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ACS Chapter

Saudi Arabia

FOCUSING ON VISION 2030 THROUGH
COMMUNITY OUTREACH

please send your comments, suggestions and articles to Newsletter Director Dr.Hind Aljohani

e-mail: chem.johani@gmail.com
Mobil # : 0504697345

2019 Chairman Message

Dear SAICSC members,

I would like to take this opportunity to welcome you all to the 1st issue of our society newsletter (ORGANON) in 2019. I would like also to thank 2018 BODs under the leadership of Mr. Jamal N. Al-Otaibi for their great efforts and achievements toward meeting the society objectives. On the meantime, I would like to welcome 2019 BODs and wish them a very successful year.



In this welcoming note, I would like to invite and encourage all members to participate actively in the society activities and programs such as,

- ◆ Attending our monthly dinner meeting.
- ◆ Be volunteer and participate in the society committees.
- ◆ Invite and encourage your colleagues and friends to join the society and become international members for great benefits. You can visit the ACS website (www.acs.org) for info about these benefits.
- ◆ Publicize for the society in the academia and industries to get more members.
- ◆ Attend and participate in the conferences organized by the society such as CHEMINDIX, LABTECH and others.
- ◆ Attend training courses organized by the society in the fields of safety, technical sessions, etc.

FYI, the society will organize the 11th International conference on Chemistry in Industry and exhibition CHEMINDIX which will be held on October 29-31, 2019 in the Kingdom of Bahrain. The theme of this conference will be "Breakthrough Solution through Innovative Materials."

So, all are encouraged to attend this conference where you will have the opportunity to meet with professionals from around the world.

I am pleased to announce the opening of the 2nd Jubail Industrial College student chapter at college of Jubail under the society umbrella. The 1st one was at KFUPM.

The society can't achieve its mission without challenges and I am sure the new BODs will overcome them such as,

- ◆ Attract more international members.
- ◆ Increase dinner meeting participations from major companies such as Aramco and SABIC.
- ◆ Get support from major companies and businessmen.
- ◆ Work with the industries to hire new fresh graduate chemists.
- ◆ Get new members to nominate themselves for the board positions.

Finally, I would like to extend my thanks and appreciation to our sponsors and members for their great support to our society program which allows us to meet the society's mission which is promoting chemistry and scientific knowledge in our areas.

Please send your comments, suggestions and articles to Newsletter Director Dr.Hind Aljohani.

Saudi Arabian international chemical sciences

Chapter of American Chemical Society

February 2019 Technical Dinner Meeting

◆ **Presentation Title**
The Future of Hydrogen

◆ **Speaker:**
Ahmed o .Al Khowaiter
Chief Technology Officer. Saudi Aramco



Location: Kempinisky AlOthman Hotel Al Khobar

Date: Wednesday, February 20, 2019 **Reception:** 6:00 p.m

Presentation: 6:30 p.m.

For further information, please contact: muzaffarkhan@kfupm.edu.sa

Mr. Al Khowaiter is Saudi Aramco's Chief technology officer. He held the position of Saudi Aramco chief Engineer from 2011 to 2014, and Executive Director of power Systems in 2014 before assuming his present role. Mr. Al Khowaiter holds a B.S. degree in chemical Engineering from the King Fahd University of Petroleum & Minerals (KFUPM), M.S degree in chemical Engineering from the University of California at Santa Barbara, and an MBA degree as a Sloan Fellow from the Massachusetts Institute of Technology.



◆ Abstract

Hydrogen is an established and growing global business. Currently, about 50 million tons of hydrogen is produced annually world-wide. The chemicals and petroleum refining industries are by far the largest producer and consumer of hydrogen, dominating %80 of the global hydrogen demand. With hydrogen-powered fuel cell electric vehicles on the cusp of mass commercialization, hydrogen-powered fuel cell electric vehicles on the cusp of

mass commercialization. Hydrogen demand for the transportation market is expected to see a significant growth in the near future. Saudi Aramco as world's leading integrated Energy and Chemicals Company is committed to sustainable development of its vast oil and gas resources. The use of hydrogen derived from oil or gas to power fuel cell electric vehicles represents an exciting opportunity for Saudi Aramco to expand the use of oil in clean transport.

