



MEPEC 2024
MIDDLE EAST PROCESS ENGINEERING
CONFERENCE & EXHIBITION

organized by

AIChE
The Global Home of Chemical Engineers

exclusive host sponsor

aramco 

May 6 - 8, 2024 | Dhahran Expo, Kingdom of Saudi Arabia

Middle East **Process Engineering** Conference and Exhibition

Post Event Report



mepec.org



Wail A. Al Jaafari

MEPEC 2024 Advisory Committee Chairman,
Executive Vice President, Technical Services,
Aramco



Our industry keeps evolving, what has remained unchanged is our commitment to innovation to achieve excellence. We have deepened the partnership between industry and academia and focused on developing young talent. This is why Aramco has always been a strong advocate for this event.

This is why we offer a lifetime learning program to our people, training thousands of colleagues every year. The industry demands greater growth but also greater sustainability combined with ageing assets.

We are digitalizing previously manual processes - an example of this is the introduction of drones and robots to inspect plant platforms and other assets.

They use sensors and cameras, meaning our field inspectors are being retrained to pilot them, avoiding exposure to challenging environments and the need to shut down facilities during inspections. It also means that the next generation who have grown up playing video games already has the necessary skills to fly these unmanned UAV vehicles.

They could turn their craft with a controller into a compelling career.

Process engineers will be at the forefront of this kind of technological innovation. We have the talent here today to help achieve our ambitions for tomorrow.

Finally, and to the students joining us today and throughout the conference, I would say choosing a process engineering career will put you at the cutting edge of innovation, where creativity is valued, and where your development is a priority.



Dr. Darlene Schuster

MEPEC 2024 Advisory Committee Co-chair
CEO and Executive Director,
**American Institute of Chemical Engineers
(AIChE)**



As the main organizer of MEPEC, AIChE is honoured to contribute to the success of this prestigious event.

MEPEC provides an unparalleled opportunity for professionals to come together, exchange knowledge, and explore the latest trends and technologies in process engineering. We are proud to support the industry's collective efforts towards a sustainable and efficient energy future.



Walid A. Al-Naeem

Vice President & Chief Engineer,
Aramco

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There is no doubt that the future success of this industry will largely depend on our ability to keep pace with this rapidly changing business environment, and I am pleased that process engineers are at the heart of the solutions needed to be delivered for society.

Key expectations, in addition to our involvement in minimising waste through the circular economy concept, and our efforts at leading the development of strategic initiatives such as carbon capturing, utilisation, and storage, this year with our leadership, and driving the agenda of new energy sources such as hydrogen & eFuel and other systems through the development of advanced materials we shine the spotlight on the power of process engineering.

Against this backdrop we have chosen Digitalizing Process Engineering for a Sustainable Future as a theme for the conference to be at the forefront of these issues, stimulating discussions and deliberating how the process industry should leverage digitalisation, technology, and innovation to shape the future of process engineering and drive sustainable practices in the process engineering industry.



MEPEC 2024 IN NUMBERS

8,058

Registered
Attendees

1,571

Companies

240

Speakers

155

Exhibitors

92

Sponsors &
Partners

60+

Countries

42

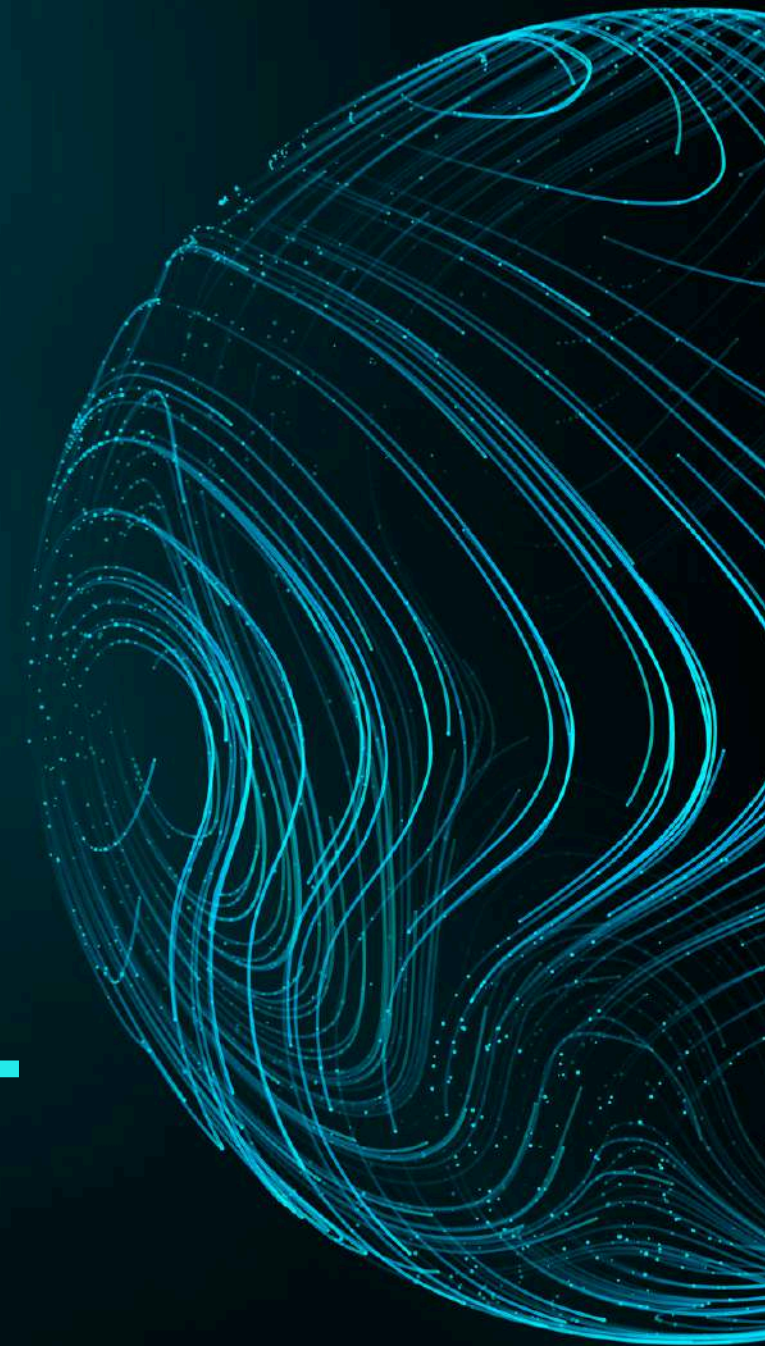
Universities

03

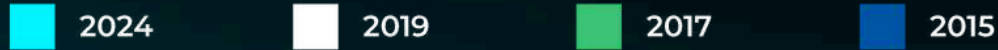
Industry Initiatives

2,600+

Learning Hours



MEPEC THROUGH THE YEARS



REGISTERED ATTENDEES



COMPANIES



SPEAKERS



EXHIBITORS



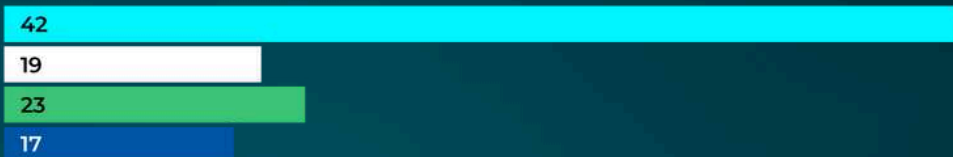
SPONSORS & PARTNERS



COUNTRIES



UNIVERSITIES



STUDENTS



PARTICIPANT PROFILE

Chairman, Co-Founder, CEO, COO, President, Executive Director, VP, Country Manager, Executive Manager, General Manager, Project Director, HRBP Lead, SVP, VP, MD

- Sales Manager/ Engineer
- Product Marketing Specialists
- Digital Transformation SME
- Technical Sales Manager
- Executive VP
- Planning and Control Manager
- Proposal and Tendering Engineer
- Service Manager
- Strategic Localization Manager
- Head of Purchasing
- Operations Manager
- Channel Manager
- Global PL Market Manager
- Area Sales Manager
- LDM & Senior Operations Manager
- Team Leader
- Project Manager
- Mechanical Engineer
- QA/QC Engineer / Safety Manager
- Project Planner / Engineer
- Chemical Engineer
- Logistics Manager
- Piping Designer
- Research Director
- Field Supervisor
- Industrial Management Systems
- Process Engineers
- Business Integration Manager
- Environmental Engineer
- Investment Manager
- Lead Engineer
- Instrumentation Engineer
- Facilities Manager
- Software Programmer
- Environmental Engineer
- Site Inspector
- Academia
- Student

TOP 20 COUNTRIES

1. Saudi Arabia
2. Bahrain
3. United Arab Emirates
4. United States of America
5. India
6. Egypt
7. United Kingdom
8. Qatar
9. Oman
10. Kuwait
11. Denmark
12. Germany
13. South Korea
14. Pakistan
15. Turkey
16. Spain
17. Switzerland
18. Indonesia
19. France
20. Canada

