ASU Research Day

جامعة الشرقية
A'SHARQIYAH UNIVERSITY

1st ASU RESEARCH DAY

(Book of Abstracts)

5th March 2019

ASU Research Day

ASU First Research Day

Tuesday,5th March 2019
A'Sharqiyah University
Ibra, Sultanate of Oman

under the patronage of

Professor Fouad Chedid

Acting Vice-Chancellor of

A'Sharqiyah University

WELCOMING NOTE

ASU First Research Day was held on March 5th, 2019 at ASU campus in Ibra. The research day program consisted of three keynotes and 51 paper presentations scheduled into one main session and five parallel sessions, one of which was a student research poster session. The keynote speaker from TRC explained the new block funding program for research institutions; keynote speakers from SQU discussed recent results in the areas of miniaturized chemical-analysis systems and metacognitive strategies for promoting a growth mindset.

This booklet contains papers and posters that were presented at this research day. Moreover, the last pages of this booklet contain pictures from the closing ceremony which recognized distinguished contributions by students.

I would like to extend my sincere gratitude to the organizing committee and all the authors for making this research day a success.

Dr. Rayya Al Balushi
Chair of UREC

Organizing Committee

Dr. Rayya ABalushi	rayya.al-balushi@asu.edu.om	Assistant Professor – Basic Sciences, College of Applied Science	Chair
Dr. Ayman El Saleh	ayman.elsaleh@asu.edu.om	Assistant Professor - Electronics and Communication, College of Engineering	Member
Dr. Esam Al Lawati	esam.allawati@asu.edu.om	Assistant Professor - Psychologyical Counseling	Member
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Keynote Speakers

Dr. Salah Al Zadjali

Director of Health, The Research Council (TRC)

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Dr.Haider Ahmed Jaffar Al Lawati

Associate Professor, Department of Chemistry,

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ASU Research Day

ASU RESEARCH DAY PROGRAM

جامعة الشرقية
A'SHARQIYAH UNIVERSITY

TIME	ACTIVITY	PRESENTER	
9:00-9:05	Holy Quran	**Abdul Malik Al-Haimli** *ASU*	**Auditorium**
9:05-9:10	Welcome	**Prof. Fouad B. Chedid** *Acting Vice Chancellor*	
9:10-9:15	Short film about ASU		
	Guest Speakers		
9:15-9:55	TRC Programs	**Dr.Salah Al Zadjali** *Research Area Manager of the Health and Social Services, TRC.*	**Auditorium**
10:00-10:30	Future Directions in Miniaturized Chemical-Analysis Systems	**Dr.Haider Al Lawati** *Associate Professor Department of Chemistry, College of Science, Sultan Qaboos University.*	
10:30-11:00	Feedback or Feed Forward? - Metacognitive Strategies for Promoting A Growth Mindset Among Language Learners	**Dr.Alina Chirciu** *Senior Language Instructor, Center for Preparatory Studies, Sultan Qaboos University.*	
11:00-11:10	**Appreciation for Guest Speakers**	**Prof. Fouad B. Chedid** *Acting Vice Chancellor*	
11:10-11:30	**Coffee break & Posters Session**	**Multi-Purpose 1**	
11:30-12:00	How to Write a Project Proposal?	**Prof. Falah Alani** *ASU*	**Auditorium**
12:00-12:30	Academic research ethics	**Dr. Emad Hussein** *ASU*	
12:30-1:30	**Lunch break**		
	Parallel Session		
	Session - 1		
	Chair: Prof. Sam Wamuziri (Dean of College of Engineering, ASU)		
2:00-2:15	New trends in electronic computation	**Dr.Adnan Kabbani** *College of Engineering*	**CAS205**
2:15-2:25	The 5th generation wireless technologies (5G) enabling the 4th industrial revolution (4IR)	**Dr. Mahmoud Albreem** *College of Engineering*	
2:25-2:35	Can future smart cities powerup by 100% renewables and cyber secured- A Analytical Approach	**Dr. Mohamed Shaik** *College of Engineering*	
2:35-2:45	Introduction to Fractional Calculus and Some of its Applications	**Mr.Hameed Rehman** *Center for Language and Foundation Studies*	
2:45-3:00	Use and health effects of caffeinated beverages in Omani student	**Dr. Nasiruddin Khan** *College of Applied Science*	
	Session - 2		
	Chair: Prof. Nabil Sultan (Dean of College of Business Administration, ASU)		
2:00-2:10	Omani Adult Crying: Causes and Motivations	**Dr.Esam Al Lawati** *College of Arts and Humanities*	**CAS207**
2:10-2:20	Empowering Omani women through Digital entrepreneurship programs to boost Oman National Economy growth	**Dr.Abdul Hakim Mohamed** *College of Business Administration*	
2:20-2:30	Factors Affecting Omani Youth's Attitudes Towards Private Sector Employment in Sultanate of Oman	**Dr.Fadi Abdel Muniem** *College of Business Administration*	

TIME	ACTIVITY	PRESENTER	
2:30-2:40	Investigating online social media network acceptance factors in the tourism and hospitality industry in Oman	**Dr. Salim Amor Al-Hajri** *College of Business Administration*	**CAS207**
2:40-2:50	Causes and Effects of Omani Students' Learning Attitude (A case study in learning English)	**Mr. Aijaz Mohd Khan** *Center for Language and Foundation Studies*	
2:50-3:00	Conflicts in Decision Making: Applied Ethics	**Dr. Faizal N.M** *College of Arts and Humanities*	
	Session -3		
	Chair: Dr. Abdullah AL Tobi (Dean for College of Arts and Humanities, ASU)		
2:00-2:15	دلالات سيميائية في الرواية العُمانية	أ.يوسف المعمري	**CAS203**
2:15-2:25	رساله الطالب الجامعي	د.مصطفى بن محمّد شريفي	
2:25-2:35	الأرشيفات الرقمية الشخصية ودورها فى استرجاع المعلومات	أ.أيمن اسماعيل	
	Chair: Dr. Saleh Said Al Mamari (Acting Dean for College of Law, ASU)		
2:35-2:50	طرق حماية حق المؤلف من الانتهاك	أ.يعقوب الحارثي	**CAS203**
2:50-3:00	النفاذ المفتوح إلى المعلومات كنموذج للاتصال العلمي في المكتبات الجامعية	د.طارق الورفلي	
	Session- 4		
	Chair: Dr. Jamal Salah (Asst. Professor-Mathematics , College of Applied Science, ASU)		
2:00-2:10	Experimental study on the effect of cuttlefish ink (Sepia pharaonis) on body tissues & bone density of rats.	**Prof. Falah K. Al-Ani** *College of Applied Science*	**CAS206**
2:10-2:20	Synergistic effects of ultrasound with microwave shock as a new approach to improve nanotrappted of dextranase onto alginate gel	**Dr. Mohanad Osman** *College of Applied Science*	
2:20-2:30	Microbiological Analysis of Swimming Pools Water From Tourists Hotels in Al Sharqiyah Region	**Dr. Emad Hussein** *College of Applied Science*	
	Chair: Dr. Mohanad Osman (Acting Dean of College of Applied and Health Sciences, ASU)		
2:30-2:40	New approach to Riemann Hypothesis	**Dr. Jamal Salah** *College of Applied Science*	
2:40-2:50	Isolation, DNA Barcoding and Genetic conservation of native strains of freshwater microgreen algae of Oman –Phase-I - Sharqiyah governorates	**Dr. Jackson Achankunju** *College of Applied Science*	
2:50-3:00	Adding Value to Plant-Based Waste Materials through Development of Novel, Healthy Ingredients and Functional Foods	**Dr. Vandita Singh** *College of Applied Science*	
	Session-5		
	Chair: Dr. Khalid Al Jardani (Assistant Professor, Deputy Director of Quality Assurance, ASU)		
2:15-3:00	PPP Student Competitions		**Multi-Purpose 1**
3:30-4:00	**Closure and Award Ceremony**		**Auditorium**

TRC's Funding Program

Salah Al Zadjali

The Research Council , P.O.Box 92, Muscat 123, Oman

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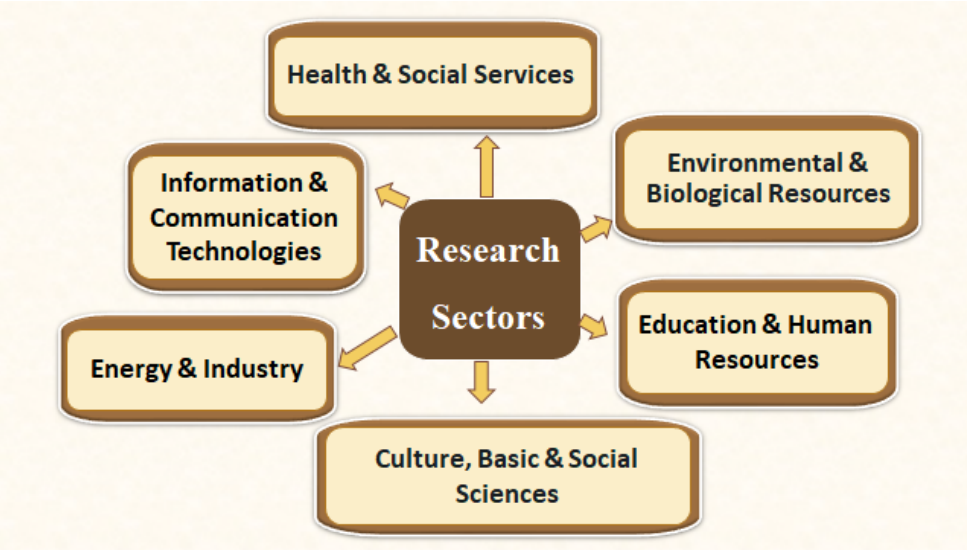
The Research Council (TRC) has announced a new funding program, The Block Funding Program (BFP), for research institutions. The BFP is a national research program adopted by The Research Council (TRC) in the Sultanate of Oman. This program allocates small-to-medium size research grants to support short-term and mid-term research projects in areas defined by researchers from academic and research institutions in Oman and serve the national research priority areas as well as TRC priority themes. The main goal of this program is to sustain and develop further excellent in research and to create a competitive economy through advanced and evidence –based research. To achieve this goal, TRC identifies three categories of grants namely, Research Grant (RG), Graduates Research Grant (GRG) and Undergraduates Research Grant (URG).

