

DU RESEARCH NEWSLETTER

Department of Research

Dhofar University Salalah, Sultanate of Oman



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The Vice Chancellor Message

The development of any nation depends on its commitment to research. Research plays an important role in imparting quality education. Dhofar University's commitment to quality higher education and research is evident from its vision and mission statements respectively. The University Research Board was established in order to promote research in the university and at the same time play a pivotal role to facilitate grants from external agencies and enable research collaborations with other universities & research institutions. The URB has been successful in strengthening research. This is the first issue of the Newsletter of the University Research Board devoted to its numerous activities. It is just the beginning and we hope to publish it with regularity.



PROF. HASAN KASHOOB

Vice Chancellor

The Deputy Vice Chancellor Message

High quality of academic research is the hallmark of Dhofar University. DU has always given priority to foster good research which has impact for the country and community. The DU's University Research Board has been constantly making endeavors to ensure high quality research by its faculty and had been facilitating the entire process by supporting the researchers with incentives for publications and conference grants. The overall aim is to develop DU as a center for research by year 2025. I congratulate the URB for bring out its first newsletter which will be a means to showcase the research being conducted by our colleagues to one and all.



DR. SYED AHSAN JAMIL

Acting Deputy Vice chancellor

URB CHAIR REPORT

It gives me a great pleasure to introduce this very first Newsletter of the University Research Board (URB) of Dhofar University. The previous year was a landmark year for Dhofar University as it was granted Institutional Accreditation from the Oman Academic Accreditation Authority (OAAA). Undoubtedly, research activities had a major role in this achievement. Research has been a high priority for the University all along. The goal of the URB is to promote research in the University and at the same time play a pivotal role to facilitate grants from external agencies and enable research collaborations with other universities & research institutions. URB has established itself as a focal point of diversified research activities across the University. In this newsletter, we shall highlight some of the significant activities of the URB.

The URB meticulously processes the application of the Research Publication Incentives (RPI) and the Conference Grants (CG) guided by a set of criteria in its policy. The RPI is up to a maximum of 300 OMR per research paper (depending on the indexing etc.) and the CG is up to 1000 OMR. The URB also provides Seed Grants and facilitates Projects with external grants.

The URB budget may sound modest to some, but it suffices for the number of applications received. The URB facilitated conduction of a number of questionnaires/surveys by researchers within the University, Nationally and Internationally.

Dhofar University assigns a significant component to research in its policies for the Annual Faculty Appraisal and Promotion respectively. Consequently, the research policies draw a lot of interest across the University. The URB Chair initiated a comprehensive feedback from all the faculty. This was done through meetings with each and every Department in the university spread over three weeks. With a wide-ranging input from the faculty the agenda of the meetings was fulfilled. The staff across the Departments acknowledged the URB Chair for the unprecedented opportunity for a detailed feedback through these special meetings. The URB is in the process of incorporating this valuable feedback to have revised policies envisaged for the enhancement of research.

The URB is in the process of implementing the following:

1. Each College to organize a National Conference per year.
 2. Inter-institutional National Competition of Research Projects.
 3. Seminar Series by all the recipients of Research Publication Incentives and Conference Grants.
- This is to promote research culture across the University.

This newsletter describes the research activities under the auspices of the URB. Undoubtedly, there are activities without the direct support of the URB. Significant among these activities is the participation in national and international conferences without any grants from University. Some authors have been lethargic in applying for research publication incentives! The number of publications is much larger than the figures in the Table. This is the first issue of the Newsletter of the University Research Board dedicated to its numerous activities and we propose to bring out fresh editions regularly. It is just the beginning and we hope to publish it with regularity.

PROF. DR. MUHAMMAD ASIF GONDAL

Chair, University Research Board



CE APPROVED RESEARCH PAPER INCENTIVES (RPI)

Name: Dr. Mazhar Ul Islam
Designation: Associate Professor
Department: Chemical Engineering
College: Engineering
Journal: International journal of Biological macromolecules
Indexing: Web of Science
Volume: 137
Issue: NA
Pages: 1050-1059
Year 2019



Paper Title: Development of three-dimensional bacterial cellulose / chitosan scaffolds: Analysis of cell-scaffold interaction for potential application in the diagnosis of ovarian cancer.

Authors: Mazhar Ul-Islam, Fazli Subhan, Salman Ul Islam, Shaukat Khan, Nasrullah Shah, Sehrish Manan, Muhammad Wajid Ullah, Guang Yang

Abstract: Bacterial cellulose (BC) has emerged as a biomaterial for diverse biomedical applications owing to its unique structural, physico-chemical, mechanical, and biological features. Its porous geometry and three-dimensional fibrous structure allow the impregnation of various materials into its matrix. The current study was aimed to fabricate 3D scaffolds of bacterial cellulose and chitosan (BC-Chi) through a one-step exsitu solution impregnation strategy and analyze the scaffold interaction with the ovarian cancer cell lines (A2780). Field emission scanning electron microscopy (FE-SEM) showed successful impregnation of chitosan into the BC matrix. Phase-contrast and confocal microscopy analyses revealed that human ovarian cancer cell lines (A2780) were adhered not only to the surface but deeply infiltrated into the matrix of BC-Chi scaffold. WST-1 assay, histology analysis, and cytoskeleton and nuclear staining showed high viability, proliferation, and infiltration of A2780 cell lines into the scaffold. The RT-PCR analysis revealed a decreased mRNA level of Notch receptors, indicating a strong cell-scaffold interaction. The improved biocompatibility, non-toxicity, and 3D structure of fabricated BC-Chi scaffold justify its potential applications diagnosis of ovarian cancer in vivo.

Name: Dr. Mazhar Ul Islam
Designation: Associate Professor
Department: Chemical Engineering
College: Engineering
Journal: International journal of Biological macromolecules
Indexing: Web of Science
Volume: 137
Issue: NA
Pages: 0141-8130
Year: 2019



Paper Title: Comparative study of plant and bacterial cellulose pellicles regenerated from dissolved state

Authors: Mazhar Ul-Islam, Shaukat Khan, Mohammad Wajid Ullah, Joong Kon Park

Abstract: Bacterial cellulose (BC), a highly purified form of cellulose, better nanofibrous morphology and superior mechanical properties than plant cellulose (PC). However, the process of regeneration alters the existing properties of native cellulose, resulting in different structural and physicomechanical features. Regeneration process produces intermediate structures that may be processed to overcome the basic limitation associated with common PC. It is important to estimate the degree of deviation in the structure and properties of PC and BC during regeneration. Here, we conducted a detailed comparative study by dissolving BC and PC in N-Methylmorpholine N-oxide (NMMO) and synthesizing their regenerated gels, namely regenerated bacterial cellulose (RBC) and regenerated plant cellulose (RPC), respectively. The structural features of BC, PC, RBC, and RPC were evaluated via field-emission scanning electron microscopy, X-ray diffraction, porosity analyses, their mechanical, thermal, and liquid-holding capabilities were analyzed. The mechanical, thermal, and crystalline features of RBC and RPC were inferior to those of BC and PC. However, RBC showed better porosity, water absorption capability, and water retention time than RPC. The overall mechanical, thermal, and physiological features of RBC were better than those of RPC. These findings may facilitate the use of RBC in composite synthesis for several applications.

