



SPECIAL EDITION

Jan/Feb 2018

SandRose

Magazine



Kingdom of Saudi Arabia Section

Augmented
Reality

Jan/Feb 2018 Special Edition

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Kingdom of Saudi Arabia Section

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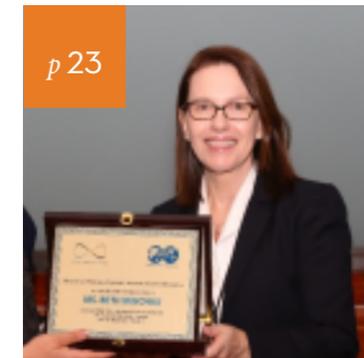
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Welcome from the Editor-in-Chief



HIND AL-RAYES

Editor-in-Chief

As the SandRose Editor-in-Chief, I would like to welcome you to an exciting new year! Marking new beginnings, new adventures, and new opportunities for the 2017-2018 term of the SPE-KSA Section.

Our SandRose editorial team will work hard to better serve our members and take the magazine to the next level. SandRose will continue to cover SPE-KSA's abundant activities and events but we want to be more innovative in our approach and offer you more creative and engaging content. This year, we are introducing augmented reality (AR) technology, where we will bridge the gap between the print and digital world.

Any great success will not be possible without a dedicated team. With that being said, I would like to take this opportunity to express my sincere appreciation to my colleague *Rawan Nasser*, our former Editor-in-Chief, who spent a great deal of effort and time in handling the magazine during the 2016-2017 term.

I would also like to express my deepest appreciation to our valuable writers, reviewers, volunteers, and readers, for their contributions, service, and interest. You have made 2017 an excellent year for SandRose Team and SPE-KSA Section. We have big plans for our term and invite you to join our efforts to enrich and inform the community through our beloved magazine. Your feedback is important to us, so please don't hesitate to contact our team with your reviews and ideas.

We wish you and your family a happy New Year! 

SandRose Contributors



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Senior Editor



ANAS RUHMAN

Creative Director



SALMA AL-HASHIMI

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JANA AL-JINDAN

Contributor



ALI AL-TOWILIB

Contributor



BAYAN WASFI

Contributor

Download our app!

For a new and exciting experience, use our new Augmented Reality (AR) technology app.

Look for this code:



Message from the Chairman

We welcome you again to a new chapter by presenting our 2017-2018 Executive Board. Our team will continue to build on the distinction of the Kingdom of Saudi Arabia Section through aligning our efforts to your needs with events that prepare you for the current and future industry challenges.

As a society for all, our teams will endeavor many areas of interest, from technical knowledge and dissemination to social responsibility. Our technical program will serve as a medium to advance technical knowledge by hosting multidiscipline speakers and distinguished lecturers. The Young Professional and Student Outreach programs will aid in maintaining and attracting top talent to the benefit of our industry as well as our national goals.

This year, we integrate efforts with other institutions to cater programs that ignite interest of students towards our industry through various programs, courses, and workshops. Our crown jewel of events, The Annual Technical Symposium & Exhibition, “Where Energy Meets Intelligence” will showcase innovations capable of transforming the industry in today’s dynamic challenges in order to drive long-term gains in efficiency. Sandrose magazine, powered by our members, will feature our activities as well as highlight recent advancements in science, engineering, and technology. We will continue to serve local communities through leading and collaboration with non-profit organizations to cultivate a spirit of citizenship.

We look forward to bringing you an exciting year full of events and activities, hoping you continue to be our partner in success!



DR. ZEID AL-GHAREEB
Chairman, SPE-KSA Section

Meet our SPE-KSA 2017-2018 Executive Board



DR. ADEL AL-QAHTANI
2018 ATS&E
Chairperson



ABDULAZIZ AL-SULAIM
Technical Programs
Chairperson



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Chairperson



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Trips & Social Activities
Chairperson



MAGID AL-GHAMDI
Membership
Chairperson



DR. MUBARAK AL-DOSSARY
Information Technology
Chairperson



HIND AL-RAYES
SandRose Magazine
Editor-in-Chief



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Treasurer



ABDULLAH AL-MULHIM
Event Management
Chairperson



AKRAM AL-BARGHOUTI
Planning & Coordination
Chairperson



ANAS RUHMAN
Public Relations
Chairperson

SPE-KSA Executive Board Bios

DR. ZEID AL-GHAREEB

is a Petroleum Engineer working in Reservoir Description and Simulation Department at Saudi Aramco. Zeid was the recipient of the Saudi Aramco Excellence Award in 2014. In addition, he was awarded a seed fund grant of \$150,000 from MIT Energy Initiative (MITEI) in recognition of his doctoral research. Zeid holds a B.S. degree from Tulsa University, M.S. from Stanford University, and Ph.D. from MIT. He is also a voracious reader with interest in behavioral economics and decision-making: heuristics and biases.

DR. ADEL AL-QAHTANI

is a Senior Petroleum Engineer leading Gas Reservoir Technical Studies Group at Gas Reservoir Management Department, Saudi Aramco. He has a PhD in Petroleum Engineering from Colorado School of Mines with focused research on Geomechanics Characterization.

ABDULAZIZ AL-SULAIM

is a Petroleum Engineer at Saudi Aramco working on strategic planning of gas capital projects. He started volunteering with SPE-KSA since 2012, and continued handling different roles reaching to Technical Programs this term. He has a degree in Petroleum Engineering coupled with Energy Business and Finance from Penn State University.

AFNAN AL-ABDULKADER

has been an active volunteer with SPE since she joined Aramco in 2014. She worked with different teams since then. Afnan is an MBA graduate from the American University of Sharjah, UAE and currently works with PE&D HR & Training unit as a professional development training advisor.

SULTAN AL-MADANI

holds a Master degree in Engineering Management and a Bachelor degree in Petroleum Engineering from KFUPM. He has 10 years of experience with Saudi Aramco including designing and implementing mega upstream projects. He served in Khurais Increment, and was involved in the development of sand oil in Central Arabia with intelligent field capabilities. Sultan co-authored several SPE technical papers and a patent in wellbore flow control. In addition, he is an SPE certified engineer and leader of many SPE programs since 2009.

