



BOOK OF ABSTRACTS

First Gulf Chemists Union Symposium

Al Khobar, 25 April 2018

“Petroleum Industry & Environment”

Editors:

Dr. Hassan Al-Rabiah,

Dr Ali Al-Salme,

Dr Samar Abubshait,

Dr Haya Abubshait

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Saudi Chapter of American Chemical Society

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First Gulf Chemists Union Symposium Committees

Scientific Committee

Dr. Hassan Al-Rabiah (Chair), *Kuwait Institute for Scientific Research*

Dr Ali Al-Salme, *King Saud University*

Dr Samar Abubshait, *Imam Abdulrahman Bin Faisal University*

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General Information

Location

Le Méridien Al Khobar
Corniche Boulevard, Al Khobar,
31952, Saudi Arabia
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Registration

Registration counters open on 25 April 2018 from 8:00-9:00 at
outside Al-Dana Hall

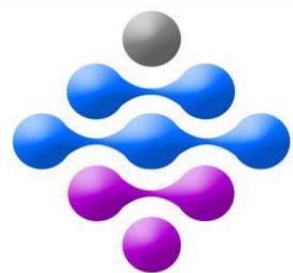
Scheduled Hours

Scientific Program 25 April 2018 from 9-12:45

Symposium Schedule

First Gulf Chemists Union Symposium

Time	25 April 2018
8:00-9:00	Registration
9:00-9:15	<p style="text-align: center;">Opening Speeches Dr Zeid Alothman-Chairman, Gulf Chemists Union Mr. Jamal Al-Otaibi-General Secretary, Gulf Chemists Union</p>
Session 1: Petroleum Industry Challenges Session Chairs: Dr. Samar Abubshait , Chemistry Department, Imam Abdulrahman Bin Faisal University Kingdom of Saudi Arabia Dr.Haya Abubshait , Preparatory year, Imam Abdulrahman Bin Faisal University, Kingdom of Saudi Arabia	
9:15-9:55	<p>PL-1 : " Petroleum Classification from Chemist Point of View" Dr Hassan Al-Rabiah, Petroleum Research Center, Kuwait Institute for Scientific Research , Kuwait</p>
9:55-10:15	<p>Pet-1: "Advanced Chemicals to Solve Petroleum Crude oil Production and Transportation Problems" Dr. Ayman M. Atta, Chemistry department, College of Science, King Saud University, Kingdom of Saudi Arabia</p>
10:15-10:35	<p>Pet-2: "Catalysis for Petroleum Refining and Petrochemicals: A Chemist's Perspective" Dr. Shakeel Ahmed, Center for Refining & Petrochemicals, Research Institute, King Fahd University of Petroleum & Minerals, Kingdom of Saudi Arabia</p>
10:35- 10:55	<p>Pet-3: "Rapid Profiling of Aromatic Constituents in Saudi Crude Oil by Direct Analysis in Real time / Time of Flight / Mass Spectrometry (DART/TOF/MS)" Dr Yacine Badjah Hadj Ahmed, Advanced Materials Research Chair, Department of Chemistry, College of Science, King Saud University, Kingdom of Saudi Arabia</p>
10:55-11:10	Coffee Break
Session 2:Latest Studies in Green Chemistry Session Chairs: Dr Hassan Al-Rabiah Petroleum Research Center, Kuwait Institute for Scientific Research , Kuwait Dr. Ali Alsalmeh , Chemistry Department, King Saud University, Kingdom of Saudi Arabia,	
11:10-11:50	<p>PL-2:" 2D/3D photocatalytic nanocomposite materials for wastewater treatment " Halema Alkandari , Public Authority for Applied Education and Training (PAAET), Kuwait</p>
11:50-12:10	<p>Env-1: " Nanostructured Mesoporous Electrocatalysts for Renewable Energy Source " Dr. Mohamed A. Ghanem, Electrochemistry Research Group, Chemistry Department, College of Science, King Saud University, Kingdom of Saudi Arabia</p>
12:10-12:30	<p>Env-2: "The Potential of Using AFX Absorber for Oil Spills cleanup in the United Arab Emirates" Khawla AlAmeri, Khalifa University of Science and Technology, United Arab Emirates</p>
12:30-12:50	<p>Env-3: " Oil and Petrochemicals Environmental Challenges " Dr. Isam Abdel-Magid , Department Environmental Engineering, College of Engineering King Saud University, Kingdom of Saudi Arabia</p>
12:50-1:00	Concluding Remarks
1:00	Prayer & Lunch