Name: Dr. Ahmed Saadi Ibrehem
Designation: Assistant Professor
Department: Chemical Engineering
College: Engineering
Journal: Arabian Journal for Science and Engineering
Indexing: Web of Science
Volume: 44
Issue: 8
Pages: 7361–7370
Year: 2019



Paper Title: Experimental and Theoretical Study to Optimize Rate Constants of Adsorption and Desorption of the Waste Water Treatment Using Waste of Tea Plant

Authors: Ahmmed Saadi Ibrehem

Abstract: The present work is used to remove three multi-heavy metal components from a simulated wastewater using waste of tea (WOT). Physical, mechanical and multi-step chemical treatments were applied on the WOT as an adsorbent being used for the removal of three multi-heavy metal components from a simulated wastewater. There are new techniques of WOT adsorbents prepared for the adsorption studies, using different pH (2, 4 and 5.5). The fixed-bed column study was carried out under multilayered fixed-bed columns. It was found that the adsorption of multi-heavy metal component was significantly increased in the first layer of pH 2 removing Cr, second layer of pH 4 removing Zn and third layer of pH 5.5 removing Cu. Produce mathematical model covers the most important parameters like the effect pH, partial pressure and concentration of heavy metals effect on the rate of adsorption and desorption. Results obtained from the application of the derived model are graphically compared with experimental results, and a high degree of matching is obtained. Newton-Raphson is a numerical optimization technique used to specify the optimum values of rate constants of adsorption and desorption of the WOT for Cr, Cu and Zn to increase the performance of mathematical model. The novelty of this study is that it is used to evaluate the performance of bio-waste to remove heavy metals using more than one technique to calculate the rate constants of adsorption and desorption. Still, further studies are required to confirm with the outcomes of this study using this active technique.

Name: Dr. Ahmmed Saadi Ibrehem
Designation: Assistant Professor
Department: Chemical Engineering
College: Engineering
Journal: Iran.J. Chem. Eng
Indexing: Web of Science
Volume: 37
Issue: 5
Pages: 235–246
Year: 2019



Paper Title: Mathematical Model of Biomass Product Using Gasification Reactor

Authors: Ahmmed Saadi Ibrehem

Abstract: The aim of this study is to design a new mathematical model biomass product with the help of the gasification reactor. This design will help in describing most of the internal parameters inside this process. This research also aims to study and analyze the kinetic reaction, mass and heat transfer for four zones of the gasification reactor. It has been found that the char concentration from zone one is almost 42% consumption and from zone three to four, the consumptions have found to be 72.06%. It means that the char conversion depends on oxygen consumptions in all zones to produce volatility gases, methane, and hydrogen. The mathematical model will help in optimizing best possible conditions so as to give a high quality product of methane and hydrogen to 2.2 kmol/m³ and 3 Kmol/m³ respectively. Thus, it appears to be important that important parameters of a chemical reaction are studied. Furthermore, all thermodynamic parameters of the reaction must be analyzed so as to optimize the best conditions through gasification reactor.

Name: Dr. Hesham Tuwair
Designation: Assistant Professor
Department: Civil and Environmental Engineering
College: Engineering
Journal: Construction and Building Materials
Indexing: Web of Science
Volume: 220
Issue: NA
Pages: 679-689
Year: 2019



Paper Title: UV-resistant GFRP composite using carbon nanotubes

Authors: Rahulreddy Chennareddy, Hesham Tuwair, Usama F Kandil, Mohamed ElGawady, MM Reda Taha

Abstract: Degradation due to exposure to ultraviolet (UV) radiation is an important durability challenge with glass fiber reinforced polymer (GFRP) composite. Design and construction guidelines of GFRP suggest using UV protection paint to prevent GFRP degradation. In this study we examine the possible use of multi-walled carbon nanotubes (MWCNTs) dispersed in epoxy matrix to produce UV-resistant GFRP composite. We suggest that MWCNTs can result in a significant improvement to UV degradation resistance in the GFRP. Direct tension tests of GFRP coupons incorporating 0.25 wt%, 0.50 wt%, and 1.0 wt% of MWCNTs show inherent stability and good resistance to UV degradation. Microstructural analysis shows the ability of MWCNTs to resist polymer backbone disassociation caused by UV radiation thus preventing UV degradation in GFRP. Scanning electron microscopy (SEM) images show MWCNTs can resist microcracking caused by UV radiation and thus improve UV degradation resistance of GFRP.

Name: Dr. Umer Farooq
Designation: Assistant Professor
Department: Electrical and Computer Engineering
College: Engineering
Journal: Simulation-Transactions of the society for modelling and simulation international
Indexing: Web of Science
Volume: 95
Issue: 8
Pages: 737-751
Year: 2019



Paper Title: A framework for high-level simulation and optimization of fine-grained reconfigurable architectures

Authors: Muhammad Adeel Pasha, Umer Farooq, Bilal Siddiqui

Abstract: Field Programmable Gate Arrays (FPGAs), due to their programmability, have become a popular design choice for control and processing blocks of modern-day digital design. However, this flexibility makes them larger, slower, and less power-efficient when compared to Application Specific Integrated Circuits (ASICs). On the other hand, ASICs have their own drawbacks, such as lack of programmability and inflexibility. One potential solution is specialized fine-grained reconfigurable architectures that have improved flexibility over ASICs and better resource utilization than FPGAs. However, designing a fine-grained reconfigurable architecture is a daunting task in itself due to lack of high-level design-flow support. This article proposes an automated design-flow for the system-level simulation, optimization, and resource estimation of generic as well as custom fine-grained reconfigurable architectures. The proposed framework is generic in nature as it can be used for both control-oriented and compute-intensive applications and then generates a homogeneous or heterogeneous reconfigurable architecture for them. Four sets of homogeneous and heterogeneous benchmarks are used in this work to show the efficacy of our proposed design-flow, and simulation results reveal that our framework can generate both generic and custom fine-grained reconfigurable architectures. Moreover, the area and power estimations show that auto-generated domain-specific reconfigurable architectures are 76% and 73% more area and power-efficient, respectively, than generic FPGA-based implementations. These results are consistent with the savings reported for manual designs in the literature.