ALI AL-YAMI

has a Bachelor degree in Finance and a Master Degree in Business Administration (MBA) from The United States. Ali is working with Southern Area Reservoir Management at Saudi Aramco and has been in different assignments with PE planning, PE contracting, and Finance. Ali sees volunteering as a way of life. His goal is to inspire others to give back to the community in any way they can, not because they have to, but because they want to. Since 2014, Ali has been an active member with several teams in SPE-KSA.

MAGID AL-GHAMDI

is a drilling engineer with the Exploration and Oil Drilling Engineering Department. Magid is a graduate of King Fahd University and University of Southern California with degrees in Petroleum Engineering. He has been with Saudi Aramco since 2007 working in several disciplines including production engineering and drilling operation & engineering. He is a very active member of SPE-KSA.

DR. MUBARAK AL-DOSSARY

is a Reservoir Simulation Systems Analyst with PEASD/ECC. Mubarak Joined Saudi Aramco in 2000 after completing a B.S. degree in Computer Science from KFUPM. He currently holds a Ph.D. in Petroleum Engineering from Texas A&M University, and his research interests are uncertainty quantification and analysis. Mubarak has been an active member of SPE since 2002. Mubarak enjoys physics programming and big data visualization.

HIND AL-RAYES

is a planning and performance analyst working in Petroleum Engineering Admin Area at Saudi Aramco. She holds a B.S degree in Computer Information Systems from King Faisal University, Dammam. Hind has been a member in the SPE since 2012. She served as section treasurer in 2017 and she is currently the Editor-in-chief for the SandRose Magazine for the 2017/2018 term. She is also a member of SPE Women in Energy Global Committee. Hind received the SPE Regional Young Member Outstanding Service Award in 2017.

ABDULLAH AL-GHAMDI

is a petroleum engineer assigned to work as senior production engineer and acting supervisor for Saudi Aramco at Southern Area Production Engineering Department's South Ghawar Division. Abdullah has a B.S. Degree in petroleum engineering from Louisiana State University, U.S.A. and a M.S. Degree in petroleum engineering from University of Texas at Austin, Texas. Abdullah has been an active SPE member for KSA Section since 2010 where he supported the section in planning and facilitating technical and social events.

ABDULLAH AL-MULHIM

is a petroleum engineer who graduated from King Fahd University of Petroleum and Minerals (KFUPM). He carries 15 years of experience in the upstream industry. In the beginning of his career, he worked as a production engineer. Abdullah is currently a general manager at EROG.

AKRAM AL-BARGHOUTI

graduated in 2013 with a bachelor degree in petroleum engineering and minors in Business Administration & Technical Sales from Louisiana State University, USA. Since then, he worked with Saudi Aramco as a production engineer for 3 years and 1 year as a reservoir engineer. Akram has been heavily active with SPE-KSA, participating in events and leading multiple teams. He is currently the planning & coordination chairperson for the 2017/2018 term. Akram enjoys working with people and creating a real impact. In college, he worked as a radio reporter/announcer for the university radio station. His hobbies include sports, public speaking, event management, and cooking.

ANAS RUHMAN

is an experienced visual communications designer and project manager working under Upstream Continuing Excellence for the Upstream Professional Development Center at Saudi Aramco. Anas is a key performer specializing in creative direction and innovation. He manages design and media projects from idea to production. Anas is an expert in event experience design and the visual communication of information for global business, government, politics, philanthropy, fashion, food, and travel industries. Anas holds a Bachelor of Arts degree in Art and Visual Technology from George Mason University. In his free time he explores his passion for music, photography, and art. 

SPE-KSA's International Awards

OCTOBER 2017

The Distinguished Lifetime Achievement Award is SPE's highest award, and has only been presented three times before; to a minister and two senior officials in the petroleum industry.



**DISTINGUISHED LIFETIME
ACHIEVEMENT AWARD**

AMIN H. NASSER

*President & Chief Executive Officer,
Saudi Aramco*

SPE International Awards were presented at the Annual Technical Conference and Exhibition in San Antonio, Texas.

**CHARLES F. RAND
MEMORIAL GOLD
MEDAL AWARD**



NASIR K. AL NAIMI

*VP of Petroleum Engineering
& Development, Saudi Aramco*

**YOUNG MEMBER
OUTSTANDING
SERVICE AWARD**



ALI ALKHATIB

*Sr. Petroleum Engineer,
Saudi Aramco*

**DISTINGUISHED
MEMBERSHIP
AWARD**



NABEEL I. AL AFALEG

*Chief Petroleum Engineer,
Saudi Aramco*

**DISTINGUISHED
MEMBERSHIP
AWARD**



SIDQI ABU-KHAMSIN

*Professor of Petroleum Engineering
with the Department of Petroleum
Engineering at KFUPM*

The first Meeting

NOVEMBER 2017

H.E. DR. MAJID AL MONEEF

Advisor to the Saudi Royal Court
Former Secretary General of Saudi Supreme Economic Council



The Society of Petroleum Engineers, Kingdom of Saudi Arabia Section, held its inaugural technical dinner meeting on Wednesday, November 22, 2017. This dinner meeting hosted *His Excellency Dr. Majid Al Moneef*, Advisor to the Saudi Royal Court and member of Saudi Aramco's Board of Directors, with attendance exceeding 460 professionals representing several companies in the oil and gas industry. The dinner meeting started with an introduction by the SPE-KSA Chairman *Dr. Zeid Al-Ghareeb* during which he welcomed attendees and highlighted the mission and vision for this year's term.