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Abstracts

PETROLEUM CLASSIFICATION FROM CHEMIST POINT OF VIEW

Dr. Hassan Al-Rabiah

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Petroleum crude oils are playing a significant role in securing the world's increasing demand for energy and raw material. Petroleum refiners plan their processes depending on crude oil type. The petroleum industry frequently class crude oil based on its geographical source such as Kuwait Heavy Crude, Arabian Light Crude. Crude oil is also classified based on chemical composition and physical characteristics. This presentation will give an overview on the petroleum classes such as sweet or sour, and light or heavy. Factors affecting petroleum classes including density, sulfur content, distillation yield, Watson K-factor. The crude oil market value is affected by its classification and properties. Crude corrosivity, processability, and its environmental impact are significant issues on crude economic value.

ADVANCED CHEMICALS TO SOLVE PETROLEUM CRUDE OIL PRODUCTION AND TRANSPORTATION PROBLEMS

A.M. Atta^a, H. A. Al-Lohedan^b,)

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World cannot imagine without energy. Many researches focused on saving energy and produced renewable energies. The present lecture cares with saving the petroleum energy by using nanomaterials produced from local Saudi materials based on clay, iron ores and gums to apply in the fields:

- (a) The enhanced oil recovery (EOR)
- (b) Demulsifiers for petroleum emulsions.
- (c) Oil spill collectors.
- (d) Self-healing materials for petroleum and gas pipeline and equipments.

The research has gone to a number of ways to increase revenues. In this respect, application of nanomaterials to solve many of petroleum problems is the main target to save the energy such as:

1. EOR processes aim to recover trapped oil left in reservoirs after primary and secondary recovery methods. New materials and additives are needed to make EOR economical in challenging reservoirs or harsh environments. In this study, hydrophilic polymeric nanocomposites were evaluated in enhancing oil recovery (EOR) as a new emerging class of materials in this field. Moreover, they have the ability to increase wetting of rocks as a result of retention of nanometer composite by porous medium and decreasing contact angle and interfacial tension of oil-water system.
2. The project supposes new technology to control marine oil spill by converting the oil to magnetic fluid and collecting by external magnetic field. The idea of project based on spreading hydrophobic magnetite nanoparticle which prepared by simple technique to disperse in crude oil followed by collection with external electrical magnet.
3. Nanoparticles and nanocomposites based on polymeric magnetite, clay and silica will act as corrosion inhibitors and self-healing materials to protect petroleum pipe line and equipment from corrosion at different temperatures.
4. Modified clay nanocomposites can be prepared by simple method to apply as viscofier for drilling muds used in petroleum production.
5. The project extends the research revenues to demulsify the crude oil emulsions by new ionic liquid polymers at low temperature. The ionic liquid polymers will by apply to enhance the heavy petroleum crude oil production using flooding method.

References (10 pt)

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2. Atta, A. M. Al-Lohedan, H. A., Abullah, M. S. *J. Ind.Eng. Chem.*, **2016**, *33*, 122-130.
3. Atta, A. M. Ezzat, A.O. Abullah, M. S. Hashem, A. *Energy & Fuels*, **2017**, *31*, 8045–8053.

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CATALYSIS FOR PETROLEUM REFINING AND PETROCHEMICALS: A CHEMIST'S PERSPECTIVE

Shakeel Ahmed

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Catalysis is a critical enabling science for chemicals and energy. Improvements in catalytic processes across the chemical and petroleum industries increase resource and energy utilization efficiencies and overall environmental footprints. Virtually all of the products used by modern societies for fuels, chemicals, polymers, and pharmaceuticals, as well as for abatement of air and water pollution, depend on catalysts. In the future, cost-effective, environmentally sound utilization of energy resources such as heavy oil will require new catalysts and processes. Other areas such as hydrogen storage and carbon dioxide capture and sequestration could benefit from new abilities to catalyze solid-state reactions.