Tanfeedh is a government initiative that aims mainly at linking the strategies of the main vital sectors of Manufacturing, Tourism, Transport & Logistics, Mining and Fisheries to each other in order to diversify the national income resources and fulfill the objectives of the Ninth Five Year Development Plan 2016 – 2020. It also works towards a sustainable participation between the public and private sectors. Tanfeedh will be identifying the challenges and opportunities of the government projects and community by outlining an inclusive roadmap with the participation of the public to ensure better solutions and fulfillment of KPIs of the government.

This presentation will discuss TRC`s Funding Program and highlighting The Block Funding Programs and Tanfeedh.



Reference:

https://www.trc.gov.om

Future directions in miniaturized chemical-analysis systems

Haider A. J. Al Lawati

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Microfluidic is a technique in which channels of sub-millimeter dimensions are etched on a solid substrate to perform various analytical steps such as sample preparation, mixing, reaction, analytical separation, detection, signal evaluation and quantification. The use of a miniaturized platform consumes minute amounts of chemicals and reduces the cost of analysis. Additionally, microfluidic methods reduce analysis time and increase sample throughput.

Microfluidics still resides a lot in the lab as new technologies are being developed by scientists, but transfer from the lab to the markets will increase drastically in the next few years and many microfluidics devices will be made for non-professionals to perform some important and useful analysis by their own.
In this presentation, I will discuss the concept of several techniques that are originated from microfluidics and few aspects of future direction of this technology.

Feedback or feedforward?

-metacognitive strategies for promoting a growth mindset (Summary)

Alina Chirciu

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Feedback

• The provision of feedback to students-an indispensable part of an efficient higher-education environment (Hounsell, 2007)

Feedforward

• This feedback is timely and oriented towards future tasks (Hendry,White & Herbert, 2016)

Metacognitive strategies & Growth mindset

• Metacognition=knowledge, self-awareness and control over one's learning (Baird, 1990 in Cubucku, 2009)

• Growth Mindset=the belief that intelligence can be improved through hard work, strategies and scaffolding (Dweck, 2012)

Feedforward is the means to develop self-assessment and re flection strategies that would Change students mindset from a fixed, grade oriented to a growth, learning-focused one.

Students appreciate feedback, it is important for us, as educators to turn Feedback into feedforward, by giving students opportunities to self-assess and reflect on their learning. Mistakes and challenges are opportunities for growth.

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How to Write a Research Grant Proposal?

Falah K. Al-Ani

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The purpose of research is to discover answers to questions through the application of scientific procedures. Types of research are Survey study, Questionnaire study, Clinical study, Epidemiological study, Perspective study, Experimental study.

Any scientific research study should have a proper proposal in written form before it is actually carried out. It is like a blue print of a building plan before the construction starts. Common Components of a Research Proposal are: Title, Abstract, Background, Review of the Literature, Hypothesis, Objectives, Design and Methodology, Data Analysis/ Data Management. Timeline and Duration, Ethical Consideration, Expected Application, Conclusion/ Recommendations, References/ Bibliography, Budget/ Cost Effectiveness, Appendixes.

Academic Research Ethics

Emad Hussein

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Ethics is the philosophy of what is right and wrong. A term we know as academics and we all should follow it.Ethical Principals in Research are Honesty,Objectivit,Carefulness,Openness,Respect for IntellectualProperty,Confidentiality,Responsible Publication, Responsible Mentoring, Respect for colleagues,Competence,Legality,Animal Care.

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http://www.niehs.nih.gov/research/resources/bioethics/whatis/

Jeffrey Kovac Ph.D. (2015) Ethics in Science: The Unique Consequences of Chemistry, Accountability in Research, 22:6, 312-329, DOI: 10.1080/08989621.2015.1047709

Gregor Strle, Rok Benčin, Jelica Šumič-Riha, Rado Riha Scientific Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU)

Parallel Sessions

Session 1

New trends in electronic computation

Adnan *Kabbani*

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The continuous down-scaling of the minimum feature has led to exponential increase in the number of transistors per chip as well as higher performance and more power consumption. In keeping with this trend, new materials such as high-K materials were investigated and improved MOSFET structures have been introduced. Unfortunately, the aforementioned solutions remain temporary, due to physical limitations of CMOS technology. Consequently, a new design philosophy has proved to be necessary for further advancement. Numerous researchers have proposed replacing Von Neumann architecture with neural networks based paradigm that mimics the operation of the human brain. The proposed trend of computing is called the neuromorphic computation. This presentation will provide a review of the development of CMOS microprocessors and the emerging neuromorphic computation scheme.

The 5th generation wireless technologies (5G) enabling the 4th industrial revolution (4IR)

Mahmoud Albreem

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The Fourth Industrial Revolution (4IR) is the new industrial transition from the traditional industry of the 18th century. It is featured by an integration of technologies that are merging physical, digital, and biological advancements. 4IR is characterized by emerging technology breakthroughs in various dimensions, including robotics, 3D printing, artificial intelligence, big data analytics, fully autonomous vehicles, nanotechnology, the Internet of Things (IoTs), and fifth-generation wireless technologies (5G). In particular, 5G is envisioned as a promising enabler for 4IR.

In this presentation, several 5G-ralted topics will be discussed including the evolution journey of wireless technology over the past generations that leads to the transition towards 5G, the power of the 5G technology, and the 5G key features, technology drivers, challenges, requirements, roadmap, and timeline. This presentation will also cover the economic and commercial impact of 5G and its recent developments. The presentation is then concluded by highlighting what is beyond 5G.

Can future smart cities powerup by 100% renewables and cyber secured-A Analytical Approach

Mohamed Shaik Honnurvali[1], Naren Gupta[2], Keng Goh[2], Tariq Umar[1], Adnan Kabbani[1]

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A smart city main objective is to provide a better living for the citizens by managing the resources both in a sustainable and cost-effective way to benefit the people at maximum. , One of the key building factors of future smart cities is to generate its energy needs by clean renewables, the analytical approach results show that 37.5% countries in Asia & Pacific, 67% countries in Europe could reach 100% renewable energy generation by 2050. Some cities in North America and Canadian regions have already met the 100% renewable target. African countries could generate about 22% of its energy by 2030. Further, a solution in four steps is presented to achieve the 100% renewables generation in building our future smart cities by 2050. Considering such an advanced energy system in smart cities, there is a strong need to strengthen the cybersecurity. A strategy with priority objectives to achieve a rigid cybersecurity system in the smart cities is also discussed.

Keywords—100% Renewable energy (RE), Internet of Things (IOT), Greenhouse gases (GHC), Photovoltaics (PV), Research, develop & demonstrate (RD&D), Energy delivery systems (EDS).

Introduction to Fractional Calculus and Some of its Applications

Hameed Ur Rehman[1] and Jamal. Salah[2]

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[2]*Department of Mathematics, College of applied and health sciences, (E-mail: drjamals@asu.edu.om).*

Fractional Calculus basically emerges from classical calculus in the recent studies of Applied Mathematics. In the present sequel, we briefly introduce the fractional calculus and the recent progress in this field. "The Fractional Calculus" and some of its application towards the diverse and widespread field of engineering and other applied sciences. The origination and history of Integro-differential calculus and some of modern definitions of fractional calculus are included. The geometrical difference between the first order differentiation(d f(x)/dx) and semi-order (d^(1/2) f(x)/dx) differentiation and first order integration (If(x-)=∫f(x)dx) and semi-order (I^α f(x)=∫f(x)^(α-1) dx) integration for a certain polynomial function along with examples are included in the sequel. At the end of the presentation the authors contribution towards the application of this field is also shown.

Use and health effects of caffeinated beverages in Omani student

Nasiruddin Khan

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The increased use of caffeinated beverages and energy drink is posing threat to all ages and gender especially, younger adults. There is a lack of scientific evidence in Oman regarding caffeine and energy drink consumption. Our study aims to demonstrate the prevalence, pattern, knowledge and awareness, and side effects of caffeine intake among university students. This cross-sectional study including (N=365) apparently healthy male and female Omani university students aged 18-30 years, was carried out from February 2018-June 2018. A self-administered questionnaire with various sections was used to obtain information. The prevalence of caffeinated beverage consumption was commonly high among participants (97%). The males preferred nescafe, coffee (both $p<0.001$), espresso ($p<0.022$), and soda ($p<0.008$) while females consumed more tea ($p<0.029$). The awareness about negative health impact of caffeine intake was significantly higher in females rather than males ($p<0.002$). The overall prevalence of energy drink consumption was 42.1% (n=149), and higher in males (75%, $p<0.001$). More males consumed 3-5 and >5 cans/day while females used 1-2 cans/day. The starting age of energy drink use was higher in females (16-20 years (51.1%)) as compared to males (11-15 years (33.3%)). Females were more aware of caffeine as energy drink ingredient ($p<0.036$) than males. The major source of information about enery drink was family and friends (58.3%). Red Bull was the commonly used brand (55.5%) among participants. Common reasons for high energy drink consumption were energy boost (68.4 %), taste (62.9%), reduce fatigue (52.1%), and better performance (47.3%). Females reported breathing problem, and abnormal heart beat ($p<0.004$, 0.054, respectively), while more males reported irritability than females ($p<0.052$). The prevalence of caffeinated beverage and energy drink consumption is high among participants. The awareness, and knowledge among university student is not satisfactory and needs immediate action to avoid excess use of such consumption.

Keywords— Energy drink, Caffeinated beverages, awareness, knowledge, Oman.

Session 2

Omani Adult Crying: Causes and Motivations

Esam Al lawati

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Crying is physiological and psychological condition and it occurring with organism whether voluntary or involuntary. In current research, researchers shed light on the process of crying with humans and for both of them male and female. The sample have ranged and for both male and female between 15 years to 25 years. The sample consisted school and high education students in addition employees from public and private sector. The objectives of this research was to know the differences between male and female in the number of times crying and its relationship to their age. Also this research aim to knowing the reasons of crying with humans either was male or female as well as to knowing types of tears. Finally, researchers highlighted the emotional crying with Omani adults and analyses reasons of it. The result shows that Omani females cry more than males crying between 15 to 17 years (binging of adolescent Stage) old but with the onset of adulthood, case is reflected, where males increases in the number of time crying than females, specifically from age 18 to age 22 or 23.This is due to the fact that males begin their university life and begin with the personal, emotional and social responsibility which push males to the difficulty encountered thus showing signs of sadness and oppression and begin shedding tears but in isolation from the social world around him. Then, after 23 years old and above, females start to increase comparing with males and this is due to feminine nature that tend to the passion and the incapability to control their emotions compared to males which their nature tend to stay away from passion as much as they can

and reliance on the mind and thinking in solving the problems they face it.

