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His Majesty Sultan Qaboos Bin Said
I am delighted to know that an International Conclave on Innovations in Engineering & Management (Oman Vision 2020: Opportunities & Challenges), ICIEM-2016, is being organized by Waljat College of Applied Sciences during 24 – 25, February 2016. ICIEM-2016, being a multidisciplinary conclave is the need of the hour for stimulating the young minds to contribute for the growth of the nation. Most spheres of human activity have been constantly influenced and governed by the research and developments in the fields of biological sciences, information technology, engineering and management. In this scenario, ICIEM-2016 is an important event being organized focusing on contemporary issues related to Oman covering business plan competition, cases study competition and research paper presentations. It will also focus on showcasing advances and developments in the fields of applied sciences and management including sharing of expert opinion and forwarding recommendations of panel discussion to stakeholders.

I am convinced that strong discussions surrounded by invited speakers, eminent scholars and other participants would surely serve the purpose of providing an international platform for the exchange of ideas and research findings in the field of Sciences, Engineering and Management.

May Allah grant His Majesty the strength and wisdom to lead this great nation as he had been for the past 45 years with his foresight and vision and may Oman be blessed with His Majesty’s continued leadership for many more years to come.

I wish the conclave every success.

H.E. Dr. Omar Bin Abdul Muniem Al Zawawi
Founder, Waljat College of Applied Sciences, Sultanate of Oman
It is a matter of great privilege that Waljat College of Applied Sciences, WCAS is organizing an International Conclave on Innovations in Engineering & Management, (Oman Vision 2020: Opportunities & Challenges), ICIEM-2016, during 24-25, February 2016.

ICIEM-2016 which is a multi-disciplinary conclave covering various areas of applied sciences and management especially contemporary issues in Oman prospective followed by various competitions like business plan, cases studies, and doctoral research competitions. It would be a good opportunity for research scholars, business planners to take part in the deliberations amongst the eminent scholars and academicians during the conclave.

I am happy to know that a souvenir is also being brought out on this occasion. I convey my heartiest felicitations to the organizing committee for their efforts in arranging such an academically important event in WCAS.

I wish to convey my best wishes to all those eminent scholars, delegates and others who would be participating in the conclave.

I wish the conclave all success.

Dr. Zuhoor Bint Abdullah Al Khanjari
The Chairperson, Trustee Council, WCAS
It gives me an immense pleasure that Waljat College of Applied Sciences, WCAS, in Academic partnership with Birla Institute of Technology, BIT, is organizing an International Conclave on Innovations in Engineering & Management (Oman Vision 2020: Opportunities & Challenges), ICIEM-2016 during 24-25, February 2016. The main objective of such conclave is to provide a platform for exchange and sharing of knowledge and skills between Academicians, Managers, Engineers and Professionals for mutual benefit and advancement.

I believe that this conclave, ICIEM-2016 will offer an opportunity to put forward business plan competitions, case study competitions and debate on topical issues in addition to the research paper presentations to illuminate the novel ideas and promote closer cooperation and sharing of knowledge among the stakeholders. This conclave would showcase high value research papers and provide an international forum for researchers, managers, planners, policy makers and practitioners to share their applied and theoretical research findings. It will also bring together the enlightened community of academicians and researchers to share their experiences through a common platform for future direction.

I wish WCAS and its team a great success for this grand ICIEM – 2016.

Prof. (Dr.) Manoj Kumar Mishra  
Vice-Chancellor, BIT, Ranchi, India
It is a joy to present this International Conclave on Innovations in Engineering & Management (Oman Vision 2020: Opportunities & Challenges), ICIEM-2016 during 24-25, February 2016, from our institution, Waljat College of Applied Sciences, in academic partnership with Birla Institute of Technology, India and with the support of The Research Council, TRC of Sultanate of Oman.

We prospect this conclave, ICIEM-2016 as an opportunity to put forward business plan competitions and case study competitions along with the research paper presentations for the young minds in Sultanate of Oman and the world at large. The experience in this conclave would foster the knowledge, skills and expertise not only to the academic community but also to the practitioners, professionals, engineers, scientists, scholars and managers from various venues in the world. So we encourage the students, academicians and professionals to get involved in the conclave either as a participant or as audience or volunteer to reap the benefits of this international event for life long experience and learning. It is sure that everyone associated with this conclave will have their share of life time experience.

We thank especially TRC of Oman and other sponsors for supporting and wish every success for this grand event ICIEM-2016.

Prof. (Dr.) S. L. Gupta
Dean, WCAS
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ICIEM-2016

About the Conclave

Waljat College of Applied Sciences (WCAS) in academic partnership with Birla Institute of Technology, Ranchi, India had been the facilitator for sharing the knowledge and wisdom among the young scholars, professionals, scientists, engineers, academicians and students through various seminars and workshops. In continuation for the pursuit of excellence, WCAS with the support of The Research Council (TRC) of Oman, is pleased to organize the International Conclave on Innovation in Engineering & Management, ICIEM-2016 (Oman Vision 2020: Opportunities & Challenges) focusing on the recent developments in all fields of applied sciences and Management. This conclave will serve as a forum to get Corporate Professionals, Academicians, Research Scholars and Students together on to a single platform for an in-depth discussion on opportunities and challenges, especially in the fields of Computer Science, Information Technology and Electronics & Communication, in the context of Sultanate of Oman and the rest of the world.

During the ICIEM-16, Business Plan competition, Case study competition, Doctoral Research Paper Competition and student paper competition shall be adding to the rigor of the knowledge sharing and celebration of the young minds.

Who Can Participate in the Conclave?

- Academicians
- Information Scientists / Information Officers / Information Managers
- IT Professionals / LIS Professionals
- Engineers
- Policy Makers/HRM/Administrator / Strategic Managers
- Research Scholars
- Students
- Any other professional concerned
The conclave has been organized to include most of the topics covered under Engineering, Sciences, Management and Library Sciences as shown below.

THEME: ENGINEERING AND MANAGEMENT

SUB THEMES

I. CONTEMPORARY ISSUES (OMAN)
✓ Automobile Market in G.C.C.
✓ FDI in Oman
✓ Financial Institutions / Markets & its Status in Oman
✓ G.C.C. Railways / Oman Railway Project
✓ Islamic Banking System
✓ Multicultural Work Force in Oman
✓ Oman Economic Policies
✓ Tourism in Oman
✓ Port Management
✓ Public Distribution System
✓ Role of Academic Institutions in Development of Oman
✓ Quality Management in HEI’s in Oman
✓ Supply Chain & Logistic Management
✓ Taxation in Oman

II. ELECTRONICS AND COMMUNICATION ENGINEERING
✓ ASIC and Embedded Systems
✓ Optoelectronic Devices
✓ Audio and Video Processing
✓ Circuits Modeling
✓ MEMS
✓ Microwave Devices
✓ MIMO, Biomedical Signal Processing
✓ MOSFET/CMOS Design
✓ Nano-Scale Devices Metamaterials
✓ Optical Code –Division
✓ Nanotubes
✓ Optimization Sensors & Actuators
✓ Photonics
✓ RF, Analog and Digital Systems Synthesis
✓ Robotics
✓ Signal Filtering, Detection and Estimation
✓ Smart Antennas
✓ System on Chips (SoC)
✓ Wideband, Multiband Antennas
✓ Wireless, Mobile and Sensor Networks
### III. COMPUTER SCIENCE AND ENGINEERING

- Android & Mobile Applications
- Artificial Intelligence
- Cloud Computing
- Compilers & Interpreters
- Computer Gaming
- Cryptography
- Cyber Crime and Cyber security
- Data Mining
- Data Structures & Algorithm
- Development of Social Apps
- Decision Support System
- Distributed Computing
- Digital Forensic
- Fuzzy Logic
- Genetic Algorithm
- IT Governance
- Image Processing
- Information Security Audit
- Mobile & Wireless Computing
- Network Security
- Neural Networks
- Operating Systems
- Parallel Computing
- Security of B2C Commerce
- Semantic Web
- Software Engineering
- Web and Internet computing
- Web Mining

### IV. BIOTECHNOLOGY

- Biomaterials
- Biological Waste Management
- Bioprocess Engineering
- Biosensors
- Environment
- Food Processing Technology
- Stem Cell Technology
- Molecular and Genetic Engineering
- Nanotechnology
- Petroleum Biotechnology
- Pharmaceutical Biotechnology
- Protein Engineering
- Bio Statistics

### V. MECHANICAL ENGINEERING

- Advanced Manufacturing Processes
- Design of Machine Elements
- Design Energy Conservation & Management
- Fluid Mechanics and Machinery
- Heat and Mass Transfer
- Industrial Engineering & Management
- Manufacturing Systems
- Material Sciences
- Refrigeration and air conditioning
- Simulation & Modeling in Mechanical Engineering
- Thermal Science and Engineering
- Interdisciplinary Topics in M.E.
VI. ELECTRICAL & ELECTRONICS ENGINEERING

✓ Materials in Engineering
✓ Power System Engineering
✓ Rural Energy Planning
✓ Smart Grids and Micro Grids
✓ Solar Thermal and Photovoltaic System
✓ Hybrid Systems

VII. LIBRARY & INFORMATION SCIENCE

✓ Change Management & Leadership
✓ Collaborative Content Creation
✓ Copyright Issues for E-Resources
✓ Emerging Library Technologies
✓ HRM : Significance and Challenges
✓ Impact of MOOCs on Libraries
✓ Innovative Strategy
✓ Integrated Library Management Systems
✓ Learning Management System
✓ Research and the New Publishing Paradigm
✓ Trends and Challenges in Research on LIS
✓ Total Quality Management

VIII. MANAGEMENT

Human Resource

✓ Competency Mapping
✓ Cross Cultural H R Perspectives
✓ Ethics in Management
✓ Leadership
✓ Managing Human Capital
✓ Motivation Strategies
✓ Organizational Development & Change
✓ Strategic Human Resource Management
✓ Training & Development
✓ Total Quality Management

Marketing

✓ Advertising Management
✓ Brand Management
✓ Consumer Behavior
✓ Customer Relationship Management
✓ Ethical Issues in Marketing
✓ Green & Sustainable Marketing
✓ Internal Marketing
✓ Marketing Strategy
✓ New Media Format
✓ On-line Marketing & Social Media
✓ Retailing
✓ Service Marketing
✓ Viral Marketing
✓ Interdisciplinary Topics in Marketing Management
### Economics
- Agriculture Economics
- Cooperatives
- Economic Development
- Financial Economics
- International Economics
- Labor Economics
- Managerial Economics
- Monetary Policy
- Planned & Mixed Economics
- Public Finance
- Sports Economics
- Tax Policy
- Welfare Economics

### Entrepreneurship
- Culture and Entrepreneurship
- E-Entrepreneurship
- Entrepreneurship & Innovation
- Gender and Entrepreneurship
- Global Entrepreneurship
- Networking & Entrepreneurship

### Accounting & Finance
- Auditing
- Corporate Finance
- Derivatives
- Electronic Orientation in Financial Sector
- Managerial Accounting
- Management Control System
- Mergers & Acquisitions
- Social Accounting
- Green Accounting
- International Financial Reporting Standards

### IX. NATURAL SCIENCES
- Atmospheric & Solar Sciences
- Plasma Science & Technology
- Nuclear Physics
- Energy Studies
- Statistical Physics
- Condensed Matter Physics
- Mathematics of Computation
- Photonics
- Fundamental Physics
- Statistics / Mathematics

### X. COMPETITIONS
- Business Plan Competition
- Doctoral Research Competition
- Case Studies Competition
**Important Dates**

Abstract Submission : 30/08/2015  
Submission of Full Paper : 30/09/2015  
Final Acceptance of Paper : 15/10/2015  
Submission of Papers : iciem-2016@waljat.net

**About Muscat**

Muscat is the capital for Sultanate of Oman. It is also the seat of government and largest city in the Governorate of Muscat. Muscat is popularly known as the financial capital of Oman. The capital has a pride and grandeur of its own and has successfully blended the best of the ancient and the modern. The city has in the offering picturesque beaches, beautiful mosques, forts that are reminiscent of Muscat's glorious past and scenic gardens and natural parks. The climate of Muscat features a hot, arid climate with long and very hot summers and mild winters. Annual rainfall in Muscat is about 100 mm (4 in), falling mostly from December to April. In general, precipitation is scarce in Muscat with several months, on an average, seeing only a trace of rainfall. The climate is very hot, with temperatures reaching as high as 49°C (120°F) in the summer. For sightseeing, the best time to visit Muscat is from December to March as the temperatures are moderate and pleasant, making it easy to move around. Between mid-March and October, travel is very exhausting with the average temperature between 31°C to 38°C and sunburn and dehydration are possible. Otherwise Oman is rich in heritage and traditions with a blend of various features of modern lifestyle and this country is a land of stunning landscapes, from plains to mountains and deserts to unspoiled beaches which stretch to 1700 km of pristine coastline. The breath-taking and splendid tourist attractions in Oman include various castles and forts, natural wonders, deserts, wadis, mountains, caves and a lot more.  