Bioactive Paper Strips Hold Great Potential for On-Site Monitoring of Heavy Metals

S. M. Zakir Hossain, Asst. Prof., Dept. of Chemical Engineering, University of Bahrain, Bahrain



Introduction:

Heavy metals are carcinogens and are involved in many diseases (e.g., failure of brain, heart, kidney, lungs, immune System) to human. Thus, monitoring of heavy metals, particularly in drinking/ beach/ waste water, is very important. Several sophisticated analytical methods including ICP/AES, ICPMS, AAS, as well as various wet chemical techniques are

available for analysis of heavy metals. However, all these methods need significant time and money, especially when large numbers of samples require testing, and are generally not suitable to on-site monitoring by unskilled personnel. In this article, β -galactosidase (β -GAL)-based colorimetric paper strip was developed for rapid and on-site monitoring of heavy metals

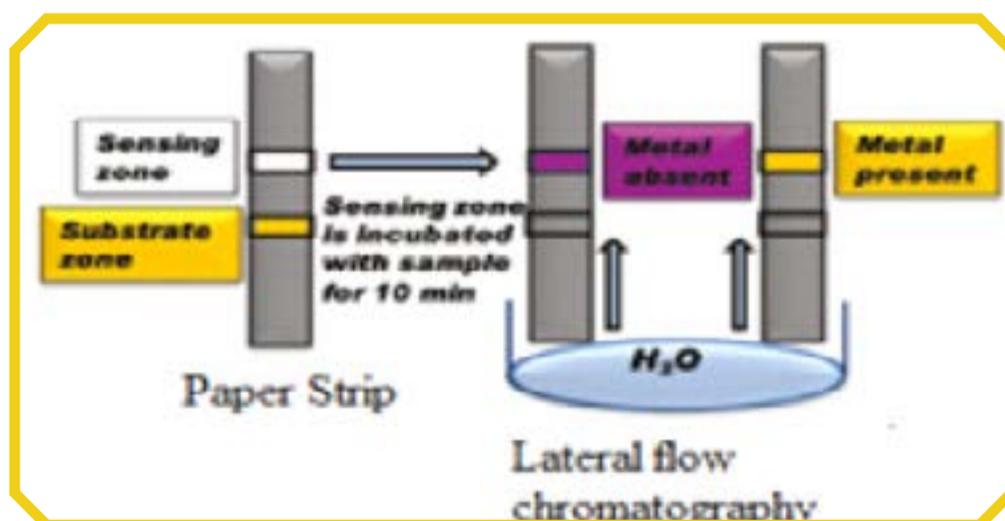


Fig. 1. Detection principle of heavy metals

Methods:

The paper strips were fabricated by using Whatman no.

1. The paper was inkjet printed with a substrate, chlorophenol red β -galactopyranoside (CPRG) zone and a sensing (β -GAL) zone. The

CPRG and β -GAL were entrapped within silica materials as sandwich manner (Fig.1). The color intensity of the sensing zones was monitored either by naked eye or quantified by using an office scanner/cell phone with ImageJ software.