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Empowering Omani women through Digital entrepreneurship programs to boost Oman National Economy growth

Abdul Hakim Mohamed

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We live in a digital era, the era of internet of things, where the automation and the digitalization of every aspect of our life very much are there. This is very evident in business, healthcare, tourism, industry, education and many other sectors. Even in our social life, we rely heavily on technologies for shopping, social communication, commuting (navigation devices), learning …etc.

Oman is one of the leading countries in the Middle East to adopted eGovernment systems. This was initiated by Sultan Qaboos in 2006 when his Majesty approved the establishment of the Information Technology Authority (ITA) to implement national IT infrastructure and supervise the implementation of the digital eOman strategy. Along with the e-Government services, the initiative also included the setup of unified e-Government architecture, broadband services, customer-centric e-Government services, easy access to timely and relevant public information accessible, empowering consumers with IT skills and knowledge through awareness and training campaigns. The initiative also stressed the need to provide a suitable training program for various stakeholders.

This was further strengthened by the establishment of Oman Blockchain club under the patronage of his highness Sayyid Taymoor bin Tariq Al Said, The Blockchain company was created specifically to raise the awareness and injecting the mo

mentum and stress the digital transformation of Oman society- Omani women are considered an integral part of the society, however, like many Arab countries their contribution into the economic growth as entrepreneurs are still lagging behind, they are still perceived as second to the man. This could be due to many social and cultural or business entry barriers, however, through the efficient use of technologies Omani women could lead and excel and become successful businesswomen.

This project proposal focuses in studying factors that facilitate the reformation of the entrepreneurship programs in universities to be escalated into the next level '**Digital entrepreneurship**' by careful and well-planned integration of cloud and web services to empower Omani women and be part of the growth of Omani economy.

To achieve this, many factors need to be assessed and carefully evaluated and analyzed in order to achieve the maximum output. Mainly we will:

a) Study the readiness of the Omani women to be part of the digital transformation,

b) Assess the readiness of Oman's digital infrastructure to support this transformation.

c) Assess and evaluate the effectiveness of Omani universities' entrepreneurship programs and how do they feed into a vision of digital transformation process.

Factors Affecting Omani Youth's Attitudes Towards Private Sector Employment in Sultanate of Oman

Fadi Abdel Muniem Abdel Fattah; Abrar AL-Alawi; Rahma AL-Masroori

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The rapid economic growth in the oil and industrial sector in Oman had brought significant growth of migrant workers in the private sector (Al-Hasani, 2015). Many social, economic, and educational factors have formed high unemployment rate between Omani youth regarding the government sector sufficiency, and private sector reliance on migrant's workers in rates exceed the number of native workers (Al-Hasani, 2015; Muneef, 2016). Unemployment one of the essential cases facing Omani youth is because of social perception of youth's working in technical and mechanical jobs, and the cost of migrant labour that compete the national labour, and the mismatching between educational outputs and labour market demand (Radwan, 2014).

The important of this study is in understanding the attitude of Omani youths to work in the private sector in light of the annually growing number of graduates, and the limited capacity of government employment, and through the results of previous studies that is related to employment policies in private sector and make it suitable to youths to contribute to change their attitude towards working in private sector.

Consequently, a better understanding of the perception of Omani youth will potentially be beneficial to the decision-makers in governmental who are responsible for hiring and open new majors. Also, the outcomes of this research will be used as guidance to the universities inside Oman to focus on new majors which in its turn reflect to fill up the market needs.

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Investigating online social media network acceptance factors in the tourism and hospitality industry in Oman.

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In the emerging hospitality industries such as that of Oman, companies can market their products and services through the Social Media Networks (hereafter SMN) and engage customers to identify their requirements online. Oman recognizes the benefits of SMN in the tourism and hospitality industry and it has made major efforts to ensure the success of this newly introduced industry like its neighboring country the United Arab Emirates (hereafter UAE). Though, the hospitality industry is of major importance to Oman's economy, the Omani hospitality industry continues to conduct their transactions using traditional methods. Understanding the influence of accepting such an innovation in hospitality industry in Oman raises a fruitful research question to investigate. Therefore, this research study aims to investigate the influence of SMN Acceptance in the tourism and hospitality industry in Oman. To achieve this objective, the study uses a survey questionnaire to 200 respondents that have visited Oman recently, where 182 responses were properly filled and returned. The collected data were analyzed using structural equation modeling (hereafter SEM). The findings reveal that respondents are expressing satisfaction in their experience and they intend to continue using these social networks for tourism purposes. On the other hand, the findings reveal that the major variables that dominate their decision are subjective norms and perceived ease of use.

Causes and Effects of Omani Students' Learning Attitude

(A case study in learning English)

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There is no denying the fact that Oman is a young nation given the commencement of educational developments initiated by His Excellency Sultan Qaboos after he took over the responsibility of developing this beautiful country.

The 70s and 80s witnessed the opening of hundreds of new schools under the Ministry of Education throughout the length and breadth of Oman with English as one of the compulsory subjects. The message was clear. The government realizes that real development was not easy without the English language.

After four decades, we can realise that most of Omani students are faced with serious learning difficulties which results in faulty pronunciations, poor sentence structures and poor vocabulary in speaking. In writing, however, the problems are more serious.

Based on my Public Speaking classes in my earlier job, which involved both speaking and writing of the language, I have had the opportunity to collect data in the form of hundreds of audio files and written samples on various topics.

Analysis of the above data presented the following problems (audio files will be played if the time allowed):

1.Frequent assimilation of some consonants e.g. /g/ & /j/ and /f/ & /v/

2.Subject-verb agreement

3.Use of plural number with singular noun and vice-versa

Further study of the society structure and basic education systems in the country revealed the following drawbacks:

1.Use of Arabic speaking teachers for teaching English in the MOE schools

2.Abence of practice in teaching grammar, vocabulary, and pronunciation

3.Low level of students' motivation

Conflicts in Decision Making: Applied Ethics

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Ethics explain how we decide whether an action is moral or immoral and what standards we used to reach that decision. Applied ethics examines specific controversial moral issues. In the contemporary period, applied ethical issues are further divided into subgroups such as medical ethics, business ethics, technology ethics, etc. Surprisingly more ethical choices and moral problems takes place in the context of professions like, health care, business affairs, technological advancements, environmental concerns, legal counselling, etc.

Ethics as always relevant is now relevant in a new way that are concerned with decision making process related to moral disagreements and justification of moral choices. Thus it is necessary to penetrate further into the fundamental questions, concepts and theories applied in controversial moral issues and ethical dilemmas.

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Session 3

دلالات سيميائية في الرواية العُمانية

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يتناول هذا البحث ثلاث روايات عُمانية وهي: رواية بن سولع لعلي المعمري، ورواية نارنجة لجوخة الحارثي، ورواية سندريلات مسقط لهُدى حمد، وجاء اختيار الروايات الثلاث بسبب ما حققته من مكانة مهمة في الوسط النقدي/الثقافي العُماني والعربي، وقد نالت روايتا بن سولع وسندريلات مسقط على جائزة أفضل رواية من الجمعية العُمانية للكتاب والأدباء لعامي ٢٠١١م و ٢٠١٧م، كما فازت رواية نارنجة بجائزة السلطان قابوس للثقافة والفنون والآداب. وتكشف الروايات الثلاث مراحل النمو التي وصلت إليها الرواية العُمانية في طريق تحوّلها إلى لغة سردية تدمج فيه الذاتي بالآخر في قالبٍ أدبي عالمي؛ حيثُ جاء عنوان البحث باسم: (دلالات سيميائية في الرواية العُمانية)، كما أن الدراسة تكشف عمق الدلالة السردية وعلاماتها المُضمرة

الكلمات المفتاحيّة باللغة العربية: رواية/سيمياء/دلالة/عُمان/علامة /مُضمر/ثقافة/بن سولع /نارنجة/ سندريلات مسقط/علي المعمري/جوخة الحارثي/هُدى حمد

رسالة الطالب الجامعي

مصطفى بن محمَّد شريف

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تنطلق المداخلة من مبدأ أداء الأمانة التي كلَّف الله بها الإنسان، وأهمية الطالب الجامعي في المجتمع. وتركِّز على ضرورة أن يعرف الطالب نفسه ومميِّزات هويته وشخصيَّته. وتوجِّهه إلى خطوات عملية عليه أن يسير وفقها، ليؤدِّي رسالته على أكمل وجه، ومن ذلك: أن يملأ قلبه بالإيمان، وأن يكون ربَّانيًّا، ويتَّخذ الرسول صلَّى الله عليه وسلَّم قدوته العليا، ويذر القدوات المزيَّفة.

وتركِّز المداخلة على توجيه الطالب إلى معرفة دوائر مسؤولياته، وتحديد أهدافه بدقة وواقعية، والإعلاء من اهتماماته، وتَرْك سفاسف الأمور، وتعلُّم طرق التخطيط والتنفيذ، وتطوير مهاراته وإبداعاته، وحسن استغلال وقته، وشغل نفسه بما يفيد، واختيار الصحبة الصالحة، والنظر إلى الحياة بموضوعية.

وتحثُّ الطالب على النقد الهادف البنَّاء، وعلى إنجاز مشاريع مفيدة في عمل جماعي منسَّق، والحذر من التسويف، والعمل بجدِّيَّة دون انتظار الشكر من أحد، مع الاستفادة من النقد الموضوعي، وزرع الثقة والتفاؤل في النفس، والحذر من اليأس والملل، وضرورة القراءة الهادفة ، وتقويم المسيرة.

طرق حماية حق المؤلف من الانتهاك

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المصنف هو كل انتاج مبتكر سواء كان انتاج أدبي أو فني أو علمي أيا كان نوعه أو طريقة التعبير عنه أو أهميته أو الغرض منه. حقوق المؤلف المترتبة على المصنف هي حقوق معنوية و حقوق مالية

الحقوق المعنويه هي نسبة المصنف لمؤلفه و بالطريقة التي تناسبه ومنع التحريف أو التشويه أو التعديل او المساس بشرفه وسمعته.تباشر الوزارة هذه الحقوق في حال عدم وجود خلف,وبطلان التصرف سواء بأجر أم تبرع.اما حقوق المؤلف الماليه هي النسخ,البيع,الترجمة والتعاقد.

