Burger, Oldroyd-B, Maxwell and Newtonian fluids are presented for comparisons with existing published findings exhibit good agreement and reveal the accuracy and validity of our analysis. With the help of graphs, the influence of rheological parameters such as dynamic viscosity, time, fractional parameter, material parameters, oscillations, retardation and relaxation periods are underlined for helicity of cylinder on fluid flow. Finally, few variances and resemblances are perceived on the helical cylinder.

Keywords: Caputo derivatives, helical cylinder, Fox-H function, analytical solution and rheology

IMPACT OF MAGNETIC FIELD ON SOME UNSTEADY CHANNEL FLOWS OF BRINKMAN TYPE NANOLIQUIDS SUSPENSION OF CARBON NANOTUBES

*(**Ref No.** ICETEMS-18-033)*
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Abstract: The objective of this paper is to analyze the combined effects of thermal radiation and magnetic field on three different types of channel flow of Brinkman type nanoliquids. Two types of carbon nanotubes namely single-walled carbon nanotubes (SWCNTs) and multi-walled carbon nanotubes (MWCNTs) are suspended in three different base fluids (Water, Kerosene-oil and Engine-oil). Based on Xue model, the thermo-physical properties of each base fluids and nanoparticles are incorporated in the form of thermal conductivity, density and specific heat. The problem is modelled in terms of partial differential with imposed boundary conditions. Analytical solutions via perturbation method are obtained for velocity and temperature, plotted graphically for all three cases and discussed for embedded flow parameters. The shear stress and the rate of heat transfer are also computed in tabular forms. Results showed that velocity of MWCNTs is greater than SWCNTs. Velocity decreases with increasing Brinkman type nanoliquids and radiation parameters.

Keywords: Brinkman Type Nanoliquid; carbon nanotubes; SWCNTs and MWCNTs; Analytical Solutions.

OPTIMAL CONTROL ANALYSIS OF ZIKA VIRUS MODEL

*(**Ref No.** ICETEMS-18-034)*
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Abstract: Zika is spread by the bite of an infected mosquito known as Ae. aegypti and Ae. Albopictus. These mosquitoes bite during the day and night. The virus of Zika can be trasnfered from a pregnant woman to his fetus. Currently, no vaccine available in the market for Zika virus. The purpose of this work to present a mathematical model on Zika virus and to explore their dynamical behavior. We proposed a mathematical model with control functions for possible elimination of ZIka virus from the community.Initially, we present the modelling of the Zika virus model, and then, we investigate the basic properties associated to the model. Then, stability results for the model of the disease free case is presented when the basic reproduction number less or equal than 1. Further, we obtain an expression of backward bifurcation for the Zika model. Furthermore, we formulate an optimal control problem with three control function and obtain the optimal control characterizations. The numerical results are presented with a different set of control combinations for possible eliminations of Zika virus from the community.

Keywords: Zika virus, basic reproduction number, bifurcation analysis, stability results, optimal control, numerical results

MHD FLOW OF VISCOELASTIC DUSTY FLUID IN CLOSED CHANNEL WITH HEAT TRANSFER

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Abstract: The objectives of this article is to investigate the combine effect of magnetic field and heat transfer on conducting viscoelastic incompressible dusty fluid flowing between two non-conducting rigid palates .The flow generation in aforementioned fluid is caused by oscillating pressure gradient. It is also assumed that all the dust particles having spherical shapes are homogeneously distributed in the fluid. In order to investigate analytical solution we use perturbation method. Furthermore, we analyze the effect of different parameters like elastic parameter, radiation parameter, Reynolds number (Re), Grashof number (Gr) both on velocity and applied shear stress. A noteworthy relation of applied magnetic field with velocity and applied shear stresses is noticed, e.g. in under discussion phenomenon it is depicted that in boundary layer flow velocity increases and shear stress decreases with increase in applied magnetic field, while in ordinary course of nature by increasing applied magnetic field decrease occurs in fluid velocity and shear stress increases.

Keywords: viscoelastic dusty fluid, Heat transfer, Radiation, Magnetic hydrodynamic.