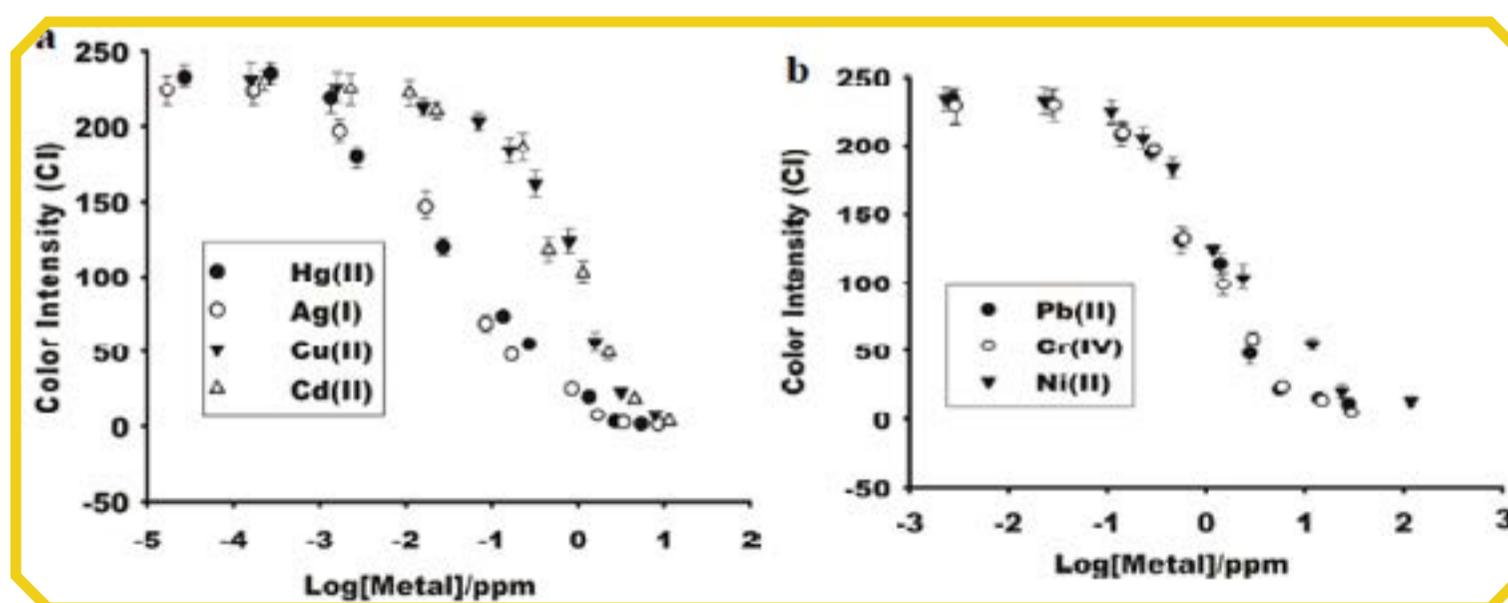
Results and Discussion:

Fig.2a, b shows the color intensity found from separate experiments using varying concentrations of Hg (II), Ag (I), Cu (II), Cd (II), Pb (II), Cr (VI), or Ni (II). The data show that increasing concentrations of the metal ions progressively inhibited the activity of β -GAL, reducing the intensity of color. The limits of detection (LODs) for all metals are similar to or lower than the maximum allowable limit according to WHO guidelines.

Conclusion:

The detection of heavy metals is possible with the naked eye and can be quantified using a camera/scanner/cell phone and image analysis software. The colorimetric detection by naked eye permits the use of the test strips directly in the field and eliminates the need for sophisticated/expensive instrumentation and skilled personnel.

This method should be valuable for on-site monitoring of trace levels of heavy



metals in resource limited areas and poor/developing countries.



Blockchain Technology

March 2019 Technical Dinner
Meeting

Speaker

Andrey Ivanov
Director, EY's EMEIA Oil
and Gas Advisory



◆ Bio:

Andrey is a Director with EY's EMEIA Oil and Gas Advisory. Andrey has worked with NOCs and IOCs across Former Soviet Union, Middle East, and Europe, focusing on shaping up and delivery of business transformation programs, enabled by emerging technologies. Throughout his career he identified and articulated significant value

creation and maturity enhancement opportunities through addressing fundamental direction, enhancing capabilities and improving processes for operations at different stages of their lifecycle. Andrey holds a BA degree from Seattle Pacific University (USA) and a post-graduate degree from Warwick University (UK).

◆ **Abstract:**

Blockchains are a B2B technology designed for the creation and management of digital contracts between enterprises. These contracts will be executed privately and securely on public blockchains and will typically involve the exchange of fiat currency tokens for asset, product and service tokens. Blockchains will do for networks of enterprises and business ecosystems what enterprise resource planning (ERP) did for the single company. Before 2018, blockchain projects were few and far



in between as companies tested the technology, legal frameworks and, most importantly, their business ideas. 2018 has marked the beginning of the era of industrialization.

A number of nation states and common trade areas have been exploring the future uses of blockchain as well as existing roadblocks to a wider adoption of blockchain by commercial enterprises and social services.



Visit to MA'ADEN in Ras Al- Khair

◆ Objective:

To boost the knowledge about different field and companies that chemist or chemical engineer might work in their future carrier.