Name: Dr. Furqan Ahmad
Designation: Assistant Professor
Department: Mechanical and Mechatronics Engineering
College: Engineering
Journal: Mechanics of Advanced Materials and Structures
Indexing: Web of Science
Volume: 26
Issue: 19
Pages: 1613-1621
Year: 2019



Paper Title: Numerical investigation to evaluate effect of fiber orientation on penetration-resistance of an aircraft composite material

Authors: Furqan Ahmad, Fethi Abbassi, Myung Kyun Park, Jung-Wuk Hong

Abstract: *The effects of the fiber orientation on the penetration-resistance of an aircraft composite material are investigated through experimental and numerical simulation results. Experiments were conducted on cross-ply and quasi-isotropic composite plates with identical boundary conditions. These results are compared with the results of a numerical simulation performed using LS-DYNA. The cross-ply composite plates exhibited the maximum resistance to a low-velocity impact load, with the impactor rebounding, whereas the quasi isotropic lay-up plates were perforated by the impactor. The FE simulation results show good agreement with the experimental data in the comparisons of the time-force curves, time-energy curves, and impact damage.*

CE APPROVED CONFERENCE GRANTS (CG)

Name: Dr. Thabit Sultan Mohammed
 Designation: Associate Professor
 Department: Electrical and Computer Engineering
 College: Engineering
 Conference Title: IEEE Middle East and North Africa Communication Conference (IEEE MENACOM2019)
 Conference Dates: 19-21 November 2019
 Conference Venue: Manama, Bahrain
 Paper Title: A Novel Algorithm Based on LoRa Technology for Open-Field and Protected Agriculture Smart Irrigation System.
 Authors: Thabit Sultan Mohammed



Abstract: A novel algorithm for smart irrigation system adaptable for both open-field and protected agriculture based on LoRa technology is proposed in this paper. The algorithm suits a networked architecture, in which a central controller is communicating with distributed units of sensors and actuators. Communication within the system units use LoRa devices, where a LoRa is an IoT based technology providing low-power and long-range radio connectivity. Within an agricultural farm, the system can be configured such that it can suit the control of environmental conditions applicable for either an open-field and/or a protected (e.g. greenhouse) agricultures. A database has been developed and designed to comply with the system architecture. The collected data is analyzed and used by the system for automatically adjusting itself to an optimal or semi-optimal performance. At the central control, the user interface offer system monitoring capability, statistics, as well as report generation.

Name: Dr. Furqan Ahmad
 Designation: Assistant Professor
 Department: Mechanical and Mechatronics Engineering
 College: Engineering
 Conference Title: International Mechanical Engineering Congress and Exposition
 Conference Dates: 11-14 November 2019
 Conference Venue: Salt Lake City, Utah, United State of America
 Paper Title: Effects of Absorbed Moisture Content on the Impact Response of Specially-Orthotropic Composite Plates
 Authors: Furqan Ahmad, Fethi Abbassi and Sajjad Miran



Abstract: This paper addresses the hygroscopic effects on the impact response of specially-orthotropic carbon fiber reinforced polymer composite plates under low-velocity impact loading. The material used in this study is Toray T800/3900 which is consist of carbon fibers and epoxy resin. For different percentage of moisture content by weight in the composite plates, low-velocity impact tests were done by using the 8-ply unidirectional [UD] and cross-ply [CP] composite plates with newly designed mini-drop tower testing machine. To study the hygroscopic effects, specimens were impacted by constant weight of impactor (3.44 Kg) with fixed impact height of 0.70 m corresponding to 23.62 J impact energy. The experiments were carried out on plates with dimension of 125 mm×125 mm×1.5 mm for simply supported boundary conditions. All UD composite plates were broken into two parts, but the impactor bounces back after hitting the top layer of the CP composite plate for all conditions. The strength of the UD composite plates decreased with increase of moisture contents, but with the increased of moisture contents, a small change was observed in the peak force, time to peak force values and absorbed energy for the CP composite plates. The large size damage areas were observed for wet plates as compared to dry plates. Absorbed moisture contents also have effect on the impactor velocity and impactor displacement.

CAAS APPROVED RESEARCH PAPER INCENTIVES (RPI)

Name: Dr. Sobhy Ahmed Soliman
 Designation: Assistant Professor
 Department: Education
 College: Arts and Applied Sciences
 Journal: Arab World English Journal
 Indexing: Web of Science
 Volume: 5
 Issue: NA
 Pages: 124-140
 Year: 2019



Paper Title: Efficiency of an educational robotic computer-mediated training program for developing students' creative thinking skills: An experimental study

Authors: Sobhy Ahmed Soliman

Abstract: This research aimed at detecting the efficiency of a computerized training program based on programming the educational roboticists to develop creative thinking skills for the eighth grade basic education students at Manba'a El-Hekma School in Dhofar Governorate. Also, it investigates the nature of the proposed program, the efficiency of the program, and the significance differences between the two groups. The researcher used the experimental curriculum with the two groups; controlled and experimental to achieve the aims of the research and to test its hypotheses. The sample of the research consisted of 30 Students during the first term of the school year 2018/2019 and they were selected intentionally. Each group included 15 students. The experimental group students were trained to program the educational robotics using the computerized training program. Torrance test of creative thinking was applied before and after on the two groups, in addition to an evaluation card to the projects of the Students. The results showed that there are differences with statistical indication on the level of 0.5 between the two averages of the degrees of the experimental and the controlled groups, before and after the application of the creative thinking test and in the evaluation card of the Students' projects in the experimental group. By implication the research recommended to merge the techniques of the educational robotics and the artificial intelligence in teaching and education and training for provide the female teachers on using that technology and encouraging them to employ it in the process of teaching, using the electronic program prepared in this study.

Name: Dr. Nasser Said Gomaa Abdelrasheed
 Designation: Assistant Professor
 Department: Education
 College: Arts and Applied Sciences
 Journal: Personality and Individual Differences
 Indexing: Web of Science
 Volume: NA
 Issue: 148
 Pages: 7-10
 Year: 2019



Paper Title: Regional differences in intelligence in the Sultanate of Oman

Authors: Nasser Said Gomaa Abdelrasheed, Edward Dutton, Khalid Muslem Aslam Almashikhid, Jan te Nijenhuis, Yusef Ahmed Bakhiet Albaraami

Abstract: We administered the SPM to a sample of 1614 pupils aged between 9 and 18 in 2018 in the Dhofar region of Oman. Our results were compared to a previous administration of the SPM to 5139 pupils aged 9 to 18 in the capital region of Muscat which took place in 2001. We found that the IQ of Muscat in 2001 is substantially higher than the IQ of Dhofar is 17 years later. As there are only a small number of studies on the mean IQ in Oman, we did not apply a Flynn-effect correction. It is found that these regional IQ differences are paralleled by regional differences on many correlates of IQ such as life expectancy and years spent in schooling. We suggest three key factors as likely explaining the difference in IQ: poorer conditions in Dhofar, the association between intelligence and urban migration, and the effects of the Dhofar Rebellion. Other possible explanations are also examined.