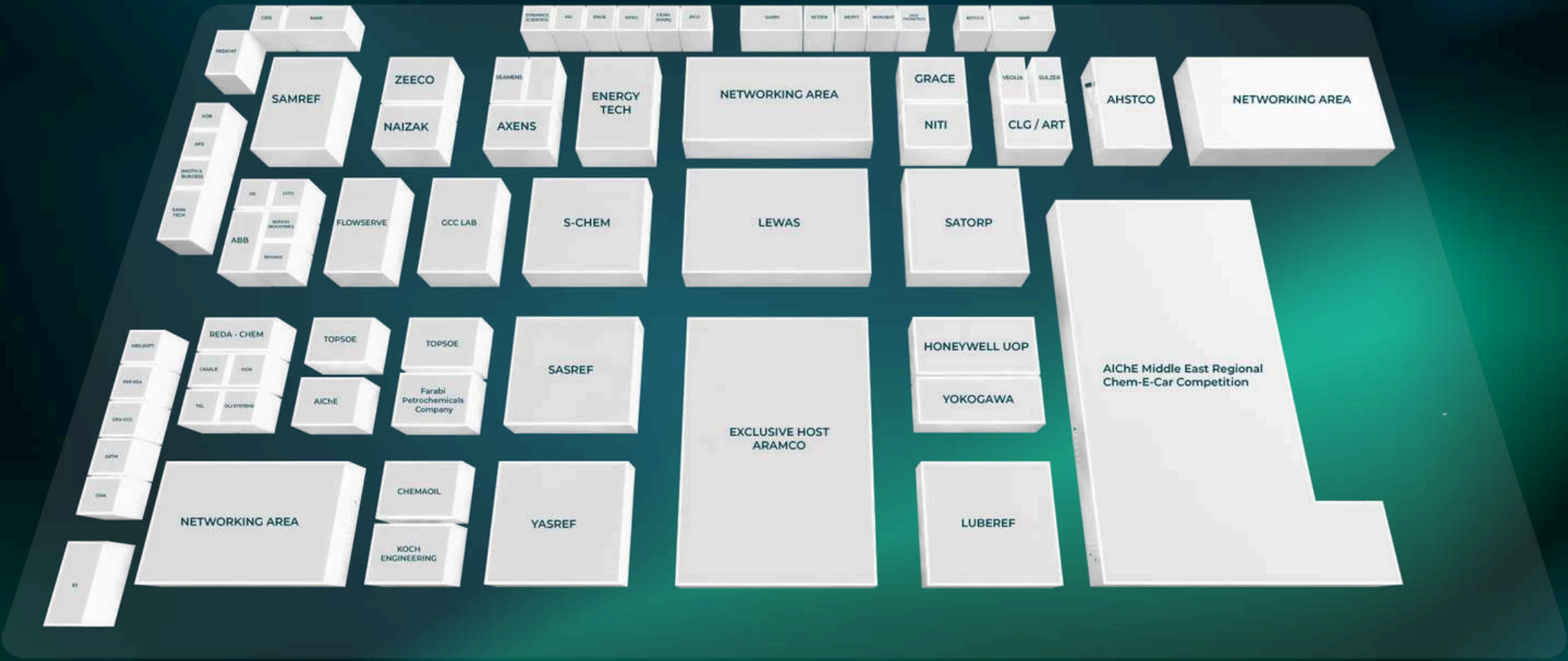
TOP 20 COMPANIES

1. Aramco
2. SATORP
3. EnergyTech
4. Honeywell
5. Rezayat Group
6. SADARA
7. Naizak
8. SLB
9. YASREF
10. Yokogawa
11. Reda Group
12. KBR
13. SASREF
14. Flowserve
15. Farabi Petrochemicals Company
16. Siemens Energy
17. Engie/Tihama
18. LUBEREF
19. Bapco Energies
20. Baker Hughes

EXHIBITOR LIST

- 3D Systems
- ABB Electrical Industries Co.
- Advanced Circular Materials Co.
- Advanced Precision Industrial Services (APS)
- AHSTCO
- AIChE
- AIChE KFUPM Student Chapter
- AIMS
- Aize
- Al Abdulkarim Holding
- Al Rowad
- Al Saida Trading And Industry
- Albemarle
- American University of the Middle East
- Ametek
- AMG Critical Materials NV
- AMG Recycling BV
- Amirkabir University of Technology
- Anybotics
- Aramco
- ART
- Artificial Intelligence Global Company
- Aspentech
- ASTM International
- Aujan Industrial Solutions
- Aveva
- Axens
- Beamex
- Brien
- Casale SA
- CCPS
- CEP
- Chemical Research & Innovation Society
- Chemtech Middle East W.L.L
- Cidra Sharq
- CLG
- Crucial Solutions and Services
- Daily Thermetrics
- Det-Tronics
- DSS
- Dussur
- Dynamics Scientific, Inc.
- E3
- Eastman Chemical Company
- EnergyTech
- Engie
- Euro Support
- Farabi Downstream Company
- Farabi Hong Kong Petrochemicals Company
- Farabi Marketing Company
- Farabi Petrochemicals
- Farabi Yanbu Petrochemicals
- Fitness Lounge
- Flowserve
- Flowserve Abahsain Flow Control Co. Ltd.
- GCC Lab
- GDA
- GPA GCC
- Grand Hyatt
- Great Orient Chemical (Taicang) Co.
- Hadad Energy
- Hadhramout University
- Honeywell
- Honeywell UOP
- INKAN Holding
- IPCO Germany GmbH
- ISG - International Systems Group
- Istanbul Technical University
- ITandFactory GmbH
- John Hopkins Aramco Hospital
- John Zink Hamworthy Combustion
- JP3
- Jubail Chevron Phillips
- KETJEN
- King Abdulaziz University, Rabigh
- King Fahd University of Petroleum and Minerals
- Klay Enersol
- Koç University
- Koch Engineering
- Koch Glitsch
- Koch Heat Transfer
- Koch Specialty Plant Services
- Lab Technologies Group
- LEWAS
- LOTO Safety Products KSA
- Lucy Electric
- Lummus Technology
- MCI
- MERYT Catalysts & Innovation
- MISK
- Mokabat KSA
- Naizak
- NAMI
- Namthaja
- National Oil and Chemical Company (CHEMAOIL)
- National Power Academy - NPA
- NDT Corrosion Control Services Co.
- NDT Products
- NDT Seals
- NED University of Engineering Technology
- Neilsoft
- NexD
- Nijhuis Saur Industries
- OGAS
- OGN
- OLI Systems, Inc.
- Optimized Process Design LLC
- Ovation Global DMC
- Pentair Filtration Solutions LLC
- Plant Digital
- PMI KSA Chapter
- Quality Wire Products W.L.L.
- Reda Chemicals
- Reda Water
- RedaChem United Factory
- Rezayat Group
- RITCO
- Rocsole
- SAECO
- Samaa Technologies Co. Ltd.
- SAMREF
- SARBV
- SATORP
- Saudi Aramco Base Oil Company (LUBEREF)
- Saudi Aramco Jubail Refinery Company (SASREF)
- Saudi Chevron Phillips
- Saudi Polymers Co.
- Saur Industries
- S-Chem
- Sealweld
- Sensia
- Shell
- Siemens Energy Company Limited
- SLB
- Smith & Burgess LLC
- SRE
- Stolway
- Suez University
- Sulzer
- Tarteeb
- Thermal Systems Pvt
- ThermEx
- Tihama
- TOPSOE
- Transcend
- TSL Company
- University of Bahrain
- Veolia Water Technologies and Solutions
- W.R. Grace & Co.
- WFEO
- YASREF
- Yokogawa
- ZEECO MiddleEast Ltd.

EXHIBITION FLOOR PLAN



EXHIBITION INAUGURATION



EXHIBITION HIGHLIGHTS



EXHIBITION HIGHLIGHTS



ATTENDEE FEEDBACK

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I had the pleasure of attending the first Saudi Edition of the Middle East Process Engineering Conference and Exhibition (MEPEC 2024) and must say it exceeded all my expectations. As a senior Engineering consultant in Refining, I found the conference to be extremely informative and well-organized.

The opportunity to network with industry experts, share knowledge, and engage in discussions about the latest advancements in process engineering was invaluable. I was able to gain insights into new technologies, best practices, and emerging trends that will undoubtedly benefit my work in the field.

The exhibition was also impressive, showcasing cutting-edge equipment, services, and solutions from leading industry suppliers. The chance to see these products up close and speak directly with vendors was a valuable experience.

Overall, I highly recommend attending MEPEC to anyone in the field of process engineering. The conference and exhibition provide a platform for professionals to learn, connect, and stay ahead of the curve in this rapidly evolving industry.

Vinod Ramaseshan
Senior Engineering Consultant
Aramco

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Those who did not attend MEPEC at Dhahran Expo certainly missed a great event and more than this missed interacting with companies who came from different parts of the world. Every booth was finely arranged, thus ensuring that none was missed while visiting the exhibition. Hospitality was 5 star.

Keshav Choudhary
CEO
Sahalat Consultancy WLL

“

As a Sr. Marine Technical Advisor, attending MEPEC24 was an enlightening experience. The conference provided a wealth of knowledge on the latest cutting-edge technologies and innovative solutions that are set to revolutionize the industry. The connections I gained from MEPEC24 have significantly contributed to my professional growth and development.

Abdulaziz Abuali
Sr. Marine Technical Advisor
Saudi Aramco

ATTENDEE FEEDBACK

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It was an awesome experience in all aspects. I got knowledge which will be useful in my future as a mechanical engineer. Thanks a lot for providing me an opportunity to be part of this excellent function.

Al Sharaz Ullathuthodika
Mechanical Engineer

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MEPEC is just the right place to meet potential customers and promote solutions to process industries.

Mahendra Gugale
Sr. Manager - Global Business Development
ITandFactory GmbH

“

The best conference for process engineers.

Abdulrahman Bahrain
Graduate Chemical Engineer
KSU

“

It was a wonderful encounter. I was having fun at the workshops and booths; overall, the mood was great and the organization was excellent.

Hind Al Sanad
Business Development Manager
Petrointech

Theme:

DIGITALIZING PROCESS ENGINEERING FOR A SUSTAINABLE FUTURE

MEPEC 2024 explored the utilization of digital technologies and innovations to enhance and streamline processes while placing a strong emphasis on environmental sustainability.

CONFERENCE PROGRAM IN NUMBERS

10

Keynote
Speakers

18

Executive
Panelists

32

Technical
Sessions

207

Technical
Speakers

KEYNOTE SPEAKERS



Dr. Ali Abdullah Al-Meshari
Senior Vice President,
Technology Oversight &
Coordination
Aramco



Bryan Glover
Chief Growth
Officer & CTO
Honeywell



Dr. Darlene Schuster
Executive Director & CEO,
American Institute of
Chemical Engineers (AIChE)



Elise H Nowee
President
Shell Catalysts &
Technologies



Dr. Ernesto Occhiello
EVP, Technology
and Innovation
SABIC



Dr. Khalid Al-Qahtani
Senior Vice President,
Engineering Services
Aramco



Leon de Bruyn
President and CEO
Lummus Technology



Norinao Sato
President and CEO - Saudi &
President and CEO - Middle
East and Africa
Yokogawa



Wail A. Al Jaafari
Executive Vice President,
Technical Services,
Aramco



Walid A. Al Naeem
Vice President &
Chief Engineer
Aramco

PANEL SPEAKERS



Prof. Abdulrahman Al Lily
Vice President for
Graduate Studies and
Scientific Research
KFU - King Faisal University



Ahmad Al-Abdrabbuh
Senior Executive Vice
President & Board Director
Yokogawa MEA



Bart Boesmans
Chief Technology Officer
ACWA Power



Bassam Al Bokhari
CEO
EnergyTech



Dr. David Dixon
Professor
South Dakota School
of Mines & Technology



Ebubekir Koyuncu
Chief Executive Officer
Air Products
Qudra



Fabien Lundy
EMEA Commercial VP
Axens



Hassan Hussain Al Hosani
Senior Vice President
Projects and Technical
ADNOC Refining



Dr. Kian Mossanen
CIO and SVP
Siemens Energy

PANEL SPEAKERS



Dr. Lada Kurelec
General Manager
Polymers Technology
& Innovation
SABIC



Mahdi F. Aladel
Chief Executive
Officer
Aramco Ventures



Mariano Delpozo
VP, Engineering &
Technical Services
SATORP



Menahi Al Utaibi
Vice President of
Manufacturing
Saudi Aramco Jubail
Refinery Company
(SASREF)



Mahdi F. Aladel
CEO
Plant.Digital



Dr. Rajesh Gattupalli
Vice President &
General Manager
Honeywell UOP



Saad H. Binmatlig
President & CEO
Yanbu Aramco Sinopec
Refinery Co. (YASREF)



Tim McMinn
Vice President Process
Engineering & Products
ExxonMobil Technology and Engineering
Company (EMTEC)



Shakeel Kadri
Executive Director & CEO
Center for Chemical Process Safety

OPENING CEREMONY





KEYNOTE HIGHLIGHTS

Sustainable Future - Key Insights into the Opportunities for Middle Eastern Energy

Elise H Nowee, President, Shell Catalysts & Technologies, delivered a keynote titled "Sustainable Future - Key Insights into the Opportunities for Middle Eastern Energy." The presentation highlighted Shell's significant strides towards its sustainability goals and the core beliefs underpinning its revised Energy Transition Strategy.