**Popular Attractions in Muscat**

Sultan Qaboos Grand Mosque  
Royal Opera House  
Amouage Perfumery  
Qurum Beach  
Qurum Natural Park  
Mohammed Al Ameen Mosque  
Bait Al Zubair  
Oman Oil and Gas Exhibition Centre  
Wadi Al Arbeieen  
Centre for Omani Dress
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Source: [http://www.omanworldtourism.com/search.html](http://www.omanworldtourism.com/search.html)
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<tr>
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Ms. Anasuya Patil Co-convener
Mr. Sanjay Kumar Member

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Dr. Prashant Rastogi Member
Ms. Neelufer Aslam Member

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Dr. Khalid Salim Al-Jardani Member
Dr. Niraj Mishra Member
Dr. Ismaeel Baki Mohammed Member
Dr. David Manohar Member
Ms. Ruwaiah Member
Communication and Support Services Committee

Mr. Syed Aulia  Convenor
Dr. Sushil Kumar  Member
Dr. Jyoti K Chandel  Member
Ms. Atiya Tabasseum  Member
Mr. Zaid Khalifa Said Al-Shekili  Member
Mr. Shahid Ali Khan  Member
Mr. Hitham Said Al-Alawi  Member
Ms. P Vijaya  Member
Ms. Ruwaiya Salim Al-Rabhani  Member
Ms. Mashaeel Al Zadjali  Member
Mr. Sunil Varghese  Member
Mr. Praneesh Kunnnummal  Member
# Event Plan ICIEM-2016

## Day 1: 24th February 2016

<table>
<thead>
<tr>
<th>TIME</th>
<th>EVENT</th>
<th>VENUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00-10.00 AM</td>
<td>Registration</td>
<td>Ground floor, Block 2</td>
</tr>
<tr>
<td>10.00 -10.40 AM</td>
<td>Inaugural Function</td>
<td>Auditorium</td>
</tr>
<tr>
<td>10.00-10.05 AM</td>
<td>Holy Quran Recital</td>
<td>Auditorium</td>
</tr>
<tr>
<td>10.05-10.15 AM</td>
<td>Welcome Address by Honorable Dr. Zuhoor</td>
<td>Auditorium</td>
</tr>
<tr>
<td>10.15-10.20 AM</td>
<td>Theme presentation by Prof.(Dr.) S. L. Gupta, Dean, WCAS</td>
<td>Auditorium</td>
</tr>
<tr>
<td>10.20-10.30 AM</td>
<td>Introduction of the Chief Guest</td>
<td>Auditorium</td>
</tr>
<tr>
<td>10.35-10.40 AM</td>
<td>Release of Souvenir &amp; Proceedings by the Chief Guest</td>
<td>Auditorium</td>
</tr>
<tr>
<td>10.40-11.00 AM</td>
<td>Key Note Speech by Dr Lee Chu Keong, Professor, NTU Singapore</td>
<td>Auditorium</td>
</tr>
<tr>
<td>11.00-11.20 AM</td>
<td>Key Note Speech by Prof. KH Hurang, Feng Chia University, Taiwan</td>
<td>Auditorium</td>
</tr>
<tr>
<td>11.20 -11.40 AM</td>
<td>Key Note Speech by Prof. Ahmed M. Al Naamany, Dean, Modern College, Muscat</td>
<td>Auditorium</td>
</tr>
<tr>
<td>11.40-12.00 Noon</td>
<td><strong>TEA BREAK</strong></td>
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<tr>
<td>12.00-12.20 Noon</td>
<td>Key Note Speech by Prof. Nawal Kishor, Professor and former director, School of Management Studies, Indira Gandhi National Open University, New Delhi, India.</td>
<td>Auditorium</td>
</tr>
<tr>
<td>12.20-12.40 Noon</td>
<td>Key Note Speech by Mr. Salim Humaid Khalfan Al Mahrroqi , Managing Director Industrial Supplies Center L.L.C</td>
<td>Auditorium</td>
</tr>
<tr>
<td>12.40-01.00 PM</td>
<td>Q &amp; A Session</td>
<td>Auditorium</td>
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<tr>
<td>1.00 - 2.00 PM</td>
<td><strong>LUNCH</strong></td>
<td>Cafeteria 1st Floor</td>
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<tr>
<td>2.00 -4.30 PM</td>
<td><strong>Paper Presentations (TECHNICAL SESSIONS)</strong></td>
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<tr>
<td></td>
<td>Session 1: Engineering &amp; Allied Sciences</td>
<td>Room 101, Block 2</td>
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<tr>
<td></td>
<td>Session 2: IT &amp; Allied Sciences</td>
<td>Room 102, Block 2</td>
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<tr>
<td></td>
<td>Session 3: Management &amp; Related Areas-I</td>
<td>Room 103, Block 2</td>
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<tr>
<td></td>
<td>Session 4: Library Science</td>
<td>Room 104, Block 2</td>
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<tr>
<td></td>
<td>Session 5: Management &amp; Related Areas-II</td>
<td>Room 105, Block 2</td>
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<tr>
<td></td>
<td>Session 6: Management &amp; Related Areas-III</td>
<td>Room 106, Block 2</td>
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<tr>
<td></td>
<td>Session7: Business plan Competition</td>
<td>Video Conference Room, Block 3</td>
</tr>
<tr>
<td></td>
<td>Session 8: Case study Competition</td>
<td>Smart Room , Block-2</td>
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<tr>
<td></td>
<td>Session 9: Technical Project Competition</td>
<td>Smart Room , Block-3</td>
</tr>
</tbody>
</table>
### International Conclave on Innovations in Engineering & Management
(Oman Vision 2020: Opportunities & Challenges)
Feb. 24-25, 2016

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.30 - 5.30 PM</td>
<td>Faculty Interaction/Discussion with International Speakers on “Emerging Research Trends/Areas”</td>
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<tr>
<td>05.30 - 7.00 PM</td>
<td>Cultural Program</td>
<td>Auditorium</td>
</tr>
<tr>
<td>7.00 PM Onwards</td>
<td>DINNER</td>
<td>Cafeteria</td>
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</table>

### Day 2: 25th February 2016

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
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</thead>
<tbody>
<tr>
<td>9.00 - 2.45 PM</td>
<td>Paper Presentations</td>
<td>Room 101, Block 2</td>
</tr>
<tr>
<td></td>
<td>Session 10: Engineering and allied Sciences – I</td>
<td>Room 102, Block 2</td>
</tr>
<tr>
<td></td>
<td>Session 11: Management &amp; Related Areas – I</td>
<td>Room 103, Block 2</td>
</tr>
<tr>
<td></td>
<td>Session 12: Engineering and allied Sciences – II</td>
<td>Room 104, Block 2</td>
</tr>
<tr>
<td></td>
<td>Session 13: Management &amp; Related Areas – II</td>
<td>Room 105, Block 2</td>
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<tr>
<td></td>
<td>Session 14: Library Science</td>
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<tr>
<td></td>
<td>Session 15: Engineering and allied Sciences – II</td>
<td>Room 106, Block 2</td>
</tr>
<tr>
<td></td>
<td>Session 16: Library Science</td>
<td>Room 103 Block 2</td>
</tr>
<tr>
<td>011.45 - 12.30 Noon</td>
<td>Panel discussion with students</td>
<td>Auditorium</td>
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<tr>
<td></td>
<td>Panel discussion with Management students (BBA Full Time/BBA Part-Time, MBA, EMBA)</td>
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<tr>
<td></td>
<td>Panel discussion with Engineering (BCA/BE/CS/BT)</td>
<td>Video conference Room</td>
</tr>
<tr>
<td>11:30 - 11.45 AM</td>
<td>Tea Break</td>
<td></td>
</tr>
<tr>
<td>1.00 - 01.45 PM</td>
<td>LUNCH</td>
<td>Cafeteria 1st Floor</td>
</tr>
<tr>
<td>02.45 - 03.30 PM</td>
<td>Valedictory Function, Prize and certificate distribution</td>
<td>Auditorium</td>
</tr>
<tr>
<td></td>
<td>Conclave Report by <strong>Prof. (Dr.) Alok Kushwaha</strong>, Assistant Dean (Academic), WCAS</td>
<td>Auditorium</td>
</tr>
<tr>
<td></td>
<td>Felicitations to Conference Officials</td>
<td>Auditorium</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
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<tr>
<td>3.45 PM</td>
<td>Vote of Thanks by Dr. Khalid Salim Saif Al-Jardani, Assistant Dean (Administration &amp; Quality Assurance)</td>
<td></td>
</tr>
<tr>
<td>Onwards</td>
<td>Sight Seeing in Muscat</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
1. Minor changes in the event plan may take place as per the need.
2. The detailed session plan will be published soon.
Abstracts
Design, Fabrication and Testing of Indirect Type Natural Convection Solar Dryer

Saad Al Mutasher¹, Almundher M. Al Noumani², Zakariya S. Al-Rashedi³, Ishaq R. Al-Hatemi Ekhlas A. Osman⁴
¹,²,³,⁴ College of Applied Sciences – Sohar, Ministry of Higher Education, Sultanate of Oman
¹saadj.soh@cas.edu.om

Abstract

This research is an attempt to develop an indirect natural convection solar dryer for crop. The aim is to produce a drying crop with good quality and decrease the drying time. Five different indirect type natural convection solar dryer concept designs were presented. One design concept was chosen after screening process which consists of a solar collector, a drying chamber, and chimney. The thermal performance of the final design of solar dryer was studied. Several experiments were performed at Sohar city in Al Batina North governorate of Sultanate of Oman. The effects of chimney cross section area, weather conditions and storage media on the thermal performance of solar dryer were studied. The results showed that, the higher performance of solar dryer with storage media and chimney area of 10x10 cm². The results recorded the average outlet collector temperature, 46.5°C and compared with average ambient temperature, 32°C. Furthermore the results showed that the experimental and theoretical dryer efficiency of solar collector are 13.1% and 17.6% respectively. The results summarized that solar dryer showed a good performance in drying time and high quality of the product compared with open sun drying.

Keywords: Solar energy, Date palm, In-direct solar drying, Natural convection, Dryer efficiency
Potentials of Open Educational Resources Learning Environment and Educational Data Mining: The Case of HCT Students in Mastering Selected Skills in Probability

Eduardo M. Lacap Jr.¹, Huda Al Shuaily², Maria Elisa Linda T. Cruz³

¹²Higher College of Technology, Muscat, Sultanate of Oman
³University of Nizwa, Initial Campus, Birkat Al Mouz, Sultanate of Oman

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Abstract

Educational data mining (EDM) is a relatively a growing research community that has been widely use in discovering novel and potentially useful information from large amount of data acquired from different data resources. This paper focuses on advocating an Open Educational Resources (OER) learning environment and showing its impact using the EDM tools. There are significant numbers of scientific articles which serves as evidence how progressive and promising results can be in utilizing EDM and currently, there is an overwhelming interest to its application in higher education institutions. This paper manages to explore the potentials of EDM by integrating an adaptive web-based tutoring system in supplementing the instruction of mastering skills in probability. In addition, it manages to look at the changes in student’s attitude towards this kind of teaching methodology. A total of 43 students participated in this study and data was gathered from different resources like the pre-test, post-test, e-learning information logs and questionnaire checklist. Majority of the students who completed the survey perceived positive gains in their student’s excitement, improved skills mastery in probability and were overall satisfied with the methodology. A predictive model was also built via forward logistic regression and found to have accuracy higher than the constant model. Results showed that students achieved skills mastery faster than expected and within the acceptable parameter using the predictive model.

Keywords: Educational data mining, Open educational resources, Skills mastery
Comparative Analysis of the Entrepreneurial Capabilities of Computing Sciences and Business Studies Students of Gulf College

Salvacion Domingo¹, Hazel C.Tagalog², Rodrigo Velasco³
¹,²,³ Faculty of Computing Sciences, Gulf College, Muscat, Sultanate of Oman
¹salvacion.sally@gulfcollegeoman.com,
²hazel.tagalog@gulfcollegeoman.com, ³rodvelasco@gulfcollegeoman.com

Abstract

The Final Year Project (FYP) requirement of both the Computing Sciences and Business Studies departments of Gulf College is geared towards product design, development and innovation. Students are trained to develop a worthwhile product capable of copyright and commercial release. In response to the entrepreneurial challenge set by the government, various academic institutions look into final year projects as potential ventures. However, developing a complete entrepreneur requires enabling one’s innate entrepreneurial capabilities. This study compares the entrepreneurial capabilities of the Computing Sciences and Business Studies students of Gulf College in realizing their final year project as a business venture after its completion. This analyses the financial and technical capabilities, entrepreneurial self-concept, and entrepreneurial students’ specialization in college. The study is an initial step towards developing entrepreneurship across all disciplines within the campus. This will be an eye opener for both students and mentors to realize students’ potential as young entrepreneur, develop and register worthwhile products for commercial release and support self-employment for student-entrepreneurs. In addition, colleges and universities in Oman can use the results of the study in mapping their curricula in the areas of computing and business.

Keywords: Entrepreneurial challenge, Student-respondents, Self-employment, Mapping
Strength Analysis of Concrete (300/20) with Superplasticizer

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¹,²A’Sharqiyah University, Ibra, Sultanate of Oman
¹tariqumar1984@gmail.com, ²s.wamuziri@asu.edu.om

Abstract

Admixtures are used in concrete to obtain some specific properties to enhance the performance of concrete. In this research concrete of a specific grade (300/20) with a superplasticizer Ha Be has been selected to enhance the reliability on the use of admixture in concreting. In the introduction part of the research properties of superplasticizer are discussed while later the technical data of Ha Be and result of different test on concrete are discussed. Initially materials / ingredients of concrete (300/20) are specified and correction for moisture have been made for 1 cum. A total of six design batches are selected to prepare a total of 36 cube of standard size (150mm x 150mm x 150mm). To know the workability, the slump have been conducted at six stages i.e. initial, at 30 minutes, 45 minutes, 60 minutes, 75 minutes and at 90 minutes. The study shows that the concrete with the use of this specific superplasticizer (Ha Be) get the desired workability (slump value 150+25 mm) at 60 minutes, and it is concluded that such superplasticizer are recommended where transportation of concrete required 60 minutes. Since concrete gain a significant strength at seven days and remaining strength is gained at 28 day, therefore 18 cubes have been crushed at an age of 7 days, while remaining 18 have been crushed at an age of 28 days. These strength especially the 28th day strength (average value = 53 Mpa) has been compared with the required one (46 Mpa) and was found satisfactory. The densities of all the 36 cubes were also computed at two stages to compare it with the required density (2400 kg/m3). Both the calculated densities at 7 days for 18 cubes and at 28 days for 18 cubes was compared and found satisfactory. At the end it is concluded that if any superplasticizer is required to get some specific properties it can be use confidently since it not affected on the strength at all. Although since the research is only focusing on the strength at up to 28 days therefore it is also required to study the behavior of concrete at later stages to see there is any adverse effect in concrete due to the use of any superplasticizer.