Name: Dr. Jihan Mohammed Zakarriya Mahmoud
Designation: Assistant Professor
Department: English Language and Literature
College: Arts and Applied Sciences
Journal: Journal of International Women's Studies
Indexing: Scopus
Volume: 20
Issue: 7
Pages: 113-128
Year: 2019



Paper Title: Public Feminism, Female Shame, and Sexual Violence in Modern Egypt

Authors: Jihan Zakarriya

Abstract: This paper examines the interconnections between public sexual violence, female shame, and public feminism in modern Egypt. It connects aspects of public sexual violence against women generally and politicized sexual violence in 21st-century Egypt in particular, arguing that successive political regimes in Egypt produce and maintain a spatial culture of humiliation and inferiorization as a political tool of silencing, and oppressing women and opposition. This culture of humiliation and inferiorization is premised upon media-oriented female shame ideas that relate and condemn female sexuality and public participation, establishing the public space as militarized, dangerous and exclusive. This paper attempts to assess the successes and failures of public feminism in Egypt in addressing such politicized culture of female humiliation and isolation in public spaces, with a particular focus on fighting politicized forms of sexual violence directed against women in post-2011 revolutionary Egypt. It argues further that sexual violence against women and the repression of public feminism in Egypt are parts of the failure of the processes of democratic transition, state formation and of the survival of socio-economic and cultural hierarchy and vulnerability in modern Egypt. The paper maintains that Egyptian women's remarkable and solid public activism during and after 2011-revolution shows them as able to invade the exclusive public spaces and hence are able to create new spaces of female resistance and new forms of public mobilization in the country.

CAAS APPROVED CONFERENCE GRANTS (CG)

Name: Dr. Gowhar Ahmad Naikoo
 Designation: Assistant Professor
 Department: Mathematics and Sciences
 College: Arts and Applied Sciences
 Conference Title: 13th International Conference on Sensing Technology
 Conference Dates: 02-04 December 2019
 Conference Venue: Macquarie
 University, Sydney, Australia
 Paper Title: Development of Highly Efficient NiO based Composite
 Materials for Ultra-Sensitive Glucose Sensors
 Authors: Gowhar Ahmad Naikoo and and Mehraj Ud Din Sheikh



Abstract: Diabetes is attracting a great attention because of alarming increase in death rate worldwide. Thus, in order to monitor blood glucose level and to prevent life-threatening impact of diabetes, researchers are consistently working on the development of highly efficient, reactive, reliable, rapid and cost-effective electrochemical sensors for glucose detection. Herein, we have adopted a green chemistry approach to synthesize NiO based composite materials via modified sol-gel route for glucose detection. The crystal structure and surface characteristics of the as-manufactured materials were characterized by Powder-X ray diffraction (PXRD), electron microscopy (SEM) and BET surface area analyzer. Cyclic Voltammetry (CV) and Differential Pulse Voltammetry (DPV) methods were employed to investigate the catalytic properties of the fabricated electrode materials for glucose electro-oxidation in alkaline media. The NiO@Si-NPs developed non-enzymatic sensor exhibited excellent performance for glucose sensing with extremely low limit of detection (LOD) of (0.08 μM) and an ultrahigh sensitivity of 445 $\mu\text{Am}^{-1}\text{cm}^{-2}$ which could be attributed to the addition of silica nanoparticles on the surface of NiO that offered large surface area for oxidation of glucose. Hence, NiO@SiNps composite electrode materials will serve as a highly promising candidate for the development of efficient electrochemical sensors for reliable glucose detection

Name: Iryna Lenchuk
 Designation: Assistant Professor
 Department: English
 College: Arts and Applied Sciences
 Conference Title: 4th Annual International Conference & Exhibition on
 English Language Teaching
 Conference Dates: 14-15 December 2019
 Conference Venue: Doha, Qatar
 Paper Title: Concept-based instruction in the Omani ESP classroom
 Authors: Iryna Lenchuk and Amer Ahmed



Abstract: This presentation reports on the results of the action research conducted in an ESP classroom. The impetus for the study is the practitioner's intention to address the gap between the current teaching practice and the teaching practice that the practitioner aspires to. The study is couched within the theory of Vygotsky and his follower Gal'perin who emphasized the importance of instruction in the learner's cognitive development. The contribution of Gal'perin is the development of a systematic type of instruction known as concept-based instruction (CBI) that targets learners' internalization of scientific concepts and development of abstract thinking. The research question that the study investigates is whether the introduction of CBI that would lead learners to the internalization of the concept of a language constituent can assist them with meaning making abilities at the phrasal and sentential levels. Specifically, to what extent can CBI facilitate a better understanding of the changes that take place between active and passive sentences in English? 22 students enrolled in the English for Engineering and Sciences undergraduate course in one of the universities in the Sultanate of Oman participated in the study. The data are collected through teacher's observations, students' artifacts as well as students' feedback on the effectiveness of CBI. The analysis of the data shows the effectiveness of CBI for the internalization of the concept of language constituency, which has greatly affected learners' understanding of the English passive and developed their meaning making abilities at the phrasal and sentential level.

CCBA APPROVED RESEARCH PUBLICATION INCENTIVES (RPI)

Name: Dr. Omar Durrah
 Designation: Assistant Professor
 Department: Management
 College: Commerce and Business Administration
 Journal: International Journal of Environmental Research and Public Health
 Indexing: Web of Science
 Volume: 16
 Issue: 7
 Pages: 1-16
 Year: 2019



Paper Title: Organizational Cynicism and Its Impact on Organizational Pride in Industrial Organizations

Authors: Omar Durrah, Monica Chaudhary, and Moaz Gharib

Abstract: Organizational cynicism has been a topic of discussion and debate among employees and top management. The purpose of this study is to find out the relationship between organizational cynicism and organizational pride. Precisely, the objectives are to identify and measure organizational cynicism among employees in industrial organizations; to determine and measure the degree of organizational pride among employees in industrial organizations and to study the effect of organizational cynicism on the organizational pride of employees in industrial organizations. In this empirical research, the study population was employees of industrial organizations of Oman. Using a purposive sampling technique, nine industrial organizations from Oman were picked. With the help of structured questionnaire, data from 350 respondents was obtained. Structural equation modeling was used through Amos version 25.0 for data analysis. The results reveal that the two dimensions of organizational cynicism (affective cynicism and behavioral cynicism) have a significant and negative impact on emotional pride, while cognitive cynicism does not significantly affect emotional pride. The study results indicate that the one dimension of organizational cynicism (affective cynicism) has a significant impact on attitudinal pride, while the rest of the other dimensions (cognitive cynicism, behavioral cynicism) do not have a significant effect on attitudinal pride. The limitations and implications of the research are also discussed.

Name: Dr. Omar Durrah
 Designation: Assistant Professor
 Department: Management
 College: Commerce and Business Administration
 Journal: Journal of Islamic Marketing
 Indexing: Web of Science
 Volume: 10
 Issue: 2
 Pages: 495-510
 Year: 2019



Paper Title: Young consumer's influence: a study of Gulf region

Authors: Monica Chaudhary, Omar Durrah, and Suhail M. Ghouse

Abstract: Purpose:- The emergence of children as a distinct consumer class has led to a stronger influence on the parents and their participation in the family buying process. This paper aims to investigate the different socializing agents of children across different product categories leading to their enhanced pester power. Design/methodology/approach- With the help of a bilingual questionnaire (English and Arabic language), a survey was conducted in Dhofar, Oman. Purposive sampling was used to collect the data from the parents of young children (8-12) years. The collected data was then tabulated in MS Excel and analyzed using SPSS and AMOS 24 Statistical software. Findings:- The study found that parents are the strongest consumer socialization agents for young Arab children, followed by friends and internet, and the weakest agent is TV. Arab children use persuasion strategy more often and use aggressive strategy least often to pester their parents. Practical implications: - The study has been very perspicacious in understanding child's role in the otherwise reserved Arab families. Marketers can make use of this finding and can develop marketing communications with more appropriate content. Originality/value - The growth of Gulf markets offers marketers a great opportunity to renew their marketing practices and techniques. Still not much has been found in literature to study this region. With this in mind, the current study aimed at analyzing the consumer socialization and influence strategies of the Arab children.