يباشر حقوق المؤلف الادبية كلا من الخلف العام وهو الورثة, وزارة التجارة و الصناعية و الإدعاء العام

آلية حماية المصنف من الانتهاك : رفع دعوى قضية تتضمن – سحب المصنف – عدم توزيعه- التعويض عن الضرر و تقديم شكوى للإدعاء العام على إعتبار ان الانتهاك يعتبر جريمة يعاقب عليها بعقوبة تصل السجن لمدة

الأرشيفات الرقمية الشخصية ودورها في إسترجاع المعلومات

أيمن اسماعيل

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تقوم الأرشيفات بدورا هام فى حياة الأمم والشعوب فلا توجد دولة على الخريطة الا ولديها أرشيف لأنه يمثل للدولة الذاكرة والهوية والتاريخ ومن ليس له ذاكرة ليس له تاريخ ومن ليس له تاريخ ليس له لا وجود بين الأوطان .والأرشيفات نستفيد منها ليس للماضى فقط وإنما للحاضر ولرسم خطانا فى المستقبل من خلال الدروس المستفادة منه والخبرات السابقة التى نستمدها من التاريخ المدون بتلك الأرشيفات بصرف النظر عن انه تاريخ حديث أو قديم .فالأرشيفات تذخر بالتراث فى كل أنواع العلوم المختلفة سواء كانت علوم اجتماعية أوسياسية أواقتصادية أو غير ذلك من العلوم المتعددة.ومن ثم يتناول هذاالبحث دور الأرشيفات الرقمية الشخصية ومدى تأثيرها على المجتمع وكيفية استخدامها فى البيئة الاكاديمية ومدى مساهمتها واتجاهها العام نحو التأليف والنشر العلمى وكيفية حفظ المواد العلمية والمبادىء التعليمية لمساعدة الباحثين على الادارة الفعالة لمقرراتهم العلمية وتنظيمها وحفظها خلال حياتهم الاكاديمية ، وذلك من خلال المؤسسات المتعددة بالدولة ومن أهمها الجامعات والمعاهد العلمية ومراكز البحوث لما تضم بين حرمها الجامعي من علماء وباحثين وطلاب نابغين ومجالس علمية ولجان ومااإلى ذلك مما يثرى عملية التعريف بالباحثين على المستويات المحلية

والاقليمية والدولية وذلك بنشر ثقافة وعلم وفن الأرشيفات الشخصية من خلال الآتى :

الأهمية - البناء – الايجاد – الحفظ - التنظيم - التطبيقات والخدمات - نظم الاسترجاع – الأرشفة الرقمية - الأمن والحماية .

اذ تعتبر الأرشيفات الرقمية الشخصية - كمصطلح حديث – كدعم أكاديمى وذلك بانشاء المستودعات الرقمية للمحتوى العلمى فضلا عن انها ستعتبر بعد ذلك أحد أهم مصادر المعلومات التى يستفيد المجتمع العلمى منها فى المسار العلمى والاتجاهات نحو التأليف والنشر وقياسات المعلومات ومدى تطبيقها فى البيئة الاكاديمية.

النفاذ المفتوح إلى المعلومات كنموذج للاتصال العلمي في المكتبات الجامعية

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تهدف هذه الدراسة إلى إبراز أهمية النفاذ المفتوح إلى المعلومات العلمية والتقنية في عمل المكتبات الجامعية من خلال طبيعة الخدمات التي يمكن أن يوفرها هذا النموذج من الاتصال العلمي كنظام بديل للنظام التقليدي، القائم على ربط الوصول إلى المعلومات بقيود مادية وقانونية. كما ترمي هذه الدراسة إلى توضيح مزايا النفاذ المفتوح وذلك وانطلاقا من أهم مبادرات النفاذ المفتوح وأدواته مع إبراز أهميته في دعم حركة البحث العلمي.

إذ يمكن للمكتبات الجامعية الاستفادة من حركة النفاذ المفتوح للمعلومات العلمية والتقنية لتقديم خدمات افتراضية جديدة كما قامت به عديد المكتبات الجامعية في الدول الأوروبية و الأمريكية. حيث تصبح المكتبات الجامعية، بهذا النمط الجديد من الاتصال العلمي، ليست فقط فضاء لتوفير المعلومات و إنما كذلك ناشرا و منتجا لهذه المعلومات عن طريق خدمات جديدة توفرها مما يساهم في تثمين دور المكتبات الجامعية في تطوير البحث العلمي.

الكلمات المفتاحيّة :

النفاذ المفتوح إلى المعلومات العلمية والتقنية / خدمات افتراضية / المكتبات الجامعية / الاتصال العلمي

Session 4

Experimental study on the effect of cuttlefish ink (Sepia pharaonis) on body tissues & bone density of rats.

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Cuttlefish ink has been widely used in Omani traditional medicine in enhancing healing of fractured bones, as a treatment for asthma, and to treat people who suffered from general weakness. To evaluate the effectiveness of cuttlefish ink in treatment these condition, experiment was designed using rats as experimental model. The project composed of two plans. The first part dealt with the distribution of a questionnaire of 32 items on 100 people used to use cuttlefish for treatment. The questionnaires were distributed on 100 people including 5 Governorates and 11 provinces of the Sultanate of Oman. The second part dealt with the use of rats as experimental model. A total of 10 healthy rats were used in this study. The rats were divided into two groups of 5 rats each. Group one included 5 rats received 0.3 ml of the liquid cuttlefish ink extract intraperitoneally at 1, 7, 14, and 28 days. Group 2 included 5 rats that selected randomly and received 0.3 ml of normal saline intraperitoneally at 1, 7, 14, and 28 days to serve as control. Blood was collected into tubes 35 days following treatment. Calcium, phosphorus and immunoglobulin IgG, IgA, IgE and IgM were determined using ELISA. All rats were humanely sacrificed and dissected. Tissues from the liver, heart, brain, kidney and spleen were collected from all mice of both group and preserved in 10% buffered neutral formalin and paraffin sections, 6 m thick, were prepared by standard histopathology procedures and stained by haematoxylin and eosin (H&E) stain. Femur bones and knee joints of the rats of both groups were subjected to X- ray scan examinations to find out the effect of ink on bone density or any pathological changes. Results of the questionnaire survey showed that Omani people are using cuttlefish ink for enhancing bone healing. Also results of the experimental studies on rats showed the presence of pathological changes in the tissues of rats inoculated by cuttlefish ink. Conclusion was made that cuttlefish ink can be used in proper doses to enhance bone fracture healing. But higher dose may have side effect on body tissues especially the kidney.

Figure 1: Ink prepared from cuttlefish by traditional way of Omani people.

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Synergistic effects of ultrasound and microwave shock as a novel approach to improve Na-no-trapped of dextranase onto alginate gel

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In this research work, we investigated the synergistic effect of ultrasound and microwave irradiation shock (US/MI-S) as a novel approach to improve Nano-trapped of dextranase onto alginate gel. Effects of US/MI-S treatment on loading efficiency and immobilization yield of dextranase enzyme onto calcium alginate beads were investigated. The microstructure of immobilized enzyme was characterized by FT-IR spectra and SEM. Furthermore, the recyclability and enzyme kinetic parameters of immobilized enzymes prepared with and without US/MI-S treatment and that prepared with ultrasonic irradiation (US) and Microwave shock (MI-S), were compared with that of free enzyme. The maximum loading efficiency and the immobilization yield were observed when the immobilized dextranase was prepared with US (40W at 25 kHz for 15 min) combined with MI-S of 60 W at shock rate of 20 sec/ min for 20 min, under which the loading efficiency and the immobilization yield increased by 97.32 % and 82.15 %, respectively, compared to immobilized enzymes prepared without US/MI-S treatment. Vmax, KM, catalytic and specificity constants values for immobilized enzyme prepared under US/MI-S treatment were higher than that for the immobilized enzyme prepared with MI-S treatment, indicated that, combination of ultrasound and microwave shock has improved the catalytic kinetics activity of immobilized dextranase at all the reaction conditions studied. Compared with immobilized enzyme prepared with US and MI-S, the immobilized enzymes prepared with US/MI-S method exhibited a higher thermal stability and recyclability, and lower activation energy, which, illustrating the effectiveness of the US/MI-S method. These results indicated that, the synergistic effect of ultrasound and microwave shock could be an effective method for improving the immobilization of enzymes in organic polymers.*

Microbiological Analysis of Swimming Pools Water From Tourists Hotels in Al Sharqiyah Region

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Bathers release bacteria in swimming pool water, but little is known about the fate of these bacteria and potential risks they might cause. Therefore, samples were collected from eleven outdoor and indoor swimming pools. This study provides a survey of bacterial quality of water from swimming pools in Oman. A total of 22 water samples were collected from 11 outdoor swimming pools in in the selected Al Sharqiyah region (Ibra, Sur, Al-Ashkharah and Sinaw) between January and August 2018 and analyzed for total aerobic plate count (TPC), Escherichia coli, coliforms, and relative abundance of bacterial families based on metagenomic analysis. The heterotrophic bacterial load ranged between 0 in some of the swimming pools and 105 CFU/ml in others. 30% of the swimming pools had a bacterial load within acceptable limits (≤2 × 103 CFU/ml), whereas 70% of the swimming pools were highly contaminated in a value exceeding the standards of recreational water quality. Although, only four swimming pools show positive results for coliforms and negative result for the presence of E. coli in all pools, the total plate count and the metagenomic analysis suggested the presence of heterotrophic bacteria which are often indicated in opportunistic infections.

"New approach to Riemann Hypothesis"

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The distribution of such prime numbers among all natural numbers does not follow any regular pattern, however the German mathematician G.F.B. Riemann (1826 - 1866) observed that the frequency of prime numbers is very closely related to the behavior of an elaborate function called the Riemann Zeta function . The nontrivial zeroes of Zeta function have ½ as their real part.

This has been checked for the first 1,500,000,000 solutions. A proof that it is true for every interesting solution would shed light on many of the mysteries surrounding the distribution of prime numbers.

The célèbre Riemann Hypothesis remains unsolved since it was introduced in 1859. Miscellaneous approaches have been considered without any exact and complete proof. Furthermore, some equivalent statements have been proved. In this work, we consider the famous Robin inequality and attempt to figure out a connection to the theory of univalent functions by the means of Koebe function.

Isolation, DNA Barcoding and Genetic conservation of native strains of freshwater microgreen algae of Oman –Phase A'Sharqiyah governorates

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Microalgae being simple photosynthetic organisms have immense potential to synthesize and store many high value substances such as carbohydrates, lipids, proteins, pigments and other metabolites. They have been used in human nutrition for hundreds of years. Countries like Chili, Japan, Mexico and Taiwan have been using microalgae as a source of nutrients like proteins and fats and even as a delicacy in their diets. Besides capturing CO_2, microalgae remediate waste materials like heavy metals and are used in phytoremediation. They are considered as biological indicators of water pollution and used for monitoring water bodies. Microalgae furnish an important source of nutrition for aquaculture, either directly as live feed or as an added source of basic nutrients and supplements. Therefore, microalgae could be useful in producing aqua-feed, fine bio-chemicals like chlorophyll, carotenoids besides the potential to be used as a feedstock for biofuels.