Keywords: Superplasticizer, Ha Be, Concrete (300/20), Cube, Strength, Slump, Density
Design and Simulation of Robot Manipulator using MATLAB and SIMULINK

Shilpa B.¹, Vaishak N. L.², Sadhana B.³, Jaimon D. Quadros⁴, Suhas⁵
¹, ³Canara Engineering College, Mangalore-574219, India
², ⁴, ⁵Sahyadri College of Engineering & Management, Mangalore-575009, India
¹shilpanarsha@rediffmail.com

Abstract

Robotics is one of the major disciplines practiced in the industry for the development of state of the art technologies. The synergy of robotics involving various applications like submarine tasks, car assembly operations, vision system and artificial intelligence has a tendency to reduce the manufacturing cost allowing innovation. For this purpose, it is imperative that robot programmers are able to visualize and analyze the behavior of robots under different circumstances with reference to its parameters. Therefore the present work attempts to improve the functions of robots by simulation which can enhance the design, development and operation of a robotic system. The main objective is to show a complete simulation methodology using the same programming platform, where the combination of MATLAB and SIMULINK has been used allowing the 5 Degree of Freedom (DOF) robotic system to manipulate and thus visualize its behavior from different perspectives. Virtual Reality Modelling Language (VRML) has been implemented in a view to saves resources i.e. (time and money) and conduct the simulation in a controlled environment. This work is dedicated to the approaches resulted from translational and rotational repositioning of a robot path in its workspace in order to achieve optimal cycle time. The output of the system achieved good graphic capability and flexibility in terms of 3-D representation. The mathematical calculation and virtual representation are shown at the same time using single software environment. The simulation using this software increased productivity, safety, economy and quality.

Keywords: Robotics, Simulation, Degree of Freedom, MATLAB, SIMULINK, VRML
Classification of Attacks in Data Mining
Optimization of Recombinant L-Asparaginase Production by *Escherichia coli* K-12 and Studies on Thermodynamic Parameters

S.K. Jha¹, H.R. Singh²,
¹²Birla Institute of Technology, Mesra, Ranchi-835215, India
¹skjha@bitmesra.ac.in

Abstract

L-Asparaginase (E.C. 3.5.1.1) is a well accepted chemotherapeutic agent against the acute lymphoblastic leukemia and lymphosarcoma. The recombinant L-asparaginase enzyme was produced by the over-expression of ansB gene of *E. coli* K-12 in *E. coli* BL21. The carbon sources, nitrogen sources, minerals and additives having yield enhancing effect, were optimized by Taguchi Design of Experiment (DOE). Their optimum level was identified by the using the orthogonal array method of Taguchi design of experiment. After the complete optimization of the selected process parameters 121.8% enhanced production of L-asparaginase was observed at shake flask level. There was further 14.8% enhancement in the enzyme production after the scale up the process in 5L bioreactor. The volumetric yield of 3.58 X 105 U/L of L-asparaginase with the specific activity of 6.97 X10³ U/mg in fermentation broth was reported. The purified recombinant enzyme was further used to study the thermodynamic parameters. The enzyme showed highest stability at 250°C than at higher temperatures with a half-life of 46 hrs which is quite significant. Its deactivation energy was found to be 60.64 kJ/mol. The value of thermodynamic parameters including ΔH, ΔS and ΔG were found to be -49.23kJ/mol, 0.09kJ/mol.K and 73.12-74.78 kJ/mol respectively implying that there are no significant processes of aggregation and the enzymatic reaction was exothermic and spontaneous in nature.

Keywords: L-Asparaginase, Chemotherapeutic, *E. coli* K-12, Thermodynamic, Half life
Medical Image Segmentation via Fuzzy Clustering and Regularized Level Set Method

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\textsuperscript{1,2} BIT Mesra, NOIDA, UP, India
\textsuperscript{3} Waljat College of Applied Sciences, Sultanate of Oman
\textsuperscript{1} peeyush.tewari@gmail.com
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Abstract

Application of applied mathematics plays an important role in many fields. Recently Partial Differential Equation (PDE) has been used very effectively used for understanding of the medical images. Using these an revolutionary technique level set method (LSM) using variational technique gives efficient segmentation of images. The implementation of the level set method described in this paper works together with spatial fuzzy c - mean clustering (SFCM) to enable a very good realisation of image segmentation. The amalgamation of two techniques made it possible to fragment images of different modalities. SFCM efficiently form clusters providing regions more consistent than supplementary methods with removal of noise spots and specious splotch. Also the regulating constraints of LSM are spontaneously predictable from the conclusions drawn of SFCM. Since Medical image segmentation has been an interesting application of the image processing, proper segmentation of the medical images helps in the accurate and correct diagnosis of the diseases. The MATLAB tool can be used to judge the performance of the suggested technique by using medical images such as CT scan image, MRI etc. the effective timing of segmentation of images.

Keywords: Partial Differential Equations, Medical images, Level set, Image segmentation
Analysis of the Importance of Compressive Sensing in Sensor Networks

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¹vivekpnew@gmail.com, ²veenuspk@gmail.com, ³dharunvs@yahoo.com

Abstract

The conventional signal processing methods which has laid their foundation with the sampling theorem, produces gigantic volume of useless data during the series of processes associated with signal processing. Compressive Sensing is an innovative platform for signal processing, which offers more practical methods to solve the issues of voluminous data generated by the conventional paradigm. It can overcome the limits of Sampling Theorem and can offer much more to address the associated issues. The Compressive Sensing concept proposes that sparse signals can be successfully reconstructed from fewer samples which are acquired at a much lower rate than the Nyquist rate. The theory is trying to simplify the process of sampling, encoding and compressing into a single step process simultaneously. Through this paper the compressive sensing scenario is examined through the Sensor Networks perspective. Along with this, the paper puts an effort to analyze the logistical, processing and storage challenges in consort with other major concerns in the realm using the Compressive Sensing Approach as an effective tool. From the study and analysis it can be inferred that most of the challenges can be defied comfortably with the help of Compressive Sensing.

Keywords: Compressive sensing; Sensor networks; Sparsity; Sampling; Nyquist rate
Coherent Noise Removal Techniques - A Review

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²HMR Institute of Technology & Management, New Delhi, India
³Caledonian College of Engineering, Muscat, Sultanate of Oman
¹peeyushtewari@gmail.com, ²29.deepti@gmail.com, ³shahjahan233@gmail.com

Abstract

Cochlear Implant is a technology used to give hearing power to profoundly deaf people. It gives smooth hearing and easy life to people. Cochlear Implant process also helps to give solution in different region of disability in hearing. The main goal is to make hearing more easy and meaningful. Existing Cochlear Implant techniques can’t satisfy all type of deficiency in hearing but still gave a big relief to people. This paper is a review of how technology has changed in the past decade and how we can find better techniques for noise removal consistently. Earlier Subspace algorithm with single channel was proposed which works on stationary noise removal and it changed the lives of the people and children by developing the speech and language skills prior to deterioration of their hearing. People who were unable to listen but could now hear with the help of Cochlear implants. Initially people faced lots of problem with regard to noise that interfered with the speech signal, so single microphone noise reduction algorithms came into existence because mostly work was done with speech quality and not with speech intelligibility. Further we focused on sound coding strategies for suppressing the noise in CI. After this, the different ways in which bilateral concept could be used to implement CI in both the ears and remove the effect of head shadow and later environmental noises were also considered in the noise reduction models. Then the concept of enhancing the bilateral implants by using multi-microphone in CI came into being. Instead of multi-microphone, dual microphone concept was introduced in bilateral implant which showed a new advancement in the technology. This was followed by the usage of channel selection for noise reduction. Then, the focus shifted to new changes in technology of time frequency contribution for speech understanding and the outcome was bilateral implants using single microphone. This survey addressed various improvement techniques and their evaluation and also presents the issues related to those techniques.

Keywords: Cochlear Implant (CI), Time-Frequency (T-F), Bilateral Cochlear Implants (BI-CIs), Dual-microphone (DM)
Impact of Covariates on Improvement in CD4 Cell Count of HIV/AIDS Patients using Bayesian Poisson Regression Model

Vajala Ravi¹, Gurprit Grover², A.K.Gadpayle³, Manoj Kumar Varshney⁴, Prafulla Kumar Swain⁵, Shahid Ali Khan⁶

¹,²,⁴,⁵University of Delhi, Delhi-110007, India
³Dr.Ram Manohar Lohia Hospital, New Delhi, India
⁶Waljat College of Applied Sciences, Sultanate of Oman

vravi.vr@gmail.com

Abstract

HIV attacks CD4 cell counts, the most important component of the immune system. After infection, this count goes down gradually over years which ultimately leads to mortality of the patient. Antiretroviral therapy (ART) is a treatment for HIV/AIDS infection which improves the CD4 cell count and hence prolongs the survival of such patients. The improvement in CD4 cell count is dependent not only on several biological factors but also on behavioural factors. In this paper our primary objective is to estimate the effect of prognostic factors associated with change in CD4 cell counts of HIV/AIDS patients who are undergoing ART at Dr. Ram Manohar Lohia Hospital, New Delhi, India, using a Bayesian Poisson regression model. In this model, the prior distribution of parameters is assumed to be Multivariate Normal and hence posterior estimates are derived. The analysis is done using the MCMC pack in 'R' language. Variables like Gender, Alcohol, Drug user, initial WHO Staging, Body Mass Index, Marital Status, opportunistic infections, duration of ART, gain in weight and occupation are the significantly affecting the improvement in CD4 count.

Keywords: CD4 count, Human Immunodeficiency Virus (HIV), Antiretroviral therapy (ART), Bayesian Poisson regression model
Development of Post Result Mobile Application using SOA for SQU Students

E. Al-Kindi¹, Z. Al-Kindi², Z. Al-Khanjari³

¹²³College of Sciences, Sultan Qaboos University, Al-Koud 123, Muscat, Sultanate of Oman
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³zuhoor@squ.edu.om

Abstract

In the modern age of information and communication technologies in work and social life, people increasingly use computers and computer applications. It should be pointed out that mobile applications usage and development have been growing. Today, there are several mobile applications, which have been progressed in order to increase the facilities and services for people. It is worth that a higher education environment is one of these sectors, which requires new services and technologies to be implemented. Beside that, the critical scheme of these services is to make the work more extensible, satisfy student’s need, ensure the accuracy of data, achieve fast access to information and save time. The goal of this paper is to develop post result mobile application for students at Sultan Qaboos University (SQU) which is considered as one of the major services for higher education institution. This paper claims that the post result mobile application is the first and unique service, which is provided for SQU students in order to allow them to send their appeal against their exams results via fast and user friendly application. Since mobile applications use Service-Oriented Architecture to implement their application services, this research paper is also intended to investigate the possibility of developing post result mobile application for SQU students based on Service-Oriented Architecture (SOA).

Keywords: Mobile Application, Service-Oriented Architecture (SOA), Post Result Mobile Application, Mobile Host, JSON, XML, Service
Abstract

Flow boiling heat transfer has attracted attention as the prime area of interest for many researchers due to ample advantages like high heat removal capacity, high surface to volume density ratio, etc. Because of very small size diameter of Mini and Micro channels, it becomes very difficult to understand local features of flow and heat transfer characteristics involved in flow boiling experiments. This difficulty in flow boiling experiment can be overcome by doing CFD simulation using multiphase models. CFD simulation can also give some insights regarding flow patterns. In this article CFD simulation of flow boiling heat transfer with DM water as working fluid is presented in 1.6mm and 3mm ID minichannels of SS316 material having length of 250 mm. The simulations were conducted with the mass flux range of 156.2 to 549.2 kg/m2s, and heat flux range of 25.2 to 346.2 kW/m2 using Fluent 15.0. The flow pattern obtained by simulations were compared with experimental result of flow patterns which were captured using high speed camera PHOTRON Fastcam mini UX100. The thin film on the inner surface of the tube predicts for these set of parameters, boiling to be in the film boiling regime/high superheat regime.

Keywords: Boiling heat transfer, Minichannel, Flow boiling, CFD simulation
Utilizing the Smart PV Converter for the Benefits of AC Power Supply

Basil Saied¹, Aouse Khalaf²
¹,² University of Mosul, Iraq
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Abstract

This paper presents a power electronic circuit, connected to the grid, which has an ability to overcome the problem of variation of both power factor and total harmonic distortion due to the nature of loads. Also the suggested circuit may be used to utilize the photovoltaic (PV) cells if solar energy is available. The power electronic circuit contains mainly transistorized voltage source inverter and solar cell system. This system is named as Static Power Components Compensation (SPCC). The SPCC has an ability to inject all the power components in to each phase of the AC power supply. These power components are real, reactive and distortion power components. The SPCC system is controlled using methodology of adaptive pulse width modulation (APWM) which drives the transistorized voltage source inverter. The analytical and simulation results are given which show the ability and benefits of the proposed method.

Keywords: Power Quality, PV converter, Active Filter, Statcom, Distortion Power
Effect of Tempering on the Mechanical Properties of AISI 52100

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Abstract

The mechanical properties of steel determine its applicability for a particular condition. Heat treatment is one such process that commonly enhances the properties of steel. The previous researchers have concentrated mainly on austempering and Martempering of AISI steels. However to the best of authors’ knowledge no work has yet been conducted on the tempering of AISI 52100 alloy steel. Thus the present research endeavor is one such attempt to study the effect of heat treatment on the mechanical properties of AISI 52100 alloy steel. Different tests like compression, hardness, impact and wear have been carried out after the tempering at 250°C, 350°C, 450°C and 550°C respectively. The tests are conducted as per ASTM standards. It is observed that the as-received AISI samples possess high carbide content which makes them hard, whereas the tempering reduces the carbide content indicating less hardness. The impact tests revealed that the impact strength of the tempered samples increased when compared to the as-received specimens. Moreover, approximately 50–60% wear resistance was improved with tempering of AISI steel. However, the elasticity and Ductility values showed a decreasing-increasing trend which is typical of tool steels of this class. The applications of AISI 52100 steel include bearing manufacture, ball screws, and gauges. Based on the functional requirement, the choice can be made among the tempered AISI 52100 steels.