Insights included the transformative changes within Shell assets, emphasizing increased investments in renewable energy, carbon capture, and storage technologies.

The keynote underscored Shell's commitment to reducing carbon emissions and enhancing operational efficiency, demonstrating how these innovations are pivotal in driving the company's journey towards a sustainable energy future in the Middle East.



Scaling Technologies for the Future: Our Approach to Collaborative Development and Innovation

Bryan Glover, Chief Growth Officer & CTO, Honeywell explored the evolving process technology development landscape and the current need for accelerated development and deployment. Glover, with his unique perspective, emphasized the importance of managing risk while leveraging new approaches and underscored the critical role of collaboration.

He highlighted the necessity of strong partnerships between operators and technology providers and among technology companies to drive innovation and effectively meet the industry's future challenges.

The keynote provided valuable insights into Honeywell's strategy for fostering collaborative growth and technological advancement.



KEYNOTE HIGHLIGHTS

Innovating for Sustainability in the Emerging Low-Carbon Energy Landscape

Dr. Khalid Al-Qahtani, Senior Vice President, Engineering Services, Aramco highlighted Aramco's commitment to sustainable innovation amid the global shift towards low-carbon energy.

He discussed key strategies and technologies Aramco deploys to reduce carbon emissions and enhance energy efficiency. Emphasizing the importance of innovation, he detailed Aramco's initiatives in carbon capture, utilization, and storage (CCUS), renewable energy integration, and advanced research.

The keynote provided valuable insights into Aramco's approach to leading the energy transition while maintaining sustainability and operational excellence.



A Balancing Act: Current and Future Realities in the Energy Transition Through Process Technologies and Innovation

Leon de Bruyn, President and CEO, Lummus Technology emphasized the dual challenge of meeting today's energy demands while progressing toward future sustainability goals. He highlighted the pivotal role of innovative process technologies in navigating this transition, underscoring their importance in reducing carbon footprints, enhancing operational efficiency, and integrating renewable energy sources.

De Bruyn shared detailed insights into Lummus Technology's strategic advancements to address these challenges. He discussed the company's efforts to develop and deploy cutting-edge technologies that improve current energy systems and pave the way for a more sustainable future. His speech resonated with the audience, stressing that the energy transition is not just about innovation but also practical implementation and strategic collaboration within the industry.



KEYNOTE HIGHLIGHTS

Commitment to Innovation and Process Excellence

Dr. Ali Abdullah Al-Meshari, Senior Vice President, Technology Oversight and Coordination, Aramco emphasized the critical role of process excellence in optimizing operations for efficiency, reliability, and safety. Highlighting Aramco's ambitious sustainability goals, Dr. Al-Meshari discussed the company's advancements in carbon capture, synthetic fuels, renewable energy storage, and hydrogen economy.

He also underscored the importance of collaboration between industry and academia, aiming to bridge the gap between practical industry practices and innovative research, thus driving a sustainable and technologically advanced future.



A Perspective on Technology Development at SABIC

Dr. Ernesto Occhiello, EVP of Technology and Innovation, SABIC delivered an insightful keynote on "A Perspective on Technology Development at SABIC." He highlighted SABIC's robust approach to technology advancement, emphasizing the company's commitment to sustainability and innovation.

Dr. Occhiello discussed how SABIC integrates cutting-edge technologies to enhance its product offerings and streamline operations. Key points included the importance of collaborative development, leveraging partnerships with global research institutions, and focusing on customer-centric solutions. He showcased several case studies demonstrating SABIC's successful implementation of advanced technologies in reducing environmental impact and improving efficiency.

Additionally, he outlined the strategic initiatives SABIC has undertaken to stay ahead in the rapidly evolving chemical industry, including investments in digital transformation and adopting renewable energy sources.



KEYNOTE HIGHLIGHTS

Creation of Sustainable Value: Industrial Automation to Industrial Autonomy

Norinao Sato, President and CEO - Saudi & President and CEO - Middle East and Africa, Yokogawa keynote session delved into the transformative journey from conventional industrial automation to the concept of industrial autonomy.

He highlighted how embracing advanced technologies such as artificial intelligence, machine learning, and Internet of Things (IoT) could propel industries towards greater efficiency, safety, and sustainability. Sato discussed how industrial autonomy represented the next frontier, where systems automated processes and could learn, adapt, and make decisions autonomously.

He emphasized the importance of integrating these technologies seamlessly into existing industrial frameworks to maximize their potential benefits while addressing potential challenges such as cybersecurity and workforce adaptation.

Furthermore, he illustrated real-world examples and case studies demonstrating the tangible outcomes of transitioning towards industrial autonomy, including increased productivity, reduced downtime, and enhanced resource optimization.



KEYNOTE FACILITATORS



Weam Al Dakheel
Journalist and TV Presenter,
Saudi Arabia



Eithne Treanor
FOUNDER & CEO,
E Treanor Media



Osama Al-Ansari
Master of Ceremonies,
Saudi Arabia



Bodoor Waleed Alabdullah
Associate Engineer,
Aramco

PANEL HIGHLIGHTS

Role of Process Excellence in Driving Sustainability

During the first day of MEPEC, the Strategic Panel titled "Role of Process Excellence in Driving Sustainability" convened, focusing on leveraging process excellence to address global climate risks. Moderated by Eithne Treanor, CEO of E Treanor Media, the panel featured industry leaders including **Ebubekir Koyuncu, Air Products Qudra, Hassan Hussain Al Hosani, ADNOC Refining, Mahdi F. Aladel, Aramco Ventures, and Tim McMinn, ExxonMobil Technology and Engineering Company (EMTEC).**

The panel engaged in a deep dive into the question of sustainability responsibility within the sector. They explored how integrating sustainability into process engineering adds value and plays a crucial role in aiding the energy transition. Despite the challenges, they underscored the ongoing importance of supporting the Oil & Gas sector on the path to net-zero emissions, providing a clear roadmap for the industry.

Large-scale low-carbon hydrogen production and carbon capture were identified as key drivers for sustainability and process excellence. The panel explored progress in these areas and emphasized the need for accelerated scaling of hydrogen production and CO2 separation technologies to meet sustainability goals.

Additionally, the panel addressed the industry-wide challenge of tech and talent shortage. They brainstormed strategies to attract and retain top talent, emphasizing the importance of investing in education, training, and creating an inclusive and innovative work environment to keep skilled professionals within the industry.



PANEL HIGHLIGHTS

Bridging the Learning Gap between Academia and Industries

The session addressed strategies for fostering closer collaboration, aligning curricula, and developing skills between academia and process engineering industries. Moderated by Eithne Treanor, CEO of E Treanor Media, the panel brought together industry leaders and academic experts to share insights on preparing students for real-world challenges and enhancing industry relevance in academic curricula.

- **Prof. Abdulrahman Al Lily, Vice President for Graduate Studies and Scientific Research, KFU - King Faisal University**, emphasized the need for continuous collaboration between academia and industries to ensure the relevance and effectiveness of academic programs.
- **Bassam Al Bokhari, CEO, EnergyTech**, emphasized integrating practical experiences into academic learning to bridge the gap between theory and practice.
- **Dr. David Dixon, Professor, South Dakota School of Mines & Technology**, discussed the role of academic institutions in providing students with hands-on training and exposure to industry standards and practices.
- **Saad H. Binmatlig, President & CEO, Yanbu Aramco Sinopec Refinery Co. (YASREF)**, highlighted the importance of industry-academia partnerships in shaping educational programs to meet industry needs.

The panel explored various strategies for curriculum alignment, including internships, industry-sponsored projects, and guest lectures from industry experts. They also discussed the importance of incorporating emerging technologies and trends into academic curricula to equip students with the skills required in the rapidly evolving process engineering field.



Left to right: Placeholder Saad H. Binmatlig, President & CEO, Yanbu Aramco Sinopec Refinery Co. (YASREF)
Bassam Al Bokhari, CEO, EnergyTech



Left to right: Placeholder Dr. David Dixon, Professor, South Dakota School of Mines & Technology
Prof. Abdulrahman Al Lily, Vice President for Graduate Studies and Scientific Research, KFU - King Faisal University

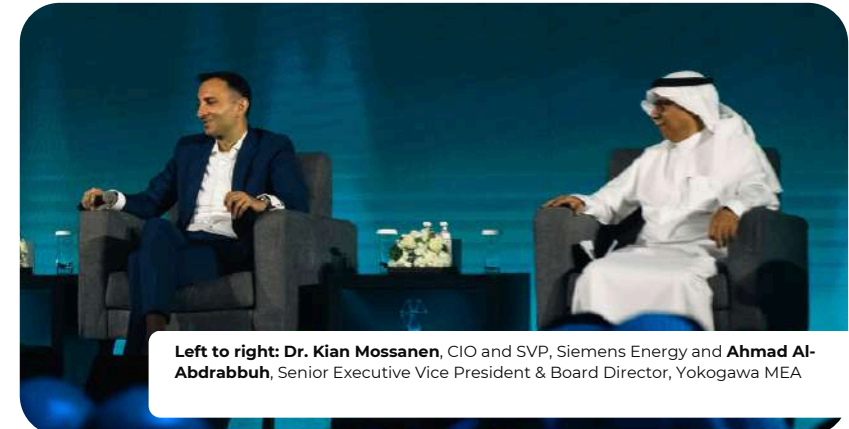
PANEL HIGHLIGHTS

Accelerating the Energy Transition with Digitalization & Artificial Intelligence

The session focused on identifying best use cases, connecting with the right capabilities and talent, and defining success metrics in the fields of digitalization and artificial intelligence (AI). Moderated by Eithne Treanor, CEO of E Treanor Media, the panel featured industry leaders who shared insights and perspectives on navigating this transformative journey.