Preliminary explorations of the water bodies show the presence of many potential species of microalgae. However, to date, extensive and systematic exploration of freshwater bodies for the Micro-algal species of has not been conducted in Oman.

The current dramatic changes in the global climate, may adversely affect the ecosystems and such tiny and highly sensitive organisms like microgreen algae may disappear even without being noticed of their existence. Therefore the current project is a region-wise exploration for the occurrence of green microalgae in the inland water bodies such as *Falages, ponds, wadis,* etc.. We believe that this work is significant not only in uncovering the unexplored and potential species diversity of microgreen algae of the region but also the pioneer step towards the genetic barcoding and conservation phycodiversity of Oman.

Adding Value to Plant-Based Waste Materials through Development of Novel, Healthy Ingredients and Functional Foods

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Many by-products are generated from the harvest of field crops and production of processed foods. By adopting food processing technologies, these by-products could be used to prepare new, healthy ingredients and Functional Foods. These plant based wastes consist of many useful components such as bioactive compounds, cellulose, lignin, pectin etc. Most of the waste is discarded which is a serious threat to the environment (1). In the startup research project, our main focus is to increase the commercial value of plant-based, postharvest waste materials, high in dietary fiber and/or polyphenols such as dates by-product, oranges by-products by reprocessing into healthful food ingredients (2,3).

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Poster Presentations

Design and Simulation of Grand Mall Traffic Signal Junction in Muscat City by Obtaining an Intelligent Traffic System Using Artificial Neural Network Approach

Omar Salim Abdallah Al-Maskari

A'Sharqiyah University, ,Ibra, 400, Sultanate of Oman

Traffic flow problems in Muscat city are acceptable in somehow, but there are areas where traffic flow is to be considered as a significant traffic issues. The area of concerns is between Algubrah and grand mall junction, included the commercial area in both sides. The objectives of research are to study the flexibility of dynamic traffic flow on this area. Research aims first to implement an intelligent traffic system in the area of concerns by adopting a sensitized traffic signals to optimize dynamic traffic flow and second design a multistory car parking lots as automobiles collecting point to facilitate the overall traffic flow in this area.

The of concept of ITS is that a controller will work as a decision maker which decide when the traffic light turn red. The input data should provide by a sensor that send a data of traffic queue to the controller. Based on code that was pre-programmed, a controller will manipulate the data and transfer it as an outcome which is known as a decision.

Factors Affecting Omani Youth's Attitudes Towards Private Sector Employment in Sultanate of Oman

Abrar Mohammed Mubarak AL-Alawi,Rahma Saleh Hamed AL-Maroori

A'Sharqiyah University, ,Ibra, 400, Sultanate of Oman

The rapid economic growth in the oil and industrial sector in Oman had brought significant growth of migrant workers in the private sector (Al-Hasani, 2015). Many social, economic, and educational factors have formed high unemployment rate between Omani youth regarding the government sector sufficiency, and private sector reliance on migrant's workers in rates exceed the number of native workers (Al-Hasani, 2015; Muneef, 2016). Unemployment one of the essential cases facing Omani youth is because of social perception of youth's working in technical and mechanical jobs, and the cost of migrant labour that compete the national labour, and the mismatching between educational outputs and labour market demand (Radwan, 2014).

The important of this study is in understanding the attitude of Omani youths to work in the private sector in light of the annually growing number of graduates, and the limited capacity of government employment, and through the results of previous studies that is related to employment policies in private sector and make it suitable to youths to contribute to change their attitude towards working in private sector.

Consequently, a better understanding of the perception of Omani youth will potentially be beneficial to the decision-makers in governmental who are responsible for hiring and open

new majors. Also, the outcomes of this research will be used as guidance to the universities inside Oman to focus on new majors which in its turn reflect to fill up the market needs

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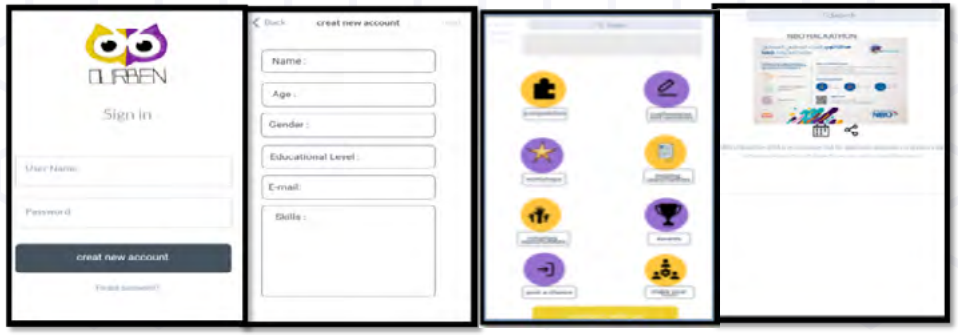
Durbene

Maryam AL-Mughairi ,Ashwaq AL-Ghafri ,Buthaina AL-Farsi ,Asila AL-Amri Ahmed Al-balushi

College of applied and Health Sciences, A'Sharqiyah University, Ibra, 400, Sultanate of Oman

Durbene application is combines of many things like events, competition, workshops, prizes, and profession in one place. Problem is: Unable to access ads or arriving late '' when finish the time for register ''. Advantages of Durben are: Easy to use, clear classification, Spread the spirit of challenge among Yonge people, creating an environment that is intellectually efficient.



Marketing plan:

1. Oral marketing ,2. Web marketing, 3. Social media.

Target population:

Institutions that offer these opportunities (educational, voluntary and others) and those who meet the conditions off opportunity.

Public swimming pools. Is it Safe for swimmers?

Emad Hussein, Sara Al Shibli, Alya Ali

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Bathers release bacteria in swimming pool water, but little is known about the fate of these bacteria and potential risks they might cause. Therefore, samples were collected from eleven outdoor and indoor swimming pools. A total of 22 water samples were collected from 11 outdoor swimming pools in in the selected Al Sharqiyah region (Ibra, Sur, Al-Ashkharah and Sinaw) between January and August 2018 and analyzed for total aerobic plate count (TPC), Escherichia coli, coliforms, and relative abundance of bacterial families based on metagenomic analysis. The heterotrophic bacterial load ranged between 0 in some of the swimming pools and 105 CFU/ml in others. 30% of the swimming pools had a bacterial load within acceptable limits (≤2 × 103 CFU/ml), whereas 70% of the swimming pools were highly contaminated

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Caffeine and Energy drink: Prevalence, awareness and health effects among Omani university students

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Over the past decade, reports confirm the high consumption of caffeine and energy drink particularly among young and adolescent population in many parts of the world including middle east [1,2]. Till date there is no such study present in Oman demonstrating detailed information about caffeinated beverages and energy drink intake in young students. Hence, our present study aims to report the prevalence, awareness, and health side effects of caffeinated beverages and energy drink consumption among university students.

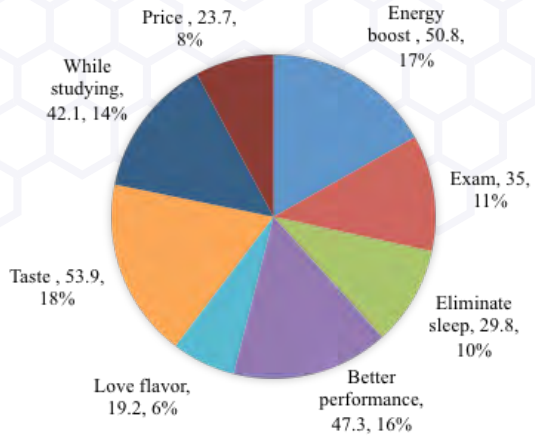

Fig 1: Motivational reasons for the consumption of energy drinks among participants

Worryingly, in spite of having awareness about caffeine, our present study reported high consumption among students. The most common health side effects among students were headaches, insomnia, increased urination and heart palpitation.

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The traditional washing powder (petrochemical) and its natural alternative from Omani plants

Abdul-Malik Juma Hashil al Haiml, Marwa Salim Al-Kathiri, Noura Abdul-Rahman Al-Kaabi, Azza Mohammed AL-Kindi

College of Applied and Health Sciences, A'Sharqiyah University, Ibra, 400, Sultanate of Oman (E-mail: abdulmalik.alhaimli@asu.edu.om)

The aim of the study was to find alternatives to traditional washing powders from the environment with similar or greater effectiveness in order to reduce the environmental and human damage caused by these powders. Where the results showed that citizens use these powders frequently without knowing the damage, for example Tide powder for washing. When they chose to use an alternative product, about half responded to this because they were accustomed to the traditional product. But after clarifying that the traditional product has health damage such as skin sensitivity, respiration and others, and that the alternative product is environmentally friendly and human and its price is competitive to the price of the product in the market and similar effectiveness in cleaning clothes, the majority of them accept the product.Where the alternative product extracted from the Omani plant called (soap plant), the effectiveness of 80% of the cleaning process of clothing. Where the plant underwent several different conditions in extraction through our practical experiments. The highest efficiency was achieved in the process of cleaning when drying the plant before extraction, which is in water. This activity can develop to a greater proportion by adding some natural enhancers such as plant-derived enzymes.