To meet these challenges, we must advance the field from *catalyst discovery* to *catalyst design*. This advance will require not only a new level of understanding of reaction mechanisms and dynamics to specify the structure and properties of the catalyst, but synthetic tools to construct catalysts at the atomic level and spectroscopic and computational tools to probe catalysts in working environments. This demands our ability, as a chemist to design catalytic systems to accomplish any desirable transformation of chemical and energy resources and to minimize undesirable impacts of their utilization. Therefore, catalysis R&D at Saudi institutions (both academic and industrial) is geared to develop competitive catalysts and processes that are required to meet these challenges. In the current presentation we will identify main challenges, crosscutting issues, and priority directions for research needs in the areas of refining and petrochemicals. Examples from graduate research and client funded projects will be presented to high light the role of a chemist in this area of paramount research.

RAPID PROFILING OF AROMATIC CONSTITUENTS IN SAUDI CRUDE OIL BY DIRECT ANALYSIS IN REAL TIME / TIME OF FLIGHT / MASS SPECTROMETRY (DART/TOF/MS)

A.Y. Badjah-Hadj-Ahmeda, B.F. Alrayesb, A. Alenezva, A. Aqela, Z.A. ALOthmana

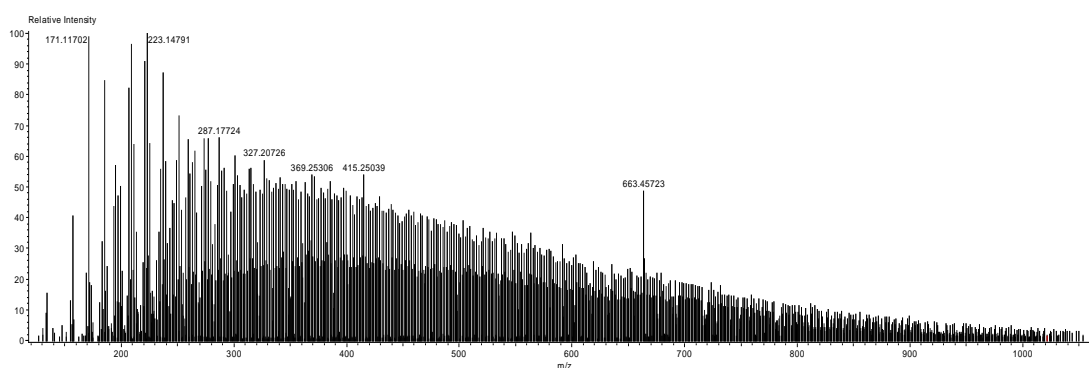
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Direct analysis in real time (DART) is a recent innovation in mass spectrometry which allows recording mass spectra of ordinary samples, in their native environment, without sample preparation or prior treatment by ambient ionization. It is a soft ionization technique which produces mainly protonated molecular ions with little fragmentation for most analytes. This new technique coupled to a high resolution time-of-flight mass spectrometer (ToF/MS) was used to investigate the aromatic fraction extracted from Saudi crude oil in positive ionization mode. In order to optimize the experimental conditions using the DART ionization technique, a series of pure aromatic constituents were investigated. The best selected conditions allowed minimizing the fragmentation with main production of a molecular protonated ion even for the highest masses. However, beside this main characteristic protonated ion $[M+H]^+$, the mass spectra showed also the presence of the molecular ion M^+ , and the deprotonated molecule $[M-H]^+$.

The high resolution mass spectrum of the aromatic fraction showed more than one thousand peaks in the m/z range 100 to 1050 Da. The molecular weight of each constituent was accurately measured, the difference between calculated and measured mass being less than 1 mDa for most components. This high accuracy allowed to elucidate the elemental composition of each constituent and to propose its formula. More than seventy aromatic hydrocarbons were identified in the range from C_{10} to C_{66} ; most of them corresponded to alkyl substituted polycyclic compounds with an unsaturation degree between 5 and 20. On the other hand, about eight hundred aromatic constituents containing heteroatoms were characterized. Their elemental composition showed the presence of several atoms of nitrogen, oxygen and/or sulfur, separately or together. The molecular weight of these NOS-compounds ranged from m/z 203 to 1053, while their unsaturation degree was between 7 and 20. The combination of DART ion source with HR-ToF mass spectrometer permitted a rapid and accurate fingerprinting of the highly complex aromatic fraction extracted from a Saudi crude oil, without any sample preparation or pre-separation.