- **Ahmad Al-Abdrabbuh, Senior Executive Vice President & Board Director, Yokogawa MEA**, highlighted the importance of collaboration between industry stakeholders, technology providers, and academia to develop and deploy innovative digital solutions that drive the energy transition forward.
- **Bart Boesmans, ACWA Power, Chief Technology Officer**, emphasized the importance of leveraging digitalization and AI to optimize energy generation, distribution, and consumption. He highlighted use cases such as predictive maintenance, energy forecasting, and optimization of renewable energy assets.
- **Dr. Kian Mossanen, CIO and Senior Vice President, Siemens Energy** discussed the role of digital twins, advanced analytics, and AI algorithms in enabling predictive maintenance, asset optimization, and real-time decision-making in the energy sector.
- **Norm Gilsdorf, CEO, Plant.Digital**, underscored the significance of harnessing data analytics and AI-driven insights to enhance operational efficiency, reduce costs, and improve asset performance in industrial settings.

The panel explored various challenges and opportunities associated with digitalization and AI adoption, including data integration, cybersecurity, and talent acquisition. They emphasized the need for a holistic approach, combining technological innovation with organizational change management and cultural transformation to realize the full potential of digitalization and AI in accelerating the energy transition.



PANEL HIGHLIGHTS

Hydrocarbon Plant of the Future

The session envisioned the next generation of refineries and chemical plants, exploring their design, products, locations, and decarbonization strategies. Moderated by Shakeel Kadri, Executive Director & CEO of CCPS, the panel brought together industry experts to share insights and perspectives on the future of hydrocarbon plants.

- **Fabien Lundy, EMEA Commercial VP, Axens**, highlighted the need for collaboration and knowledge sharing among industry stakeholders to accelerate the adoption of innovative technologies and sustainable practices. He discussed the role of partnerships, research consortia, and industry alliances in driving technological advancements and fostering industry-wide transformation.
- **Dr. Lada Kurelec, General Manager of Polymers Technology & Innovation, SABIC**, focused on the future of chemical plants and the shift towards sustainable and circular solutions. She discussed the development of bio-based materials, recycling technologies, and eco-friendly processes to minimize waste and environmental impact.
- **Mariano Delpozo, VP of Engineering & Technical Services, SATORP**, elaborated on the role of digitalization, automation, and data analytics in optimizing plant operations and driving productivity gains. He also discussed the integration of renewable feedstocks and bio-based processes to diversify product portfolios and reduce environmental footprint.
- **Menahi Al Utaibi, Vice President of Manufacturing, Saudi Aramco Jubail Refinery Company (SASREF)**, emphasized the importance of sustainability and decarbonization in the evolution of hydrocarbon plants. He discussed carbon capture, utilization, and storage (CCUS) initiatives, renewable energy integration, and circular economy practices to reduce carbon emissions.
- **Dr. Rajesh Gattupalli, Vice President & General Manager, Honeywell UOP**, discussed innovative technologies and processes that will shape the future of refineries and chemical plants. He highlighted catalysts, process optimization, and modular design advancements to enhance efficiency and flexibility.



Picture from left to right: **Shakeel Kadri**, Executive Director & CEO, CCPS; **Dr. Rajesh Gattupalli**, Vice President & General Manager, Honeywell UOP; **Menahi Al Utaibi**, Vice President of Manufacturing, Saudi Aramco Jubail Refinery Company (SASREF); **Walid Al Naeem**, Vice President & Chief Engineer, Aramco; **Mariano Delpozo**, VP, Engineering & Technical Services, SATORP; **Fabien Lundy**, EMEA Commercial VP, Axens; and **Dr. Lada Kurelec**, General Manager Polymers Technology & Innovation, SABIC

EXECUTIVE SPEAKER TESTIMONIALS

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It was an absolute honor to participate in the Executive Panel discussion at the 1st Saudi Edition of the Middle East Process Engineering Conference and Exhibition (MEPEC 2024). The event provided a platform for industry leaders to come together and discuss the latest advancements and challenges in process engineering.

I was particularly impressed by the high caliber of speakers and the engaging discussions that took place during the panel. It was clear that the topics discussed were not only relevant but also crucial for the future of our industry and the energy transition.

MEPEC are essential for fostering collaboration and knowledge sharing within the process engineering community. I am grateful for the opportunity to be a part of such a distinguished panel and look forward to future editions of this conference.

Overall, I would like to commend the organizers for putting together such a successful event and I highly recommend MEPEC to anyone in the Energy Industry . It was truly a valuable experience.

Ebubekir Koyuncu
CEO
AirProduct Qudra

“

I had the honor of participating in the Strategic Panel at the first Saudi Edition of the Middle East Process Engineering conference and Exhibition (MEPEC 2024) with the title of Bridging the Learning Gap between Academia and Industries. This panel was a crucial opportunity for academia and industry professionals to come together and discuss ways to enhance collaboration and knowledge exchange.

The discussions during the panel were insightful and thought-provoking, highlighting the importance of bridging the gap between academia and industries for the benefit of both sectors. It was clear that there is a need for closer collaboration and partnership to ensure that academic research and knowledge can be effectively applied in the industry, leading to innovation and advancement in various fields.

I believe that events like MEPEC 2024 play a vital role in facilitating dialogue and fostering collaboration between academia and industries. I commend the organizers for putting together such a valuable platform for knowledge sharing and networking. I look forward to continuing to work towards bridging the learning gap between academia and industries for the betterment of society and the economy.

Prof. Abdulrahman Al Lily
Vice President for Graduate Studies and Scientific Research
KFU - King Faisal University

EXECUTIVE SPEAKER TESTIMONIALS

“

I believe MEPEC 2024 was a premier global event for process engineering and the oil & gas industry. The excitement level for participants was high, and the exceptional level of investment activity in the region was obvious. Producers, licensors, vendors, universities, etc., were all present at scale, which facilitated a high level of collaboration across the value chain and the talent pool. It was exciting to see the energy in the youth program as well, with a healthy pipeline of talent in the region on display. Finally, it was impressive to see the dedication to sustainability. Leaving MEPEC 2024, there was absolutely no doubt the industry and the region are taking this societal and leadership challenge as an imperative.”

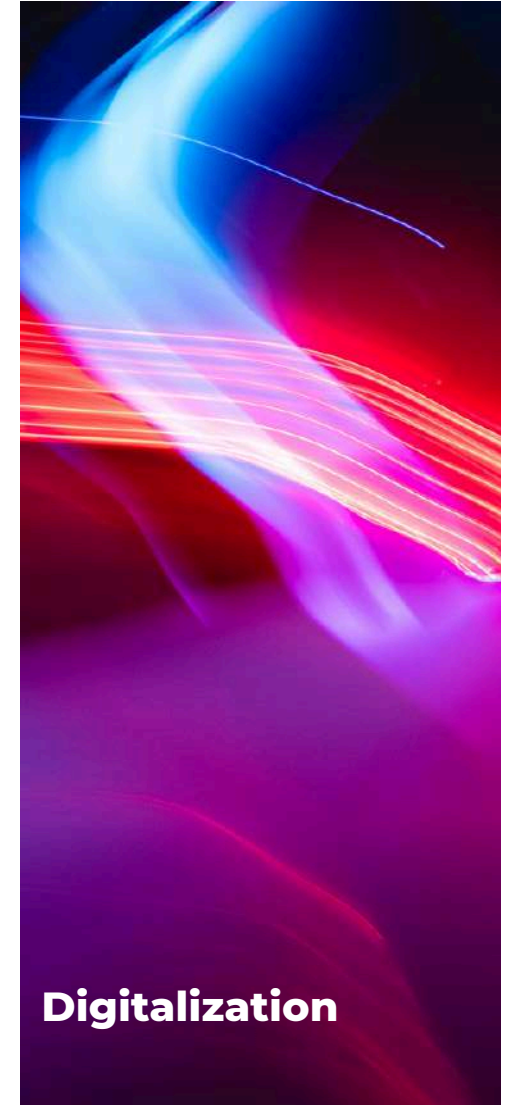
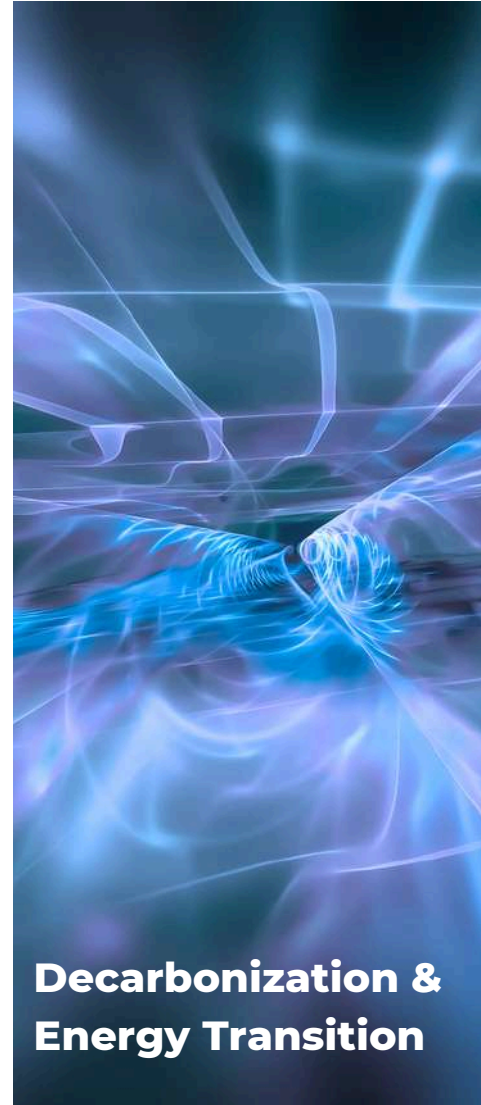
Tim McMinn
Vice President Process Engineering & Products
ExxonMobil Technology and Engineering Company (EMTEC)

“

It was an absolute pleasure joining this panel at MEPEC alongside such distinguished panelists. We had great discussions with expert and diverse panelists and critical insights on the vital role of process engineering and AI's huge potential in helping shape the industry. I would like to thank MEPEC and my fellow panelists for this great opportunity. I was delighted to share my views, and I hope to inspire more collaboration and innovation.