CCBA APPROVED CONFERENCE GRANTS (CG)

Name: Dr. Suhail M. Ghouse

Designation: Assistant Professor

Department: Marketing and Entrepreneurship

College: Commerce and Business Administration

Conference Title: IACCM-IÉSEG

2019 Congress: Intercultural competencies for a disruptive VUCA world

Conference Dates: 31 October-02 November 2019

Conference Venue: IESEG School of Management, Paris, France

Paper Title: Gender and Exposure based Entrepreneurial Attitudes of Oman University Students

Authors: Suhail M. Ghouse, Dennis Barber, Michael Harris and Shanan



Abstract: The current study adds the Oman context to our knowledge base related to the entrepreneurial attitudes, intentions, and experiences of the university students across multiple nations. The individual level study examines how the gender and the previous work exposure are associated to the entrepreneurial attitudes of the Omani university students. Entrepreneurial attitudes of 144 Omani students were measured with the Entrepreneurial Attitudes Orientation (EAO) survey instrument which comprised of four subscales. Exposure was measured through current or previous small business ownership, previous work exposure and family exposure. The females scored higher on personal control and achievement oriented sub-scales than the males while scored lower on the self-esteem subscale than the male students. Both scored equally on the innovation subscale.

CL APPROVED RESEARCH PUBLICATION INCENTIVES (RPI)

Name: Dr. Ahmed Elzein
Designation: Assistant Professor
Department: Private Law
College: Law
Journal: مجلة الأمانة ، مجمع البحوث والدراسات بأكاديمية السلطان
قابوس لعلوم الشرطة، سلطنة عمان
Indexing: NA
Volume:
Issue: الثاني والثلاثون
Pages: 95-126
Year: 2019



Paper Title: شرط المصلحة في الدعوى المدنية في القانون العماني

Authors: Ahmed Elzein

Abstract: The study shows that interest is the benefit gained by the claimant when taking the case to court. Therefore, interest is the motive and the objective behind taking the case to court, and interest must therefore be available in any case. The study also deals with the characteristics of interest, and shows that interest must be legitimate, legal, and conforms to the general apparatus and manners, and must be present at the time of the proceedings. The study also shows that interest must also be personal and direct in the sense that the claimant must be a person whose rights must be protected. The study further deals with the nature of pleas driven by interest. and concludes that this type of pleas is objective and must be pursued throughout the case. If considered, the findings of the study would fill a number of gaps which are equally available in the law and the judicial application of it.

FP APPROVED CONFERENCE GRANTS (CG)

Name: Nathaniel Lotze
Designation: Lecturer
Department: English
College: Foundation Program
Conference Title: 4th Annual International Conference & Exhibition on English Language Teaching
Conference Dates: 14-15 December 2019
Conference Venue: Doha, Qatar
Paper Title: Revisiting the Wug Test: Pushed output and meta-awareness in the development of productive morphological awareness
Authors: Nathaniel Lotze



Abstract: Arabic speakers commonly have trouble applying rules of inflection to English. This longitudinal study followed 114 Arabic-speaking university students as they moved through a foundational English program, testing their ability to generalize the eight inflectional (bound) morphemes of English to nonce words. After one year, the students' productive awareness topped 70% for only three of the eight morphemes: a result of lack of pushed output, negative transfer, and natural order. While the students' productive morphological awareness was not where it ought to have been, it was trending in the right direction for the ninety-four who passed out of the program at CEFR Level B1 or higher. The study argues that teachers can help students develop their productive morphological awareness by (a) pushing output evenly and (b) building a meta-awareness of productive morphological awareness in the classroom to offset negative transfer and natural order.

APPROVED TRC PROJECTS

Principal Investigator: Iryna Lenchuk
 Designation: Assistant Professor
 Department: Education and Human Resources
 College: Arts and Applied Sciences
 Project Title: Balancing act: The effect of task design on foreign language learners' fluency and accuracy
 Sector: Education and Human Resources



Abstract: This proposal describes a research project (RP), which investigates the effect of the task design on the development of communicative competence of language learners who study English as a Foreign Language (EFL) in skill-based and content-based courses at the university level in the Sultanate of Oman. The RP is couched within the theoretical framework of the cognitive interactionist perspective on additional language learning, which has inspired Task-Based Language Teaching (TBLT), an approach to teaching and learning EFL (see e.g., Bygate, Skehan & Swain, 2001; Long, 2015). The novelty of the project is that it aims to investigate the effect of the implementation of TBLT in the Omani context, which, to the best of our knowledge, has not been done before. In addition, by focusing on the design of a communicative task, the project has a strong potential to make a contribution to the field of applied linguistics, since task design and its effect on the development of learners' communicative competence has been an under investigated area in the TBLT research (see e.g., Ellis, 2017). It is our prediction that an optimal task design can contribute greatly to the development of communicative competence of EFL learners. This advanced proficiency in English will ultimately assist the learners in getting access to a highly-competitive job market of the knowledge-based economy in the country where English has the status of the official foreign language and is used as a lingua franca of many work places across the country.

Principal Investigator: Hedi Haddad
 Designation: Assistant Professor
 Department: Computer Science
 College: Arts and Applied Sciences
 Project Title: An IoT-based Framework for Balancing Taxis Service Supply-Demand in the Context of a Smart City
 Sector: Information Technology and Communication



Abstract: Taxi industry is a key element of the transportation infrastructure of most countries worldwide with important economical impact. Taxi systems are a type of urban spatiotemporal phenomena which dynamics are driven by complex interactions between service suppliers and service consumers. Governments and taxi operators are continuously concerned by understanding these interactions in order to balance service supply and demand. While taxi operators need to deploy their fleets at the right spatio-temporal locations to minimize their operational costs and maximize their benefits, governments need accurate estimations on taxi services' distributions over time and space for effective entry regulation and congestion control. Balancing taxi service supply-demand is an active research topic in transportation research field. Given that there is interesting potential to propose innovative solutions in the sector that achieves Oman's strategic sustainable mobility objective, this project aims at proposing a prototype of Intelligent Transport System (ITS) that balances taxi service supply demand at a city level. The project builds on the recent advances in the fields of smart cities, IoT and connected mobility to propose a solution tailored to the context of Oman.