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Water quality in Al Hoota cave

Rawabi Alhajri

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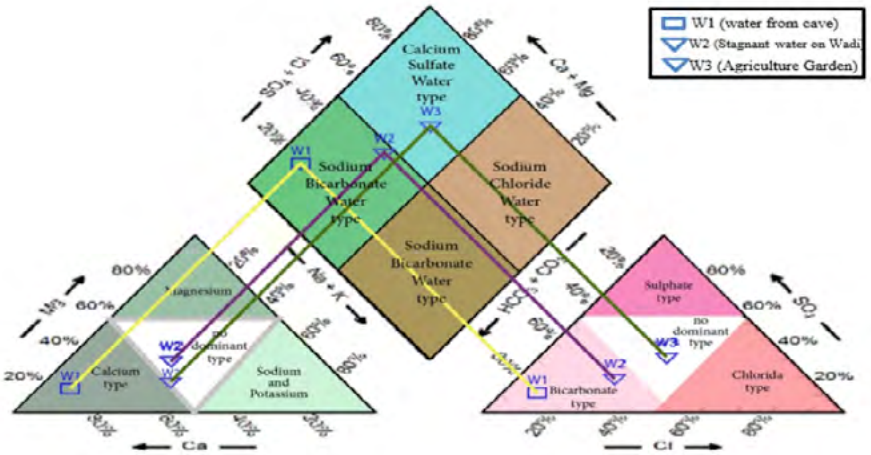
Groundwater is the most important source of water in Sultanate of Oman. The groundwater is available as unconfined, confined and karst aquifers.Karst is a topography formed from the dissolution of soluble rocks such as limestone, dolomite, and gypsum.Water samples from Al Hoota cave and environs includes data of WAD-03 from Ministry of Municipalities and water resources (Table 1) .Analysed samples at Food and Water Laboratories Centre, MRM & WR, . The parameters measured include among others the cation Ca2+, Mg2+, Na+, the anions HCO32, and SO42-, pH, total hardness and total alkalinity. Some of the applications which were used are ArcMap and AqQa . Al Hoota cave is located in the Hajar mountains in the northernmost part of Oman, in Al Dakhliyah, Alhamra . Al Hoota cave has two large entrances, Al Hoota entrance as its inlet and Al-Fallah as its outlet (Figure 1). The length of the cave system is slightly less than 5 km .

Water types analyzed



Omani Adult Crying Causes and Motivations.

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[2]*Department of Computer Sciences , Mazoon College, Muscat, Oman*

Crying is physiological and psychological condition and it occurring with organism whether voluntary or involuntary. In current research, researchers shed light on the process of crying with humans and for both of them male and female. The sample have ranged and for both male and female between 15 years to 25 years. The sample consisted school and high education students in addition employees from public and private sector. The objectives of this research was to know the differences between male and female in the number of times crying and its relationship to their age. Also this research aim to knowing the reasons of crying with humans either was male or female as well as to knowing types of tears. Finally, researchers highlighted the emotional crying with Omani adults and analyze reasons of it. The result shows that Omani females cry more than males crying between 15 to 17 years (binging of adolescent Stage) old but with the onset of adulthood, case is reflected, where males increases in the number of time crying than females, specifically from age 18 to age 22 or 23.This is due to the fact that males begin their university life and begin with the personal, emotional and social responsibility which push males to the difficulty encountered thus showing signs of sadness and oppression and begin shedding tears but in isolation from the social world around him.

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Dicopper(I) Complexes Incorporating Acetylide-functionalized Pyridinyl-based Ligands for Photovoltaic Applications

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A series of dinuclear Cu(I) complexes 1-10 have been synthesized and characterized (Figure 1). Single crystal X-ray structure analysis confirmed rhomboid dimeric structures for complexes 1, 2, 4, and 5, and a polymeric structure for 6. Cu complexes 1-6 showed oxidation potential responses close to 0.9 V vs. Fc0/+ which are most likely associated with the ligand oxidation. Preliminary photovoltaic (PV) results of these new materials indicated moderate power conversion efficiency (PCE) in the range of 0.10-1.56% in dye-sensitized solar cells (DSSCs). The highest PCE was achieved with complex 10 bearing the sulfonic acid anchoring functionality.

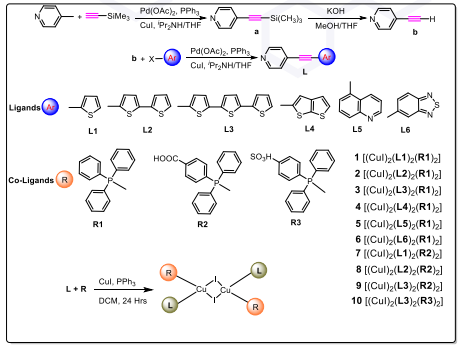

Figure 1: The synthesis of fused and nonfused heteroarylethynyl-pyridinyl ligands (L1-L6) and their corresponding dinuclear Cu(I) complexes 1-10.

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Design, Synthesis, and Antifungal Evaluation of Benzimidazole-2-carbamates

incorporating fluorine and piperazine Moieties

Thuraya Salim Al-Harthy[1], Raid Abdel-Jalil[2]*, Abdullah Al-Saidi[3], Wajdi Zoghaib[2]

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[2]*Chemistry Department, College of Science, Sultan Qaboos University, Muscat, Oman*

[3]*Department of Crop Sciences, college of agricultural and marine sciences, Sultan Qaboos University, Muscat, Oman*

Benzimidazoles (1) is a well-known scaffold of heterocycles that gained importance as intermediate in medicinal chemistry which exhibit remarkable biological profiles. Nocadazole (2) Benomyl (3), and Carbendazim (4) are examples of 2-carbamatebenzimidazole fungicides. Ciprofloxacin® 5 is a powerful antibiotic and studies was revealed that the presence of both piperazine and fluorine moieties shows the best potency and maintain minimum toxicity against human cell lines. Herein an attempt to develop a new series of fungicides aimedto enhance the microbial potency and decrease cytotoxicity to human. Utilizing the advantages of fluorine and piperazine groups, a novel series of 2-carbamatebenzimidazole were prepared and evaluated against several types of pathogens.

Purify Water Using the Cellulose Seeds Property

Noof Ahmed Alwahaibi,Samah Saif Alghafri

A'Sharqiyah University,Ibra, 400, Sultanate of Oman

Microstructural of chia seeds (salvia hispanica L) that could be form cellulose fibrils which had many functional properties in polluted water combining electrochemical materials , the cellulose fibrils consider as scientific revolution because it be as substitute substance and environmentally friendly ,and more strength material .chia seeds Under specified condition of PH , suitable temperature and seed measurable water ratio ,the seeds cellulose fibrils can be drawn and use as strong fibers where cellulose fibers are fibrillated *which is creates an increased area giving the novel fibril product with new characteristics.

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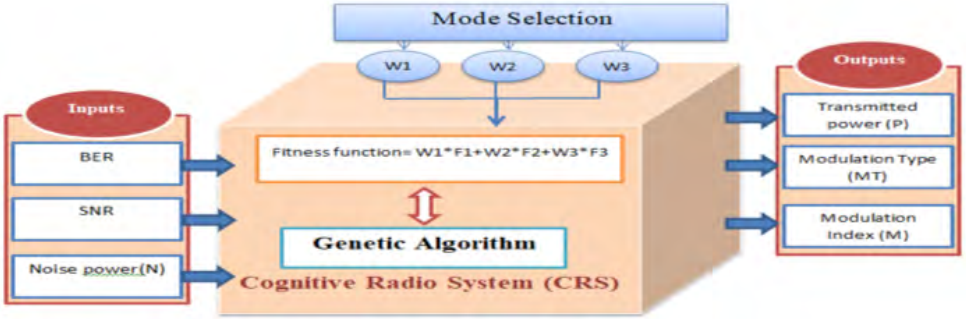
Development and Performance Analysis Of Adaptive Genetic Algorithm-Based Cognitive Radio System

Hajar Ahmad AL-Harthy, Abir Talip AL-Mamari, Zeyana Hamuaid AL-Habsi

A'Sharqiyah University, Ibra, 400, Sultanate of Oman

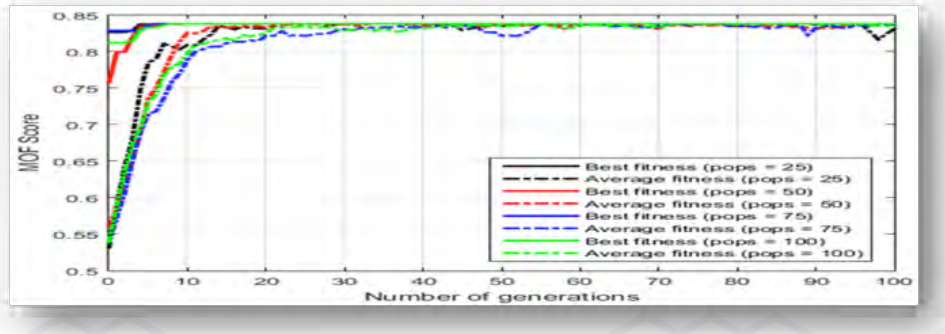
In this project, an adaptive genetic algorithm based cognitive radio system is developed. The adaptive genetic algorithm is realized by variable crossover and mutation probabilities as well as variable population size. Simulation results show that the adaptive genetic algorithm based cognitive radio system outperforms the conventional standard genetic algorithm based cognitive radio system in terms of convergence speed.



AGA-CR System

The AGA-CR system has radio environmental and transmission parameters as well as transmission modes that steer the system operation based on user demands. The decision making core of the system is realized using AGA. The following block diagram presents the idea.

A sample result with variable population size is shown:



The Performance of a CR system can be improved by empowering it with adaptive parameters.

Managing Illumination and Road Island using Renewable Energy and IOT

Amira Khalfan Said AalAbdulsalam, Ameera Said Salim AlSabqi

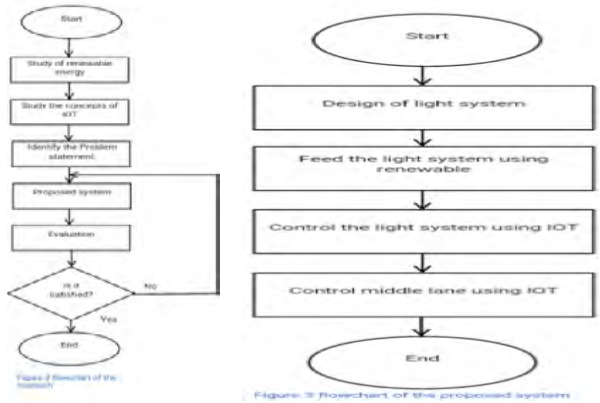
A'Sharqiyah University, Ibra, 400, Sultanate of Oman

In last decade, renewable energy has received researchers' attention due to its sustainability and cost potential reduction. This project exploits the benefits of renewable energy to design a smart street which is controlled by the internet of things (IOT).

Smart street lights are equipped with microcontroller, sensors, batteries and photovoltaic modules. The proposed system will be monitored by IOT.

The proposed system also senses vehicles in streets and transmits a signal to the monitoring unit which is controlled by IOT. In addition, if one of the street lights is not working appropriately, the proposed system will notify the maintenance unit via IOT. A luminous pier along the double street line will be utilized in case of emergency and traffic jam. It provides an additional road between the two regular lanes. The proposed system has to sense and monitor the traffic in respect of congestion. The color of smart pavement will be changed using the IOT system.