DART-ToF high resolution mass spectrum of the aromatic fraction of Saudi crude oil

2D/3D photocatalytic nanocomposite materials for wastewater treatment

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INTRODUCTION

TiO₂ is one of the most utilized photocatalyst. However, there are some challenges regarding the use of TiO₂ on an industrial scale. Significant attention is directed towards using carbonaceous nanomaterials such as graphene and carbon nitride along with TiO₂ to enhance its photocatalytic behavior. Combinations of ozone or hydrogen peroxide with ultraviolet radiation in water can generate powerful oxidants that are useful for the advanced oxidation processes (AOPs). In this work, we used graphene oxide and carbon nitride nanocomposites in advanced oxidation process for treatment of water contaminated with phenolic compounds and some dyes.

EXPERIMENTAL

Graphene oxide powder (GO) was prepared using a modified Hummers' method [1]. GO and carbon nitride (CN) was loaded on TiO₂ using hydrothermal treatment. All photocatalysts were characterized using XRD, XPS, Raman and BET were also measured

RESULTS AND DISCUSSION

From Table 1, as can see that the photodegradation percentage increases with time regardless the type of photocatalyst or the phenol used. Secondly, adding H₂O₂ or O₃ to the reaction mixture increased the rate of phenol degradation compared to bare catalyst regardless of the type of photocatalyst or the tested phenolic compound. This is mainly due to the increase in the formation of hydroxyl radicals and inhibition of the electron/hole (e/h⁺) pair recombination. Finally, the best degradation of phenol was observed in presence of both H₂O₂ and O₃, in which 83.7 % degradation was obtained after 30 min and the rate constant was 0.062 min⁻¹.

Table 1: Rate constant data in min⁻¹ of phenol (20 mg L⁻¹) on Ti and rGOTi under 150 Xe illumination in absence and absence of 70 μL H₂O₂ and/or O₃.

Xe		Xe + H ₂ O ₂		Xe + O ₃		Xe + H ₂ O ₂ + O ₃	
Ti	rGOTi	Ti	rGOTi	Ti	rGOTi	Ti	rGOTi
0.021	0.023	0.028	0.032	0.025	0.026	0.038	0.062

CONCLUSION

Photocatalytic degradation of phenolic compounds on TiO₂ nanoparticles in presence of Xe illumination were improved drastically upon loading it with 0.33 % rGO. Based on data obtained rGOTi nanocomposite can be considered as a promising candidate for the photocatalytic degradation of phenolic compounds in wastewater when both H₂O₂ and O₃ were added to the rGOTi nanocomposite

REFERENCES

[1] W.S. Hummers, R.E. Offeman, Preparation of graphitic oxide, J. Am. Chem. Soc., 80 (1958) 1339-1339.

ACKNOWLEDGMENTS

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Nanostructured Mesoporous Electrocatalysts for Renewable Energy Sources

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Nanostructured mesoporous materials are of interest for a variety of applications for developing a renewable and clean energy sources. This work presents the synthesis of entirely new classes of nanostructured mesoporous metallic, hydroxides and oxides nanocatalysts with improved electrocatalytic properties for hydrocarbon oxidation, water splitting and fuel-cell reactions. Mesoporous metallic nanocatalysts and support of transition metal oxides, hydroxides and phosphates with high surface areas, high degrees of mesoporous order, and different architectures are prepared via the chemical deposition of metal ions dissolved in the aqueous domain of hexagonal (H) and cubic (I) liquid crystalline phases of nonionic surfactant templates. The compositions, periodicities, surface areas, pore diameters, and architectures of the nanocatalysts can be varied in a controllable way through changes in the template compositions and the type of surfactant. The electrochemical and catalytic activity of the resulting mesoporous nanocatalysts investigated and screened for hydrocarbon (urea, methanol and ethanol) oxidation and water splitting reactions of hydrogen and oxygen evolution.