ANALYSIS OF HEAT TRANSFER IN CASSON FLUID DUE TO THE CONVECTIVE FLOW IN A VERTICALLY OSCILLATING CYLINDER USING INTEGRAL TRANSFORMS

*(**Ref No.** ICETEMS-18-039)*
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Abstract: The governing and analyzing the movement of the fluid flow in oscillating cylinder is of much significance for mechanical perspective. Investigation which is carried out for fluid movement in cylindrical shaped body has various applications in science and bioengineering. This research paper is based on convective heat transfer of Casson fluid in vertically oscillating cylinder which executing both sine and cosine oscillations. Exact solutions for steady and transient state were obtained for both oscillations by means of Laplace and Hankel transforms. In the limiting case by putting will reduce our solution to well-known published results. Different fluid parameters like Casson fluid, Prandtl and Grashof number are analyzed and discussed graphically.

Keywords: Heat transfer, Non-Newtonian Casson fluid, Vertical Cylinder, Exact Solution, Integral transforms.

ENHANCED HEAT TRANSFER IN WORKING FLUIDS BY USING NANO-PARTICLES: A FRACTIONAL MODEL

*(**Ref No.** ICETEMS-18-040)*
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Abstract: Now a day, greases have shown a considerable variety the procedure for the flow plans for the production of lubrication; semi continuous production processes have been developed and commercialized. Hence, a need has arisen for reliable data on the thermophysical properties of greases and the dispersion of nanoparticles in it to enhance the efficiency of the greases. Many chemical, engineering and other industries use non-Newtonian fluids in their processes. Generally, non-Newtonian fluids such as oil and grease are used for lubricancy. We select grease as base fluid in our study due to its importance in the modern technology and industry. Using oil as lubricant there is a chance of leakage, while in case of grease this chance could be minimized. Nanofluid which can be formed by dispersing nano particles in a base fluid, is capable to absorb more heat. Keeping in mind the applications of nanofluid, we have considered two nanoparticles molybdenum disulfide and graphene oxide nanoparticles to see their heat transfer performance in grease as base fluid. The obtained governing equations of the problem are transformed from classical model to Caputo-Fabrizio fractional model. The solutions of the problem are obtained using the Laplace transform technique. Furthermore, we have also considered the effects of magnetohydrodaynamic (MHD), porosity, chemical reaction and ramped wall temperature. The parameters of interest are discussed by plotting their graphs and also show the effect of isothermal and ramped temperature of the wall graphically. Finally, comparative analysis of the heat transfer rate of and graphene oxide nanoparticles is shown in tabular form. From graphical analysis it is found that is more effective as compare to graphene oxide nanoparticles.

Keywords: Caputo-Fabrizio,Casson nanofluid, chemical reaction, ramped wall temperature.

APPLICATIONS OF GOLD NANOPARTICLES IN CANCER PHOTOTHERAPY: A FRACTIONAL BIOMAGNETIC FLUID DYNAMIC MODEL

*(**Ref No.** ICETEMS-18-041)*

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Abstract: Gold nanoparticles possess distinguished physiochemical and optical properties and therefore are extensively studied in the fields of medical diagnostic and cancer phototherapy, particularly in the advancement of cancer treatments. This paper aims to study applications of gold nanoparticles in blood flow. More exactly this study is concerned with the fractional model of non-Newtonian Casson fluid. Blood is taken as its counterexample with the suspension of gold nanoparticles to make it as non-Newtonian nanofluid. Hence a biomagnetic fluid dynamic homogeneous model (suspension of blood and gold nanoparticles) of blood flow in a vertical cylindrical tube under the influence of an oscillating pressure gradient via fractional derivative approach is established. A new definition of Caputo- Fabrizio time fractional derivative has been used and exact solution of the problem is obtained using joint integral transforms of Laplace and Hankel. Identical solutions corresponding to usual non-Newtonian blood flow and Newtonian blood flow are obtained as particular cases of the fractional problem. Regular blood flow solutions for a unit fractional parameter are also recovered in limiting sense. The physical interpretation of the embedded is Fabrizio using various graphs. It is found that the heat transfer can be enhanced in the fluid with memory. Fluids described with a fractional model flow faster than the ordinary fluid, depending on the volume fraction.

Keywords: Gold Nano particles; Heat Transfer Enhancement; Blood flow; Casson fluid; Caputo-Fabrizio fractional derivative.

THE STUDY OF UNSTEADY MHD WATER-GO AND EG-GO NANOFLUID FLOW BETWEEN TWO PARALLEL PLATES IN A POROUS MEDIUM

*(**Ref No.** ICETEMS-18-042)*

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Abstract: The unsteady flow of Water-GO and Eg-GO nanofluids flow between two vertical plates in a porous medium under the influence of magnetic field has been analyzed. The thermophysical properties has been utilized from the existing literature. The basic governing equations have been transformed using the Von karman transformation concept. Then, solution for the model are performed by means of optimal homotopy analysis method(OHAM). The influence of Water-GO and Eg-GO on velocity and temperature profiles are mainly focused. The effect of opportune parameters, namely Magnetic parameter, Prandtl number, Reynold number, unsteady parameter, porosity parameter is investigated. Phyical parameters i.e skin friction coefficient and local Nusselt number is computed and analyzed. Residuals errors and range of parameters is also calculated.