Activity Date: : Monday, January 21,2019

Activity Time:From 7:30 Am to 5:00 Pm



◆ Overview:

A group of graduate and undergraduate led by Prof. Mohammad Nahid Siddiqui and other instructors visited MA'ADEN company in Ras Al-Khair city on Monday, January 2019 ,21. The trip begins with A refreshments and a breakfast served by the student chapter members in the bus during the trip. Once the visitors reached Ras Al-Khair industrial city, a tour around MA'ADEN company were given by one of MA'ADEN Employee where he showed students different areas of MA'ADEN company and Ras Al-Khair industrial city where they are two different parts of the company one about aluminum, and

the other one is about phosphates production, and about the different products that are produced by the MA'ADEN company. After that, a presentation about MA'ADEN and their main buyers such as Jaguar Land Rover company where they buy the car body materials such as aluminum from MA'ADEN and how important the safety is to MA'ADEN company. After that, the trip continued with a tour around the company and different services they provide their employees. The tour was educational to the students from undergraduate and graduates., and then the refreshments and lunch were served to the visitors along with gifts from MA'ADEN company



Chemistry festival 2018

with fathers and
their childrens

◆ Objective:

To celebrate the chemistry festival with fathers and their childrens . Also, to share excitement of chemistry experiments with them.

Activity Date: Saturday, December 8,2018

Activity Time: From 8:00 Am to 12:00 Pm.



◆ **Overview:**

The activity started with different groups of fathers along with their children visiting the chemistry student's section in the nursery schools at King Fahd Uninvest of petroleum and engineering.

Moreover, they enjoyed participating in different exciting experiments where they done several experiments where the chemistry students explain to them the chemistry behind each experiment in simpler ways that the kids can understand it.



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Development@saicsc-acsc.com

Orlando ACS National Meeting

◆ Objective:

To have access to many resources, opportunities and communication with fellow student chapters worldwide. Moreover, to have more networking, discovering new research field and new developed technologies in the exhibition.

Activity Date: Sunday, March 31, 2019 – Thursday, April 4, 2019

Activity Time: From 7:00 Am to 6:00 Pm



First of all, we traveled from Saudi Arabia at Thursday Afternoon at 4:00 Pm and arrived at Dubai Airport at 5:30 Pm and waited until the next flight to Orlando. Me and my vice president we arrived there at Friday 10:30 Am at Orlando Airport and took a taxi to our hotel.

We spent the next day exploring Orlando city to some of the important places in there such as Orange County Convention Center,

Disney world and Universal studies. After that on Sunday it was the first activity of the National meeting for us according g to the schedule of event. On Sunday it was the first activity called IAC International Welcome Reception which we enjoyed meeting Ms. Miller there which from her side introduced us to different student chapter and giving us the nice opportunity for such nice networking. After

that, there was a party for the IAC International on the Orange County Convention Center. On Monday we attended the CMA Luncheon which we had the chance to learn new things about research and have the chance to meet few members of the BOD of the society and have the opportunity to communicate with different student chapters Presidents and members. Moreover, in the same day we had the chance to visit the Orange County Convention Center in the morning and attended different student activity and afternoon we had the chance to visit the exhibition in the Center which was really great experience to meet different people and to get the chance to learn about the new technologies in different filed chemistry. Moreover, we had the chance to attend different activities done by the volunteering team of the ACS, and they have done great job in volunteering in this conference. On Tuesday we had the chance to attend one of the pleasantest



activates the ACS National Awards Banquet Ceremony & General Meeting where we had the chance to see the recognition of great people in chemistry and listened to the inspirational speech of Professor. Sharpless which inspire us in many ways. On Wednesday we attended the workshop about Careers in Industrial Chemistry: Identifying Your Role in the Industrial Value Chain which we enjoyed such workshop done by the ACS and the speaker was really excellent the activity was in the Orange County Convention Center. On Thursday we had a great night of communication and sharing ideas and with the Student Chapter of United Arab Emirates. We would thank the ACS and the local society SAICSC-ACS for providing us the support to attend such nice conference and we would wish such support continues in the future.

Liquid Nitrogen Ice Cream Night

◆ Objective:

To show that chemist is not all about studying and doing research, but it has different areas where it the chemistry science can be use.