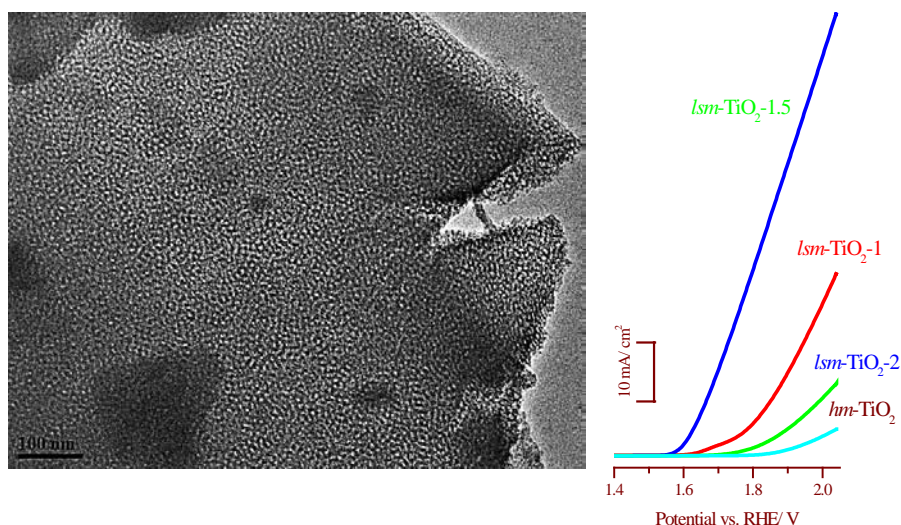


Fig. 1 Low-symmetry mesoporous TiO_2 electrocatalyst showed a significant activity for oxygen evolution reaction in alkaline solution with onset potential of 1.55 V, and a current density of 11 mA cm^{-2} at 1.65 V vs. RHE.

References

- 1- M. A. Ghanem, A. M. Al-Mayouf, J. P. Singh, P. Arunachalam, *Electrocatalysis*, 2017, 8, 16–26.
- 2- M. A. Ghanem, A. M. Al-Mayouf, P. Arunachalam, T. Abiti, *Electrochimica Acta*, 2016, 207, 177–186.
- 3- M. A. Ghanem, A. M. Al-Mayouf, J. P. Singh, T. Abiti, F. Marken *J. Electrochem. Soc.* 2015, 162, H453-H459.

Acknowledgement

Deanship of Scientific Research at King Saud University for funding this Research group No: RG-1437-015.

The potential of using AFX Absorber for oil cleanup and contaminated water purification in United Arab Emirates

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Oil spill accidents are regularly happening during oil exploration and transportation, resulting in threats to the environment. Many techniques have been developed to clean up spilled oils from contaminated area. Among these, the application of peat moss is one of the accepted responses to absorb oil slick. However, concerns were raised regarding their biodegradability and reusability. Using environmentally benign and biodegradable-based absorbents has gained a lot of attentions nowadays.

Peats are considered a common replacement to several materials for heavy metals removal and can be used for oil spills clean-up, due to their hydrophobicity and oleophilicity. Using peats would be a green alternative with less use of harmful chemicals, and it is a low-cost absorbent. This project gives a new knowledge about the use of natural absorbents in cleaning up oil spills.

OIL AND PETROCHEMICALS ENVIRONMENTAL CHALLENGES

Prof. Dr. CEng. Isam Mohammed Abdel-Magid and Dr. Mohammed Isam Mohammed Abdel-Magid

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Abstract


Petroleum, oil and petrochemicals have become an integral part of the industrial revolution of the twenty first century. With the expanding industries, the booming businesses and the demanding populations, the production and combustion of petroleum and oil has become a daily activity, practised all around the world. However, such an important and influential field is not without its flaws. From chemical toxicity to waste oil, and from climate change to the physical effects of oil spills, petrochemicals have a strong toll on human health and the environment. This paper will review the chemical, physical, biological and psychosocial adverse effects of oil and petrochemicals. It will then briefly discuss the different control measures that are used in order to mitigate those effects.


Keywords


petrochemicals, petroleum, health effects, environmental challenges, greenhouse effect





Speakers Short C.V

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Education	PhD in Petroleum Chemistry, University of Leeds, UK 2003 MPhil in Petroleum Chemistry, University of Leeds, UK 1997 BSc in Chemistry, Kuwait University, Kuwait 1989	
Work Experience	<ul style="list-style-type: none"> • Extensive experience in petroleum products testing and characterization. • Expert in crude oil assays crude oil blending and blend stability. • Principle investigator and task leader for various R&D projects in the petroleum chemistry field. • Experienced in advanced analytical procedures and techniques used for the molecular characterization of crude oil and petroleum products especially Chromatography • Knowledgeable in Supercritical fluids interaction with crude oils. • Conducted several training courses in Crude Oil and Petroleum Products Characterization and Refining Processes 	
Awards		