Keywords: Reynold number, Prandtl number

THE EXPERIMENTAL STUDY TO EXAMINE THE STABLE DISPERSION OF THE GRAPHENE NANOPARTICLES AND TO LOOK AT THE GO–H2O NANOFLUID FLOW BETWEEN TWO ROTATING DISKS

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Abstract: The nanofluid analysis has been carried out as a function of temperature and this idea is utilized to study the graphene oxide (GO) water-based nanofluid from both experimental and numerical perspectives. Various spectral investigations were used to endorse the successful synthesis of graphene oxide. The obtained GO exhibits large size platelet morphology with stable dispersion in water. The experimental procedure of the preparation of nanofluid and its outputs has been analyzed with numerical data. The obtained results from the Chebyshev spectral scheme were transformed into a mathematical model considering the 3D flow of the dispersed GO nanofluid between two parallel rotating disks using the governing Navier–Stokes equations and energy equation with the utilization of Von Karman similarity transformations. The obtained nonlinear differential equations have been examined through a recently fashionable analytic approximation method called the Optimal Homotopy Analysis Method (OHAM). Opposite and same direction rotational effects have been conferred on the flow characteristics. To analyze how the velocities, pressure and temperature fields are affected by various parameters, plots have been displayed. Convergence of the obtained results has been authenticated with residual errors physically and numerically. Moreover, the physical parameters impact, such as local Nusselt number and skin friction coefficients are obtained through numerical data and inspect.

Keywords: Synthesis of graphene oxide ; Three-dimensional GO–H2O nanofluid flow ;Rotating disks ; Heat transfer ; OHAM and Error analysis for convergence;

THE COATING OF THIN NEEDLE THROUGH NANOFLUIDS FOR HEAT TRANSFER ANALYSIS

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Abstract: The aim of this research is to coat a thin needle through hybrid nanofluids. The nanofluid comprising aluminum Oxide and ethylene glycol and are used for the heat transfer enhancement. The governing equations have been solved by Optimal Homotopy Analysis Method (OHAM) utilizing the BVPh 2.0 package. In most of the existing literature the range of parameters is not mentioned. The range of parameters play a vital role in the convergence of the problem. So due to this importance the output of this research is to investigate the range of parameters using the above mentioned PVPh.2.0 package.

Keywords: thin needle, coating phenomena, nanofluids, heat transfer, OHAM

ANALYSIS OF REGRESSION AND CORRELATION OF ENTROPY GENERATION OF NANOFLUID IN THE MHD PERISTALTIC FLOW

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Abstract: Peristaltic flow of nanofluid under the influence of magnetic field has attracted many attentions in engineering science and industries. Such as in the metallurgy and polymer industry where hydro-magnetic techniques are being used. To be more specific, it may be pointed out that many metal surgical processes involve filaments or the cooling of continuous strips by drawing them through a quiescent fluid and that these strips are sometimes stretched during the process of drawing. In the present study the mathematical model of peristaltic flow of nanofluid has been developed under the assumption of low Reynold's number and long wavelength approximation. The analytical solution has been obtained with the help of perturbation method. The expression of temperature profile, pressure distribution and friction forces are presented graphically for some significant parameters. The results of correlation and regression between the entropy generation and some other parameters have been plotted. It is very important to find the sensitivity of each parameter on entropy generation. Because the entropy generation minimization technique is applied to maximize different thermal engineering devices for a better performance. Entropy generation function can be described as the level of available irreversibility in a process. The efficiency of engineering devices can be reduced due to the existence of irreversibility. Findings of regression analysis show that 81% of the variability of entropy generation for magnetic parameter, 99% of the variability of entropy generation for Brownian motion parameter, 40% of the variability of entropy generation for Thermophoresis parameter and 100% of the variability of entropy generation for Brinkmann is accounted for by the variable Iv. Similarly, a decrease of 2.562 in entropy generation for the various values of the independent variable Magnetic parameter, an increase of 2.029 in entropy generation for the values of Brownian motion, 6.307 in entropy generation for Thermophoresis and 68.492 in entropy generation scores for Brinkmann on every one-unit increase in Iv.