The Smart street light and Road Island control system adopts a dynamic control methodology according to the proposed flowcharts as shown in Figure 2 & Figure 3.



The goal of the project is to implement a smart street lights equipped with the lamp control units and photovoltaic module, and a luminous pier along the double street line. It will be utilized to solve the trouble of congestion and emergency situations by providing an additional road between right and left roads. On the other side, the proposed system depends on intelligent monitoring and control system equipped with IOT and renewable energy.

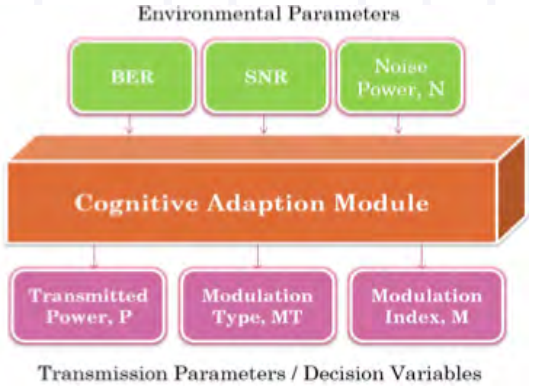
Realization of Cognitive Radio System using Genetic Algorithm

Saleema Salim Almaskari,Muna Hamed Alhamhami, and Salha Salim Alsubhi

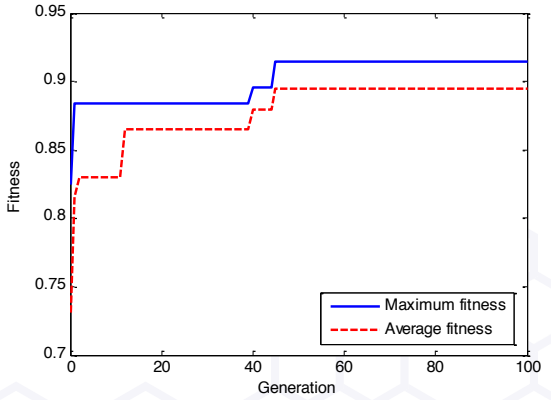
A'Sharqiyah University, Ibra, 400, Sultanate of Oman

Cognitive radios (CRs) take advantage of intelligent control methods and use sensed information to determine the optimal set of radio transmission parameters for a given dynamic wireless channel environment. This project presents an autonomous cognitive radio system driven by a genetic algorithm (GA) to determine the optimal set of radio transmission parameters. It is observed through the performance analysis results that the proposed system can certainly converge into a set of optimal solutions at which a multi-objective function is optimized.

The block diagram of the proposed GA-driven CR system is shown below. The CR adaption module senses environmental parameters and determines radio transmission parameters defined as decision variables to a pre-defined multi-objective fitness function.



A sample simulation result of the performance of the proposed system under the emergency mode is shown below. The obtained transmission power & modulation index/type under the emergency mode are 0.79 mW and 16-QAM, respectively.



The obtainable radio transmission parameters suit their respective operation modes.

Development Of Automated Utility Control System (Aucs) For Lights And Air Conditioners In Masjids

Issa Saleh Al Aamri, Abdullah Hamed Al Musalami, and Waleed Hamed Al Khusaibi

A'Sharqiyah University,Ibra, 400, Sultanate of Oman

In this project, the main aim is to develop an automated utility control system for efficient management of lighting and air conditioning systems in Masjids. The proposed system does not only minimize unwanted wastage of energy, but it also realizes a user-friendly and hassle-free utilization procedure of resources in Masjids. The automated system is reprogrammable as per operator's timing preference and the AC and lights to be turned on automatically when the prayer time starts and be turned off when a pre-defined duration after the prayer time is elapsed. The automated system is implemented on an Arduino UNO R3 platform with Arduino Mega 328P microcontroller. The timing information is supplied to the automated control system by reading signals from the prayer time clock which is already programmed for long terms, thus realizing a sustainable self-operating automated solution for controlling power consumption in Masjids.

Problem Statement: Efficient utilization of energy has become increasingly essential recently due to environmental issues such as climate change and global warming. Efficient manual control of lights and air conditioning systems in a Masjid by an operator may not be feasible as it very much depends on human errors leading to energy overutilization.

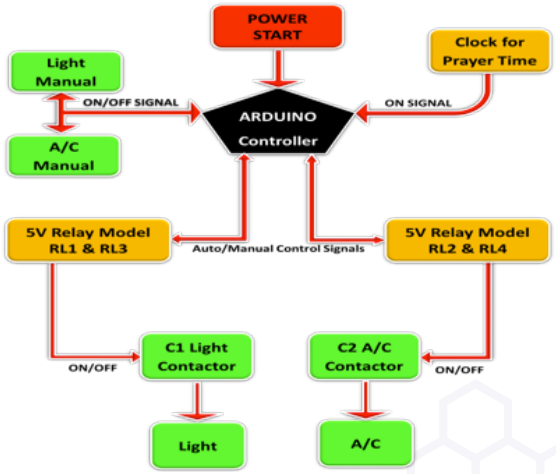


Figure (1) System Flowchart

Stepped nanowire with stabilized magnetic domain wall

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Domain wall (DW)-based magnetic memory offers the possibility for increasing the storage capacity. However, stability of DW remains the major drawback of this scheme. In this letter, we propose a stepped nanowire for pinning DW in a desirable position. From micromagnetic simulation, the proposed design applied to in-plane magnetic anisotropy materials shows that by adjusting the nanowire step size and its width it is possible to stabilize DW for a desirable current density range. In contrast, only a movement of DW could be seen for conventional nanowire. An extension to a multi-stepped nanowire could be used for multi-bit per cell magnetic memory.

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Experimental Study on the Effect of Cuttlefish Ink (Sepia pharaonis) on Body Tissues & Bone Density of Rats

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Cuttlefish ink has been widely used in Omani traditional medicine in enhancing healing of fractured bones, as a treatment for asthma, and to treat people who suffered from general weakness. To evaluate the effectiveness of cuttlefish ink in treatment these condition, experiment was designed using rats as experimental model. The project composed of two plans. The first part dealt with the distribution of a questionnaire of 32 items on 100 people used to use cuttlefish for treatment. The questionnaires were distributed on 100 people including 5 Governorates and 11 provinces of the Sultanate of Oman. The second part dealt with the use of rats as experimental model. A total of 10 healthy rats were used in this study. The rats were divided into two groups of 5 rats each. Group one included 5 rats received 0.3 ml of the liquid cuttlefish ink extract intraperitoneally at 1, 7, 14, and 28 days. Group 2 included 5 rats that selected randomly and received 0.3 ml of normal saline intraperitoneally at 1, 7, 14, and 28 days to serve as control. Blood was collected into tubes 35 days following treatment. Calcium, phosphorus and immunoglobulin IgG, IgA, IgE and IgM were determined using ELISA. All rats were humanely sacrificed and dissected. Tissues from the liver, heart, brain, kidney and spleen were collected from all mice of both group and preserved in 10% buffered neutral formalin and paraffin sections, 6 m thick, were prepared by standard histopathology procedures and stained by haematoxylin and eosin (H&E) stain. Femur bones and knee joints of the rats of both groups were subjected to X- ray scan examinations to find out the effect of ink on bone density or any pathological changes. Results of the questionnaire survey showed that Omani people are using cuttlefish ink for enhancing bone healing. Also results of the experimental studies on rats showed the presence of pathological changes in the tissues of rats inoculated by cuttlefish ink. Conclusion was made that cuttlefish ink can be used in proper doses to enhance

bone fracture healing. But higher dose may have side effect on body tissues especially the kidney.

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Species diversity in the marine macroalgae (seaweeds) of A'Sharqiyah Coast

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Seaweeds are marine macroalgae growing along the coastal region between high tide to low tide and in the sub-tidal region. Sea weeds are classified into three main groups i.e. **Chlorophyta**(green), **Phaeophyta** (brown) and **Rhodophyta** (red) primarily on the basis of their photosynthetic pigments and storage food products. They do not have true roots, stem or leaves and thus their plant body is called **thallus.** This preliminary investigation aimed at studying the species diversity of the marine macroalgae (seaweeds) growing along the A'Sharqiyah Coast. Many potential species have been identified. These are usually delicate plants, grass-green in colour found more commonly in the inter-tidal zone

Our study reports 21 species of seaweeds are reported from Asharqiyah oast comprising of 6 species of Chlorophyta, 5 species of Phaeophyta and 10 species of Rhodophyta. *Codium fragile and Ulva reticulata are new reports from oman.*

Reference:

Chapman V J & Chapman D J ,Seaweeds and their uses (Chapman and Hall, 1980.*Fourth National Report to the Convention on Biological diversity*, Ministry of Environment and Climate Affairs, Sultanate of Oman,2010

Groundwater in coast AL-Khaboura

Jihad Said Al-adawi

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Sea water intrusion into groundwater is a difficult problem in the large coastal aquifers that are pumped into arid areas such as the Batinah region of Oman. Groundwater has been used extensively and extensively for a long time, but increased demand has increased salinity and affected the quality of groundwater. Groundwater has been withdrawn from the aquifer more quickly than can be replenished through natural recharge. We have studied this study in the northern Batinah region of Oman, which is affected by the penetration of saline water in the system of coastal aquifers due to the excessive clouds of groundwater.**Objectives** are Analysis current situation of groundwater quantity and quality,Use the analytical solution and numerical USGS like ModFlow ,MT3Dms and Modpath to evaluate the current situation and predict future scenarios.

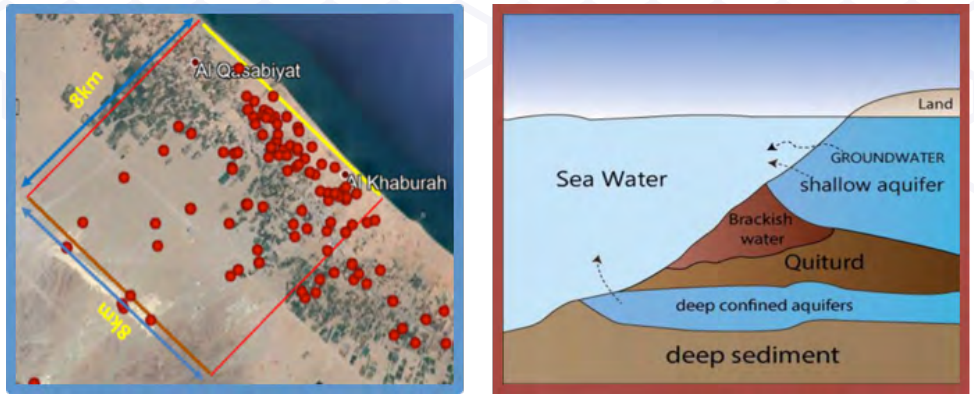


Figure1:(left)Show the study area in the coast of Khaboura, (right) show the seawater interest with groundwater

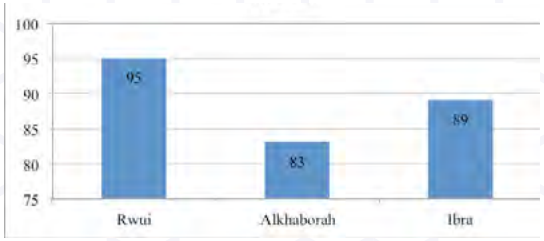
Recommendations: Close all damaged wells on the coast and use treatment water for use instead of groundwater,Using the method of injecting old wells with water treatment of increasing water in the groundwater tank and Building a desalination plant.