Keywords: AISI steel, Tempering, Compression, Hardness, impact, wear
Supplier Categorization using MCDM & Cluster Analysis Techniques: An Application from Indian Automobile Manufacturing Firm

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Abstract

Manufacturing is complex and necessitates to integrate large number of internal and external factors. Manufacturing changes slowly and it takes a long time to build new facilities, install new equipments, change operating procedures, train personnel and develop new suppliers. Manufacturing outputs of a firm depend on various parameters including the production workforce, technology used, quality assurance and the reliability of the suppliers. Supplier involvement in meeting the objectives of a firm is of a paramount importance. One of the most critical strategic decisions of a firm is the selection of the right suppliers which can align its capabilities and outputs with the levels desired. In literature many studies have been carried out for supplier selection process. But there is a gap in supplier's evaluation and development process. There is a need to develop an effective mechanism which can help the manufacturing firm to evaluate their current suppliers and to classify them on the basis of their performance. In the present work, this motive is achieved by the application of Multi criteria decision making techniques and cluster analysis, to categorise the current suppliers of an automobile manufacturing firm into similar sets or groups, with an aim to develop strategies for each group.

Keywords: Manufacturing strategy, Supplier evaluation, Multi-criteria decision making, Cluster analysis
Vector Based Dynamic Shortest Path Routing For Mobile Adhoc Using 3D Virtual Grid

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Abstract

In Mobile Adhoc Networks (MANETs) location management is an important problem since its always self organization, decentralization and infrastructure-less network of mobile devices connected without wires therefore the mobile devices can change location dynamically while connected to the network. The VL3VGP (Virtual Location 3D Vector Grid Protocol for Mobile Adhoc Devices) to improve the quality of services over minimizing the complexity of routing, highly support for fault analysis, clustering, speed of service, increased intelligence of tracking devices and fast relocation of fault over communication failures like link breakage. When switching nodes among the 3D grid, it is often necessary to calculate the shortest path between all pairs of nodes in a 3D grid space based on the vector of the target node. We use a vector technique to eliminate the shortest path algorithm by integrating the vector along with the nodes selection process to dynamically optimize the routing problem.

Keywords: 3D Virtual Grid, 3D shortest path, Vector based routing, Adhoc network routing
Mechanical and Morphological Properties of Impact Modified PBT Nanocomposites

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Abstract

Elastomer toughened poly(butylene terephthalate) (PBT)/ organoclay (Cloisite 30B) nanocomposites are prepared via melt blending using microcompounder. In this work two types of impact modifiers Ultra low density polyethylene grafted glycidyl methacrylate and Ethylene-methyl acrylate-glycidyl methacrylate (ULDPE-g-GMA, IM1 and E-MA-GMA, IM2) are used and a detailed comparison of the effect of both the impact modifiers is made. With respect to the impact strength 2 wt% of ULDPE-g-GMA shows better result as compared to 2 wt% E-MA-GMA. Therefore, 2 wt% of ULDPE-g-GMA is considered as optimized percentage for the preparation of nanocomposites. Being an impact modifier ULDPE-g-GMA it decreases the yield stress, tensile modulus and breaking strength of the neat PBT. This issue is addressed in this paper by using organoclay which may improve the mechanical properties of the PBT materials. The content of ULDPE-g-GMA has been kept constant while OMMT content is varied from 2 to 5 wt% in nanocomposites. Crystalline morphology has been investigated by polarizing optical microscopy at 185ºC and 205ºC crystallization temperatures. The tensile modulus of the elastomer toughened PBT nanocomposites has given the optimum increase with a 3 wt% addition of organoclay.

Keywords: PBT, POM, Nanocomposites, Blends, Impact modifiers
Performance, Combustion, and Emission Characteristics of Compression Ignition Engine with Different Compression Ratios - An Experimental Investigation

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Abstract

The Experimental Investigation on Compression Ignition Engine was analyzed in different compression ratios by using Diesel as a fuel. Different volumes of Piston heads were employed to achieve compression ratios. In that respect are different compression ratios used, namely 16.5, 17.5 and 19.5. The investigation was taken from single cylinder, four-stroke, air cooled diesel engine. The observational results of a compression ignition engine indicated that an overall brake thermal efficiency was increased at part load conditions of all compression ratios. The emission characteristics of carbon monoxide were increased at peak load conditions at the compression ratios of 16.5 and 19.5. Unburned hydrocarbons were increased in the compression ratio of 19.5 in all load conditions. Overall oxides of nitrogen were reduced by 50% at the compression ratio of 16.5. The experimental result shows that compression ratio of 16.5 was suitable to operate in compression ignition engine comparable to other compression ratios.

Keywords: Performance, Combustion and Emission, Compression Ratio, CI Engine
Effective m-Learning on Instruction through a Learning Management System

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Abstract

ICT, Intranets, extranets, and internet are growing day by day, and are becoming eminent technologies. Moodle, Blackboard, WebCT also known as LMS (Learning Management Systems) are widely used for instruction in education. Today’s learning is not limited to the classroom only. Mobile learning (M-learning) is an ideal technique for delivering the content to learners at the time of their need. This study has revealed the effectiveness of M-learning on instruction using Moodle (LMS), to the students taking a course “Basic Computing Skills” offered at Sultan Qaboos University (SQU), Sultanate of Oman, for General Foundation Program. The course was designed as a blended learning approach and the material was digitally used through Moodle’s webpages, designed for the course along with face to face teaching. Students had used their smart phones and portable devices for accessing the Course website. The findings revealed that students had a little exposure to M-learning at the beginning of the course, and had appreciated M-learning technique, after testing it.

Keywords: M-learning, Moodle, LMS, Students Attitudes, Blended Learning
Cloud Computing Technology Setups to Support the Learning Management System (LMS) in Higher Education Institutions in Oman

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Abstract

The cloud computing terminology is used widely nowadays. Some people may not understand its technical meaning but they keep repeating this word every time an organisation is involved. The most crucial issue is to understand the in-depth meaning of the terminology, especially, for the decision makers in any company. Any misunderstanding would lead to wrong decision-making which can cost the organisation much time and resources. The internet is one of the most vital infrastructures needed to deploy this kind of technology which has become an important part of our lives. The author will explain in details the various types of Cloud computing services, such as; SaaS (Software as a Service), PaaS (Platform as a Service) and IaaS (Infrastructure as a Service). This paper will discuss in detail the challenges and security issues that exist in the implementing of cloud computing service in most of the higher education initiations in Oman. In general, this paper will allow the organisations to choose where, when, and how they use cloud computing, and help the decision makers to play the right role in higher education institutions.

Keywords: Cloud-computing, Cloud-Security, Cloud-Challenges, Saas, PaaS, IaaS
Shared Secret Key Splitting with Confidentiality and Authentication

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Abstract

Hadoop was designed barring any security model. It’s didn’t authenticate user or services. The initial defiance of enabling security in Hadoop is to deal with access permission of Data block goes through the Name Node and restrain impersonation where a user can mistreat and simulate another user to have access on other’s data in the HDFS cluster. There is no enforcement of access control by Data Node on access to its data blocks. Name Node issue the secret key to all Data Nodes. Various security vulnerabilities can occur in block access token, which is used for the permission control of data block in Hadoop. In this paper, a shared secret key splitting with Confidentiality and authentication scheme is proposed to overcome such security vulnerabilities.

Keywords: Hadoop, block access token, authentication, confidentiality, secret key
Virtualization of Server Architecture for Green IT Environment

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Abstract

There are several components required to establish green IT environment. These typically include front end platform used by the user, back end platforms such as server and storage, a cloud based delivery, and a network. The approaches to green IT could be applied to individual component or organizational level. In particular, the important approach is to move to server virtualization, cloud computing and software as a service where appropriate. Virtualization can assist in distributing work so that servers are either busy or put in a low-power sleep state. In this paper novel server architecture is proposed that could be used as platform virtualization. With virtualization, a system administrator could combine several physical systems into virtual machines on one single, powerful system, thereby unplugging the original hardware and reducing power and cooling consumption. The proposed study suggest that virtualization helps to reduce lower power and cooling consumption, by reducing the number of machines and server it needs. The proposed architecture helps to create an environmentally sustainable computing effectively.

Keywords: Cloud Computing, Green IT, Multiprocessor, Interconnection Network, Server, Virtual Machine
Energy Conservation in Built Environment

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Abstract

Artificial energy consumed by human is increasing due to population explosion and changing lifestyle throughout the world. The excess need of energy is creating pressure on natural resources and its exploitation further leading to substantial pollution. ‘A penny saved is a penny earned’, ‘Prevention is better than cure’; it would be appropriate to adopt strategies at the beginning to lessen the usage of energy than putting effort to invent methods to consume less energy during its functioning. The impact of utilizing the natural resources is multitude and the same could be integrated with the technology. As the Built envelope is one of the main requirements for the activities of humans; conservation of energy needs to begin at the initial stage of design of the built mass as they have an embedded energy. The embedded energy amounts to a considerable magnitude; if reduced will help in achieving overall reduction in the energy consumed or to be consumed. The orientation of building with respect to local climatological data, appropriate choice of materials along with techniques for construction and different elements used in building design are few of the basic consideration. The paper discusses the consumed energy by the built mass and ways to reduce the energy utilized from the setting up and also during lifespan of the built environment.

Keywords: Strategies, Built Mass, Embedded Energy, Construction Material and Techniques
Efficacy of Carbon Nanotubes for Water Purification

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Abstract

Water is one of the most vital natural resources for sustaining life and the environment. The Sultanate of Oman heavily depends on sea water as a resource. Community water supply is brought about by desalination of sea water throughout a major part of the country. Even then, a good portion of the population here utilizes underground water source for satisfying their needs. Among the water quality parameters, the fluoride ion is unique in that it is beneficial to health if present up to an optimum threshold and harmful otherwise. In this study, an attempt was made to check the performance of adsorbent multiwalled carbon nanotubes developed using nanotechnology for removing fluoride from water. The large specific surface area, and high thermal and chemical stability make nanomaterials quite attractive for use as an adsorbent material. The influence of various operational parameters viz. effect of pH, interfering ions and contact time are studied by a series of batch adsorption experiments. The results of the study appear to be quite promising in the sense that they demonstrate the capacity of MWCNTs to remove excess fluoride from drinking water.

Keywords: Carbon Nanotubes, Fluoride, Nanotechnology, Oman, Water
Classification of Attacks in Data Mining

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Abstract

Intrusion Detection and data mining are the major part of almost every application. With a diverse expansion of internet use, there are millions of intrusions that need to be detected and to get rid of them. Intrusion Detection System (IDS) is an effective tool that helps to prevent unauthorized access to system resources by various mechanisms and one among them is using machine learning tool called weka. It is an open source environment available for machine learning and data mining that could be used for classification of attacks. Collection of machine learning algorithms for data mining task written in java used for classification, clustering, association etc. This paper emphasis on performance evaluation and comparison of various classifiers on the basis of different types of attacks The paper is set to make comparative analyses among machine learning algorithm zeror, oner, naive, J48.

Keywords: Classifiers, Oner, Zeror, Naive Bayes, J48
Study of Pitting Corrosion on SS316, SS304, DSS2205 and SS410 in HCl and NH₄Cl

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Abstract

This paper focuses on employing weight loss and electrochemical methods to study pitting corrosion in stainless steels samples, namely, SS304, SS316, SS410, DSS2205 and CSA53 in HCl and NH₄Cl. Pitting corrosion is basically a localized form of corrosion wherein cavities or holes are formed in the material. The corrosion rates were determined and corrosion products were characterized by Energy Dispersive Spectroscopy (EDS). The morphology of the pits was studied by using Scanning Electron Microscope (SEM). The pit depth was determined by using KEYENCE VHX-1000 Digital Microscope. The maximum corrosion rate was observed in carbon steel CSA53. It was found that the duplex stainless steel DSS2205 and stainless steel SS304 show best resistance towards the environment. The anodic polarization tests were conducted on the samples in 1M NH₄Cl. The results show that highest corrosion rate occurred in CSA53 whereas DSS2205 did not show any corrosion. In addition, when the samples were exposed to 1M HCl at pH 3.77, all samples showed corrosion due to presence of aggressive chloride ions in the solution. Finally, it is concluded that the weight loss method results were in good agreement with the results obtained by electrochemical tests.

Keywords: Weight Loss Method, Electrochemical Test, Stainless Steel, Carbon Steel, Duplex Stainless Steel, Pit Depth
FENN: Fuzzy Integrated Extended Nearest Neighbor Classification Algorithm for Web Page Retrieval

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Abstract

Due to the continuous growth of web page collection in the World Wide Web, the finding of relevant and useful document for the user is a challenging task now-a-days. Literature presents different techniques for web page retrieval based on keyword-matching mechanism. In order to alleviate the issue behind the keyword matching in web page retrieval, a new classifier-based technique is developed in this paper using logarithmic similarity measure. Here, a new classifier, called FENN classifier is developed by including the fuzzy concept in the extended nearest neighbor classifier. The proposed FENN classifier classifies the input query to the relevant category and the document related to the category is retrieved from the input database. The developed FENN classifier is experimented with the web page database collected through five benchmark queries and the quantitative performance is analyzed using precision, recall and f-measure with the existing ENN and KNN classifier. From the results, we proved that the proposed FENN classifier obtained the maximum f-measure of 93.8% as compared with the existing algorithms.

Keywords: Information retrieval, Web pages, k-NN classification, Similarity, F-measure
Demulsification of Heavy Crude Oil Emulsions using Surfactants

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Abstract

Deposition of crude oil in the transfer lines is a common problem and hence need to be addressed. One of the possible ways to resolve this problem is by decreasing the viscosity of the crude oil. The objective of the work presented in this paper is to decrease the viscosity of heavy crude oil emulsions using surfactants. Diluent oil was explored as a surfactant and its effect on the viscosity, total petroleum hydrocarbon (TPH) and basic sediment and water (BS&W) is investigated for two samples of crude oil obtained from two different wells located at different locations in the Sultanate of Oman. It was found that the increase in diluent blended with emulsion results in a corresponding decrease in the values of both the viscosity and the BS&W which in turn causes the enhancement of rate of demulsification of the samples. Further it was also noted that increasing the volume of diluents oil decrease the value of TPH until an optimum volume was reached and then further increases with the increase in the diluents volume. Crude oil with optimum values of diluents and TPH is safe for other purposes in the field. Also, the water droplets can be removed easily from the crude oil.