Keywords: Regression; Correlation; Magnetohydrodynamics; Nanofluid; Entropy Generation.

EXACT ANALYSIS OF CONVECTION FLOW OF CASSON FLUID IN A POROUS MEDIUM WITH RELATIVE MAGNETIC FIELD AND NEWTONIAN HEATING

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Abstract: The aim of this article is to study the combined effects of heat generation and chemical reaction on magnetohydrodynamic (MHD) natural convection flow over moving plate embedded in a porous medium. Natural convection is caused due to buoyancy forced which has been induced because of temperature and concentration gradients. The general condition of velocity has been considered on the plate

surface with Newtonian heating and constant wall concentration. The effect of thermal radiation is also considered in the energy equation. The main objective here is to study in this problem when the magnetic field shows two types of relative behavior. More exactly, when the magnetic field is fixed relative to the fluid (MFFRF) and magnetic field is fixed relative to the plate (MFFRP). The general exact solution of the problem is determined by Laplace transform method. Particular solutions for two special cases namely the plate with variable vibration and the plate with sine and cosine oscillations are also determined. Moreover, the solutions when for both cases i.e. MFFRF and MFFRP are also obtained as a special case. The velocity profile is presented in the form of mechanical, thermal and concentration components. Velocity obtained for oscillating plate condition is written in terms of steady-state and transient parts. Exact solutions obtained in this paper are interpreted graphically using computational software Mathcad-15 to examine the effects of various pertinent parameters such as Casson fluid parameter, permeability of pours medium, chemical reaction parameter, heat generation parameter, buoyancy force parameter, magnetic parameter and radiation parameter. Results for Sherwood number, skin-friction and Nusselt number are work out numerically and discussed.

Keywords: MFFRP, Heat Generation, Newtonian Heating, Casson Fluid, General Solution.

UNSTEADY FLOW OF CeO_2 AND Al_2O_3 WATER BASED NANOFLUIDS WITH INCLINED PLAT WITH ATANGANA-BALEANU FRACTIONAL DERIVATIVES: APPLICATIONS IN SOLAR COLLECTORS

*(**Ref No.** ICETEMS-18-106)*

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Abstract: Nanofluids are developing fluids with improved thermal properties than the traditional fluids. The use of nanofluids achieves the maximum possible thermal performance with the smallest possible concentration by uniform dispersion and constant suspension of the nanoparticles in the base fluid. Nanofluid plays a decisive role in different thermal applications, such as the automotive industry, heat exchangers and solar power generation. The purpose of this article is to provide the mathematical formulation for the nanofluid and to simulate the use of nanoparticles to increase the heat transfer rate of solar equipment by obtaining the exact solutions for the problem under consideration. Furthermore, the fluid is considered to pass through a rigid inclined plane. The classical model of nanofluid is transformed into a fractional model using the newly developed Atangana-Baleanu time fractional derivative. The Laplace transform method is used to represent the flow profile and the heat transfer profile. Variations in the Nusselt number have been observed for different nanoparticles and their volume fractions. In addition, the influence of the volume fraction of nanoparticles on the fluid velocity has been studied in the illustrations. The obtained solutions are reduced to the corresponding solutions for the classical model of the nanofluid.

Keywords: Nanofluid, Solar collectors, Heat transfer enhancement, Atangana-Baleanu fractional derivatives

ENTROPY GENERATION INFLUENCING ON UNSTEADY FLOW OVER A VERTICAL PLATE WITH ARBITRARY WALL SHEAR STRESS AND RAMPED WALL TEMPERATURE

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Abstract: The present paper aims to report irreversibility analysis in unsteady flow of viscous fluid over a vertical flat plate with ramped wall temperature and arbitrary wall shear stress in the presence of thermal radiation. The equations which governing the problem are solved by the method of Laplace transform. The expression for Bejan number and volumetric entropy generation rate are calculated. The effects of different embedded parameters on the Bejan number and the entropy generation number are elaborated by graphs. It is noted that entropy production in thermal system can be minimized by decreasing thermal radiation. It is also observed that heat transfer increases the entropy of the system.

Keywords: irreversibility analysis; wall shear stress; ramped temperature; exact solutions.