Dr. Al-Moneef's speech stressed on the disruptive factors impacting the long term global oil market outlook. His Excellency gave some insights about the current international energy landscape from China's leadership to the new role of the U.S. in the oil and gas market and the world's commitment to fighting climate change. Moreover, he emphasized on the impact of today's oil market on the Kingdom's economy and potential growth factors from the new local reform. His Excellency was then presented with a token of appreciation from *Dr. Mohammed Al-Qahtani*, Senior Vice President of Upstream at Saudi Aramco and Honorary Chairman of the Board of Directors to the SPE-KSA Section, and *Mr. Nasir Al-Naimi*, Vice President of Petroleum Engineering & Development at Saudi Aramco and Chairman of the Board of Directors of SPE-KSA, for his participation in this event. SR



SPE- KSA 2017-2018 Board of Directors, Executive Board, and other Team Members



Dr. Sami Al-Neaim



H.E. Dr. Majid Al Moneef and Azzam Shalabi



Khalid Zainalabedin
Dr. Abdulaziz Al-Kaabi



Dr. Zeid Al-Ghareeb



LEFT TO RIGHT:
Abdulaziz Al-Sulaim, Dr. Zeid Al-Ghareeb, Mr. Nasir Al-Naimi,
H.E. Dr. Majid Al Moneef, and Dr. Mohammed Al-Qahtani

Modern Decline Curve Analysis

DECEMBER 2017

DR. TAREK AHMED

Founder of Tarek Ahmed & Associates Ltd. and former Professor & Chairman of the Petroleum Engineering Department at Montana Tech of the University of Montana



Attracting an exceptional number of attendees for the kick-off event, Dr. Tarek Ahmed presented his latest findings on Modern Decline Curve Analysis Methodologies in the first Technical Series session of the term. Dr. Ahmed discussed the different approaches

to the application of Arps equation in reservoir engineering, and the importance of selecting the appropriate set of data in analyzing the historical performance and forecasting the future of a field, while demonstrating his views with real life examples of production analyses. 

Looking for
fresh content

& new writers!



Send us your
article ideas
and viewpoints.

Share your words with us,
sandrose@spe-ksa.org

The articles in SandRose magazine highlight our strong community of energy industry professionals and students through the articles you write on techniques and technologies, viewpoints, ideas, and relevant activities.

Leverage SandRose as your platform to feature perspectives in the energy sector from any discipline. Send us topics that you find most interesting or interviews that you've conducted with leaders or colleagues for our community to enjoy and learn from. Include relevant high-resolution photos with captions to complement your stories.

We encourage anyone interested in learning and practicing content strategy, magazine development, or design and layout to join the SandRose team as a volunteer.

Regards,

Hind Al-Rayes
Editor-in-Chief



Dr. Zeid Al-Ghareeb



Ayman Al-Abbad and Saud Al-Aithan



Mr. Nasir Al-Naimi



SPE- KSA 2017-2018 Board of Directors, Executive Board, and other Team Members



Dr. Mohammed Al-Qahtani



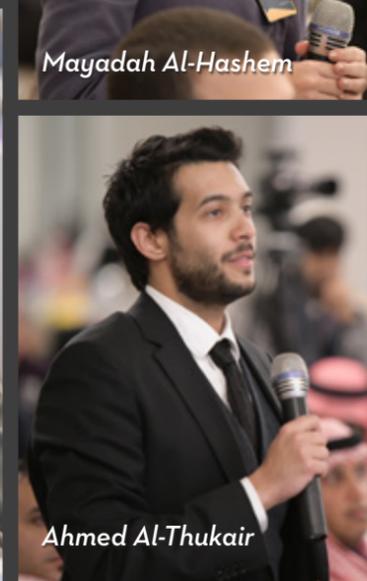
Mayadah Al-Hashem



Abdullah Al-Thuwaini



Tofiq A. Dhubaib



Ahmed Al-Thukair



Abdulaziz Al-Sufyan and Mohammed Al-Zubie

TECHNICAL PROGRAMS

TECHNICAL DINNER



Big Data, Artificial Intelligence, and Machine Learning

JANUARY 2018

DR. JOHN R. WILLIAMS

Professor of Information Engineering at the Massachusetts Institute of Technology (MIT)



The Society of Petroleum Engineers, Kingdom of Saudi Arabia Section, hosted Dr. John R. Williams, Professor of Information Engineering at the Massachusetts Institute of Technology (MIT) during the December Technical Dinner meeting that took place on January 2, 2018.

Dr. Williams' speech, titled Leveraging Big Data in the Oil Industry, discussed the importance of utilizing the massive amount of data available to companies today, and the great advances we are witnessing in machine learning and autonomous systems enabled by big data. He also addressed the importance of building data capabilities and the evolution of IT infrastructures.

Over 330 people attended the session, ranging from various management positions, engineers, and students. Williams was pleased with the large turnout of engineers

and managers to the event. He enjoyed the conversation that ensued about the potential for using Big Data in the oil industry, he said:

"I found the discussions stimulating as we delved into technical topics related to the oil industry and the future of the world economy,"

Members of management presented Dr. Williams with a recognition trophy as a token of appreciation for his participation in this event. The event was attended by Dr. Mohammed Al Qahtani, Senior Vice President of Upstream in Saudi Aramco and Honorary Chairman of the Board of Directors of SPE-KSA section; and Mr. Nasir Al Naimi Vice President of PE&D in Saudi Aramco and Chairman of the Board of Directors of SPE-KSA.

Ambassador Lecturer

DECEMBER 2017
 SULTAN AL-MADANI
 Student Outreach Chairperson



The First Ambassador Lecture at Dhahran Secondary School



18th University Exhibition held at the Dhahran Ahliyya Schools (DAS)

The SPE-KSA student outreach team visited Dhahran Secondary School to introduce the activities of the section to the students and how the young participants can be a part of the society in the future.

The volunteers engaged with 35 participants and shared the Ambassador's Career Path and decision making processes. To give the students an idea of what SPE members take interest in, they offered a brief explanation of Intelligent Field technologies in streamlining real-time data for managing fields, wells and reservoirs.

ENRICHING YOUTH IN SAUDI ARABIA

The student outreach team conducted over 20 sessions with students and presented overviews about petroleum engineering and the Ambassador Lecturer Program (ALP). This program, a flagship platform of the SPE, is targeting to reach all potential talents in Saudi Arabia. ALP program also encourages the young professionals

(YP) to be influencers, as YPs shared their life-story with the Oil & Gas industry across a wide spectrum of topics including Innovation and Technology, Secrets of Success, Life- Long Learning and Women Empowerment, etc.

ALIGNING OUR CITIZENSHIP VALUE AND SOCIAL RESPONSIBILITY

The Ambassador Lecturer Program is enriching the learning experience of young professionals and students by encouraging them to build on their strengths to reach their potential.

As of today, the Student Outreach team has approached approximately 400 students in the Eastern Province. All presentations were well received and witnessed lively discussion. This effort has been powered by the collaborative spirit of local entities that have been keen on aligning with SPE-KSA's citizenship values and goals.