Keywords: Demulsification, Viscosity, Total Petroleum Hydrocarbon, Basic Sediment and Water, Emulsion, Crude Oil
Study of Corrosion Inhibition in SS316, SS304 and SS410

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Abstract

Even though stainless steels are considered to be very versatile materials having high resistance to corrosive environments, still they suffer from pitting corrosion in certain environments. The use of inhibitors has been quite effective in controlling corrosion of metals. There is a continuous search for better corrosion inhibitors to meet the need of the industrial expectations. In the present study corrosion protection of some samples of stainless steels namely SS304, SS316 and SS410 has been analyzed by means of three different corrosion inhibitors. Electrochemical and Weight loss methods were adopted and the experiments were carried out at a constant temperature of 37 °C in FeCl₃ and NH₄Cl. The addition of inhibitors in different concentrations effect the pitting corrosion of SS304, SS316 and SS410. The outcomes of both the methods reveal that an increase of inhibitor concentration results a decrease in the pitting corrosion in all the samples. However the best protection efficiency and least corrosion rate has been observed when samples were injected with inhibitor-A.

Keywords: Pitting corrosion, Inhibitors, Stainless steel, Weight loss method and Electrochemical test
Tunnel Field Effect Transistor (TFET) Modeling and Device Simulation using Synopsys TCAD Tools

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Abstract

This paper presents a simulation based study of tunnel field effect transistor (TFET) using commercially available technology computer aided design (TCAD) device simulator. Double gate TFET devices employing Germanium source with 25nm gate length are simulated. A step by step procedure to simulate the device is presented and the electrical characteristics are extracted from the device simulation. A look up table based model using Verilog-A is used to verify the inverter circuit performance.

Keywords: TCAD, Band to band tunneling, Device simulation, TFET, Subthreshold swing

A Study on Treatment of Industrial Wastewater using Low Cost Adsorbent Method

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Abstract

The aim of this Paper is to study the adsorption process in the removal of emerging compounds. The treatment of wastewater was performed using low cost natural adsorbent, which is prepared from date palm seeds. Batch experimental studies was carried out to investigate the degradation of pollutants present in the wastewater and the effect of various parameters such as pH, biological oxygen demand (BOD), chemical oxygen demand (COD) and total dissolved solids (TDS), total suspended solids (TSS) and turbidity were evaluated. Different reaction parameters and conditions for adsorption processes were investigated.

Keywords: Activated carbon, Low cost adsorbents, Industrial wastewater
Work Life Balance for Women Employee: Attitude of Children of Working Moms

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Abstract

An employee who is a mother faces work-family or family – work conflicts. These results in lower life satisfaction and greater internal conflict with the family. Work-Life Balance is the maintenance of a balance between responsibilities at work and at home. It is creating and maintaining supportive and healthy work environment which enables women to have a balance between work and personal responsibilities. Traditionally the role of women was only domestic but women of today are dynamic. They have made their mark in every field and are ready to take up challenges. They are career-driven. She wants to be empowered, wants to take up challenges, wants to constantly learn and grow. Women are striving continuously for work-life balance. Woman’s aspirations are soaring high to become more successful. She wants to be empowered both financially and emotionally and thus more confident and secured. By doing this she becomes confident of rearing her children better. She is able to give a better life to her children. A women employee can achieve all these by the right work-life balance. Society is rethinking about high achieving women. Women have learnt to maintain a healthy work life balance. This paper attempts to identify attitude of children of working women towards different aspect of life. Sample of children of women from different profession is studied on various aspects. Respondents are of different age group. Age influences the behaviors of any individual, considering this fact, respondents of different age group are studied for the research study. Emotional dynamics of the family of independent women is studied.

Keywords: Work-life balance, Work conflict, Attitude, Emotional dynamics, Empowerment
New Service Developments for Non-Clinical Depression in the Workplace

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Abstract
Non-clinical depression is not an official medical category, but its estimated impact on workplace productivity in Japan is substantial. Few risk management methods or studies have focused on reducing the effect of this type of depression on workplace productivity. Human error, staff turnover, motivation, engagement, and deterioration of wellbeing among employees are all influenced by the incidence of non-clinical depression in the workplace. This paper introduces a new approach to cope with the risk of non-clinical depression in the workplace. The main research concept is to verify the use of research from six selected industry groups: the fitness, information technology (IT), health food, tourism, spa, and education industries. There has been no previous systematic study examining the use of industry-related services for non-clinical depression in place of conventional medical tools and therapies. I propose that there is good evidence that services related to the fitness industry and IT industries could be effective for non-clinical depression. The health food industry shows some potential in treating depression if the risk of overuse of products can be controlled. However, there is no current evidence that tourism and spa industry services are effective. Education industry services show high potential if new teaching materials and tools are adopted in the future, together with more advanced IT. This paper concludes that new risk management methodology can be used to assist employees with non-clinical depression symptoms; thus, corporate management can carry out risk management and use services from the fitness industry and IT industries. The Employee Assistance Program (EAP), which has a long history of interventions for workers suffering from depression, should also incorporate this concept into existing services, such as employee counseling. This is a new concept of work place risk management and more statistical and scientific evidence is needed in the form of follow-up studies of real cases in the workplace.

Keywords: Industrial entrepreneurship, Non-clinical depression, Human resources management, Risk management, Innovation
Crisis Preparedness of a Private Organization

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Abstract

The study is about crisis preparedness of the organization. It answered statement of problem such as to what extent the crisis preparedness of the organization in terms of detection, prevention, damage control, restore and lesson gained. It used the descriptive research design, take samples from its previous and senior staff as respondents to questionnaires. Data were processed using weighted mean, standard deviation, and t test to test the hypothesis of comparing groups of respondents. Results showed that, effective in term of the detection, prevention, damage control, restore and proactive in lesson gained. The implication of the result of the study, organization is effective. This result saying that the management were effective on their operation. However must have to strive to be very effective.

Keywords: Crisis preparedness, Damage control, Descriptive research design, Standard deviation
Enhancing Quality of HEI Teaching and Learning – How CBFS in Oman Adapts to the Quality of UK Universities? A Case Study

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Abstract

The importance of Quality has been greatly acknowledged in today’s world and efforts are made in all organisations whether they produce goods or deliver services to enhance the quality of their offerings; University education being no exception to this. Globalisation of education and having global campuses pose another challenge to Universities to maintain and enhance the quality of education in their global campuses. The paper presents here a case of a college in Oman which hosts post-graduate and undergraduate degree programmes from prestigious universities in the United Kingdom and the effort it makes to enhance its quality in line with the Universities’ quality standards and best practices. The College of Banking and Financial Studies (CBFS) currently holds an MBA programme and an MSc Finance from the University of Strathclyde, UK as well as degree programmes in Accounting and Finance and Business and Management from the University of Bradford, UK. It is indeed a big challenge at CBFS to maintain the standards of quality as required by its international partners but still the College has been largely successful in this effort.

Keywords: University, Quality, Teaching, Learning
Study Habits of Business Students in Gulf College

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Abstract

Education is considered as one of the most important things in life that makes an individual to become a better person making him achieve his goals in life. Thus, the Oman government supports all Omanis in their educational ladder which is beneficial for the whole society as it eradicate illiteracy and may provide individuals a better living. However, education is a lifelong process that needs the involvement of teachers and the students who gain the knowledge in which their study habits affect their education as shown in their academic performance. The study is aimed to determine profiles of business students and their study habits along time management, study environment, and use of resources. Further, it also determines the relationship between the profiles and the study habits of business students. The results of the study serves as information that help improve the study habits of Gulf College students. The descriptive research is used and the questionnaire is the primary tool in gathering the data. The respondents are the business students of the Gulf College who are registered in the first semester of school year 2015 – 2016. The Gulf College students practice the study habits along time management, study environment, and use of resources. Further, the profiles of students have relationship with the study habits practiced by students. Thus, the need for students to enhance and develop their study habits along time management, study environment, and use of resources to improve their academic performance.

Keywords: Study habit, Academic performance, Time management, Study environment
Trade Fair Participation of Small Entrepreneurs in Mountain Province

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Abstract

Trade fair is related to trade show, trade exhibition or trade expo that is being organized by any organization for companies to showcase their latest products, examine recent market trends and opportunities, and to market their products. This is common in developing countries like the Philippines in which the Department of Trade and Industry and the local government units to organize trade fair activities for entrepreneurs to showcase their products. The objective of this study is to determine the profile of entrepreneurs in Mountain Province, the extent of their participation in the trade fair, the level of impact of trade fairs on participating entrepreneurs, and the degree of seriousness of the problems they encountered for participating in the trade fair. The results of this study will help in the expansion of local entrepreneurs in local and overseas markets, provide information to the local authorities for improved trade fair supports, and as a springboard for further researches that are related to this study. The respondents of this study were the entrepreneurs who attended the trade fair. The descriptive design was used with the use of questionnaire, interview and observation as the data gathering tool. The questionnaire was distributed during the trade fair last April 2015 in Bontoc, Mountain Province that was sponsored by the Provincial Government of Mountain Province. Entrepreneurs have different profiles and the trade fair has an impact on their business. They also have problems in trade fair participation in which the sponsoring unit needs to address each of these problems for improved participation of these entrepreneurs and to further encourage all entrepreneurs in the province to participate in all trade fairs conducted in Mountain Province.

Keywords: Trade fair, Marketing, Entrepreneurship, Indigenous products
Empirical Analysis of Weak Form Efficiency Evidence from Muscat Securities Market

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Abstract

The stock market is an emerging area for research and this work analysis the efficiency of Muscat Securities Market and focuses on MSM index companies. The main objective of is to find out efficiency level and random walk nature of Muscat Securities Market by testing selected MSM index companies with the help of Descriptive Statistics, Runs Test, Augmented Dickey Fuller test (ADF) and EGARCH for the selected companies return during the year Jan 2010 to December 2014 (5 years). This study suggested that, it is necessary to pay the attention to the historical as well as the publically available information to analysis the changes in the market.

Keywords: Market efficiency, EGARCH, Runs test, Autocorrelation
Consumer Behavior towards Organized Food Retail Outlets in India

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Abstract

Organized food retailers presence has been increased for the three/four decades in India. Many organized food retailers have been strongly advertising their brands to attract the customers. It is a fact that the customer bases have been increased for the organized food retail outlets in India and hence the number of organized food retail outlets has also growing. Though the Indian food culture is different from the western food culture, where most of the organized food retailing outlets has origin, the retailers have changed their food ingredients to attract the local customers in India. Under this context, the study of consumer behavior towards organized food retail outlets holds importance. The primary objective of the study is to explore the consumer behavior in organized food retail outlets in India.

Keywords: Consumer behavior, Organized food retail, Consumer behavior in India
Business Practices of Micro Enterprises

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Abstract

The role of micro enterprises in the development of economy is emerging as a key factor and its importance in the recent years is gaining momentum as it targets people at the bottom of the society, especially women, promotes self employment and reduces unemployment problem. Various studies across the globe reveal that involvement of women in small and medium enterprises found to be more than 40 percent and in India it is still 7 percent. This paper is an attempt to categorize the common business practices of micro enterprises run by women with a special focus to identify the common finance and accounting practices of such enterprises. Case study approach has been adopted in this study as it deals with “How” and “Why” questions which delve into the past, analyze the present and focus on the future. Using these two types of questions, the selected micro enterprises are qualitatively analysed and interpreted. From the analysis it is found that micro enterprises run by women are not only financially sound and but also successful and some were posing a severe competition to other branded products in their respective locality. It is observed from the study that the practices adopted by them which had given them hope are sources of investment, savings practices, maintenance of accounts, repayment of loan, expenditure patterns, working capital, budgets, and use of vouchers. It is highlighted from the study that micro enterprises run by women are doing well and they should be given importance for toning up the economy of the country.

Keywords: Entrepreneurship, Micro enterprises, Women entrepreneurs, Business practices, Finance and accounting practices
Indian Banking & Managerial Unionism: An Empirical Study of Key Factors affecting White Collar Employees in Banking

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Abstract

Indian Corporate World is today facing many challenges posed by global as well as domestic competition. Perhaps the most difficult of these challenges is the one posed by the manpower of an organization. The size of manpower has been growing over the years. The employees are better organized today than ever before and the influence of trade unions has grown manifold. Today’s worker, compared to his counterpart of yesteryears, is more educated and better informed. His hopes and aspiration are quite high and he is not shy of using collective action to release the same. Trade unionism in India is not confined to blue collar industrial workers alone. It has spread over white collar salaried employees as well. White collar employees who were shy of trade unionism in the beginning were unionized in a big way in the past four decades. White collar employees both in the government sector and in public and semi public sector have form strong managerial unions. The old distinction between blue collar and white collar workers has almost disappeared as all of them now belong to the same unions. Highly skilled worker’s and qualified technicians, who used to be vary of trade unions but are also taking active part in union activities. In many cases, the supervisors to have either join the existing workers union or formed a separate union or an association. The latest entrants to the trade union movement are the higher level employees like civil servants, technical professionals, doctors, pilots, managers of PSU’s like bankers, insurance and corporation related to public enterprises. Some of them have professional associations of long standing. However, officers started organizing into trade unions about four decades ago. Officers in industries, banking, insurance and other public and semi public enterprises have established OA’s. Officers generally do not use the term trade union but they call their union as an “Association”. All associations in a single undertaking or industry usually 2 combine into federations at the all India level; and federations have combined into confederations of federations of officers in India.

Keywords: Trade unionism, White collar employees, Officers, Federations
Challenges in Motivational Strategies for Knowledge Workers – an Investigative Study

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Abstract

The paper is an explorative study paper about the motivational challenges for knowledge workers in the field of Knowledge Management (KM). KM refers to a multi-disciplined approach to achieving organizational objectives by making the best use of knowledge. Knowledge management is in a state of high growth, especially among the business, research, technology development, project centered, services and manufacturing industries. KM is normally viewed as people centric, organizational centric and technology/process centric. For smooth functioning of an organization in a competitive world nowadays and for excelling in growth, more attention needs to be given on people human behavioral aspects. The paper addresses mainly the motivational challenges faced in organizations having different goal towards the firm’s progressive growth and KM activities. The paper is of investigative nature. An investigative research study and analysis of KM in a manufacturing organization shall be carried out further for study, collect the data, and test the KM model with appropriate tools. The results shall bring out motivational challenges and strategies to be followed in the setup where in knowledge workers could excel in their performance.