Hassan Hussain Al Hosani
Senior Vice President Projects and Technical
ADNOC Refining

TECHNICAL THEMES



May 6, 13:00 - 14:00 | Session Room A

Session Chair:

Kelepile E. Meleloe, Process Engineer, GME Operations Engineering Solutions Department, Aramco

Managing High-Risk Transitions: How Petro Rabigh Partnered with Grace to Deliver Refinery Value and Successfully Manage Technology Change
Presenters: Graeme MacAulay, Technical Service Manager, W.R. Grace & Co. | **Ahmed Aladwani**, Process, Engineer, Petro Rabigh

Leverage Process Simulation Tool for FCC Catalyst Selection

Presenter: Mohammad Rakib, Research Science, Specialist, Aramco

Elimination of Dry-out Gas Flaring during Natural Gas Liquids Recovery Process Start-up

Presenters: Abdulaziz Alaql, Operations Engineer, Aramco | **Ahmed Al Ahmed**, Process Engineer, Aramco

May 6, 14:30 - 15:30 | Session Room A

Session Chair:

Shakeel Kadri, Executive Director & CEO, CCPS

Manage Process Safety by making a Big Impact on Nuisance Alarm Management

Presenter: Jai Chainani, Senior Process Control Engineer, Aramco

Achieving Operational Excellence through SSX

Presenter: Mohammad Albuzaid, Organizational Development Consultant, KANZ

Evaluation of the Disposal of a Sour Water Stream to Protect the Integrity of a Flare System in an Oil and Gas Processing Facility

Presenter: Simon Wohnsiedler, Lead, Process Engineer, Aramco

May 6, 14:30 - 15:30 | Session Room D

Session Chair:

Dr. Mohamed Bin Shams, Chair and Associate Professor, Department of Chemical Engineering, University of Bahrain

Evaluation of the Maturity Level of the Process Safety Culture for Oil and Gas Industry Workers in a region of the Middle East

Presenter: Leonardo Cotrufo, Lead Engineer, Aramco

Samref SRU Catalyst Management, Retrofit and Optimization Initiatives during the 2023 T/A

Presenters: Khalid Ghazal, Technical Process Engineering (Sulfur & Amine Specialist), Saudi Aramco Mobil Refinery Company Ltd. (SAMREF) | **Marc Elia**, Regional Sales Manager, Axens

Consequences and Mitigations to High Sulfur Condenser Inlet Temperature

Presenter: Ziyad Alshahrani, Process Engineer, Aramco

May 6, 15:30 - 16:30 | Session Room A

Session Chair:

Dr. S. M. Zakir Hossain, Associate Professor, Department of Chemical Engr., University of Bahrain

Chevron Lummus Global's Hydroprocessing Success at Jazan Refinery

Presenter: Suresh Kumar Nellore, Process Design Engineer, Chevron Lummus Global (CLG)

An Optimal Crude Oil Selection in a Refinery with Lube Hydroprocessing Capacity

Presenter: Lujayn Alsayooof, Economic Optimization Specialist, Bapco Refining

Enhancing Safety and Emergency Response in Industrial Processes: Implementation of HF Alky Critical Operating Parameter (COP) for Hazard Mitigation.

Presenter: Almuhammad Basuni, Advanced Process Control Engineer, Saudi Aramco Mobil Refinery Company Ltd. (SAMREF)



May 7, 13:00 - 14:00 | Session Room A

Session Chair:
Fadi Mhaini, Vice President & Managing Director, MENA, Lummus Technology

Discover your Plant Potentials
Presenter: Mohamed Abouzid, Process Engineer, TASNEE

Integrating Safety, Operation, Maintenance and Environmental (S.O.M.E) Aspects during Detail Engineering Phase
Presenter: Rusheed Aldossari, Engineer, Self Employed

Benefits of Switching from Conventional High Temperature to Low-Temperature Catalyst in the Tail Gas Treating Unit
Presenter: Khalid Nadhem, Senior Process Engineer, Bapco Refining

May 7, 14:30 - 15:30 | Session Room A

Session Chair:
Amer Saleem, Advisor SCP JCP, Saudi Chevron Phillips (S-Chem)

Correlation for Condensed Hydrocarbon Fraction Provides Better Water Dew Point Estimation in Column Overhead Systems
Presenters: Fatima Janahi, Associate - Senior Process Engineer, Bapco Refining | Velmurugan Venkatesan, Superintendent RHC and Projects, Bapco Refining

Impact of Dynamic Flare Analysis on Cost, Safety and Environment
Presenter: Taseer Seer, Senior Applications Engineer, Siemens

Turnaround Cycle, Optimization a Trade-Off between Production Loss and Catalyst Lifetime Abstract
Presenter: Mahmoud Elsayed, Lead, Process Engineer, SABIC

May 7, 14:30 - 15:30 | Session Room D

Session Chair:
Hashem Al-Hashem, Leader, GAS & ARRAZI Project, SABIC

Improving Air Separation Plant Energy Intensity by Optimizing its Operation
Presenter: Mohammed Almutawa, Process Engineer, SABIC

Pinch Analysis, a Retrofit Approach for Process and Energy Optimization in Crude Oil Refinery and Downstream Processes. Opportunity for Reduction in Emissions and Opex
Presenter: Syed Abbas Raza, Lead Process Engineer, Muscat Engineering Consultancy Ltd.

Improve CDU Corrosion Mitigation Strategy through Cloud-Based Ionic Modelling
Presenter: Cristian Spica, Senior, Application Engineer, OLI Systems Inc.

May 7, 15:30 - 16:30 | Session Room A

Session Chair:
Claudia Janse van Rensburg, Regional Marketing Manager, FCC, EMEA, W.R. Grace & Co

System Reliability and Sustainability Improvement in DSG at Ethylene Plant
Presenter: Mohammad Imran Khan, Senior Production Engineer - Ethylene Cracker, Saudi Chevron Phillips (S-Chem)

Jazan Refinery Complex - Pathway to Environmental Sustainability
Presenter: Nidal A Samad, Operations, Engineer Specialist, Aramco

Fix Combustion Control Malfunction
Presenter: Emad Fallatah, Staff, Engineer, Advanced Process Control, SABIC ARRAZI



May 7, 15:30 - 16:30 | Session Room D

Session Chair:
Faisal Ahmad Raza, Technical Expert - Process, SLB Saudi Arabia

Aramco Way of Managing Advanced Process Control Portfolio
Presenter: Ali Altayeb, APC Engineer, Aramco

Troubleshooting Vertical Reboiler Performance in a Stabilizer Plant by Leveraging Digital Aspen HYSYS Simulation
Presenter: Majed A. Al-Jeshi, Process Engineer, Aramco

Optimization of ULSD Vacuum Drying and thus Reducing Equipment Counts/Sizes; Saving Steam Consumption and Energy Resulting Reducing Carbon Foot Print
Presenter: Rajib Talukder, Lead Engineer, Aramco | Prabhas Mandal, Operations Engineer Specialist, Aramco

May 8, 12:30 - 13:30 | Session Room A

Session Chair:
Dr. Hayat Abdulla Yusuf, Assistant Professor and, PCAP Program, Coordinator, University of Bahrain

Design and Operation of Various Gas-Liquid Distributors for Trickle Bed Reactors
Presenter: Pradyut Kumar Dhar, Senior Engineer - Research and Analytical Services Department, Aramco

Heat Integration of an Industrial Crude Plant Distillation Unit Using Pinch Analysis
Presenter: Saba Alomari, Student, University of Bahrain

May 8, 12:30 - 13:30 | Session Room C

Session Chair:
Shakeel Kadri, Executive Director & CEO, CCPS

Novel Approach for Increasing Gas Production and Enhancing Controllability for Upstream Degassing Tanks Toward Process Excellence
Presenters: Hussain Abualsaud, Process Engineer, Aramco | Mohammed Alwani, Engineer, Aramco

Plant Optimization – Begins with Right Concept and Effective Detailed Design
Presenter: Saravanavel Muthiah Ponnusamy, Process Engineering Manager, SLB

May 8, 14:00 - 15:00 | Session Room A

Session Chair:
Faisal Ahmad Raza, Technical Expert - Process, SLB Saudi Arabia

Best Practices in Design, Operation and Data Interpretation of Fixed Bed Pilot Scale Units to Overcome Scale-up Challenges for Hydroprocessing Catalysts
Presenter: Pradyut Kumar Dhar, Senior Engineer - Research and Analytical Services Department, Aramco

Tackling the Dual Challenge with Embedded AI
Presenter: Nooh Isa Mualem, Principal Solution Consultant, AspenTech

Trays in Amine Sweetening Contactor- Process Excellence in Debottlenecking with the Right Approach
Presenter: Michael Lam, Concept, Solutions Engineer, SLB

May 8, 12:30 - 13:30 | Session Room C

Session Chair:
Dr. Mohamed Bin Shams, Chair and Associate Professor, Department of Chemical Engineering, University of Bahrain

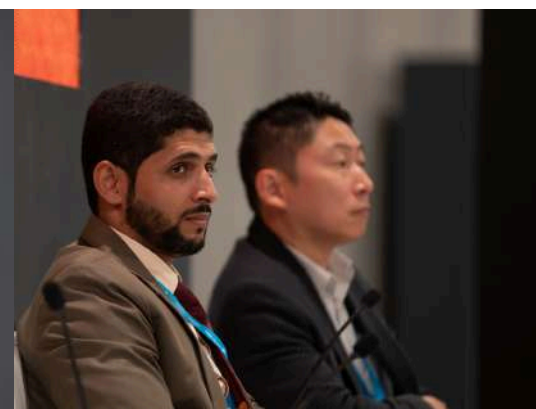
Techno-Economic Assessment of Crude Oil/Water Emulsion Separation Efficiency
Presenter: Mashhor Aljabrine, Senior Engineer, Aramco

The Deployment of New Technologies and Initiatives in Samref's SRU
Presenter: Khalid Ghazal, Technical Process Engineering (Sulfur & Amine Specialist), Saudi Aramco Mobil Refinery Company Ltd. (SAMREF)

Enrich Your Sulfur Plant Two Case Studies with High Level Oxygen Enrichment Implemented in Sulfur Recovery Unit Revamps
Presenter: Abdulaziz Alkhalid, Process Specialty Engineer, Fluor Corporation



MEPEC 2024



POST EVENT REPORT



May 6, 13:00 - 14:00 | Session Room C

Session Chair:
Dr. Steve Hall, Independent Industry Consultant

End-to-End Optimization of Stabilization Columns through Advanced Process Control
Presenters: Alaa Aljassim, Process Engineer, Aramco | Waled Bin Howimi, Process Engineer, Aramco

AI-Enhanced Gasoline Blending System for Refineries
Presenter: Abdul Gani Abdul Jameel, Assistant Professor, King Fahd University of Petroleum & Minerals (KFUPM)

AI Approach to Real Manufacturing World: AI Solution for an HCR Plant and AI Hybrid Solution for a TDM Plant
Presenter: Chang-Ha Lee, CEO & Professor, DogWoodAI & Yonsei University

May 6, 14:30 - 15:30 | Session Room C

Session Chair:
Faisal Ahmad Raza, Technical Expert - Process, SLB Saudi Arabia

Enhancing Reaction Furnaces Temperature Monitoring through Machine Learning
Presenter: Abdullah Alhumaid, Associate Engineer, Aramco

Digitization of Gas-Oil Separation Plant (GOSP) Space using a Hybrid/AI Model
Presenters: Faisal Ahmad Raza, Technical Expert - Process, SLB Saudi Arabia | Mohamed Nassar, MENA -Tech Sales Process Twin & APM, SLB