INSPIRING AND ADVOCATING THE ADVANTAGE OF SPE MEMBERSHIP

During the 18th University Exhibition held at Dhahran Ahliyya Schools (DAS), SPE-KSA was represented by three engineers from Saudi Aramco, Bayan Wasfi, Rowa Tawfiq, and Suha Kayum.

Dozens of schools across the Eastern Province attended the event to explore their options and opportunities and were encouraged by the SPE members to join the international organization. In addition to the exhibition, SPE also participated in the presentation section of the event, and delivered the SPE ambassador lecturer presentation to the DAS senior class. The presentation engaged the students with the purpose of inspiring them to pursue their education in fields related to the oil & gas industry. **SR**



SPE-KSA was presented with a certificate of appreciation from Dhahran Ahliyya Schools.

Environmental Campaign Plant Me

DECEMBER 2017



“The best time to plant a tree was 20 years ago, the second best time is now.”

SPE-KSA considers society and environment as one of its primary objectives, Trips & Social Activities team collaborated with Muslim Al-Bouri Garden to organize an environmental campaign titled “Plant Me”. SPE-KSA volunteers directed attendees to the importance of planting trees “and inspired them” to plant more than 1500 trees in Khobar area. The team had the chance to discuss briefly the importance of trees and raise the awareness of the consumption of trees to produce goods,

such as papers. The booth successfully attracted attention through its decoration, interactive questions, and instant photos. More than 1000 flowers seedlings were distributed to the booth visitors.



Noha Al Lababidi
PlantMe #1 Team Lead

BRING YOUR MUG

The team initiated the “bring your mug and we will fill you up” campaign, where free coffee vouchers were distributed to the visitors who brought their non-paper mugs. This successfully minimized the paper cup consumption, and raised the awareness of sustainability. The number of the registered volunteers who showed their high interest to participate in planting trees in the next phase of this campaign exceeded 500 people.

“Plant me was a small opportunity to pay back the land that gave us a lot! I am thankful that I was a part of such an event.”

—Noha Al Lababidi

PLANT ME PHASE TWO

At the second “Plant Me” environmental campaign more than 200 volunteers from all ages participated in planting more than 250 trees and 1000 flowers.

The Trips & Social Activities team collaborated with Al Khobar Municipality to launch the second campaign. The event started early in the morning at Khobar Towers Park, where volunteers were welcomed by the organizers and prepared for the active task ahead. When the volunteers started planting, they were asked to hang tags with their names and the date to send a message to the park visitors on the importance of planting trees and to signify how personal and meaningful this experience is for them on an individual level.

Every single person was excited to take part in an activity that benefits both the environment and the community. They will surely return to the same spot to check on how their plants are growing! SR

“Happiness was one word that could describe the facial expressions of volunteers after planting their trees. As a leader for Plant Me phase two, happiness filled my heart when I saw the excitement and read the feedback. Every detail added joy to the place, the plants, name tags, and the awesome spirit of T&SA team members. It was a success.”

—Rawiyah Alshammari



Blood Campaign

DECEMBER 2017




Mobile Blood Donor Unit was parked next to EXPEC II Building at Dhahran core area



“A small drop of blood, a great hope for life”

The Trips & Social activities (T&SA) team has organized a blood donation campaign for two days in collaboration with Johns Hopkins Aramco Healthcare. The campaign activities included setting up a booth for donors to register in EXPEC I building at Dhahran core area, and the Mobile Blood Donor Unit was parked next to EXPEC II Building at Dhahran core area, which eases the process and saves time for donors. The objective of this campaign was to raise the level of awareness in our society to the significance of blood donation in saving others' lives and the fact that 60% of people can donate but only 5% do. The campaign has successfully supplied the blood bank with more than 51,000 ml of whole blood types from 118 donors. These precious blood drops will play a major role in saving the lives of hundreds of patients. SR



Group picture with the 2019 SPE president Dr. Sami Al-Neaim



LEFT TO RIGHT: Latifah Al-Nasser, Sarah Al-Dossary, Ali Al-Yami, and Yousif Al-Tahan

Building a Game Changer

DECEMBER 2017

MR. ZIAD AL LABBAN

Former CEO of Sadara Chemical Company



With around 80 plus attendees, the auditorium was filled with eager smiles and knowledge-hungry eyes as Mr. Al Labban walked the audience through Sadara's journey and the building blocks to building a successful company.

Sadara is the first petrochemicals company to produce specialty petrochemicals in addition to commodity petrochemicals. Mr. Labban started off by walking us through the difference between specialty and commodity petrochemicals. He then transitioned to outlining management's priorities when building a corporate culture: Financing, Staffing, Building the complex, and company.

Mr. Al Labban then invested a generous amount of time discussing an area that he was passionate about: the pillars to building a company "with a value system", as he puts it. He said, "I cannot tell you what the future will look like. But, if I'll face any challenges, I need three things to be working well: Teamwork, Communication and Trust". With teamwork, Mr. Al Labban emphasized on asking questions, listening and, most importantly,

taking action. With communication, he said that a few methods utilized in Sadara include: Social media (Yammer), Town Hall Meetings and Informal Gatherings. As for trust, two important courses of action were advised: "Be transparent with your weakness and walk the talk".

"Be transparent with your weakness and walk the talk."

Mr. Al Labban concluded by gifting us with an important piece of wisdom, "When you're willing to share your weaknesses with people, it's amazing to see how they open up. This is how you build trust". We then ended the session by granting Mr. Al Labban an acknowledgment and appreciation trophy presented by Mr. Khalid Zainalabedin, Afnan Al-Abdulkader, Adel Al-Qahtani and the Inspirational Speakers Team Leaders, Mohammed Al Nahas and Rabab Al-Meshikhes. SR

A Nontraditional Career Path

NOVEMBER 2017

BETH MINCHAU

Lawyer



"I have changed three different jobs at Aramco and I can honestly say that each has built on the other in a very effective way and it has been rewarding to me."

Over 150 employees and students stepped into the EXPEC Auditorium to attend the first 2017-2018 SPE-KSA Young Professionals Inspirational Leaders session titled "A Non-traditional Career Path". Lawyer Beth Minchau was the featured speaker, who encouraged attendees to follow their passions, go the extra mile and to add value wherever they go.