Keywords: Knowledge management, Dynamics of knowledge management, Organizational culture, Motivational strategies, Intrinsic and extrinsic motivation
Effect of Moderating Parameters on Relationship between Quality Management Practices & Organization Performance

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Abstract
Main aim of this study is to understand the relationship between quality management practices and organization performance & how this relationship gets affected by various internal & external moderating parameters. Design/methodology/approach - The empirical data was collected using a self-administered instrument that was distributed to forty two Indian manufacturing companies. The data was analyzed using descriptive statistics, ANOVA & Path Analysis in AMOS 19.0. Findings - This study identifies that organization size & certification status does not have significant effect on organization performance & extent to which different QMPs are implemented in manufacturing organization. But these QMPs do have effect on organization performance in varying degree for each of QMPs. For example this study indicates that Management Commitment & Strategic Planning (Quality Planning) does not have direct effect on Quality & Profitability Performance of an organization. But it does have positive effect on Schedule Performance. Similarly Customer Focus, Employee Relationship & Process Management has strong effect on Quality & Profitability Performance of the organization. Though surprisingly but in line with few of past studies, this study indicated that Supplier Relationship does not have significant effect on Organization performance. Also all these QMPs are highly correlated to each other. Hence their implementation is to be planned keeping this observation in mind. Major finding of this study is that Type of Order & Workload Situation does have moderating effect on QMP-Performance Relationship. This effect comes in the form of some QMP-Performance Relationship become stronger, weaker or being eliminated from the model. Research limitations/implications - The research paper was limited by including only engineering manufacturing organization. Also not all quality management practices were included. Making this a possibly biased selection and it may not be adequate to generalize the results for the entire manufacturing sector. Originality/value - The study has contributed to the Quality Management literature with a better understanding of the quality management practices and how they affect organization performance. Also better understanding of how this relationship gets impacted by various internal & external moderating parameters. This will provide valuable knowledge to owners of manufacturing companies, to refine their current quality management practices and subsequently improve organization performance.

Keywords: Six-Sigma, TQM, Moderating Parameters, Path Analysis, ANOVA
Effects of Social Media Technology on Consumer Behaviour: An Empirical Study among the students of Delhi University

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Abstract
As technology continued to progress, shopping became easier. In this light we can define social media as “internet-based applications that are built on the ideological and technological foundations of Web 2.0 and they allow the creation and exchange of user-generated content” (Kaplan and Haenlen 2010). On the other hand, Consumer behavior is the study of individuals, groups, or organizations and the processes they use to select, secure, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society. Social media websites nowadays have become a platform for consumers (youth) and companies to interact with each other in a coherent and accessible way. Also, the growing usage of Internet and web tools has led to rapid development in the technology and communications channels. Thus, consumers, especially the upcoming generations, can access information from social media, about goods and services to a great extent. This has resulted in the emergence of that set of consumer who exercises his/her power of making a rational purchase. The purpose of this study is to examine the effects of social media technology usage among the students of Delhi University and further study how it affects the behavior of those consumers. The study aims to understand that how the usage of internet and other new technologies continue to pay a big role influencing the youth market, particularly the students of Delhi University. Also, this study will assess the positive and negative effects of social media on consumer behavior especially on the students of Delhi University. Through the study of latest literature on this topic, variables will be decided for changing consumer behaviour and the linkage with digital upcoming. This descriptive research will be based on primary data collection which will be collected by using questionnaire as a tool for carrying out the survey. The survey will be done to obtain responses from the students of Delhi University. Thereafter, the accumulated data should be analysed using statistical tools.

Keywords: Social media, Consumer behaviour, Social media technology, Delhi University, Youth market
Impact of Employee Motivation on Job Satisfaction in Higher Education Institute in Oman

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Abstract

The study aims to depict the phenomena related to Impact of Employee Motivation on Job Satisfaction in Higher Education Institute in Oman. A combination of descriptive and conclusive research design was adopted to describe and report the related phenomena. An university of Oman was chosen for study. Sample frame consisted of all the academic staff teaching in various departments of the university. The sample size consisted of 50 academic staff. Study indicated that motivation level of academic staff had a positive influence on their job satisfaction. The motivation level was influenced by appreciation and expectancy of academic staff. Job satisfaction was found to be influenced through supervision, promotion, teaching, pay, fringe benefits, research and student and staff competencies. Based on the review of literature relatively a very few studies targeted on university teachers in universities of Oman with related variables.

Keywords: Employee motivation, Job satisfaction, Higher education, Oman
Impact of Multicultural Workforce in Academic Institutions and its Implications for HEIs in Oman

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Abstract

Multicultural Workforce means the employees who have different culture and racial background. Usually the multicultural workforce is seen in medium and large industries and has become a trend and a question of privilege for the organization. It is believed that when an organization has Multicultural Workforce the performance and productivity of the employees increase. Oman being a young developing country with a very young population, the number of young people entering the Higher Education stream has been on the rise in the recent decade with the numbers expected to increase further more. Most of the Higher Educational Institutions have Multicultural Workforce and hence shows this has contributed to the growth and development of the Educational Industry. This study seeks to understand the academic institutions implementing the Multicultural Workforce and its contribution towards the development of Omani Educational Institutions. The study is conducted to explore and understand how the Higher Educational institutions manage the multicultural workforce. The research tries to identify the whether the multicultural workforce has contributed to the organizational success and also the various challenges faced by the Higher Educational Institutions and the ways to overcome these challenges.

Keywords: Multicultural, Workforce, Higher education institutions, Performance productivity, Development
Opportunities and Challenges in Creative Accounting: Academic and Professional Perspectives

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Abstract

The objective of my research is to explore the effects of creative accounting on the financial performance, financial position and cash flows of an organization that uses creative accounting techniques, manipulates financial reporting and show unrealistic results. This paper consists of a discussion about different relations between creative accounting and corporate governance and its effect on management and shareholders. This paper covers professional judgments and involvement related to creative accounting and ethical responsibilities of professionally and academically qualified managers, and other professionals who are considered as business stakeholders. A discussion addresses the involvement of those professionals who support in certain decisions related to creative accounting instruments. A comprehensive discussion on solution part of the creative accounting is a vital portion of this research paper. ‘True and fair view’ of a company’s financial performance and financial position is very important not only from audit and assurance point of view but also establishes a sound code of corporate governance. I have focused my research towards specific queries to find out the relationship between several variables on individual basis towards creative accounting, such as capital market techniques, involvement of directors, goodwill of the firm, internal control mechanism, audit standards and product-market conditions. The term creative accounting generally misunderstood in the world of finance due to financial scandals, however, history tell us that it has brought ripple positive effects in the lives of many organizations towards success and solvency.

Keywords: Creative accounting, Corporate governance, Audit and assurance, Financial reporting, True and fair view
An Empirical Assessment of Financial Risk Tolerance and Behavior of Individual Investors in Portfolio Decision

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Abstract

Individual investors contribute substantially to Gross Domestic Saving (GDS) in India and naturally their financial behavior and attitude in portfolio decision noticeably influence the direction and pattern of resource allocation function within the economic system. One of the unhealthy trends in the saving and investment of programme by individual investors is that out of their surplus financial resources a substantial portion was mobilized government, banks and financial institutions which is a major hurdle in channelizing the savings of individual investors to productive sectors of the economy directly and limit their wealth maximization through portfolio decision. Unrealistic Risk tolerance and financial behavior of investors has been diagnosed as a prominent reason for low preference of individual investors towards common stock and similar risky securities. In this context, the pertinent question emerges on this issue is that how do and to what extent the risk tolerance and financial behavior of individual investors influence their portfolio decision. This psychometric study was conducted to examine this complex financial issue empirically. In this study the risk tolerance of individual investors was scientifically measured by employing a risk tolerance test using a behavioural approach. Arithmetical average, correlation standard deviation, regression, cluster analysis cumulative logistics analysis Z test etc. were the different descriptive and inferential statistical measures employed to analyze data. The study clearly reveals that risk tolerance and other psychographic characteristics of individual investors strongly influence their portfolio decisions and financial preference. The study also shows that there is significant difference the risk tolerance of individual investors belonging to different demographic, geographic and longitudinal categories. Portfolio decision is a cognitive process characterized by systematic biases and distortions. Individual investors in general do not react consistently when they face risk rather they exhibit systematic biases and sensitivities. This disproportionality in individual’s risk tolerance may make the capital market inefficient and limit the wealth maximization of individual through portfolio decisions. The superior brain and market intelligence alone do not guarantee generation of extra financial gain from capital market rather emotional maturity manifested in balanced risk tolerance, diligence, patience and contrary thinking positively help individual investors to have sensibility and confidence to enter capital market which make possible creation of millions of equity centric portfolio by investors that will strengthen Indian financial system and enhance prosperity and welfare of one and all.

Keywords: Risk tolerance, Financial behaviour, Portfolio management
To Study the relationship between Work Life Balance Practices and Organization Commitment

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Abstract

Work-life balance is a vast construct which comprises of career, ambition, health, lifestyle, family and leisure. In the present dynamic era of competition with unlimited work i.e. multitasking. If human resource the most vital asset of the organization is not addressed in proper approach there is a need to study why employees fail to fully commit themselves in their job leading to non-performance. The construct Work-life balance is the bed rock or foundation towards the concept of organizational commitment and also a strong predictor of organizational commitment. Thus, clearly showing the two-way relationship between employer and employee compared to the above listed constructs: work-life balance and organizational commitment. Committed employees are psychologically attached to their organization and highly concerned with their job with a grand passion for the success of their employer, going extra mile beyond the defined roles and responsibilities. With the above mentioned hitch here arises the desire to study the hot topic of discussion among the research community work-life balance practices which act as companion to the employees of the organization leading to efficient & effective work productivity. The aim of this study is to observe the relationship between work-life balance practices and organizational commitment.

Keywords: Work-life balance, Organization commitment, Work life balance practices, Marital status, Gender
What is a Digital Entrepreneurship Ecosystem: Players and Processes

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Abstract

A key factor determining the success of a Digital Startup has been the Ecosystem that it is located in. Startups cannot succeed in isolation and need an enabling environment and the support of a large number of Ecosystem Players. This is the reason that a large number of Digital Startups have been attracted to successful ecosystems like London or Berlin. This paper analysis the key constituents of a successful Digital Ecosystem and identifies the relationships between the key players of an ecosystem. The Entrepreneurial Ecosystem consists of seven key pillars: Proximity to Accessible Markets, Availability of Human Resource, Funding Opportunities, Support Systems, Government and regulatory framework, Education and training, and Cultural Support. Availability of human resource and Educational and training opportunities is linked to presence of Universities which form a key actor in the Ecosystem. Also large Ecosystems tend to draw a large number of immigrant skilled labour thus contributing to the easy availability of workforce. Angel Investors as well as Venture Capital Firms are important actors as far as funding opportunities are concerned. Also extremely important has been the Support Systems that can help a fledgling startup gain experience and valuable feedback. Business Accelerators and Incubators are key Support Systems which not only help support through mentorship programmes but also help startups find economical work space and connections to other actors. In this paper, the role and relevance of all these actors and a discussion about the changing nature of Digital Ecosystems are presented. The paper also discusses development process and growth of a Digital Ecosystem, and the case study of the European ecosystem is analysed.

Keywords: Entrepreneurship, Digital, Ecosystem, Startups
Employee Wellbeing and Productivity: Application of Cognitive Behaviour Therapy (CBT) at Workplace

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Abstract

There is considerable empirical evidence about the success and efficacy of Cognitive Behaviour Therapy (CBT) in counselling and psychotherapy. However, CBT can also play a significant role at workplace. Even more, given the significance and attention that the training programmes related to behavioural skills are getting, CBT can be used at workplace not only as an intervention for individual employees with mental health problems and mental disorders, but it can also be used with group of employees at various hierarchical levels in form of training programmes that are mainly based on the techniques of CBT. Increased productivity and profitability are main goals of any organization. However, in order to achieve this goal, the organizations need to ensure wellbeing of one of the most important resources, that is, human resource. With the help of training programmes, workshops and activities, employees can be helped to learn and practice the principles and techniques of CBT. The present paper is a theoretical paper and mainly discuss the application of CBT to promote employee wellbeing and productivity at workplace. It will also highlight the empirical evidences in this context. Further, the challenges and problems that can arise while implementing CBT at workplace will also be focused on in the present paper. The techniques of CBT can be effectively used in order to not only help employees manage stress and anxiety, but it can also be applied to improving employee motivation, job satisfaction, productivity, reduce turnover and promote overall employee wellbeing.

Keywords: Employee wellbeing, Employee productivity, Cognitive Behaviour Therapy (CBT), Application of CBT at workplace
Academic-Related Stress among Researchers and Postgraduate Students of Kurukshetra University, India

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Abstract

Stress in any form makes an academic life dull. The present study aims to inquire the different factors of academic stress among the research scholars and postgraduate students of Kurukshetra University, Kurukshetra, Haryana, India. Academic stress has been divided into four different variables namely study, career, information and technology. Respondents were asked to rate the different sources of stress on a 5-point Likert Scale (1 = strongly disagree; 5 = strongly agree). The level of stress in this study was found slightly high i.e. stress of getting undesirable results even after hard working (M = 4.03), assignment/research progress related work and submission of it with time made the students most stressful (M = 3.87), insecurity to start career after completion of current course/degree (M = 3.83), regular class attendance to fulfil the minimum requirement (M = 3.82), financial problems of the family (M = 3.81), changing reading habit due to adoption of technology (M = 3.73), undesirable add-ons/advertisements during net surfing (M = 3.60). The analysis of variance results found no significance difference between academic stress and gender and/or course. The present study has a significant importance for the university authorities to measure their academic policies and put straight vision for further research in stress management.