Advanced Process Control Tools Toward Plant Optimization
Presenters: Almuhammad Basuni, Advanced Process Control Engineer, Saudi Aramco Mobil Refinery Company Ltd. (SAMREF) | Safi M. AlBuhairi, Staff Process Control Engineer, Saudi Aramco Mobil Refinery Company Ltd. (SAMREF)

May 6, 15:30 - 16:30 | Session Room C

Session Chair:
Fawaz Sahan, Senior Engineering Consultant, IIoT Leader and Chairman of Instrumentation Standards, Aramco

Industrial Internet of Things Architecture Standardization (Benefits, Challenges & Remediations)
Presenters: Dr. Mohammed A. Alsaeed, Engineering Consultant, Aramco | Omar Alabdulwahed, Sr. Industrial Computer Engineer, Aramco

Physics-Informed Automated Discovery of Kinetic Rate Models
Presenter: Miguel Ángel de Carvalho Servia, PhD Candidate, Imperial College London

Innovative Process Analyzer Technology for Measuring Gas Composition
Presenter: Ali Aldossary, Engineering Specialist, Aramco

May 6, 15:30 - 16:30 | Session Room D

Session Chair:
Dr. Steve Hall, Independent Industry Consultant

Enhancing Ethylene Steam Cracker Equipment Design through AI: Addressing Thermal Stresses and Predicting Remaining Useful Life in Cold Boxes
Presenters: Saravana Bhavan Baskaran, Engineering Specialist, Aramco | Prashant Kumar, Senior Business System Analyst, Aramco | Joud Al Jalaoud, Data Scientist, Aramco

AI-Based Multi-Unit Real Time Optimizer (First Refinery in the Middle East)
Presenters: Othman Shamrani, Automation & Control Sys. Unit Yanbu Refinery Department, Aramco | Raad Bassam Mulla, DT & Energy Teams Leader - Yanbu Refinery Department, Aramco

Phosphate Injection Prediction Tool
Presenter: Abdulsalam Ali, Process Engineer, Aramco





May 7, 13:00 - 14:00 | Session Room C

Session Chair:
Saifuddin Sheikh,
 Sr. Director – Solution Consulting,
 AspenTech

Refinery Energy Demand Forecasting through Data Analytics and Machine Learning – A Case Study
Presenters: Omar Naeem, Lead Digitalization & Optimization Engineer, Aramco | Muhammad Abbas, Engineering Specialist, Aramco

Saudi Aramco's Process Digital Twins: Advances & Implementation Strategy
Presenter: Abdullah Alghazal, Process Optimization Engineer

Aramco Refinery Wide Process Simulation Digital Twin (PSDT)
Presenter: Majed Aldalbahi, Digital Transformation Lead, Aramco

May 7, 14:30 - 15:30 | Session Room C

Session Chair:
Nihar Gulwadi, Regional Head - MENA,
 Ingenero Inc

Artificial Intelligence Associated Drones Solutions for Waste Disposal Management in the Process Industries
Presenter: Burri Harsha Vardhan Reddy, Senior Data Consultant, Artificial Intelligence Global Company (AIGC)

Refinery Advisory Hub- a Conceptual Promising Use Case of Large Language Models (LLM)
Presenters: Arun Kumar Thalondan Poyithaya, Business System Analyst, Aramco | Raad Bassam Mulla, DT & Energy Teams Leader - Yanbu Refinery Department, Aramco | Reema Alamoudi, Associate IT System Analyst, Aramco

Surrogate Based Mixed Integer Linear Programming Model for Decarbonization of an Integrated Gas-Oil Separation Network
Presenter: Abdullah Bahamdan, PhD Candidate, Imperial College London

May 7, 15:30 - 16:30 | Session Room C

Session Chair:
Dr. Rohit Patwardhan, Sr. Engineering
 Consultant, P&CSD, Aramco

Real-Time Economic Performance System
Presenters: Shashikant Ramsangar, Senior Engineer, Aramco | Parandhama Gudapati, Lead Business System Analyst, Aramco

Forecasting Process Faults Using Machine Learning in a Reactive Absorption Case Study
Presenter: Yasser Al-Goufily, Scientist, SABIC

May 7, 14:00 - 15:00 | Session Room D

Session Chair:
Nihar Gulwadi, Regional Head - MENA,
 Ingenero Inc

SRU Incinerator Fuel Gas Intelligence Optimizer
Presenter: Mohammed Aldossary, Process Engineer, Aramco

Harnessing Machine Learning for Precise Prediction of Fuel Gas Consumption
Presenter: Abdulmohsen Alnafea, Associate Engineer, Aramco

A Data-Driven Framework for Monitoring the Operation of Chemical Plants: Application to Monitor a Bench-Scale Fischer Tropsch Process
Presenter: Nour Basha, PhD Student, Texas A & M University



May 6, 13:00 - 14:00 | Session Room B

Session Chair:
Dr. Basim Abussaud, Faculty, King Fahd University of Petroleum & Minerals (KFUPM)

Overcoming Modularisation Challenges for Low Carbon Hydrogen (LCH) Plants
Presenter: Eric Maina, Engineering Manager, McDermott

Ereact™: Production of Chemicals and Sustainable Aviation Fuels Using Electrified Synthesis Gas Generation
Presenters: Aadesh Harale, Research Science Specialist, Aramco | **Adam Kadhim**, Product Line Director, Topsoe

Techno-economic Study on the Thermochemical Recycling of Waste Plastic to Produce Dimethyl Ether
Presenter: Mohammad Awwad, Master's Degree Student, KAUST Catalysis Center

May 7, 13:00 - 14:00 | Session Room B

Session Chair:
Mohammad Mozahar Hossain, Professor, Dept. of Chemical Engineering, King Fahd University of Petroleum & Minerals (KFUPM)

Methanol to Jet: A Promising Pathway for Sustainable Aviation Fuel
Presenter: Mohammed Rustom, Market Development Director - ME Region - Sustainable Technology Solutions, Honeywell UOP

Simulation of Bio-Oil Production from Fast Pyrolysis of Dates Waste Biomass in Saudi Arabia to Produce Fuels and Chemicals
Presenter: Ariel Gursida, PhD Candidate, King Fahd University of Petroleum & Minerals (KFUPM)

Leveraging Digital Process Twins for Efficient and Flexible Hydrogen Production: From Design to Operation
Presenter: Taseer Seer, Senior Applications Engineer, Siemens

May 8, 12:30 - 13:30 | Session Room D

Session Chair:
Dr. Anas F. Alkhani, Engineering Specialist, New Energies Engineering Division, Aramco

Photocatalytic Hydrogen Generation from Seawater Using High-Performance Polymeric Materials
Presenter: Ghalya Alabdulla, Chemical Engineer, Texas A&M University at Qatar | **Noora Alsubaiei**, Graduate, Texas A&M University at Qatar

Potential of LCAF As a Complementary Tool for Decarbonizing the Aviation Industry
Presenter: Dr. Nasiru M. Tukur, Engineering Consultant, P&CSD, Aramco

Accelerating Scale-up of the Hydrogen Economy with Systems-Level Strategic Evaluation
Presenter: Faisal Baksh Solution, Consulting, AspenTech



May 6, 13:00 - 14:00 | Session Room D

Session Chair:

Dr. Nasiru M. Tukur, Engineering Consultant, P&CSD, Aramco

A Plant's Sustainability By Utilizing Flare Gas Recovery System

Presenters: Abdulaziz Al Qubali, Project Engineer, Aramco | Naseem Al Rashedi, Supervisor Engineer, Aramco

Incremental Approach to Decarbonization for Steam Crackers

Presenter: Jose De Barros, Vice President, Ethylene Business Group, Lummus Technology

Unlocking Sustainable Chemistry: Landfill Gas Utilization for Green Chemical Production

Presenter: Sami Alrashidi, Technology Management Engineer, SIRC Saudi Investment Recycling Company

May 6, 14:30 - 15:30 | Session Room B

Session Chairs:

- **Tim McMinn, Vice President, Process Engineering & Products, ExxonMobil Technology and Engineering Company (EMTEC)**
- **Dr. Debalina Sengupta, Program Director, Coastal Resilience, Texas Sea Grant, Texas A & M University**

Valorizing Biomass Waste into Activated Carbon for a Low Carbon Economy

Presenters: Manar Al Attar, Process Engineering Student, International Maritime College of Oman | Anfal Al-Shezawi, Process Engineer (Student), International Maritime College of Oman

Reduction of CO2 Emissions on the Crude Desalting Systems: A Focus on Fourth Generation Dual Frequency Electrostatic Technology

Presenters: John Philip Marshal, Process Engineer, SLB | Arun Goel, Concept Solution Engineering Manager, SLB

Membrane Reactors for Low Carbon Hydrogen Production

Presenter: Alaa Albasry, Associate Engineer, Aramco

May 6, 15:30 - 16:30 | Session Room B

Session Chair:

- **Tim McMinn, Vice President, Process Engineering & Products, ExxonMobil Technology and Engineering Company (EMTEC)**
- **Dr. Debalina Sengupta, Program Director, Coastal Resilience, Texas Sea Grant, Texas A & M University**

Blue Hydrogen and Ammonia: Large Scale with Ultra Low Carbon Intensity

Presenter: Jesper Poulsen, Licensing Manager, Topsoe

Performance Evaluation of Membrane Reactor for Low Carbon H2 Production

Presenter: Rakesh Kumar, Lead Engineer, Research & Analytical Service Department, Aramco

Carbon Dioxide Transport with Impurities: Optimal Design and Operation of Pipelines

Presenter: Ahmed Alhajaj, Assistant Professor, Khalifa University

May 7, 13:00 - 14:00 | Session Room D

Session Chair:

Dr. S. M. Zakir Hossain, Associate Professor, Department Of Chemical Engr., University of Bahrain

Techno-Economic Environmental Analysis of Hydrogen Production and Transportation Network in Saudi Arabia

Presenter: Fatimah Alhassan, Student, King Fahd University of Petroleum & Minerals (KFUPM)

Challenges and Opportunities for Integration of Mixed Plastic Waste and Plastic Derived Oil into Refineries, Crackers and Plastic Sinks

Presenters: Rasha Daadoush, Co-Lead - Aramco Sabic Circular Solutions Technology Integration Team, Aramco | Salahdine El Idrissi, Group Leader, Aramco

Methane Pyrolysis Integration for Low Carbon Ammonia and Urea Production

Presenter: Muhamad Reda Galih Pangestu, Master's Degree Student, King Fahd University of Petroleum & Minerals (KFUPM)



May 7, 14:30 - 15:30 | Session Room B

Session Chair:
Dr. Gopal Juttu, Engineering Consultant, P&CSD, Aramco

Techno-Economic Analysis of Ammonia for Power Generation Application in the Middle East Region
Presenter: Mohammed Dayili, Project Engineer, Aramco