Beth shared the non-traditional path that she followed to transition into her current career as a lawyer. In the beginning of her journey, she worked in IT handling the company's software contracts and following that she worked with the company's contracting department. Although it took a considerable amount of time to reach her goals, Beth reminded attendees that happiness at the workplace is linked to the level of satisfaction one has with the quality of work that they are engaging in and how it fits in with their own priorities and values.

Beth, who was selected as the Most Influential Canadian Expat by the Canadian Expat Association, was involved in major projects such as the construction of King Abdullah Stadium (Al-Jawhara) in Jeddah. About her "wandering path" she said: "it has been interesting at every step".

The ever-increasing pace of transforming information and the way business is evolving played a role in shaping her career path. Beth conveyed a strong message about how fundamental education is to continue growing in one's career and said "Law school taught me how to reason and think logically. Anything worth doing starts with being scared". She closed with a reminder to "Take time to laugh" because it puts life and work into perspective. SR

Make the Connection

Collaboration with Qudwa

DECEMBER 2017

A total of 75 participants took part in the first event of its kind where SPE-YP Balance Team collaborated with Qudwa to bring to fruition an interactive and guided session on networking.



encouraged them to try their newly acquired skills. These skills included tips on how to grab attention, build and maintain your network, and enhance your social networking abilities.

The attendees consisted of a diverse demographic with a 56:44 ratio of gentlemen to ladies and a remarkable 83% of the attendees being young professionals, the target demographic for the event. The presence of senior professionals (18%) provided an interesting perspective and an exchange of ideas between the two demographics.

This diverse group of professionals was guided by Mr. Mehaboob Abdulazeez who shared tips on networking both in social and professional contexts and then steered the participants through a series of activities, which

At the end of this session, a number of participant left feedback to describe the event and what they got out of it. One of the participants thought that the diversity at her table gave a very interesting perspective where she was joined with people from JHAH, Schlumberger, and Saudi Aramco's HR.

Another participant highlighted how they liked the Warren Buffet quote at the end of Mr. Mehaboob's presentation which was "honesty is a very expensive gift." SR



For more information about Qudwa visit qudwa.org

Qudwa



Lunchtime Yoga

RAWAN ALASAD

Geologist

Join us in the lunchtime yoga series for a quick boost of energy and mental clarity!

Yoga has been known to reduce the effects of stress, cultivate mindfulness, improve concentration, and build strength, stability and flexibility. Taking a break from your hectic work schedule and dedicating time for your mental and physical well-being will take you a long way on the path to a balanced and healthy living.

If you are a yoga fan you can check our new events section on the SPE-KSA website to keep informed about the next session.

spe-ksa.org/yp/events



Rawan Alasad is a Geologist in the Red Sea Exploration Department at Saudi Aramco. She is a certified yoga teacher and has nine years of experience practicing and teaching yoga in the United States, Canada, and Saudi Arabia.

The best preparation for tomorrow is doing your best today.

—H. Jackson Brown J.R.

SPE TALENTS

Where science meets art

Geode Cake

SALMA A. AL-HASHIMI

Contracts Advisor, Saudi Aramco

This cake was inspired by the beauty of Geode rocks, which are geological secondary structures that occur in certain sedimentary and volcanic rocks. Geodes and geode slices are sometimes dyed with artificial colors. Working on this cake took 10 non-stop working hours! 



Kingdom of Saudi Arabia Section

In this section, we will showcase the diverse skills of SPE members.

Share your passions with us,
sandrose@spe-ksa.org

Salma A. Al-Hashimi is a Cake Artist and founder of Looma's Baking Décor @LoomasBDecor



April 22-26, 2018

Dhahran Expo Center, Dammam

where **energy** meets **intelligence**

The event will shed light on the transformation to automation and intelligence in meeting global energy demands, highlighting innovative solutions in optimizing consumption, lowering production costs, and overcoming today's dynamic challenges.

The 2018 AT&S&E topics encompass:

- Reservoir dynamics and description
- Production and facilities
- Exploration and appraisal
- Drilling and completion
- The Fourth Industrial Revolution - 4IR
- Energy economics, human resources, and HSSE

AT&S&E is a platform for regional and international professionals, academics, and researchers to exchange views, expertise, and knowledge on the latest industry research and technology.

We look forward to your participation.

Dr. Adel A. Al-Qahtani
2018 AT&S&E Chairperson

For more information, please contact us at ATSE_TP@spe-ksa.org



Kingdom of Saudi Arabia Section

www.spe-ksa.org/atse

FEATURE



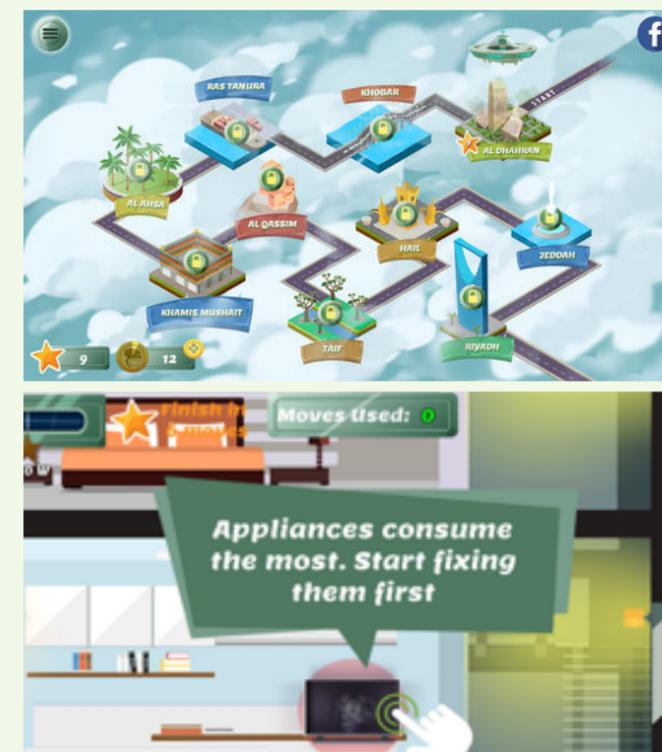
SPE Collaborating with ITHRA



ENERGO is a game that was developed as part of Energy-to-the-Kingdom (E2K), an initiative of Saudi Aramco. The theme of the game is adventure-action with the objective of promoting energy conservation within the Kingdom.