	Name	Ayman M. Atta
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Education	<ul style="list-style-type: none"> • Ph. D. Ain Shams University, Cairo, Egypt (1995), faculty of science, Polymer Chemistry, Title: Synthesis and characterization of water sorbers by catalytic and irradiation. • Ms.C. Ain Shams University, Cairo, Egypt (1992), faculty of Science, polymer Chemistry, Title: Synthesis of organosilicon and chelate polymers. 	
Work Experience	<ul style="list-style-type: none"> ○ Professor of polymer chemistry, chemistry department, college of science, king Saud university, 2012 up to date ○ Professor of polymer chemistry in Petroleum Applications Department, Egyptian petroleum research institute (EPRI) since 28/6/2005. He started the work since 1988. ○ Technical consultants for Egyptian Petroleum company in chemical and petrochemical small projects 1999-2005. ○ Visiting professor to university of North Texas (Jun 2006) and (1st Jan 2011). 	
Awards	<ul style="list-style-type: none"> • U.S. - EGYPT JOINT BOARD ON SCIENTIFIC AND TECHNOLOGICAL COOPERATION ENTITLED “SYNTHESIS OF SOME RECYCLED DENDRITIC CURABLE RESINS BASED ON PET FOR COATING APPLICATIONS” (2008). • National science foundation (NSF, USA, Synthesis and evaluation of porous polymers for absorbing petroleum spills based on recycled PET (2001). 	

	Name	Shakeel Ahmed
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Education	<ul style="list-style-type: none"> • Ph.D., King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia (1995), Chemistry (Catalysis). • M.Phil., Quaid-e-Azam University, Islamabad, Pakistan (1989), Analytical/Inorganic Chemistry. • M.Sc., Quaid-e-Azam University, Islamabad, Pakistan (1987), Analytical/Inorganic Chemistry. 	
Work Experience	<ul style="list-style-type: none"> ○ Research Scientist-II/Associate Professor Center for Refining & Petrochemicals, KFUPM, 2005-present. ○ Research Scientist-II/Assistant Professor Center for Refining & Petrochemicals, KFUPM, 1995-2005. ○ Production Manager, RockWall, Pak Canadian Pvt. Ltd., 1990. 	
Awards	<ul style="list-style-type: none"> • Patents incentive awards, 2016-2017 for seven granted patents from H.E. the Rector, King Fahd University of Petroleum & Minerals. • Patents incentive awards, 2015-2016 for six granted patents from H.E. the Rector, King Fahd University of Petroleum & Minerals. • Distinguished Researcher Award-RI, 2014-2015 and patents incentive awards from H.E. the Rector, King Fahd University of Petroleum & Minerals. • Excellence in Leading a Research Team Award in the Research Institute, 2013-2014 and patents incentive awards from H.E. the Rector, King Fahd University of Petroleum & Minerals. • First Prize for Poster from LABTech2014 Conference & Exhibition, 2014, Manama, Bahrain. • 	

	Name	Yacine Badjah Hadj Ahmed
	Presentation Title	Rapid Profiling of Aromatic Constituents in Saudi Crude Oil by Direct Analysis in Real Time / Time of Flight / Mass Spectrometry (DART/ToF/MS)
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	Job Title	Professor
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Education	<ul style="list-style-type: none"> - PhD in Applied Organic Chemistry, June 1987, University of Sciences and Technology Houari Boumediene (U.S.T.H.B.), Algiers, Algeria - Magister in Applied Organic Chemistry, July 1978, University of Algiers, Algeria * High Studies Diploma (D.E.S.) in Organic Chemistry, June 1975, University of Algiers, Algeria 	
Work Experience	<ul style="list-style-type: none"> - Professor at King Saud University, College of Science, Department of Chemistry since September 2007 - Professor at University of Science and Technology Houari Boumediene of Algiers (Algeria) from 1993 to 2007 - Associate Professor at University of Science and Technology Houari Boumediene of Algiers (Algeria) from 1987 to 1993 - Assistant Professor at University of Science and Technology Houari Boumediene of Algiers (Algeria) from 1975 to 1987 	
Awards		