Experimental Study of Methane Pyrolysis for Hydrogen Production
Presenter: Omar Behar, Post Doctoral, King Abdullah University of Science and Technology (KAUST)

Carbon Capture and Storage Pilot Project
Presenter: Massimo Capra, Process Service Manager, Aggreko

May 7, 15:30 - 16:30 | Session Room B

Session Chair:
Dr. Gopal Juttu, Engineering Consultant, P&CSD, Aramco

Evaluating the Risks and Framework for Hydrogen Fuel Road Transportation in Bahrain
Presenter: Bassam Alhamad, Professor, University of Bahrain

Transition to Lower Carbon Fuels
Presenters: Romain Roux, Decarbonization and Consulting Vice President, Axens | Joseph Ibrahim, Managing Director, Axens

Carbon Emissions Management and Decision Support Made Easy By Digital Solution
Presenter: Saifuddin Sheikh, Sr., Director - Solution Consulting, AspenTech

May 8, 12:30 - 13:30 | Session Room B

Session Chair:
Dr. Ranjit Kulkarni, Global Director - Business Development, Honeywell UOP

Using Low Carbon Hydrogen for Olefins Decarbonization: Operational and Economic Considerations
Presenter: Ibrahim Sedie, Olefins, Process Engineer, SABIC

Process Results and Operational Experience from the Dmx™ Demonstrator Installed at Arcelormittal's Steel Mill at Dunkirk, France
Presenter: Peggy Chan, Technology Engineer, Axens

TC2C™ - More Carbon Effective Conversion of Crude Oil into Chemicals
Presenters: Derek Jones, Principal Technology Specialist, Lummus Technology | Mazin Tamimi, Lab Scientist, Aramco

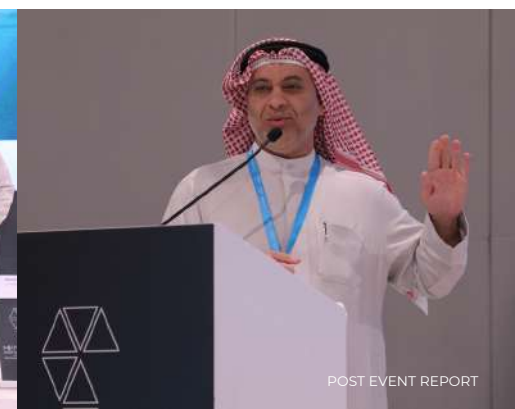
May 8, 14:00 - 15:00 | Session Room B

Session Chair:
Dr. Ranjit Kulkarni, Global Director - Business Development, Honeywell UOP

Low Carbon Ammonia Technology optimization - moving projects forward to achieve Net Zero targets
Presenter: Tim Ballai, Senior Offering Manager, Honeywell H2 & CO2 Solutions, Honeywell UOP

Use of Spiral Tube Heat Exchangers in Hydroprocessing Units
Presenter: Jan Reneteau, Managing Director, NECTIS

Forced Periodic Feed Composition Switching to Address Methane Dehydroaromatization Catalyst Deactivation Challenge
Presenter: Mamoun Al-Rawashdeh, Assistant Professor, Texas A&M University at Qatar



DIGITAL POSTER PRESENTATIONS

May 6, 2024

Effective Management of Safety Instrumented Systems

Dinu Caragheorghe, Control System Engineer, Aramco

Jazan Refinery Complex (JZRC) Pathways to Sustainability

Nidal A Samad, Operations Engineer Specialist, Aramco

KGP RO Quality Challenges and Improvements

Abdullah Aldadi, Associate Engineer, Aramco

Integrating Safety, Operation, Maintenance and Environmental (S.O.M.E) Aspects during Detail Engineering Phase

Rusheed Aldossari, Engineer, Self Employed

Aspen Plus Simulation: High-Valuable Syngas and High-Surface Area Modified Biochar from Pyrolysis of Chlorella Pyrenoidosa

Gus Ali Nur Rohman, King Fahd University of Petroleum & Minerals (KFUPM)

Water Treatment Optimizer

Mohammed Aldossary, Process Engineer, Aramco

Ammonium Bisulfide and Ammonium Chloride Corrosion Control in Reactor Effluent Air Cooler Systems: An Operational and Engineering Experience in Aramco Refineries

Abdullah Alratoee, Engineer, Aramco

The Role of CCUS Technology in the Oil and Gas Industry

Mohammed Rustom, Market Development Director - ME Region - Sustainable Technology Solutions, Honeywell UOP

SRU Thermal Oxidizer Oxygen Analyzer Upgrade

Ahmad Almousa, Process Engineer, Aramco

Waste Heat Recovery in the Process of Sour Water Stripping (SWS)

Hae Yong Noh, Senior Process Engineer, Aramco

Mesoporous ZSM-5 Additive for Catalytic Cracking of Waste Plastics in Vacuum Gas Oil to Light Olefins

Abdulkadir Tanimu, King Fahd University of Petroleum & Minerals (KFUPM)

MEPEC 2024 unveiled the ePoster, a dynamic and interactive platform designed for authors and visitors to engage and share knowledge. Its user-friendly interface, incorporating various multimedia formats, facilitated audience interaction. Each screen was exclusively dedicated to one speaker throughout their allotted time.

CCTV Migration from Analogue to Digital Solutions

Dinu Caragheorghe, Control System Engineer, Aramco

An Asset Management Maturity Benchmarking Model

Dr. Khalid Al-Jabr, Engineering Specialist, Aramco

Design of Waste Cooking Oil-to-Biodiesel Facility: A Case Study of Bahrain

Ajaz Rashid, Assistant Professor, University of Bahrain

Muhammad Rizwan, Assistant Professor, University of Bahrain

Best Practice to Mitigate High Risk of Improper Chemicals Management

Heba Alhabboubi, Senior Lab Scientist, Aramco

Asset Predictive Analytics Digital Solution

Abdullah Albannay, Digital Project Lead, Aramco

Advancing H₂S Removal in Multiphase and Single Phase Streams: A Laboratory Investigation of Novel Nano-Enhanced Scavenging Agents

Ahmed Akram, Samaa Technologies Co. Ltd.

DIGITAL POSTER PRESENTATIONS

May 7, 2024

Heat Integration of an Industrial Crude Plant Distillation Unit Using Pinch Analysis

Saba Alomari, Student, University of Bahrain

Reducing Fuel Gas Usage in SRU Claus Burners for Improved Energy Efficiency, BTEX Destruction, and Sustainable TGTU Operations

Mohammed Aldossary, Process Engineer, Aramco

Robust Automation and Analytics Lead to Improved Fouling, Emulsion, and Corrosion Control in Ethylene Plants

William Choueri, Veolia Water Technologies & Solutions

Oreste Vassillo, Senior Product Application Leader HPI/CPI Middle East, Veolia Water Technologies & Solutions

Economic Optimization of the Energy Portfolio Management at Hard-to-Abate Industries

Alaa Alsaffar, Instructor, University of Bahrain

Effective Propane Preservation Strategy

Rayan Aldahan, Associate Engineer, Aramco

King Faisal University: A Pioneering story with patents

Hany M. Abd El-Lateef, KFU - King Faisal University

Optimizing Operations Unleashing Efficiency in Desalter Health for Enhanced Profitability - a Process Excellence & Techno-Economic Study

Michael Lam, Concept Solutions Engineer, SLB

Rejected Gas Recovery System for Gas Oil Separation Plants (Two Inventions)

Abdulrahman Alshehri, Lead Engineer, Aramco

Carbon Capture and Storage Pilot Project

Massimo Capra, Process Service Manager, Aggreko

Energy Conservation & Emissions Reduction through Sustainability Digital Solutions

Mohammed Al Buainain, Process Engineer, Aramco

Lummus Hybrid Cracking Heater

Hani Alkhalifah, Sr. Tech Services Engineer, Lummus Technology

Eco-Friendly Decarbonization Process to Convert Carbon Dioxide to Liquid Fuels

Shamsa Alderei, Student, United Arab Emirates University

Amna Almahri, Student, United Arab Emirates University

Veolia's Comprise* Analytic Tool for Ethylene Cracked Gas Compressor System Assets, Helps Producers Meet Their Sustainability Objectives

Naveen Agrawal, Digital Analytics Leader, Veolia Water Technologies & Solutions

Predicting Crude Quality in Gas Oil Separation Plants Using Hybrid AI: Physics Driven Machine Learning Modelling

Syed Abrar Ahmed, Process Engineer, Aramco

Abdullah Alhussain, Process Engineer, Aramco

Non-Contact Radar Wellhead Growth Monitoring Digital Solution to Protect Well Integrity

Jai Chainani, Senior Process Control Engineer, Aramco

Real-Time Framework to Detect Leaks in Industrial Heat Exchangers Network

Abdulrahim Mohammed, Data Analytics Engineer, BAPCO

Optimizing Methanol Synthesis: Integration of a Digital Twin with Aspen HYSYS for Enhanced Plant Performance and Profitability

Yomna Ayyad, Student, University of Bahrain

Advanced Filtration Solutions to Optimize Clean Hydrogen Production

Hassan Al Saiood, Principal Field Scientist, Pall Corporation

DIGITAL POSTER PRESENTATIONS

May 8, 2024

NGL Quality Journey Towards Digitalization at Saudi Aramco

Taib Abang, Engineering Consultant, Aramco

Performance Analysis of Innovative Multi- Stage High Oily Industrial Wastewater Treatment System

Faisal Bader Almutairi, Engineer, Aramco

Process Optimization with an Efficient Separation Section: A Case Study on Scaleup of Enhanced Olefin Production from Butenes

Dr. Qi Xu, Engineering Specialist, Aramco

Green Hydrogen – Electrolysers, Comparison, Evaluation & Hydrogen Usages

Mihir Patel, Engineering Manager - Major Contracts, Muscat Engineering Consultancy Ltd.