In addition, the game educates players about the benefits of using various energy resources. Energo tackles six energy conservation topics (electricity usage, wind power, water usage, recycling, transport and atomic energy) in 10 different cities around the Kingdom of Saudi Arabia.

The player will help the main character, Energo, in his adventures and will guide him through all the challenges in competing with the main antagonist, Wasto, in order to preserve the Kingdom's energy. E2K initiative focuses on growing, diversifying, and saving its energy supply to the Kingdom. The game is available to download for free from App store.





What is 4IR?

by SALEM AL-GHARBI, Drilling Data Scientist, Saudi Aramco

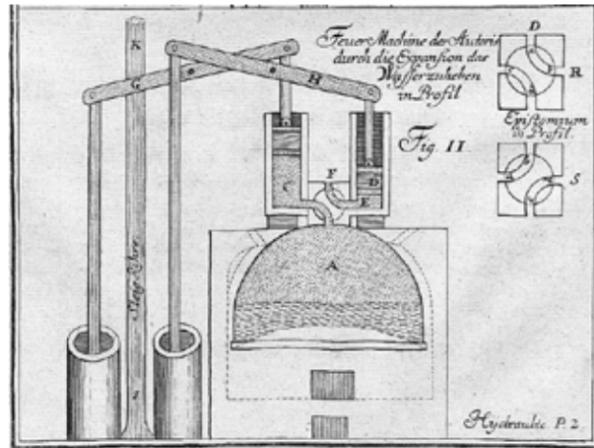
Some people call it The Fourth Industrial Revolution, industry 4.0, or simply 4IR. If this is the fourth one, then what was the third, second, or the first one? This article will share some answers for these questions.

Since the dawn of humanity, muscles were the main source of power; people used their own muscles to move, travel, make clothes or to manufacture materials. If more power was needed, they used animals' muscles like those of camels or horses. This power source was scarce and required a lot of fuel: food. In a few cases, our early ancestors used the power of wind and water, but it was limited to specific geographical areas which minimized its impact on human life.

The human power development rhythm was almost steady until the 18th century, when Thomas Newcomen invented the first commercial true steam engine using a piston; unleashing the power of steam. No need for muscles anymore, wood and water would generate a steam that will do all the needed movement. The wood was replaced by coal, generating more power, by then the **First Industry Revolution: Steam Revolution**, become a reality—mankind was able to build big factories, carry goods through big steam engines in ships and trains to any part of the earth. During that era, moving pistons were seen almost everywhere.



Animals' strength was the main power for agriculture.



Sketch of early prototype of piston steam engine.

Even though the piston was the heart of every manufacturing facility, it was people's responsibility to combine and integrate all the parts together. This required each person to have full understanding of all the manufacture parts, its functionality and how it fit with each other; this was not an easy task. In the 20th century, in order to solve this challenge, Henry Ford introduced the assembly line into his automobile manufactory, where each team was responsible for one-and-only one task, "do it and pass it to the next team", this increased his manufactory production by eight to one, launching the mass production era, which was known as the **Second Industry Revolution: Assembly Line, and Mass Production Revolution**. The assembly line concept introduced the team specialty concept, leading to higher quality products, and gave rise to production optimization ideas, which added more energy to the fast second industry revolution. It is worth mentioning that the automobile industry was booming in this period, which increased oil demand.

Late 1950s, the steam that powered the manufactures, was replaced by electricity; on parallel efforts computers moved from solving academic problems to control the



The assembly line in automobile manufactory.

manufacturing process. Adding to the equation the sharp development of telecommunication, these combined led to the **Third Industry Revolution (the Digital & Electrical Revolution)**. The Telephones, Television, Telefax, helped connect people together to exchange information and explore new industrial opportunities. Aligning with that, computers were controlling the manufacturing process 24/7; generating products faster, with more accuracy, and with less manpower, which boosted the third industrial revolution.

Nowadays, computers are smarter, robots are faster and more flexible, and advanced material are invented to serve different goals. We are surrounded by intelligent gadgets, massive amount of data is generated and collected in micro-second frequency. Imagine if all of these systems were connected and communicated with each other? This is the **Fourth Industrial Revolution: 4IR**. It injected intelligence into the tools surrounding us (such as cars, mobiles, refrigerators, TVs, and home sensors), which will observe and collect data about their owners' behavior, then utilize the advanced cybersecurity



Computer replaced human in controlling and running manufacturing.

technology to pass these data to cloud computing to simulate it, run artificial intelligence models leading to predictive behavior. After that, all these tools will proactively provide the best service to their owners.

This technology will raise the level of the tools around us from reactive mode to proactive mode. A simple example is the auto self-driven vehicle, it used to be driven by a person, now it can drive itself. Imagine the big impact self-driven vehicles will introduce to the human behavior, extend that vision to all the 4IR technologies integrated with each other and supporting our lifestyle.

Currently there are a lot of investments in research and manufacturing to develop intelligent and integrated technology that allows autonomous devices to communicate and make decisions. The oil and gas industry is working hard to deploy big data and analytic infrastructure, implementing Internet-of-things (IOT) on the field equipment, and exploring the opportunities of having robots on the derrick floor. One day, we might have a fully automated drilling rig. SR



Healthy tips for



By **LAYAL ALKHATIB**
M.S. Nutrition, JHAH

I can't remember the last time I stuck to my New Year's resolutions, if I ever did. Every year I set wildly unattainable goals, leading me to dismiss all of them almost immediately after failing just one. If you also have this problem, this year let's try something new.

Let's go with setting realistic and attainable goals that can nourish and nurture us and those around us, goals that can feed our lives with strengths to endure challenges and to be our best selves. Let's make 2018 a year of health, prosperity, appreciation and achievement. Be the best version of yourself and follow these tips to lay a foundation for a happy and healthy year.

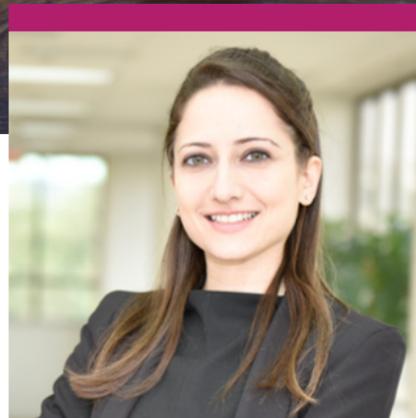
BALANCE IS KEY

Work-life balance...does it really exist? Only as much as you will allow it to. Having a clear barrier between your job and your personal life is key to a happy and healthy life, and it can make you a more productive employee at work and a well-rounded, fulfilled person outside of work. During your out-of-work existence, unless you have work

emergencies, your focus should be on your life and the people in it. Leave your office at a reasonable hour and allow time to unwind after a long day and to spend time with your family and friends.