Activity Date: Wednesday, March 20, 2019

Activity Time: From 6:00 Pm to 8:30 Pm



◆ Overview:

The activity started at 6:00 PM after Maghrib prayer in student chapter and chemistry club room in KFUPM Mall. Many students started to come one after another to see what kind of activity that awaits them since this is the first-time activity to be done by the students. The chemistry club leader started to explain to them the safety instruction on how to deal with liquid nitrogen and the possible effect if any of this liquid spilled on them. After that, he asked them to start preparing

the ice cream mix and put it in the aluminum plates. Then he started to pour the liquid nitrogen from its container. And asked the student to wear gloves and start mixing the ice cream mix with the cold liquid so it started to get solid and ready to be tasted. The activity where very successful with no bad incidences. The student thanks the society and the student chapter for their support on organizing such nice activity.





Saudi Arabian International Chemical Sciences
Chapter of American Chemical Society
www.saicsc-acs.com



April 2019 Technical Dinner Meeting



Presentation Title

Energy Outlook: Integrating Climate into Strategy

Speaker

Benoît Chagué

Vice President, Total Saudi Arabia

Mr. Chagué graduated from the Institute de Chimie et Physique Industriels de Lyon (1982). He was appointed Vice-President of Total Saudi Arabia on September 1, 2016 within the Refining & Chemicals Division of Total. He is also the Country Chair in KSA for Total and Board member Saudi Aramco Total Refining & Petrochemical Company in Jubail and Saudi Total Petroleum Products in Jeddah.

Abstract

After a quick overview of Total's activities, Mr. Chagué will present a summary of a Total study about what an outlook for energy demand could be by 2040 with 2 scenarios: The first, which is called Momentum, is quite an aggressive scenario. It assumes, for instance, that by 2040, 50% of cars will be electric, however this scenario does not comply with the 2°C Scenario from IEA. As a consequence, Total have imagined a second scenario, called Rupture, that would comply with the 2°C Scenario but which requires technological breakthroughs. To end this presentation, Mr. Chagué will present what Total does to take into account climate in its strategy.

Location: Kempinski Al Othman Hotel Al Khobar

Date: Tuesday, April 30, 2019

Reception: 6:30 p.m.

Presentation: 7:00 p.m.

For online registration, please click [here](#)

For further information, please contact muzaffarkhan@kfupm.edu.sa

Regrettably, children below 15 years old are not allowed

SAICSC-ACS Membership Benefits

◆ ACS Benefits:

- ◆ Member-Get-A-Member (Bring a new local member and get a gift). Please contact the membership director (MEMBERSHIP@SAICSE.ACS.COM)
- ◆ Discounts on meetings and courses.
- ◆ Career development.
- ◆ Professional networking.
- ◆ Free and discounted ACS Journal articles.
- ◆ Free SciFinder research activities.
- ◆ Life and health insurance.
- ◆ Participations in the society OOK trip.
- ◆ Entitled for Board of Directors' election.
- ◆ You can register through this link:
- ◆ <https://www.acs.org/content/acs/en.html>

Local Membership Benefits:

- ◆ Career development. Member will have the privilege to post his/her CV in the society website.
- ◆ Professional networking.
- ◆ Participates in society's local events, monthly meetings and activates.
- ◆ Develops leadership skills through volunteering in society's teams
- ◆ Receives the society newsletter (Organon).
- ◆ Participates in the society local in Kingdom trip.
- ◆ Registration can be done onsite only till further notice

The 11th International Conference And Exhibition on Chemistry in Industry

October 29-31, 2019

Manama, Kingdom of Bahrain.



Call for Abstracts

"Breakthrough Solutions Through Innovative Materials"

Under the honorary sponsorship of **Mr. Ahmad Al Khowaiter, Saudi Aramco Chief Technology Officer**, the Saudi Arabian International Chemical Sciences Chapter of the American Chemical Society (SAICSC-ACS) is pleased to invite you to submit abstracts and participate in the 11th International Conference and Exhibition on Chemistry in Industry (ChemIndix 2019).

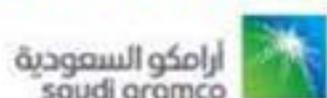
The conference covers innovative materials applications and solutions in

- Refining and Chemicals
- Artificial Intelligence
- Exploration and Production
- Analytics and Characterizations
- Health Safety and Environment

The abstracts submission deadline

April 30, 2019

Official Sponsor





Society Upcoming Events:



Best Articles to Organon-ACS-SAICSC



The competition is open to anyone for the best scientific article through

2020-2019

The prizes are

1st prize - 1000 SAR

2st prize - 750 SAR

3st prize - 500 SAR



Dr.Hind Al Johani
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For Future information please visit our website

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