Keywords: Stress, Academic stress
Green Marketing: A Smarter Way of Marketing

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Abstract

Green Marketing has developed as a very important and promising tool in the modern marketing era. Green Marketing basically refers to the marketing of Eco-friendly products. It includes various activities such as product modification, changes in production process, sustainable packaging, re-marketing and re-cycling etc. Green Marketing has gained in relevant importance due to the growing concern about climate change. The big professional companies has gone through green marketing initiatives such as IBM, Starbucks, Nike, Wipro, HP etc. and finally suggested some initiatives which will help the organizations to go green. Research studies indicate that from green marketing, people and organizations can benefit as well as protect the environment to achieve sustainability. A strong commitment of environmental sustainability in product design and manufacturing can lead to the growth of business along with the increase in the level of brand equity. This study is primarily based upon the secondary data collected from various websites, magazines and other available resources related to this topic. Finally the main focus of this study is to increase awareness for preservation of our environment by the marketing of eco-friendly products and services. This study largely focuses upon the various marketing activities and strategies which help in the marketing of eco-friendly products and services. On a concluding note this research paper attempts to understand the attitude, strategies and practices of industries in India towards green marketing. How much importance they are giving to green marketing? Do they also admit that green marketing practices will ensure sustainable development?

Keywords: Green marketing, Eco-friendly Product design & manufacturing, Sustainable packaging, Recycling, Environment sustainability and development
Journey from a “Manager” to a “Super Manager” goes through Leadership

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Abstract

According to “John Maxwell” - A LEADER is the one who: KNOWS the way, GOES the way, & SHOWS the way. We often hear that there is a serious lack of GOOD MANAGERS in the corporate world. We can say that a manager equipped with the adaptive capabilities in the changing environment is a GOOD MANAGER or a SUPER MANAGER. Let’s first differentiate between MANAGER and SUPER MANAGER. A Manager is someone who has got a position and he just goes to the office everyday and does his part of work whereas a super manager is the one who knows how he can lead his team towards a goal and can make every member feel valuable for the organisation. He is also a true figure of confidence and trust for his team and knows how to adapt with the changing environment. The distance between manager and a super manager is not the matter of ALTITUDE; it’s the matter of ATTITUDE and LEADERSHIP. Employees come from different backgrounds, skills, abilities as well as different interests in an organization. And a SUPER manager is the one who knows how he can utilize his manpower effectively and can motivate every member to give their best and work towards achieving common organizational objective in a particular frame of time. The magic behind every successful firm is none other than leadership in its managers or let’s say super managers. This study is an attempt to bring out the characteristics and leadership qualities of a super manager which would bring success for the organization.

Keywords: Leader, Manager, Super manager
Investment Portfolio Optimization: A Case Study of NPPF (Bhutan)

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Abstract

In Bhutan, National Pension and Provident Fund (NPPF) is a public social security institution with the mandate to provide post-retirement income security to its members. The main function of NPPF is collection of pension and provident funds, but the collections have to be invested optimally. Its investments are in equities, bonds, fixed deposits, real estates and loans. The investments in these asset classes need to be optimized to reap the maximum return with minimal risk. The task of minimizing risk and maximizing returns can be obtained by using optimizers, for example the Mean-Variance optimization or the Markowitz optimization commonly known as Markowitz model. However, in this paper focus has been placed on efficient optimizer; the Linear Programming model. In both the models the risk aspect of the portfolio is represented by the variance or the standard deviation. The finding of this paper indicates that investment portfolio of NPPF can be optimized. Despite limited equity markets in Bhutan, if investments in equities are increased than the investments by NPPF could optimize returns.

Keywords: Portfolio, Risk, Optimization, Returns, LP model
GREEN HRM – Greener Business Better Business

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Abstract

Green HRM (Green Human Resource Management) is the hottest buzz of the Business world. Green HRM involves the protection of environment and maintaining ecological balance. It basically incorporates environmental studies along with the human resource management studies. Green HRM requires environment-friendly human resource initiatives which result in greater efficiency, lower cost, enhanced employee engagement and retention. The research work to a great extent focuses upon the various HR practices that helps the organizations all over the world to go green. This study explains the simplified meaning of Green HRM which will help the organizations to reduce environmental damages by likes of electronic-filling, recycling, job sharing, online training, energy conservation etc. The main aim of the study is to provide clear understanding about GHRM, highlight the work of other workers done in the field of Green HRM and finally suggest some such initiatives for HR which will help the organizations all over the world to go green. On a concluding note the paper suggests that Green HRM has significant opportunities in the business world and thus it should be given relevant importance in today’s era. Our main focus is to increase employee awareness for the preservation of natural resources and contribution in pollution control, waste management as well as to manufacture eco-friendly products.

Keywords: Green HRM, Ecological balance, Reduce carbon foot prints, Recycling HR initiatives
An Empirical Study of Consumer Behaviour Toward On-Line Marketing

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Abstract

On-line marketing is the term which represents commercial transactions which takes place through internet. Internet can offer any business irrespective of its size and locations a large customer base who can shop round the clock and around the globe. Information can be updated at anytime from anywhere. The consumer behavior is changing very fast as consumer’s purchase decisions are widely influenced by easy availability of on-line information, through internet consumer compares various offering easily and conveniently before purchasing. The present study aims to investigate the consumer behavior toward on-line marketing. Data and information are collected from Ranchi district of Jharkhand, India with the help of structured questionnaire and then analyzed with the help of statistical techniques. The result of the study indicates that people have positive attitude toward on-line marketing however, they are cynical about the authenticity and reliability of information on internet. Internet is the medium of on-line marketing and has contributed significantly in overcoming the limitations of geographical presence of any business organization. It also reduces the limitations of time zone differences. The growth of on line marketing is very fast. Many companies like Flipkart, Snapdeal, OLX, Amazon, etc. are using the technique of on line marketing and their businesses are growing very fast, Internet can support two way communications between the company and the customers. On-line marketing also provides all facilities and support for multimedia applications it can provide pictures and texts as well as sound and videos, which helps the sellers to display and make the consumer aware about their product and services.

Keywords: Attitude, On-line marketing, Virtual, Transactions, Behaviour
Mobile Engagement, Mobile Addiction and FOMO: A Conceptual Framework Based on Literature Review

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Abstract

The rapid amelioration of Internet technology and the advancement of communication-enabling apps has made online lives much more diverse and has helped people integrate. However, the need for socializing and keeping abreast with all the information related to friends and acquaintances cannot be undermined. Therefore bigger the social circle, more is the time spent online. The increased mobile engagement has further given rise to a fear or more specifically, the “Fear of Missing Out” (FOMO). When the need to interact gets morphed into an addiction, the level of engagement reaches a point, where an individual begins to feel psychologically and/or emotionally disturbed. With such disturbances, especially FOMO being the focus of this study, a review of extant literature on the subject lead to a conceptual framework (proposed) comprising of 3 constructs, viz.; Mobile Engagement, Mobile Addiction and FOMO. The relationship between these constructs is examined and greater insights obtained by elucidating the factors influencing them. This paper will widen the scope of research to scholars, students and others interested to delve deeper in this field of study.

Keywords: FOMO, Mobile engagement, Mobile addiction, Conceptual framework
Assessment on the Motivation of Internet Usage of Gulf College Employees

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Abstract

This study evaluated the Internet usage motivation of Gulf College employees. The variables used in assessing the Internet usage motivation based on the Uses and Gratification theory (U&G) Theory by McQuail(1994) using the four variables: Information, Entertainment, Social Interaction and Personal identity. In this paper, the researcher presented and discussed the employees’ motivations why they are using Internet in their daily lives and the different purposes why they are using it. The objective of this study is to have a deeper understanding on what are the employees’ motivations why they use Internet. The study used descriptive research design by floating a structured questionnaire to the respondents. Total population was used for data gathering. It was found out that the respondents motivations based on UG theory were information and social interaction. The output of this study will help the management on how to improve the Internet experiences of the employees and to propose more programs for the benefits of the college in using the Internet.

Keywords: Internet, Social networking, Motivation, Surfing, Internet usage
A Study on Assessment of Motivation Level Among Employees in Integral Coach Factory after the Training Provided

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Abstract

Training is the never ending process in all industries. Nowadays, Training and Development plays a major role in the Railway Industry. By providing induction training, employees are able to know about the working culture, domain knowledge and the regulations of the particular industry. Trainings have been provided by the trainers and experienced staffs to the newly employed staff. Organizations are investing funds in training and development to bridge the gap of the company requirements and employee capability. In this Industry, apprenticeship training program implemented to train the employees to their respective work. Motivation plays a major role in the training and development. Training has effects for productivity, health and safety at work and personal development. A very well planned training gives motivation to the employees to deliver their knowledge, skills, and abilities in their relevant work.

Keywords: Training and development, Trainers, Industry, Apprenticeship, Motivation, Productivity, Health and safety, Knowledge, Skills, Abilities
Future Proofing of Tourism Entrepreneurship in Oman for Sustainable Development

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Abstract

‘Vision 2040’ aims at developing tourism as a sustainable economic sector in the process of diversification of Oman’s economic activities from oil and gas sector. The objective of the study is to find out and analyze the various factors that inhibits a tourism student’s inclination towards tourism related entrepreneurial activities in Oman. The study was conducted with 223 students of tourism studies who were selected on the basis on random sampling and were contacted through a well-defined questionnaire. The collected primary data was compiled, analyzed and a critical analysis was carried out using null hypothesis, chi-square and ranking tests. The study reveals that the factors like non-discrimination of gender, promotion opportunities, and physical working conditions play a crucial role in motivating tourism. Our empirical results also reveal that the high risk of accidents, non-tourism spouse preferences, Omani traditional values discourage the attitude towards choosing tourism as their future job and hence setting up of such tourism related entrepreneurial activities. The main factors which impeding entrepreneurship tourism are the insufficiency of capital, lack of awareness about the ongoing programs and the lack of entrepreneurial skills. The study further demonstrates that there is a strong association between the motivating factors and the reasons for students choosing tourism as their studies. There exists necessity for the Government and the related sponsoring institutions to provide the necessary field skills training and create financial supporting schemes so as to encourage the young tourism entrepreneurs who will in venture with zest in the participation of diversifying Oman’s future economy towards tourism.

Keywords: Entrepreneurship tourism in Oman, Factors impeding entrepreneurship tourism, Omani tourism students’ perceptions, Tourism in Oman
A Study on Emotional Intelligence and Job Performance in Government Authorities in Sultanate of Oman

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Abstract

The study aimed to report the phenomena related to Emotional Intelligence (EI) and Job Performance among middle level management among government authorities in the sultanate of Oman. The study included middle level management officials from three government authorities in Oman. A combination of descriptive and conclusive research design was adopted. Standard questionnaires were used to collect the data from public authority offices in Oman pertaining to Emotional Intelligence and Job Performance respectively. Sample size was 73. SPSS was used to analyze the data. Descriptive statistics, item reliability, correlation and multiple regression analysis were administered by using SPSS version 20.00. Item reliability score reported was found higher and acceptable in both the instruments for data collection. Descriptive statistics revealed that the middle level employees working in government authorities scored more than the average in these two phenomena. It indicated that the middle level managers have high emotional intelligence and also have high perceived job performance in public authorities. Correlation analysis indicated a week and inverse relationship between Emotional Intelligence and Job Performance. It means these two phenomena are loosely and inversely related among middle level managers in such organizations. The relationship between EI and Job Performance was also found relatively weak and insignificant from regression analysis. It indicates that emotional intelligence was weakly impacting the job performance among middle level managers in public authorities in Oman and the relationships were also reported insignificant.

Keywords: Emotional Intelligence (EI), SPSS, Job Performance, EI
Loan Loss Reserves as a Test of Solidarity in Cooperatives

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Abstract

The cooperative structure traces its origin to Europe and is in existence for more than one and a half centuries. The structure rapidly expanded across the globe and encompassed all possible activities where there was a need for collective action. The collective need for banking resulted in the formation of financial co-operatives. These are usually non-profit and provide financial services to the members who come together for some common financial need. Due to the exclusion of certain section of the society from the mainstream banking, they became an important structure for addressing financial inclusion and poverty alleviation. Though the cooperative structure offers lot of advantages over other institutional forms, the key to success of cooperative lies in participation and solidarity. This paper deals with a part of the experimental project of a microfinance institution in India that targeted income generating poor above the subsistence level. The main focus of the project was to test the feasibility of cooperative structure in the target segment and for this a special tool was determined to measure the feasibility. This was called the Loan Loss Reserve. This paper presents the result of a Focus Group Discussion conducted online in 2012 involving experts from the field of microfinance. The findings are quite significant for practitioners as well as researchers because loan loss reserves may test the sustainability of the cooperative structure for meeting the financial needs of this segment of poor population.

Keywords: Cooperatives, Microfinance, Poverty alleviation, Sustainability, Focus group
Effectiveness of Training & Development in Public Sector: A Case Study of Ministry of Agriculture & Fisheries Wealth in Oman

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Abstract

The study aims to identify and analyze the effectiveness of training & development in one of the Ministry of Agriculture & Fisheries Wealth in Sultanate of Oman. A combination of exploratory and descriptive research design was adopted to explore the report the phenomena. 101 fisheries researchers and specialists working in the Ministry of Agriculture & Fisheries participated in the study. Stratified sampling method was used to maintain the representative sample from 9 different Governorates. Interview method was used to validate the secondary data collected from the ministry. Certain dimensions of training and development indicators were also verified by interview from the expert at the top level in the same sector. Descriptive statistics were used to report the findings of primary data collected on the effectiveness of training and development. Expert interview revealed that there was no relation between people leaving the job with training effectiveness. Descriptive statistics revealed a mixed attitude towards effectiveness of training program used in ministry.

Keywords: Training effectiveness, Development, Exploratory study, Descriptive statistics
Transition /Transformation of Libraries: An Overview

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Abstract

The explosive growth of information technology has been ubiquitous. It has made and making tremendous impact on the library and information professions. The electronic environment has brought about hitherto unseen changes in the information landscape. The challenge for the information creators, providers and users is to learn new skills and at the same time the task of information professionals particularly librarians have and is becoming consequently more complex and their performance requirement are tough. It is therefore a matter of transformation and transition of organization to the present scenario and also a matter of urgency for library and information professional to inevitably to improve and enhance their skills with multiple expertise and to select most innovative and practical approaches to designing, developing, improving, integrating, maintaining and supporting their library resources, services and instructions in the digital age.