Principal Investigator: Mansour Alraja
 Designation: Assistant Professor
 Department: Management Information System
 College: Commerce and Business Administration
 Project Title: Enabling End-Users to Protect their Privacy by themselves: Application to Smart Healthcare Cyber-Physical Environments (Acronym: uPrivacy)
 Sector: Information Technology and Communication



Abstract: We progressively find ourselves surrounded by smart cyber-physical systems that silently track our activities and collect information about us. Examples include smart homes and cities, remote patient monitoring. While such systems may ease our lives, they raise major privacy concerns for their users, as collected data is often sensitive, e.g. vital signs, location. Our project addresses these concerns by proposing a solution that enables the users to play a central role in protecting their privacy. We propose models, techniques and tools to help users, before sharing their data with data consumers, to 1) identify the privacy risks involved in that sharing; 2) assess the value of data, based on identified risks, and compare it to the benefits generated by the sharing; 3) control the data release by applying data modification techniques to implement taken sharing decisions. We apply our solution to the healthcare domain to protect the privacy of patients.

Principal Investigator: Md Saiful Islam
Designation: Assistant Professor
Department: Mechanical and Mechatronics Engineering
College: Engineering
Project Title: An Emerging Averaging Algorithm to Upscale Fracture Systems of a Fractured Reservoir
Sector: Energy and Industry



Abstract: All hydrocarbon reservoirs are fractured to some extent. Due to the structural and petrophysical complexity of fracture, very special flow simulation modeling (e.g. dual porosity modeling) is indispensable for fractured reservoir if the fractures are interconnected and build the primary flow path between injection and producing wells. There are two different recovery mechanisms are usually used to simulate the fractured reservoirs, for example, water-oil-imbibition (WOI) and gas-oil gravity drainage (GOGD). Ideally, oil is displaced by water for WOI and by gas for GOGD mechanism for naturally fractured reservoir. Relative permeability of oil-gas or oil-water, and capillary pressure curves have a great influence on enhanced oil recovery (EOR) for GOGD or WOI system in naturally fractured reservoirs. Therefore, the perfect flow simulation modeling of fractured reservoirs still is the immature and emerging area of research to understand the fluid flow between the matrix-fracture systems. The industry standard commercial flow simulators are simulating the fractured reservoirs as dual-porosity model as they are inept to upscale the fracture systems and their associated petrophysical properties. To address this shortcoming, this study has aimed to devise an emerging algorithm to upscale the fracture systems with their associated petrophysical properties as a function of flow properties, which may result to convert the dual-porosity model (fracture systems will be assigned explicitly into the model) into a conventional single-porosity upscaled model (fracture systems will be represented into the model implicitly as flow properties).

Principal Investigator: Luay Rashan
Designation: Professor
Department: Research Center
College: NA
Project Title: Development of a Topical Formulation for Bedsores from the Gum Resin of Omani *Boswellia sacra*
Sector: Culture Humanities and Basic Sciences



Abstract: Medicinal plants are widely used to treat different life threatening ailments. Traditional herbal remedies play significant role in curing as well as lead to the research on the development of most pharmaceutically important metabolites from plants (Buyel, 2018) which are helpful to produce drugs on commercial scale. It is already reported that 90% population of developing countries use chiefly herbal medicines for cure of various ailments (Martins, 2013). Schippmann et al., (2002) mentioned that all over the world nearly 50,000 herbal plants are in use for getting various medicinal products and metabolites for cure of ailments. People of "Middle Eastern" countries have much interest in use of herbal drugs (Al-Aalwan, 2017) under Unani (GreecoArab medicine) system of medicines. Sakkir et al., 2012 mentioned about several plant based medicines being used for treatment in the Arabian Peninsula. Many local plants were being used for cosmetic remedies. Majority of the local herbs are being used for cauterization, cupping or bone setting.

Principal Investigator: Abdelkader Elsayed
Designation: Associate Professor
Department: Education and Human Resources
College: Arts and Applied Sciences
Project Title: An Emerging Averaging Algorithm to Upscale Fracture Systems of a Fractured Reservoir
Sector: Energy and Industry



Abstract: The Sultanate of Oman attaches great importance to the development of education and confronting its various problems using modern scientific methods through relying on theories, models and strategies of active learning as an input to teaching different subjects in different stages of education. The Sultanate also focuses on the research and investigation of students and staff in the field of education. This is evident in its orientation towards the development of mathematics and science curricula in various stages of education according to the philosophy of the Cambridge curriculum, as well as the Omani Ministry of Education's approach to providing training programs for all teachers in the field. But the real challenge, which represents a major obstacle to achieving what the Sultanate aspires to, lies in the low skills of excellence and creativity among the students of basic education, especially the skills of excellence and creativity in science and mathematics, as well as the wasted times and the huge sums spent in implementing training programs for teachers to train them on how to develop those skills among their students. Therefore, the proposed project aims to overcome these obstacles and thus improve the educational process in Oman by drawing up a list of the skills of excellence and creativity in mathematics and science that must be met by students of basic education and determining their level of excellence and creativity skills. These measures will be a starting point for building a proposed mathematics and science program based on some active learning theories (Riegloth's elaboration theory, Gardner's theory of multiple intelligences and constructivism theory) and then applying this program to basic education students in Dhofar governorate using some active learning models and strategies (Scaffolding strategy, instructional enrichment strategy and the Marzano Model of Learning Dimensions) to explore the effectiveness of this program in developing the skills of excellence and creativity in mathematics and science for these students. It will be very easy to generalize the program for the rest of the governorates of the Sultanate of Oman if its effectiveness is achieved in the Governorate of Dhofar. The current project is based on the descriptive approach to identify the skills of excellence and creativity in mathematics and science that are required for students of basic education in Oman, and the descriptive and qualitative approaches to identify the level of excellence and creativity in mathematics and science in these students in the Sultanate, as well as the semi experimental approach to several experimental groups and controls) (pre and post test) to build the proposed program and verify its effectiveness in developing skills of excellence and creativity in mathematics and science among students of basic education in the Sultanate of Oman. The project community consists of all basic education students in all educational stages in Dhofar Governorate. The sample will be a large random selection from a large number of basic education schools at all levels of education in Dhofar Governorate and will be a representative of the study community. The program will be built in the form of modules in mathematics and science based on some active learning theories and implemented using some active learning strategies as well. Data will be collected through questionnaires, interviews, and standardized tests on the skills of excellence and creativity in mathematics and science. The implementation of the project takes two full years. The data will be analyzed by the SPSS program based on the arithmetic mean, the standard deviation, the T test, and the variance analysis test. Some qualitative analysis methods will also be used for interviews with math and science teachers.