LIMIT SCREEN TIME

Let's face it, if you are not glued to your computer screen, it's your TV screen, and if that's not the case, then it's your mobile phone screen. The digital world has taken over, but you can control that. Staring into a screen for hours on end can have negative effects on your eyes, your posture and your physical and mental health. Aim to limit your screen time to less than two hours per day, and that means all screens. i.e., computer, television and mobile devices. Try reading an interesting book, working on a puzzle or doing something you enjoy that does not include a screen. The key here is to "Disconnect to Connect."



AN ATTITUDE OF GRATITUDE

Saving your worries for another day and showing an appreciation for your surroundings keeps you grounded and living in the present. Mindfulness is the rage now for a reason; living in the moment helps you focus more and stress less, allowing for your creativity to flow and your productivity to flourish. Wherever you may be, just close your eyes for a few minutes, breathe deeply, count your blessings and then you will be ready to tackle what comes your way.

GET YOUR BEAUTY SLEEP

An adequate amount of sleeping restores and rejuvenates your body, helps you perform better mentally, improves your productivity and even helps you manage your weight, which in turn reduces your risk of chronic disease. As an adult you need at least 7-9 hours sleep to gain all the benefits sleep provides.

FIBER-UP

When I say fiber do you think of bland and hard to chew high-fiber bran cereal? You may be right, but wait there's more! You can find fiber in fruits, vegetables, nuts, whole grains and beans. Did you also know that popcorn is a good source of fiber? Just go easy on the salt and butter. Fiber aids digestion, helps lower cholesterol and regulates your blood sugar levels.

SPEND TIME WITH YOURSELF

Some alone time every once in a while can help you recharge and rejuvenate. The hustle and bustle of everyday life can drain you and make you neglect someone very important, yourself! Take yourself out for walk or a shopping spree, spend some quiet

time alone to align your thoughts and goals or to just recharge; you can't give when you are running on empty. Go by the mantra of "treat yourself!"

GET MOVING

Sitting for long hours doesn't serve your body well, whether it's in your office or on your couch at home. Keeping active fights chronic diseases such as heart disease and diabetes while contributing to your mental wellbeing as it reduces stress and helps ward off depression. Try to do at least 30 minutes of physical activity a day and keep moving!

BREAK AWAY FROM ROUTINE

Ever hear about how short life is? While some routines are a necessity for everyday life, that doesn't mean you are off the hook of taking responsibility for how you choose to spend your days. Bring something new into your life that feeds your soul; sign up for that interesting course you have been meaning to take, read that book you have been saving, go on that trip you have been planning or volunteer in your community and give back. Keep challenging yourself to live a life you can be proud of.

STOP THAT DIET

Dieting implies limiting what you eat for a short amount of time until you achieve your target weight or lower your cholesterol level. For many of us, we then go back to our old ways. Instead, aim for a healthy lifestyle change where eating fruits and vegetables is the norm and eating whole grains instead of white, processed carbohydrates is simply a habit. Eat greens, skip processed foods; exercise and avoid high fat and sugary foods and you will never have to diet again! SR



Geological Treasures

by **GHAITH A. AL-SHAIA**, Geophysicist

photos by **ABDULAZIZ AL-SHAIA**

As a geophysicist in Exploration Operation Department at Saudi Aramco, my job is to help in exploring the hydrocarbons treasures underground.

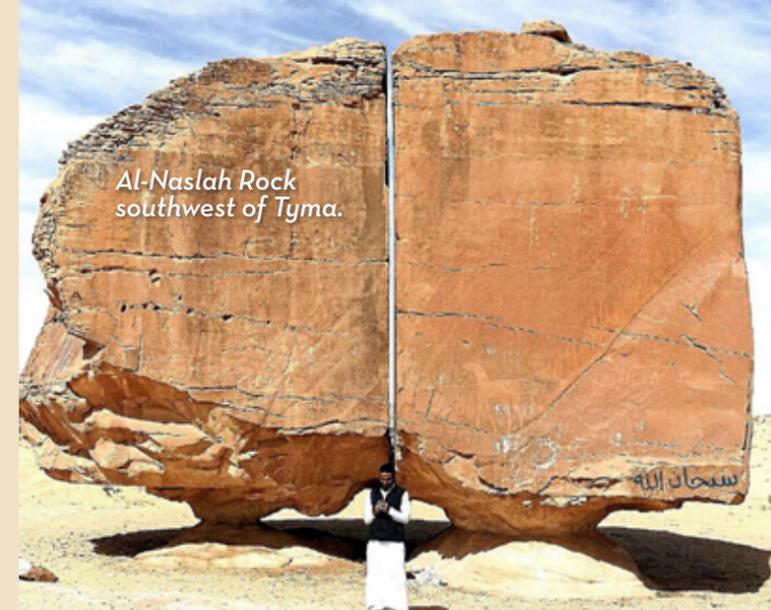
My ultimate passion is exploring geological and archaeological treasures above the massive land of our Kingdom and they are as abundant as the hydrocarbons underneath. Both are great economic resources, one is fully utilized while the other is still under-utilized.

Since childhood, I was obsessed with the books and diaries of western travellers, who left their modern countries to explore the wilderness of Arabia hundreds of years ago. Among them were the French traveler Charles Huber, and German explorer Julius Euting, who made history during their 1884 exploration trips to northern Arabia by finding the famous Taima Obelisk, which is resting now at the Louvre museum. During their

“We travelled for five consecutive hours in a wonderful desert where mountains rise to about 150 meters. It is a wonderful mountainous area with abundant grassland. If this place were in Europe it would be full of tourists.”



Historic Arabic and Islamic engravings.



Al-Naslah Rock southwest of Tyma.



More engravings in the Al-Naslah region.

journey, they wrote about every daily detail of their trip, which included maps, copies of inscriptions, drawings and paintings of the Arabian life at that time, mountains, caves, valleys and other geological and archaeological wonders they passed by.