MULTI-STEP QUASI NEWTON'S METHOD WITH NEW ITERATIVE SCHEME FOR THE OPTIMIZATION OF NONLINEAR PROBLEMS

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Abstract: In multi-step Quasi-Newton methods, to update Hessian at each step, interpolatory polynomial is used to derive information from more than one previous steps. To calculate interpolating points Ford and Moghrabi developed some techniques, Fixed and Accumulative method. In this paper, we use three step Accumulative technique with new scheming to update Hessian. The numerical results indicates successive performance with comparison to existing BFGS method. Key words: Hessian, quasi-Newton's method, Langrangian polynomial.

Keywords: Hessian, quasi-Newton's method, Langrangian polynomial.

LINEAR STABILITY OF SPECIAL FOURTH ORDER ORDINARY DIFFERENTIAL EQUATIONS (RKFD)

*(**Ref No.** ICETEMS-18-170)*
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Abstract: In practical dealing with real world problems, a physical system contain different quantities, that relates to each other in some specific rule. In mathematics such rule is called function or formula. In dynamical system, different kinds of situation are mathematically formulated through differential equations. Differential equations play an important role in many fields of science and engineering. Mathematically differential equations is a well defined formulation of some dependent variables and its derivatives. These equations are further divided in two basic types, ordinary differential equations and partial differential equations. All the methods used for above mentioned ODE/PDE are chosen according to their stability and convergence. Convergence of a method inform us about performance / how fast a method moving toward the desired root as step size moves to zero. Stability of the methods inform us that how the errors are curbed out. In numerical analysis different type of algorithm are designed to solve continuous mathematical problems. Stability analysis of algorithm provides help to identify, which method performs better for any specific problem. Here our focus is on numerical stability. In numerical analysis usually three conditions of stability are commonly used i.e. zero stability, linear stability and Absolute stability. Here our focus is on numerical stability. In numerical analysis usually three conditions of stability are commonly used i.e. zero stability, linear stability and Absolute stability. Here, we will present the linear stability of special fourth order ordinary differential equations (RKFD).

Keywords: Runge-kutta method, Ordinary Differential Equation, special fourth order ordinary differential equations

TWO STEP FIXED POINT SKIPPING METHOD FOR SOLUTION OF NONLINEAR UNCONSTRAINED OPTIMIZATION

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Abstract: To solve unconstrained optimization problems different methods are available in literature (are also in use), such as, Analytic, Newton, Quasi-Newton, Multi-step methods. For solving function of one variable or system of nonlinear equation, most commonly used method is Newton's Method, but this method has some disadvantages. To overcome these disadvantages Quasi-Newton Methods were introduced. This was further developed by ford and are known as multi-step quasi-Newton Methods. Here we propose to develop a new iterative scheme using fixed point technique for the solution of nonlinear unconstrained problems by selecting different iterative point and along with this applying the skipping technique. Numerical results will be compared with standard BFGS method.

Keywords: Quasi-Newton Method, skipping technique, Two-step quasi-Newton method

THE EFFECTS OF MHD CONJUGATE FLOW ON ENTROPY GENERATION WITH WALL SHEAR STRESS OVER AN INFINITE PLATE

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Abstract: The current work going to describe the irreversibility analysis in an unsteady MHD flow with combined influence of mass and heat transfer. Considering the flow in xy plane and the plates are isothermal and ramped in a porous medium with wall shear stress. The effects of different pertinent parameters on velocity, Bejan number and on total entropy generation number are reported graphically. Entropy generation in the fluid are controlled and reduced on the boundary by the constant wall shear stress. It is observed in this paper that the energy losses in the system can be minimized by taking suitable values of pertinent parameters such as Schmitt number, mass diffusion parameter, prandlt number, Grashof number, magnetic parameter and modified Grashof number. These results will play an important role in the heat flow of uncertainty must therefore be controlled and managed effectively.

Keywords: Entropy generation, Mass transfer, Wall shear stress, Ramped wall, Porous medium, Heat transfer

ELECTROOSMOTIC FLOW OF WALTERS'-B FLUID OVER A VERTICAL PLATE WITH ATANGANA-BALEANU TIME FRACTIONAL DERIVATIVE

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Abstract: The aim of this paper is to investigate the magnetohydrodynamics (MHD) free convection flow of generalized Walters'-B fluid with the effect of electroosmosis. Electroosmosis is the motion of liquid across a porous material which is generated by applied potential on a net mobile electric charge in a solution. In the paper under consideration the classical Walters'-B fluid model is transformed to generalized Walters'-B fluid model using the new idea of Atangana-Baleanu time fractional derivative. Exact solutions for the velocity and temperature of the stated problem is obtained using Laplace transformation technique. Some interesting and important results were obtained from the current study. The effect of various embedded parameters like Walters'-B parameter, Prandtl number Pr, Grashoff number Gr, Keff and Electroosmosis parameter Es were ploted graphically using Mathcad software.