APPROVED FURAP PROJECTS

Faculty Mentor: Dr. Gowhar Naikoo Al Mashali
 Principal Investigator: Fatema Al Mashali
 Designation: Assistant Professor
 Department: Maths and Sciences
 College: Arts and Applied Sciences
 Project Title: Decorated Copper based Nanoparticles for Anti-Colon Cancer Activity
 Sector: Health and Social Services



Abstract: Cancer is world threatening disease which kills more than 2 million people every year. Oman is the second largest country among GCC countries where cancer incidence is increasing every year. In particular, emergence of colon cancer is increasing in Oman every year (Kumar et al. 2015). So, there is a need of safer treatment to treat the colon cancer patients in Oman at early stage to decrease the mortality rate. Chemotherapy, radiation and surgery are current clinical options to treat colon cancer. There is a chance of cure for early stage of cancer however, at later stages cancer cells metastasized all over the body and it becomes highly tedious to treat with above mentioned options in clinical set up. Clinicians often choose chemotherapeutic option to treat cancer as this format is easy to handle. However, the post treatment systemic toxicity is inevitable. Developing less systemic toxic chemotherapeutic approach is highly warranted to avoid clinica toxicities. Intravenous administration of chemotherapeutics induces severe toxicities. To overcome these challenges, researchers are interested to use nanoparticles based drug delivery in which systemic toxicity is considerably low due to target specific delivery of drugs. Numerous nano based drug delivery system has been reported in literature however, ideal combination of materials which can provide large surface area for drug loading, stable and selective delivery of cancer drug is lacking. To address this issue, in this proposal we plan to synthesize Cu based nanoparticles decorated with biocompatible metal nanoparticles such as silver (Ag) and gold (Au) for anti-colon cancer activity. These Cu decorated nanoparticles will offer the high surface area for drug loading and consequently open the tangible ways of selective colon cancer drugdelivery.

Faculty Mentor: Dr. Najam Ul Hasan
 Principal Investigator: Fahd al Mashani
 Designation: Assistant Professor
 Department: Electrical and Computer Engineering
 College: Engineering
 Project Title: The Use of UAV in Disaster Management
 Sector: Information Technology and Communication



Abstract: Over the past few years, the world has faced a lot of natural crisis that have affected its infrastructure quite badly. Therefore, many companies and organizations across the world trying to obtain a suitable way to reduce the risk level of any specified disaster that can occur in any geographical area. One of the key research and development area in this regards is to build a suitable machine that can interact with damaged infrastructure, and reduce risk level of disaster. As the result of ongoing efforts in this direction, it is devised that unmanned aerial vehicle (UAV) can be a promising solution for such scenarios. So far UAV have been used in lot of applications including, military, agriculture, disaster management, cargo transportation and many other. There are a number of advantages of using UAV over the other alternatives for the use case of the disaster management. First, UAV can quickly reach the inaccessible locations and provide quick first response relief and rescue operations. Second, UAVs can interact easily with the victims in the disaster and can gather actual the ground situation in a more precise and accurate manner. Third, UAV can take high resolution image of the affected area, which can be provided to the mission control, to help out in their decisions. Fourth, UAV more cost effective and safe as compared to other solution such as manned aerial vehicle (MAV) or unmanned or manned ground vehicles (UGV/MGV). Regarding, the architecture of UAV, it has mainly two parts including its body and other functional components, which help it to fly, and carry out the relief and rescue activities such as flight controller, digital camera, payload, power source, and remote controller.

Faculty Mentor: Dr. Mazhar Ul Islam
 Principal Investigator: Somiya Yasir Said Bait-Ameer
 Designation: Assistant Professor
 Department: Chemical Engineering
 College: Engineering
 Project Title: Synthesis of conductive bacterial cellulose composites for applications in optoelectronic devices
 Sector: Environmental and Biological Resources



Abstract: Bacterial cellulose (BC) produced, by class of microorganism has pretended excellent physical, mechanical, and biological features. To dates there are two main limitations associated with pure BC including their production cost and lacking of certain features. owing to lack of conducting properties their utilization in optoelectronic devices fabrication is restricted. In here, we are trying to produce BC from cheap sources and develop its composites with conducting materials including CNTs, graphene oxides and polymers for practical applications in developing optoelectronic devices. The composites will be synthesized through ex-situ synthetic strategy and will be evaluated for structural, physical, mechanical and conducting properties.

Faculty Mentor: Dr. Abuiyada, Reem
 Principal Investigator: Al Anood Al Meqbali
 Designation: Assistant Professor
 Department: Social Sciences
 College: Arts and Applied Sciences
 Project Title: Cross Cultural Education: A Key to Omani Student Learning Success
 Sector: Culture Humanities and Basic Sciences