	Name	Halema Ali Al-Kandari
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Work Experience	<ul style="list-style-type: none"> • Involved in many research projects in surface science, catalysis, photocatalysis and wastewater treatments. Published more than 30 Peer Reviewed Journal articles and have more than 30 accepted oral and poster presentations in the national and international conferences. • 5th Feb 2015- Present Associate Professor and from 14th Feb. 2010-5th Feb 2015, Assistant Professor, Department of Health Environment, College of Health Science, The Public Authority of Applied Education and Training (PAAET), Kuwait. • Reviewed many articles in the international journals and supervising Ph.D. student • 19th Feb. 2003-14th Feb.2010, Teaching Assistant, Department of Chemistry, Faculty of Science, Kuwait University, Kuwait. 	
Awards	<ul style="list-style-type: none"> • Scientific Production Prize for year 2016 in Physical Sciences and Mathematics. Kuwait Foundation of the Advanced of Science (KFAS). • Prestigious IAAM Scientist Medal of year 2016 and membership card for notable and outstanding research in the advanced materials science and technology. It was given during award ceremony of International association of Advanced Materials held on 24 August 2016 at seaside Auditorium, M/S Mariella, Helsinki, Finland. • Many of research reward from PAAET and Kuwait University for published papers of high impact factor and for evolution of final reports of the project. 	

Professional Photo to be inserted here	Name	Mohamed A. Ghanem
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	Job Title	Professor of Physical Chemistry
	Contacts	Email: mghanem@ksu.edu.sa ; Tel: +966 0114670405, mobile: +966 568796983
Education	PhD in Chemistry, University of Southampton, UK	
Work Experience	<p>Professor Ghanem obtained PhD (1998-2002) from University of Southampton (UK) in the field of synthesis, characterization and applications of nanostructured materials. Then, He spent postdoctoral researcher between Southampton and Bath University with Prof. Phil Bartlett and Frank Marken research groups. Joint KSU in 2012 as an Associate professor then promoted to professor of physical chemistry in 2017. His research interests focus on mesoporous and nanomaterials, electrocatalysts, electrochemical methods, photo-catalysts, surface modification, biosensors and nanotechnology. He published over 70 papers, 4 patents and gave about 15 conference presentations and supervised about 8 master and PhD students. Currently, he is an associate editor for Journal of Saudi chemical society and recently founder and editor for Arab Journal of Physical Chemistry.</p>	
Awards	<p>International association of advanced materials (IAAM) medal 2018. www.iaamonline.org</p>	

	Name	Khawla Mohammed AlAmeri
	Presentation Title	The potential of using AFX Absorber for oil cleanup and contaminated water purification in United Arab Emirates
	Affiliation	Student at Khalifa University of Science and Technology
	Job Title	-
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Education	<ul style="list-style-type: none"> • Khalifa University of Science and Technology, Masdar city, Abu Dhabi. Master of Science in Water and Environmental Engineering (2016-present) o Water and Environmental Technologies, current GPA 3.00 Related Courses: Desalination, Wastewater Treatment Engineering, Environmental Policy and Economics, Chemicals in the Environment: Fate and Transport. • Zayed University, Abu Dhabi, UAE BSc Environmental Science and Sustainability College of Sustainability Science and Humanities, Department of Natural Science and Public Health, GPA 3.31 (2015). Related Courses: Principles of Environmental Sustainability, Energy and Sustainability, Environmental Policy and Economics and Water and Solid Waste Management. 	
Work Experience	<ul style="list-style-type: none"> • National Bureau of statistics, Abu Dhabi - Intern, (fall 2015) ✓ Audited hard copy data forms and online data forms. ✓ Found results in order to get valid data. ✓ Entered data into Food and Agriculture Organization website (FAO). ✓ Coded work orders to be recorded in Oracle. ✓ Participated in building tables that are for publishing. 	
Awards	<ul style="list-style-type: none"> • Zayed Scholar Certificate (GPA of 3.88) (2012) • Dean's List certificate (GPA of 3.67) (2013) • MEPRA Competition Certificate (2014) • Abu Dhabi University Knowledge Group Certificate (2009) 	

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Work Experience	<ul style="list-style-type: none"> • Chair Development and Training Unit, Postgraduate Studies Deanship, University of Dammam, KSA, Dean decision number to date. • Head Revision and Proofreading Department, Scientific Publishing Centre, University of Dammam, KSA, University Rector 2013 and member of Scientific Publishing Centre Management Board, November 2013 to date • Chair Environmental Engineering Unit, EEU,, College of Engineering, Dammam University, 2011. • President Coordinating Council for Engineering Research and Industrial Technologies, SAS, 2004 - 2005 	
Awards	<ul style="list-style-type: none"> • Best paper award2014 , International Conference of Engineering, Information Technology, and Science, University Kuala Lumpur, Malaysia • Professor Abdalla Eltayb prize for the best book of the year 1999, National Council for Journalism and Publication. • ALECSO prize for a book in engineering (Pollution: hazards and solutions), 1995. 	