Natural insecticide

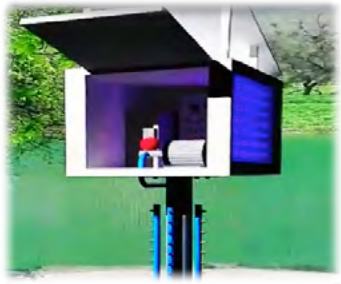
Zahra Al Zaabi, Juhaina Al Hamdani,Ashjan Al Saidi, Maria Al Bulushi, Aysha Al Barashdi, Faisal Al Muqbali, Alyaqdan Al Sarmi

A'Sharqiyah University, Ibra, 400, Sultanate of Oman

A natural herbicide extracted from a Colocynth plant that works to kill cockroaches to eliminate harmful cockroaches and reduce the use of chemical pesticides. The Mechanism is extraction and examination of parts of the plant and indicates the type of poison found in each prophecy and its concentrations. Which produces different concentrations of natural insecticide to eliminate harmful insects of various kinds The Percent of houses infected by cockroaches in different area is shown below:



The Future vision of the device is: work special sensors for the device to pick insects and make the device move after a certain period to cover the largest possible area. Mechanism of operation of the device is show below.



شركة راشن

زينب الحبسي ,لقاء الحبسي ,هند المسكري

جامعة الشرقية- إبراء-سلطنة عمان

شركة راشن شركة مساهمة في توفير عدد كبير من المنتجات الغذائية

بإمكانك تحميل تطبيق الشركة على هاتفك واختيار احتياجاتك أو التواصل عن طريق إرسال رسالة نصية أو الاتصال على رقم الشركة لنلبي متطلباتك.

فوائد الخدمة:تسهيل عملية التبضع المنزلي,وفير الوقت والجهد على المستهلكين, تخدم شرائح مختلفة من المجتمع كالأسر،طلاب الجامعات والكليات والسكنات

مزايا الخدمة: سرعة توصيل المتطلبات للمستهلكين, توفير المئات من السلع تحت مظلة واحدة ضمان لجودة السلع المقدمة

الموقع الرئيسي للشركة في ولاية إبراء بمحافظة شمال الشرقية في بناية « مارس سوبرماركت » لتسهيل عملية الحصول على المنتجات من قبل الشركة ، وسهولة تزويد.

Inst: RASHIN_2018

شاحنة الرصف الآلي

الزهراء الحسينية

جامعة الشرقية- إبراء-سلطنة عمان

كما هو معروف بأن الشوارع تعتبر من أكثر مرافق البنى التحتية استخداما في أي دولة سواء المتقدمة منها أو النامية وهي واجهة حضارية تعتبر من المؤشرات على مدى الاهتمام الدول والحكومات بهذا المرفق الحيوي ، وهذه الشوارع لا تخلو من حركة السيارات والشاحنات .وإن الإهتمام بها وصيانتها يؤدي بشكل مستمر إلى الوقاية من الحوادث ويسهل أنسيابية حركة المرور ، ومن هنا جاءت فكرة هذا الاختراع ، والذي هو عبارة عن الية جديدة لإصلاح الشوارع بإستخدام التكنلوجيا الحديثة وهي سريعة وسهلة الإستخدام وتختلف عن باقي الاليات المستخدمة حول العالم في هذا المجال ولهاالعديد من المميزات المدهشة.اهم اهداف المشروع هو السعي للوصول إلى أسرع طريقة لرصف الطرق بشكل الي باستخدام التقنيات المتطورة وإختصار المال والجهد وتوفير فرص عمل للشباب الباحثين عن عمل والمنافسة بقوة في مجال الطرق بأفكار ناجحة وقابلة للتطبيق . من أهم التوصيات هي الحاجة إلى الصيانة المستمرة لشاحنة الرصف الالي و توفير شاحنات بشكل مستمر في كل المدن و متابعة مستمرة للشوارع من قبل الجهات المسؤولة.

مشروع خزان ماء صديق للبيئة

مهند سيف الشقصي, شيماء حمد سالم المشايخية

جامعة الشرقية- إبراء-سلطنة عمان

فكرة المنتج عبارة عن فلتر يقوم بتنقية المياه من الميكروبات وتصفيته من الاتربة والتقليل من نسبة الكلور بحيث يكون الماء صالح للجميع وايضا تكون المياه صحية اكثر .تم تطوير منتجنا الى خزان متكامل مع الفلتر بحيث يغني العملاء عن السخانات المنزلية الكهربائية حيث يعالج عدة مشاكل منها صحية وبيئية واقتصادية حيث يتميز الخزان انه يعمل بطاقة طبيعية مئة بالمئة على عكس السخانات المنزلية.

رؤيتنا المستقبلة هي تصنيع فلتر اخر يفيد الزراعة ويساهم ف يإعادة تدوير مياه الغسيل او مياه المساجد لتحويلها الى مياه زراعية.

Winners And Appreciations

1. PPP Competition (Students)

Award	Name	Title	College	Supervisor
Best Student Project Award	• Alzahraa Alh-saini	آلة الرصف الآلي	CAH	-
Best Student Poster Award	• Hajar Ahmad AL-Harthy • Abir Talip AL-Mamari • Zeyana Hamuaid AL-Habsi	Development And Performance Analysis Of Adaptive Genetic Algorithm-Based Cognitive Radio System	COE	Dr. Ayman El-Saleh
Best Student Presenter Award	• Ashjan al_saidi • Faisal Al-Maqbali • Maria Albulushi • Alyaqthan Al-sarmi • Juhaina al-hamdai • zahra alzaabi • Aysha Al barashdi	Natural insecticide (فليتب)	CAHS	Mr. Mohammed AL-Riyami

2. Academic Staff

A. **Award of Best Published Journal Paper**

Staff Name	College	Journal Paper Details
Dr. Rayya Al Balushi	CAHS	Rise of Conjugated Poly-ynes and Poly(Metalla-ynes): From Design Through Synthesis to Structure–Property Relationships and Applications, Ashanul Haque, Rayya A. Al-Balushi, Idris Juma Al-Busaidi, Muhammad S. Khan, and Paul R. Raithby, Chemical Reviews, 118 (18), pp 8474–8597,2018
Dr. Ayman El-Saleh	COE	User Association for Backhaul Load Balancing with Quality of Service Provisioning for Heterogeneous Networks, Ying Loong Lee, Teong Chee Chuah, Ayman A. El-Saleh, and Jonathan Loo, IEEE Communications Letters, 22(11), pp. 2338-2341, November 2018.
Dr. Abdul Hakim Mohamed **Mr. Akbar Khanan**	COBA	Mehmood, A., Khanan, A., Umar, M. M., Abdullah, S., Ariffin, K. A. Z., & Song, H. (2018). Secure knowledge and cluster-based intrusion detection mechanism for smart wireless sensor networks. IEEE Access, 6, 5688-5694.

B. **Highly Cited Researcher**

Staff Name	College	h-index
Dr. Nasiruddin Khan	CAHS	21
Prof. Falah Al Ani	CAHS	18
Dr. Mohammad Changez	CAHS	16

C. **Active researchers**

Staff Name	College
Prof. Nabil Sultan	COBA
Dr. Fadi Abdel Muniem	COBA
Dr. Mohamed Haneefuddin	COBA
Dr. Adnan Kabbani	COE
Dr. Mahmoud Albreem	COE
Dr. Ayman El-Saleh	COE
Mr. Tariq Umar	COE
Mr. Mohamed Shaik	COE
Prof. Falah Al Ani	CAHS
Dr. Emad Husien	CAHS
Dr. Nasiruddin Khan	CAHS
Dr. Mohammad Changez	CAHS
Dr. Jamal Salah	CAHS
Dr. Rayya Al Balushi	CAHS
Ms. Vandita Singh	CAHS
Mr. Jackson Achankunju	CAHS
Dr. Faizal N.M.	CAH
Mr. Hameed Rehman	CLFS

CAH, College of Arts and Humanities
CAHS, College of Applied and Health Sciences
CLFS, Centre for Language and Foundation Studies
COBA, College of Business Adminstration
COE, College of Engineering



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19 -









PUTURE DIRECTIONS IN
HNIATURIZED CHEMICAL-
YSIS SYSTEMS







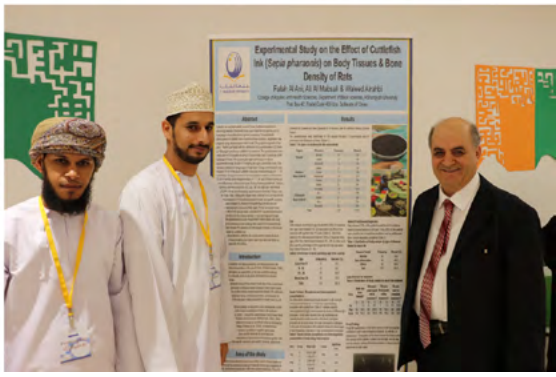
9





FURAP Project
17





Experimental Study on the Effect of Cuttlefish Ink (Sepia pharaonis) on Body Tissues & Bone Density of Rats





















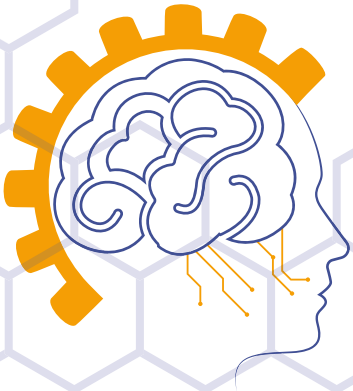












ASU Research Day