Keywords: Library transformation, transforming libraries, Library transition
E journal Consortia in India: Innovative Strategies for 2020

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Abstract

Consortium is an effort to pool or share resources among member libraries. This paper briefly describes existing e-journals consortia in India and their scope & services. Most important benefit of consortia is saving of financial resources through publishers deep discount policy. It explains in details about DRDO consortia. DESIDOC is the nodal agency that administers and monitors the access/subscription on behalf of DRDO. It provides online access of E-journals for all DRDO labs as per the requirement and recommendation of the Monitoring Committee. The DRDO E-Journal Service came into effect w.e.f. 01 January 2009 covering ten publishers and one service provider. Total ten publishers and one service provider covered by this consortium are ACS, ACM, AIAA, ASME, Elsevier, IEEE, Nature, Science, Taylor & Francis, Jane’s and JCCC. All 55 DRDO labs covered are using this service. Recently it has started providing online access of E-journals from, Anywhere & Anytime to all DRDO Scientific Community on 24x7 basis using Open Athens—an access management system. Suggests innovative ideas including implementation of single license SUSHI compliance agreement for all publishers, pay per article models, archiving permission, renewal / subscription of e-journals service, downloading, compilation and analysis of usage statistics, supply of full text information services, conducting workshops, training/awareness programmes regularly for awareness generation for increased use, and a feedback management system, etc. for qualitative improvement in services to users in the future.

Keywords: Library networks, Library Consortia, Library resource sharing, DRDO, DESIDOC, e-journals
Scholarly Research and the New Publishing Paradigm

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Abstract

This paper considers what academics seek to achieve in publishing the results of their research in terms of the contribution of publications to their academic reputations, both personal and institutional, to professional practice, and to policy making. These activities are increasingly becoming intertwined with rankings of academic institutions and researchers. Current trends in publishing include traditional print and an abundance of electronic, Open Access (OA) book and journal publishing, institutional and subject-based repositories, self-publishing, and informal publishing in social media. The paradigm has an impact on traditional commercial publishers, some of whom are not comfortable with eBook publishing for academic use. The perspective also encompasses the growing volume of professional literature produced in English as well as other languages, and how that productivity affects academic standing of scholars and their parent institutions.

Keywords: Publishing paradigm, Self-publishing, Open access, Repositories, Institutional rankings
Library Catalogue in the Internet Age

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Abstract

Library catalogue has represented stagnant technology for close to two decades. An ideal Library catalogue should enable end users to search and find material/resources without the help of a librarian. The Library catalogue has evolved and developed from clay tablets to the now a day’s being used web based catalogue. In the earlier times cataloguing was a local and individual library practice. But with the advent of technology transition has taken place in it, the introduction of Web 2.0 has helped in improving the basic functionality of the library catalogue and adapt to the new trends. Web 2.0 has opened the climate for collaboration and participation where users no longer only receive but also create and share content. In the Internet age today the Library Catalogue can function like a portal and this function can be exploited so as to redirect the users to the other useful information. The System designers are continuously trying to adopt new trends in OPACs. Web 2.0 has revolutionized the web based catalogue by adding to it features like RSS feed, blogs, downloadable e-media and chat features into it. In the Internet age such a change from the simple catalogue to the web enriched advanced catalogue is anticipated. Web 2.0 phenomena has made need based web services even more attractive to suit the user’s needs so that better services can be offered in the changing information environment in the Internet age.

Keywords: Library catalogue, OPAC, Web 2.0, Internet age, Portal, Web OPAC
Measuring Web Based Learning: A Study on LIS Students in Bharathidasan University

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Abstract

The advancement in Information and Communication Technology (ICT) has brought phenomenal changes in the field of education. In the present era, people who are seeking lifelong education have enhanced enormously. As a result, the educational institutions now a days have been forced to discover new methods of teaching in order to impart education to these mass learners. To overcome this problem, most of the educational institutions are providing web based courses though Virtual Learning Environment (VLE). In web based learning, the teaching and learning process is done using electronic media or other computer network in order to give the material to the students. In order to deliver the material, Learning Management System (LMS) will be used, which is an e-learning infrastructure with the functions of delivering the courses, supporting collaborations, assessing learners’ performance, recording learner data and generating reports to maximize the effectiveness of the entire learning organization. Since, abundance of information is available on the web, organization of content becomes difficult and the needs of the target group is essential in order to be successful in Bharathidasan University towards creating the course content for web based learning. Survey method was adopted in this study and questionnaire was distributed to collect data from the students and the data was analyzed using various statistical tools.

Keywords: ICT, LIS Students, Web based learning, LMS, VLE
Application of Knowledge Management in Newspaper Libraries in India

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Abstract

In India serving the information with 792 channels, among them 392 are news channels, most 24x7, the Indian news television and 13,519 news papers genre are booming in the country in English and various Indian languages. The development is already taken place in media Domine. In the present globalized economy, to be competitive and successful, media enterprises along with other basic resources such as money, materials, manpower also needs high quality information resources. While the professionals working in a media organization may have more than one information channels to obtain such information source, It is primarily the responsibility of media library/ information center to cater the information needs of editors, journalists, photographers, freelances and other employees of the newspaper organization. Knowledge management in newspaper organization is concept aimed at enhancing and improving information to updating and gaining profits with the highest circulations. However, the tools and techniques of information management can also be applied in the newspaper organizations, such libraries to improve their services to meet the changing user needs. The news environment in which today’s libraries operate, drastically transformed due to the arrival of e-resources and the Internet. The librarian’s role in knowledge management and improvement in library services and user satisfaction of media mechanics.

Keywords: Media libraries, Communication technology, Automation, Archiving, Text processing, User interfaces, Information management
Tweets do Measure Non – Citational Intellectual Impact

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Abstract

The aim of the paper is to identify the motive behind the social media indicators in focus to tweets and attempts to identify what is measured or indicated by tweets, based on these motives. Documents with non zero tweets were manually collected from a source of 5 journals – Nature Biotechnology, Nature Nanotechnology, Nature Physics, Nature Chemistry and Nature Communications for the period January 2014 - October 2014 so as to depict the contemporary trend, as tweets tends to have L shaped curve in time-wise distribution. Investigations suggest that the motives behind the tweets are research reach, research acceptance and research usage. Further analysis revealed that the motive behind self – tweets is research visibility which is one of the attributes of social media and therefore self tweets may not be a complex problem as expected seeing that documents are self tweeted not more than once in most cases. Furthermore, identifying and classifying tweets based on users - Publishers, Frequent tweeters who aberrantly tweet all documents of an issue and Authors will increase the effectiveness of altmetrics in research evaluation. It was also found that association between subjects can be identified with the analysis of tweets pattern among subjects. Study proposes overall hierarchical structure of impact based on the change/advancement instigated. Study confirms that tweets do measure non – academic intellectual impact that is not captured by traditional metrics.

Keywords: Tweets, Altmetrics, Research impact, Research reach, Research acceptance, Research usage
Assessment and Performance of Oman Research Output: A Scientometric Analysis

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Abstract

This article deals with the Oman country research publications assessment of through document wise, institution wise and journal wise publication output of Oman. The sample period is 1989 to 2015; data collected from the web of Knowledge database, 8009 records were downloaded. The highest productivity year is 2014 and 2013. Highest Local citation score earned at the year of 2011. Highest global citation score earned at the year of 2008. 98 percent of publications were come out through collaborative mode. “Saudi Medical Journal” is the most productive journal. The institute of “Sultan Qaboos University” produced more than fifty percent of articles.

Keywords: Scientometric study, Degree of collaboration, Citation scores, h-index, Histriographic map
Smart Library for the New Generation with MOOCs and OER Facility

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Abstract

Providing the best quality library services is one of the thrusts of libraries not only in Oman but worldwide. As the number of library users is increasing leading to wider demands and needs, new ideas and tools are enhanced to be able to support knowledge and capabilities. With the understanding of how new generations can learn and improve with the use of libraries, the concept of MOOCs facility as a strategic opportunity was introduced. In exploring such emerging technologies, which develop open learning experience has created an opportunity for an open participatory environment. It has been a fact that Massive Open Online Courses [MOOCs] has not only influenced society but also higher education as well. It has impacted how courses are delivered globally which has apparently influenced academic support services like libraries in a greater aspect. Such interest in MOOCs and OER has widened the perspective that libraries can play a big role in the area of education. This paper aims to introduce the applications of a smart library and its uniqueness that will serve the whole society and facilitate learning through MOOCs and other Open Educational Resources (OER). Smart libraries have become popular because of the many advantages it could offer to the learning communities which become more appealing to librarians in academic and public libraries as well as the new wave of knowledge workers. It will discuss the role smart libraries play in the development of MOOCs and other OER facilities. The smart library systems architecture model will also be presented with a leverage of virtual technology.

Keywords: MOOCs, LIS, Open educational resources, Smart library, Library systems architecture
Quality Assessment of Library Websites of IITs in India Based on Kano’s Model

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Abstract

The quality of library websites of IITs in India have been assessed by using three main categories viz. ‘E-Resources’, ‘Services’, and ‘Web-centric’ aspects. The study extends Kano’s model to LIS application area at micro level by visualizing three quality levels within a particular information category covering various features. ‘E-resources’ include sub categories like e-books, e-journals, e-thesis, and online databases etc., ‘Services’ contain SDI, OPAC, Document delivery/Interlibrary loan etc., and ‘Web-centric’ aspects include aesthetic appearance of home page, content presentation, ease of use, search process in websites and other navigational aspects etc. The objectives of the study are to systematically examine the library websites features of IITs based on Kano’s Model, and to assess the quality level of Library websites of IITs based on scores obtained by specific features presence as checkpoints. The findings reveal that Mumbai tops the list with 1st rank (40 scores) followed by Delhi (32), Gandhinagar (32) with 2nd rank each, and Bhubaneswar (28) and Kanpur (28) with 3rd rank. The trailing IITs pertain to Guwahati, Ropar, Mandi, and Roorkee. The lowest rank i.e. 10th is shared by Indore. Category wise analysis of overall score of all IITs indicate that although the ‘e-Resources are rich and ‘Web-centric aspect’ features are well planned and established, yet there seems to be a lack of provision of effective ‘Services’ while accessing the desired services features. It is concluded that the findings of this study would be useful to the web designers and Library & Information science professionals who need to be aware about the implications of the quality features characteristics.

Keywords: Website features, Quality assessment, IIT, E-resources, E-services, Web-centric aspects, Library websites
Continuing Education in Library Science: Management Development Programmes in India

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Abstract

Presently various organizations, associations, information centres and academic institutions are doing remarkable work in the field of continuing education in library and information science in India. Many Management Development Programmes (MDPs), Faculty Development Programme (FDPs) and Librarians Development Programme (LDPs) course are organizing in India for Library and Information managers. Asian Chapter, Special Libraries Association has also organized many seminars, conferences and education programs in India. Continuing Education Management development can play an essential role in enhancing inter-professional collaboration and in building capacity for the Library Science Professionals.

Keywords: Continuing education, Continuing professional development, Management development programmes, Library science
Digital Preservation of Indian Cultural Heritage Data

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Abstract

Digital preservation involves the use of well-defined techniques to prevent the digital material from deteriorating further need to perhaps even improve it to the point where is can be better disseminated through modern techniques for maximum use of the digitized information. This paper presents an overview of successful development of Sanskriti Digitalya, an Open Archive Information System for Digital Preservation of India Cultural Data by Human-Centred Design and Computer Group, C-DAC, India. The Paper discussed different varieties of cultural data i.e. Rare-book; Manuscripts written on palm leave, burch bark, cloth, paper etc.; Slides/Photographs; Artifacts and Archival Audio Visual material available in IGNCA. Also throne light on the challenges perceived by IGNCA in management of these digital data. This pilot project is a part of Indian National Digital Preservation Programme and after successful completion it would be implemented in all cultural institutions of India. It also describes the overall structure and workflow for digital preservation tools, techniques and standards.

Keywords: Digital preservation, Digital preservation – Cultural Data, Digital preservation-Tools and Techniques, Digital preservation strategies, Digital cultural data-IGNCA, India
Innovation Management for Small and Medium-sized Libraries – a Comparison with Start-Ups and Small and Medium-sized Enterprises

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Abstract

In spring 2015 an online survey among German-speaking librarians and information specialists was carried out to identify the critical success factors in innovation management in libraries and information centers. About 490 persons responded to this survey. Furthermore circa 20 executives / directors of libraries were interviewed to get a concrete view and assessment of special framework conditions relating only the management level. The results and analysis of the survey will give answers about the critical success factors in innovation management in libraries. In addition a comparison between the opinion and assessments of the employees and executives will be possible. The survey is done in spring 2015. It is the long-term objective to strengthen small and medium-sized libraries and information centers in their efforts to introduce or to optimize their own innovation management.

Keywords: Librarians and information specialists, Information centers, Long-term
Chat Reference Services in Academic Libraries

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Abstract

The purpose of this paper is to discuss Chat Reference services using live virtual reference technology as a reference service provided by librarians and technicians at information and reference desks in academic libraries. The focus is on experiences from different academic libraries around the world and gives an example from the Zayed University, United Arab Emirates, experience of the chat reference. Experience of chat reference practices in academic environments from a local academic library at Zayed University and international academic libraries as reviewed in the literature such as Purdue University Libraries and University of Nevada are used as examples in this paper. The importance of the study is in addressing the competencies of chat reference librarians in academic libraries and best practices that other libraries implementing the service may find useful. The critical question is: what are the basic skills needed for chat reference? In addition to finding out the advantages and disadvantages of chat reference, the paper highlights its benefits to a library when it is part of user services. It is also necessary to discover methods of evaluating Virtual Reference Services compatible to international standards from the RUSA, ALA and IFLA associations.

Keywords: Chat reference services, Virtual reference services, Academic libraries, United Arab Emirates Zayed University
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