Keywords: Walters'-B fluid, Electroosmosis, Atangana-Baleanu

FLOW OF MAGNETIC PARTICLES WITH HEAT TRANSFER ANALYSIS OF BLOOD IN A VERTICAL CYLINDRICAL TUBE: TWO-PHASE ATANGANA-BALEANU FRACTIONAL MODEL

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Abstract: This study aims to examine the impact of magnetohydrodynamics on the blood flow of Casson fluid including magnetic particles in a vertical cylinder. Blood is considered as non-Newtonian viscous fluid, due to the viscosity which depends on the fraction of volume occupied by red blood cells. The magnetic field effect on the velocities of blood and magnetic particles along with heat transfer and external pressure gradient are also studied. This problem is modeled using the Atangana-Baleanu fractional derivatives approach and then solved for an exact solution using joint Laplace and Hankel transforms. Effects of different embedded parameters on both the blood and magnetic particles flows have been shown graphically. An increase in velocity is noticed for increasing value of and while velocity decreases for higher values of.

Keywords: Magnetohydrodynamics; Magnetic particles; Casson fluid; Blood flow; Heat transfer; AB fractional derivatives.

THE FRACTIONAL ANALYSIS OF HEAT AND MASS TRANSFER IN BRINKMAN-TYPE NANO LIQUID

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Abstract: Nanofluid is used in many areas in the practical as well as in the analytical sciences. Due to the importance of the Nanofluid in the daily life scientists are showing much involvement in the heat enhancement in the Nanofluid. The present paper aims to study the Nanofluid with copper nano particle, because it is utilized as inexpensive and useful nano particle in the sterilizing of liquids, cloth industry and also for human tissues for decades. It will be the antibacterial agent of future, so in this regard the present discussion is to obtain the closed form solution of MHD Brinkman type of nano fluid using Caputo- Fabrizio fractional model. The solution for the velocity profile, thermal part and mass concentration the technique of Laplace transformed has been used. The nusselt number presented in table. The effect of different parameters has been presented through graphs.

Keywords: Nanofluid, fractional model, Laplace transformed, nano particle

A COMPARATIVE STUDY OF GENERALIZED CASSON NANOFLUID VIA THE LAPLACE TRANSFORM: ATANGANA-BALEANU AND CAPUTO-FABRIZIO FRACTIONAL MODELS

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Abstract: Abstract: The present article aims to investigate Casson fluid with heat and mass transfer. The fluid flow is along an infinite oscillating vertical plate. This article generalizes the concept of free convection flow of Casson fluid over a vertical oscillating plate. The free convection is caused due to the temperature gradient. Therefore, heat and mass transfers are considered. The classical model for Casson fluid is written in dimensionless form with the help of non-dimensional variables. Furthermore, the dimensionless model is converted into a fractional model called as a generalized Casson fluid model. The governing equations of generalized Casson fluid model have been solved analytically using the Laplace transform technique. The physics of velocity and temperature profiles are studied by means of numerical computation. This report provides a detailed discussion as well as a graphical representation of the obtained results.

Keywords: Casson Fluid, Fractional calculus,Laplace transfermation

THE ANALYSIS OF UNSTEADY SPRAY COATING OF A VERTICAL TUBE THROUGH CARBON NANOTUBES IN WATER AS A BASE FLUID

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Abstract: The aim of the recent study is to examine the time dependent spray coating of a vertical cylinder through Carbon nanotubes CNTS for the thermal applications. The preparation of the nanofluid and the stable dispersion of the CNTs in Water has been used from the available experimental approach in the recent literature. The thickness of the spray pattern has been kept variable to control the stability of the spray pattern and to accomplish the suitable heat transmission. The pressure distribution and spray rate as a function of the liquid film thickness have also been calculated which play an important role in the spray coating and stability analysis to control the irregular distribution. The basic governing equations have been altered into the set of nonlinear differential equations by inserting the similarity transformation. The numerical outcomes have been calculated using the convergence controlling procedure. The impact of the physical parameters, like skin friction, Nusselt number, spray rate, variable thickness, pressure distribution and its comparison with the existing literature has been emphasizes and discussed.

Keywords: Carbon nanotube and water based nanofluid; Thermal Spray Coating; Vertical Stretching cylinder; Skin friction and Nusselt number; Pressure distribution and Spray rate; Optimal controlling procedure.