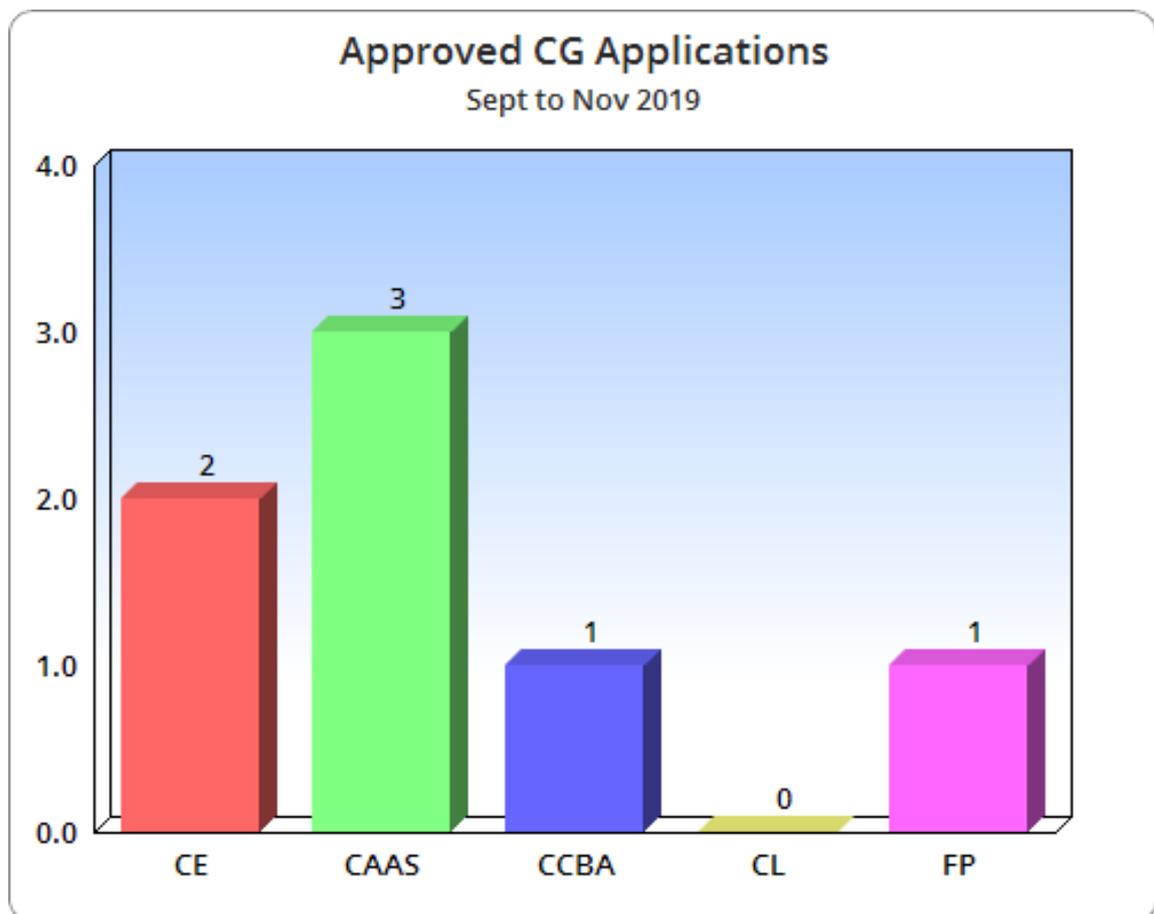
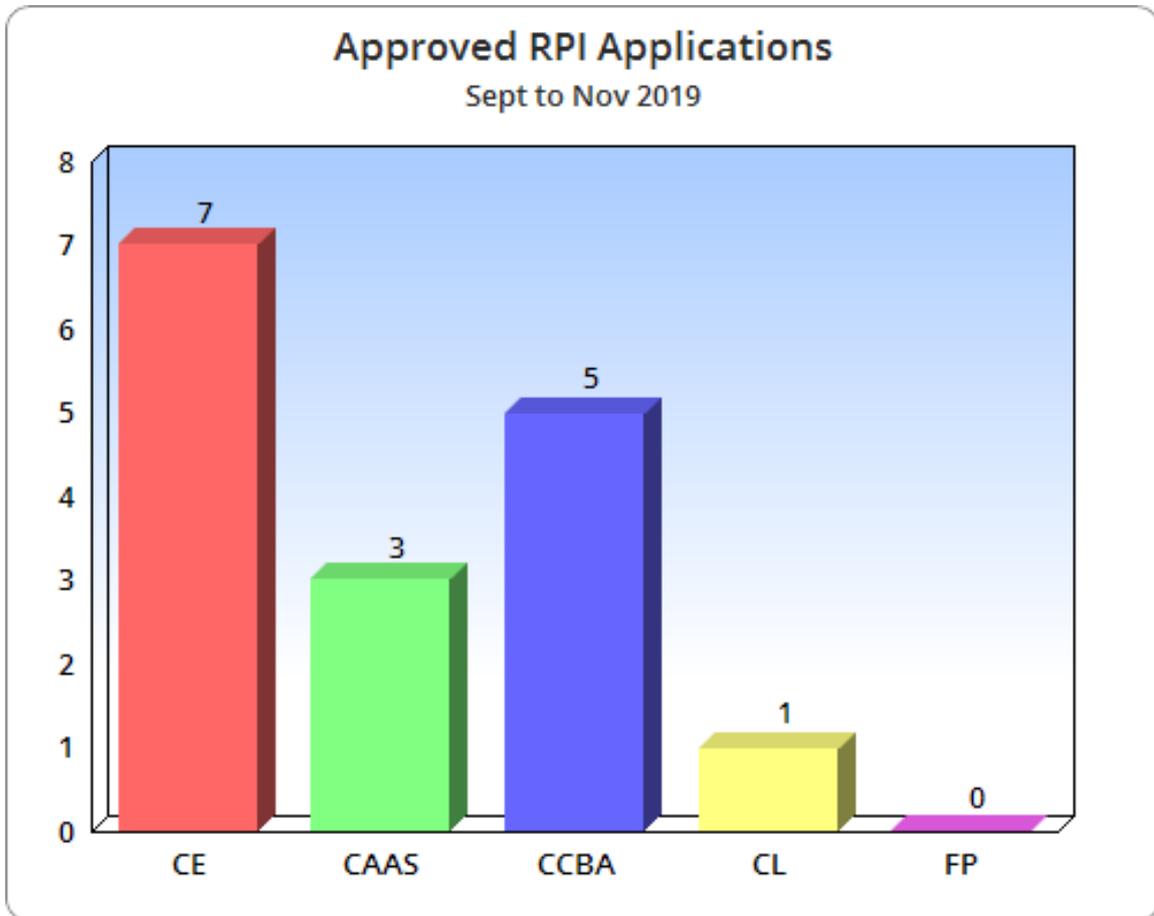
Abstract: Oman is a multicultural society in terms of both traditions and religion. Communities differ in terms of cultural heritage, language, dress and religious or sectarian affiliation. The majority of people are Arab (Newcombe, 2008). Arabic is the principal language spoken by Omanis; whereas English is their second language. The road to educational development in Oman with all its complexities has been laid out. Provoking the socio-cultural challenges by continuously improving and adapting the education system in line with the welfare of the local population is the main way forward (Valeri, 2014). Formal education in Oman was based on their own ethnic language that included their career, business and progression extended to people generally from the similar culture and language as one-self. But now, the swift globalization has headed to covering an extensive range of socio-economic and political changes influencing employment, profession choices which sequentially have advanced to substantial changes and amendments in the professional growth of young Omani Nationals (Valeri, 2014). The National Education Strategy 2040 that is being developed presently the Educational Council in Oman is trying to aim at equipping young Omanis with the skills required to succeed in a knowledge-based economy (The National Strategy for Education of Oman, 2018). The widespread reform of education schemes in which Omanis are presently involved helps to warrant that the government sectors and the private sectors have an ample pool of merited prospective recruits graduating from full time studies (Mohammad, 2004). In accordance with Dhofar University (DU) Strategic Plan (2014 - 2019), the motto of the University is not only constrained to teaching, research, and community services but also the University standpoints powerful in the development of all areas: Social, economic, scientific and technological. This strategic vision focuses the DU at the lead of backing to the development of the Sultanate of Oman within the Expanse (DU, 2018). Alleviating the above decree, Dhofar University has a weighty role in supporting the far-reaching range of reforms through the groundwork/training of highly competent Omani students. This would aid them to enter the stimulating job arcade of future inherent within the certainties of the demands of international development and standards. The widely held students presently studying at DU are Omani students that have come from an educational background of highly teacher-dependent locale, limited exposure to English language inside and outside the classroom, low proficiency in English, unsupportive parents and teachers (Al-Mahroqi, 2018)

Faculty Mentor: Dr. Mohamed Hamdoun
Principal Investigator: Amira Safrar
Designation: Assistant Professor
Department: Management
College: Commerce and Business Administration
Project Title: The impact of personality traits on career aspirations of
business schools' students in Oman
Sector: Education and Human Resources



Abstract: Business studies are attracting a significant number of students wishing to pursue a professional career or establish their companies in numerous industries. In Oman, many students are interested in studying the different disciplines of the business field according to their ambitions. However, it is important to note that they differ in terms of personality characteristics and career aspirations due to various factors. In fact, the personality traits of students in business schools may meet or not their career aspirations.

STATISTICS



ABBREVIATIONS

DU-Dhofar University
VC- Vice Chancellor
DVC-Deputy Vice Chancellor
URB-University Research Board
RPI-Research Publication Incentive
CG-Conference Grant
TRC-The Research Council
FURAP-Faculty Mentored Undergraduate Research Award Program
CE- College of Engineering
CAAS-College of Arts and Applied Sciences
CCBA-College of Commerce and Business Administration
CL-College of Law
FP-Foundation Program

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