They even left their signatures engraved on the rocks by their stops. All this time, I had been travelling out of the Kingdom while such treasures were nearby, in my own country, that travellers such as Euting and Huber explored on camels. Feeling inspired, I decided to follow in their steps with my family and go on an expedition to stand face to face with such magnificent wonders.

We started by studying their routes and trying to match their old maps that they drew with our

own modern satellite maps. We didn't know for sure how successful we would be until we found the places they described and spotted their signatures engraved in the rocks of northern Arabia 133 years ago.

The feeling of finding a place that you only read about before is indescribable! One magazine article is not even enough to go through all the details of our findings and the several exploration trips we did in the Arabian desert.

What I want to emphasize for young explorers who want to travel the world in search for old artifacts and hidden treasures is that they can start exploring their country's national treasures and help in exposing them to the outer world. **SR**



Signatures and dates engraved on the rocks.



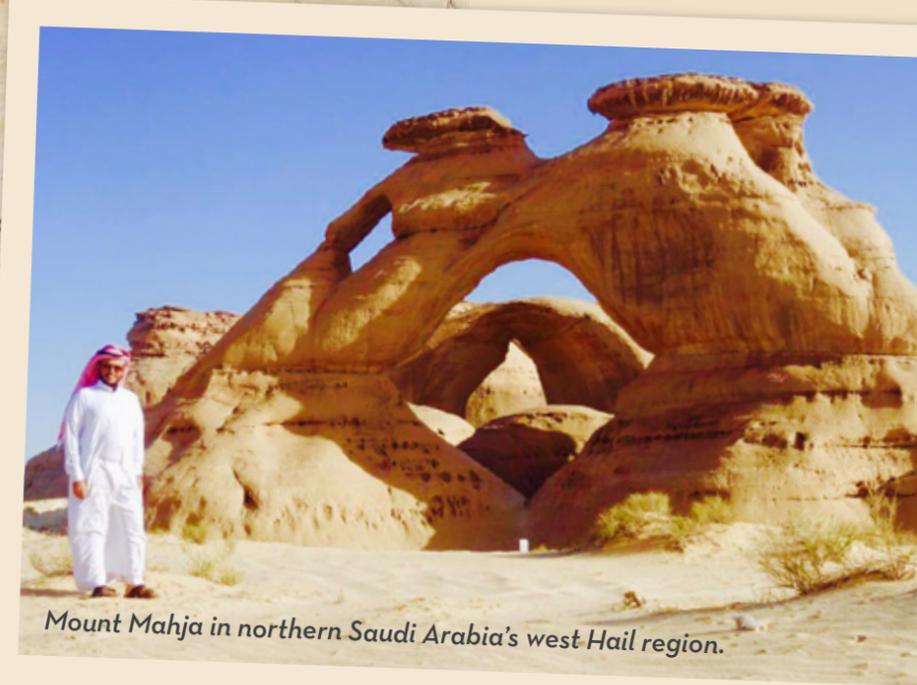
Mishash Khirb Mountain.

Falcon Rock in the Al-Alam mountains, southwest Hail region of Saudi Arabia.



"When we reached Mount Mahja, I was very impressed by the view before me. There were hundreds of inscriptions on the rock walls."

Madaggeh, der Porticus von NW.
 Es war sehr nöthig, heute Rasttag, restaurirenden Zeichnungen Karten Menge. der Himmel war rein & klar. Unsere Namen in der Halle vere Herrliche Mondschein nachts in leider langer nicht litt...



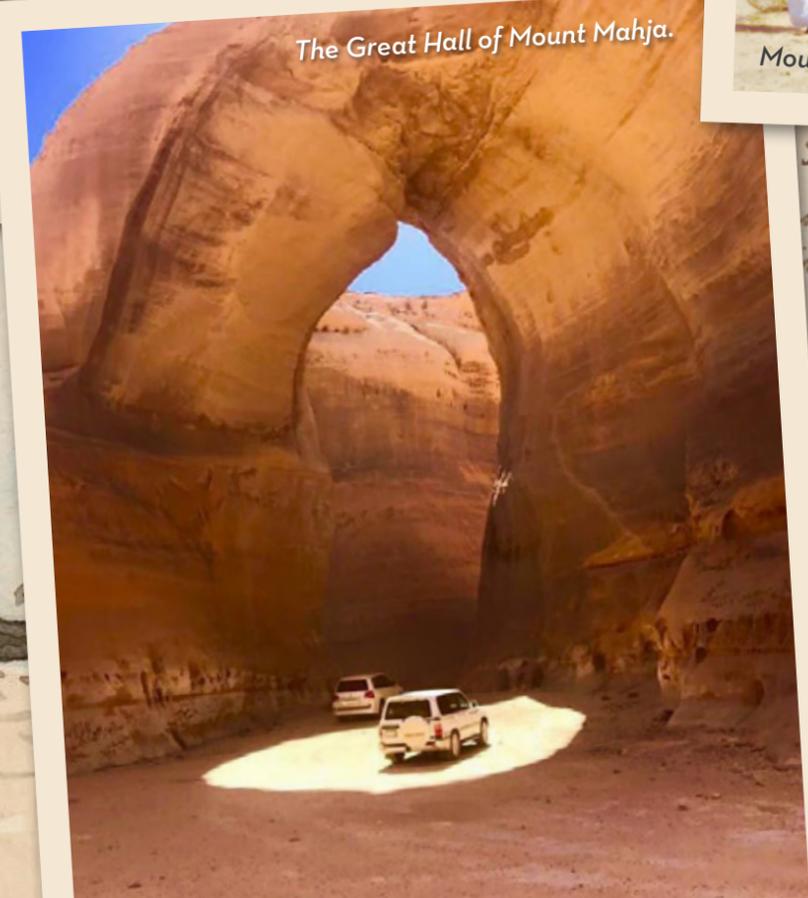
Mount Mahja in northern Saudi Arabia's west Hail region.

Misma

"It was only a few minutes before we reached that wondrous rock formation, it was a small mountain of sandstone resembling the shape of mushrooms. This is where we took refuge from the storm."



Mushroom Rock, west of Saudi Arabia's Hail region, midway between Hail and Tjma.



The Great Hall of Mount Mahja.