SUSTAINABLE ARCHITECHTURE

APPLICATION OF 3M ANALYSIS FOR DECREASING WASTED SPACES IN HEALTHCARE SETTING IN KPK

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Abstract: The built environment of hospital buildings may have both positive and negative impacts on patients. In the design of healthcare facility, it is quite important that its design, spatial arrangement and areal distribution must respond to curative needs of people so as the outcome emerge in the form of healing environment in the physical spaces. This kind of healing environment is quite adequately available in the developed countries of global north. However; in developing countries of global south like Pakistan the healing environment in healthcare facilities is neither documented nor evident in any available published literature. Whereas, it need to be well documented and analyzed. Total two case study analyses of hospital projects are spatially analyzed i.e. Peshawar Institute of Cardiology, FC Hospital Peshawar for simulation of Spatial analysis based on 3M analysis which is a Japanese model referred as Muda (waste), Muri (over burden), MURA (unevenness) obtained from Kaizen theory for eliminating wasted spaces from Hospital buildings. Total eight design determinants were investigated based on the opinion of the interview on House of Quality template which is a objective aspect of this research i.e. the user which includes: entry, parking, waiting area, connectivity, visibility, walkability, accessibility, and way finding. With regard to spatial organization, the characteristics of individual space, site allocation plan and typology of circulation was especially examined. The two cases from Peshawar Institute of Cardiology Peshawar and FCP, are analyzed from the lenses consisting aspects of, circulation pattern in the hospital, accessibility, connectivity and barrier free movement within buildings, walkability status of over stressed staff within the Hospital building. Here functionality of the schematic designs and the problem of the users concerning repetitiveness in their circulation pattern and the way to increase the efficiency of spaces, their spread and flow in the hospital building.

Keywords: 3M Analysis, Muda (Waste), Muri (Over Burden), Mura (Unevenness) Kaizen Theory,

USE OF INDIGENOUS KNOWLEDGE AND CULTURALLY SENSITIVE ELUCIDATIONS FOR SUSTAINABLE DEVELOPMENT

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Abstract: Abstract Sustainable development is one that fuflils the needs of the present environment without having compromise with the ability of the future generation to meet their own needs. Indigenous knowledge refers to the knowledge possessed by different communities and societies across the globe over time and that continues to develop. It is based on the experiences often tested over centuries of use, adapted to local culture & environment, dynamic and changing. This paper aims to explore how effectively indigenous practices respond to ecological and sustainable-development agenda. At first, it will look into the characteristics of indigenous knowledge and at indigenous people's notions of development to understand the concepts in which traditional knowledge is rooted. It will then explore the relationship between indigenous knowledge of inhabitants and natural resources, current threats and challenges. This will be followed by an analysis carried out on-land, animals, plants etc which ultimately derive to the listing of

some indigenous practices to be continued over time. The paper will then look at the contribution of indigenous knowledge to climate change adaptation and to disaster risk reduction. The paper will conclude with a reflection on the importance of indigenous knowledge and a reflection of the mitigation strategies to overcome these challenges and be of benefit to the sustainable development agenda.

Application of 3M Analysis for decreasing wasted spaces in Healthcare setting in KPK

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Abstract

The built environment of hospital buildings may have both positive and negative impacts on patients. In the design of healthcare facility, it is quite important that its design, spatial arrangement and areal distribution must respond to curative needs of people so as the outcome emerge in the form of healing environment in the physical spaces. Total two case study analyses of hospital projects are spatially analyzed i.e. Peshawar Institute of Cardiology, FC Hospital Peshawar for simulation of Spatial analysis based on 3M analysis which is a Japanese model referred as Muda (waste), Muri (over burden), MURA (unevenness) obtained from Kaizen theory for eliminating wasted spaces from Hospital buildings. Total eight design determinants were investigated based on the opinion of the interview on House of Quality template which is a objective aspect of this research i.e. the user which includes: entry, parking, waiting area, connectivity, visibility, walkability, accessibility, and way finding. With regard to spatial organization, the characteristics of individual space, site allocation plan and typology of circulation was especially examined. The two cases from Peshawar Institute of Cardiology Peshawar and FCP (Frontier Corp Hospital Peshawar), are analyzed from the lenses consisting aspects of, circulation pattern in the hospital, accessibility, connectivity and barrier free movement within buildings, walkability status of over stressed staff within the Hospital building. Here functionality of the schematic designs and the problem of the users concerning repetitiveness in their circulation pattern and the way to increase the efficiency of spaces, their spread and flow in the hospital building.

Keywords

3M Analysis Muda (Waste) Muri (Over Burden), Mura (Unevenness)
Kaizen Theory, Visibility Graph, Space Syntax, Axial Line Application, Total Quality Management, House of Quality.

TOURISM AND HOSPITALITY MANAGEMENT

AN INVESTIGATION INTO KEY MARKET SEGMENTS FOR INTERNATIONAL TOURISTS IN GILGIT-BALTISTAN PAKISTAN

*(**Paper ID**: ICETEMS-18-069)*

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Abstract: The purpose of this study is to find market potential and market segments for international tourists in Gilgit-Baltistan, Pakistan. The study is quantitative and descriptive in nature. Sample size is 143 international tourists. Factor-Cluster analysis is used to identify the tourists' segments. Findings of this study show that international tourists spent 1.34 trillion dollars in 2017 worldwide. Six segments are identified namely Traditionalists, Relaxers, Adventurers, Nature lovers, Family tourists, and Relationship builders. Findings of this study will help the Tourism Department of Gillgit-Baltistan in calculating market share and design and offer proper services to international tourists in view of the identified segments.

Keywords: Market potential, Market segmentation, Destination Marketing

URBAN PLANNING

STUDY THE BEHAVIOR OF SHREDDED TIRE-SAND MIXTURE AS BACKFILL MATERIAL IN MECHANICALLY STABILIZED WALL

*(**Ref No.** ICETEMS-18-005)*
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Abstract: With the development of human society, there has been an increase in the use of vehicles around the world. This rapid increase has lead to an increase in the number of waste tires, and its disposal is a serious environmental concern these days. Since last decade, utilizing waste rubber tires in civil engineering applications has gained much attention to reduce its hazardous effects. One such application is the use of tire shreds-sand mixtures as backfill material in Mechanically Stabilized Earth (MSE) wall systems. Using tire shreds as backfill material has several advantages over traditional backfill material. In this regard, numerous experimental and field studies have been conducted. The paper comprehensively reviews the behaviour of tire shreds with sand as a backfill material for MSE walls. From the literature, it was found that MSE walls systems constructed with tire shreds-sand mixture show high strength, good drainage, high thermal insulation, and high shear strength. A systematic exploration of the studies showed that waste tires help to reduce face deflection and settlements of MSE wall systems during earthquake excitation. Keywords Mechanically stabilized wall, Steel bars, Tire shreds, Geogrid, Geosynthetic

Keywords: Mechanically stabilized wall, Steel bars, Tire shreds, Geogrid, Geosynthetic

MORPHOLOGICAL, OPTICAL AND SENSING PROPERTIES OF GRAPHENE DECORATED BY SILVER NANOPARTICLES AND PMMA THIN FILM BASED SENSORS

*(**Ref No.** ICETEMS-18-013)*
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Abstract: Multifunctional sensors are extensively used in various fields of human life to detect the moisture, gas, temperature and pressure in the surrounding. A highly sensitive and efficient sensor exhibiting quick response/recovery timea nd real time stability is the basic need nowadays. In this paper, we reported the humidity characteristics of graphene/silver nanoparticles composite (Gr-AgNps) and graphene/silver nanoparticles/PMMA composite (Gr-AgNps-PMMA) based efficient humidity sensors. Addition of silver nanoparticles and PMMA to graphene yields sensors with enhanced response time and conductivity respectively. Aqueous solution of Gr-AgNps and Gr-AgNps-PMMA was drop casted over interdigitated copper electrodes with 50 µm gap embedded in the substrates in dust free environment. The surface morphology of the thin film was analysed using scanning electron microscopy (SEM). The value of band gap obtained from the UV-vis spectra for Gr-AgNps and Gr-AgNps-PMMA nanocomposite was 4.7 and 4.1 eV, respectively, that can be possibly tuned by varying the concentration of the constituents in the composite. Apparent increase in capacitance (100-10,000 nF) with the increase in the humidity, temperature, gas and pressure at lower frequencies for both the sensors was recorded using LCR meter (GW Instek817). Resistance of the sensors dropped to zero as the concentration of moisture and gas is increased

in the chamber. The devices were tested for real time stability and for fast response/recovery time. Both the devices showed an excellent stability and response by recording their resistance and capacitance respectively.

Keywords: sensors, graphene, thin film, response/recovery, band gap

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