Sweet Gas Recycles for NGL Recovery Enhancements

Rayan Aldahan, Associate Engineer, Aramco

Flaring and GHG Emissions Minimization By Eliminating Off-Gas Flaring - a Success Story

Mohammed Albuainain, Process Engineer, Aramco

Gasification Technology: Unlocking the Potential of Sustainable Aviation Fuel Production

Daffer Alyami, Lead Process Engineer, Aramco

Elimination of Dry-out Gas Flaring during Natural Gas Liquids Recovery Process Start-up

Ahmed Al Ahmed, Process Engineer, Aramco

Abdulaziz Alaql, Operations Engineer, Aramco

Techno-Economic Analysis and ML-Based Optimization of Advanced Solvent Looping and Stripper-Free Absorption Process for Pre-Combustion CO2 Capture from a SMR Plant

Jun-Ho Kang, Senior Developer, DogWoodAI

Hybrid AI - Industrializing Physic-Based Model from Engineering to Operation

Muhamad Zaki Bin Zaini, Digital Production BDM, SLB

Guided Experimental Design for Modeling Methane Dehydroaromatization Reaction Systems

Byanne Malluhi, Student, Texas A&M University at Qatar

Smart Solutions for Integrated, Optimized and Predictive Refinery Operations

Hamoud Al-Zuabi, IT Analyst, Saudi Aramco Jubail Refinery Company (SASREF)

Ashly Titus, IT Business Application Section Head, Saudi Aramco Jubail Refinery Company (SASREF)

Conversion of High-Moisture Wastes into Fuels and Chemicals Via Hydrothermal Technologies

Dwi Hantoko, Researcher, King Fahd University of Petroleum & Minerals (KFUPM)





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Commercial Director Saudi arabia
and Bahrain,
Shell catalysts and technologies



LEWAS at MEPEC 2024 was an initiative that empowered women in energy to ENGAGE, EMPOWER and ELEVATE. This transformative initiative amplified the voices of women in process engineering.

From interactive stirring keynotes to collaborative workshops and networking opportunities, LEWAS championed equality and celebrated the indispensable contributions of women in shaping our industry's future.

Program Features

- Fireside Chat
- Panel
- Workshops



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Reem Al Ghanim
Downstream Affiliates HR
Manager, Aramco



CO-CHAIR

Ezz Almannai
Director, Policies and Strategic
Planning, Ministry of Oil Bahrain

Supporting Organizations



500
Participants

09
Speakers &
Panelists

06
Sessions



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LEWAS SESSIONS

May 6, 2024

Fireside Chat: The Future of Inclusive Leadership: Cultivating Diversity and Equality in the Workplace

Moderator: Dr. Jennifer Shepard, Diversity and Inclusion Specialist, Industrial and Organisational Psychologist, Aramco

Speaker: Elise H Nowee, President, Shell Catalysts & Technologies



May 7, 2024

Forever Employable Workshop

Facilitator: Dr. Charlene Glenn, Thought Leader, Fulbright Scholar, Business Professor, Trainer, iSAW Professional Women's Organization

Breaking the Gender Norms in Process Engineering Panel

Moderator: Claudia Janse van Rensburg, Regional Marketing Manager, FCC, EMEA, W.R. Grace & Co

Panelists:

- Peggy Chan, Technology Engineer, Axens
- Fatima Janahi, Associate - Senior Process Engineer, Bapco Refining



Speaking to Influence Workshop

Facilitator: Dr. Charlene Glenn, Thought Leader, Fulbright Scholar, Business Professor, Trainer, iSAW Professional Women's Organization

May 8, 2024

Next 5 Moves Workshop

Facilitator: Dr. Charlene Glenn, Thought Leader, Fulbright Scholar, Business Professor, Trainer, iSAW Professional Women's Organization





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The Youth Program at MEPEC 2024 was a dynamic and engaging initiative designed to inspire and empower the next generation of process engineers.

Tailored for students, young professionals, and emerging talents, this program provided a unique opportunity to connect with industry experts, gain valuable insights into the world of process engineering, and explore exciting career prospects.

Participants benefited from interactive workshops, mentorship opportunities, and exposure to cutting-edge technologies and innovations.

Sessions included:

- 3 Executive leader panels
- 4 Misk Skills workshops
- Ithra Sync Digital Awareness

Technical competitions:

- Technical Debate
- AIChE Jeopardy
- AspenTech Competition Winners

Other highlights included:

- ChE Future Careers Round Table
- Advanced Process Safety IR4.0
- Improving Plant Reliance Through 3D Printing
- Shabab Mujtamaie YouthInn



COMMITTEE CHAIR

Dr. Basim Abussaud
Faculty, King Fahd University of
Petroleum & Minerals (KFUPM)



COMMITTEE CO-CHAIR

Jaffer Al-Maskeen
Project Management,
Worley

1500+
Participants

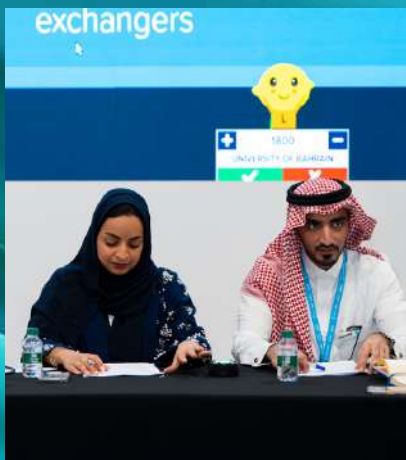
36
Sessions

45
Speakers

73 Hrs
Content

02
Field Trips

05
Executive Leaders





ChemME PROGRAM

May 6, 2024

- ChemME Youth Kickoff
- Executive Panel: "Engineering the Future: Digitalization, Innovation, and Youth Leadership"
- Leading Joint Venture with AbdullahAlSuwailem
- Career Essentials: Your Road Map to The Job Market - From Graduation to Employment (by MISK)
- CEO Talk: Norm Gilsdorf
- Improving Plant Resilience through 3D Printing & Digital Inventory
- Day Closure (Draw/Winners Announcement)

May 6, 2024

- AIChE Jeopardy - Preliminary
- AIChE Jeopardy - Finals
- Aramco Ras Tanura Refinery Plant Tour
- Introduction about "Virtual Work Experience Program" & Eastern Region Top Performer Recognition
- Advancing Process Safety Education in the Era of Industry 4.0
- ChemME Closing Ceremony & Raffle Draw
- YouthInn Story by Mujtamaie

May 7, 2024

- Chemical Engineer Future Careers
- Digital Wellbeing Awareness (Sync Workshop) by Ithra
- Aramco 4IRC Visit
- Fundamentals of Success in Academy & Industry
- How Can Blockchain Play a Part In Day-to-day Business? (by MISK)
- Technical Debate
- Career Essentials: Making a Good Impression (by MISK)

CHEMME COMMITTEE



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KFUPM



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Sabir



Mohammed Almutawa
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specialist,
KBR-AMCDE



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The 2024 **AICHE Middle East Regional Chem-E-Car Competition®** was held in Saudi Arabia for the first time. The competition ran in its 4th iteration on May 7, 2024.

The competition challenged undergraduate students to develop and construct a car powered by a chemical or biochemical energy source, that safely covers a specific given distance and stops. What is even more special about this competition is that it not only required students to work with a multidisciplinary approach to achieve their goal of building a car powered by a chemical reaction but also having it stop by another chemical reaction, while taking on detailed technical and engineering tasks.



Dr. Basim Abussaud
Faculty, King Fahd University of
Petroleum & Minerals (KFUPM)

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2. Amirkabir University of Technology
3. Hadhramout University
4. Istanbul Technical University
5. King Abdulaziz University Rabigh
6. King Fahd University of Petroleum and Minerals
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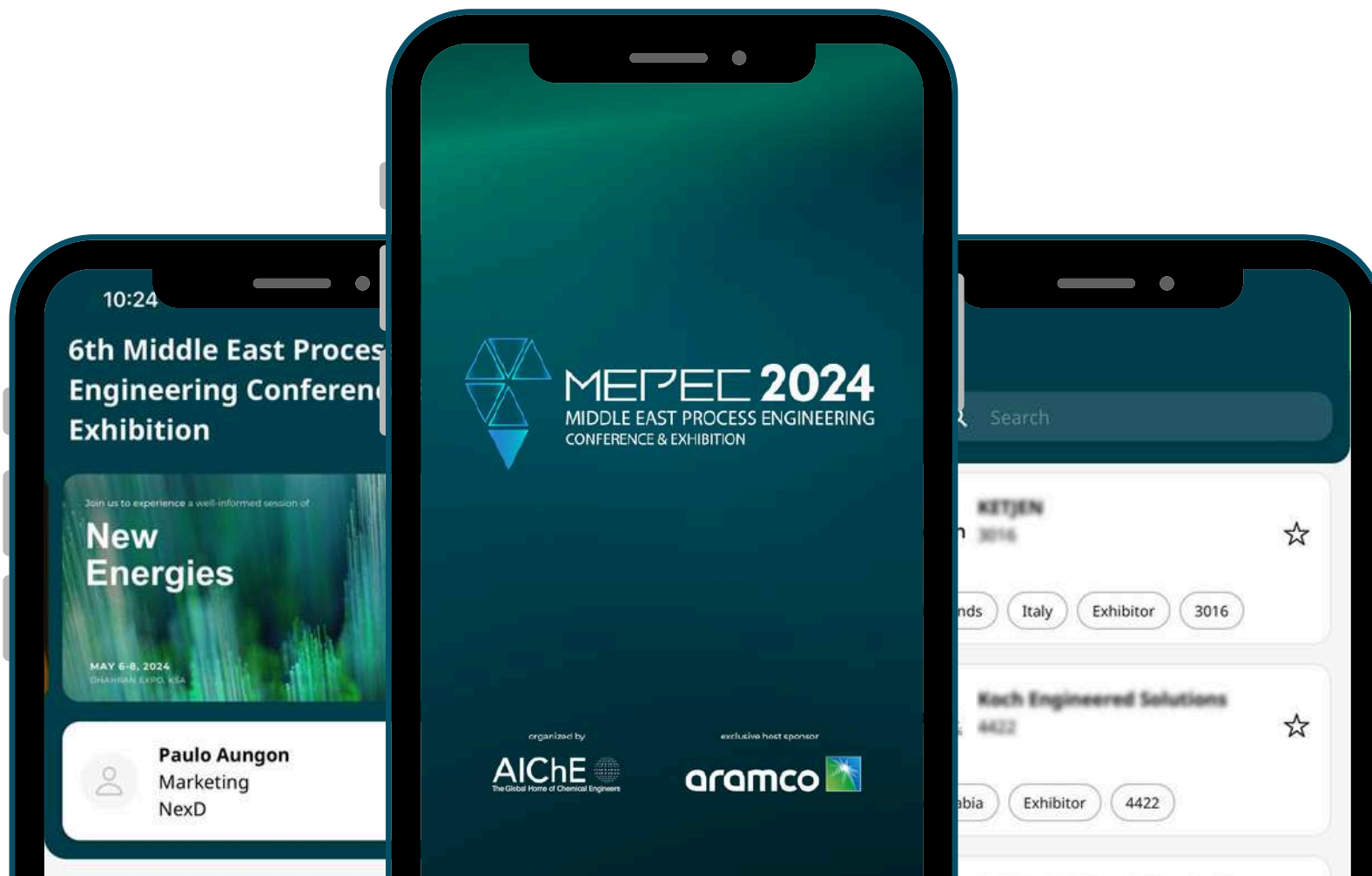


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opens

7,685

Web App
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10.37

App opens per
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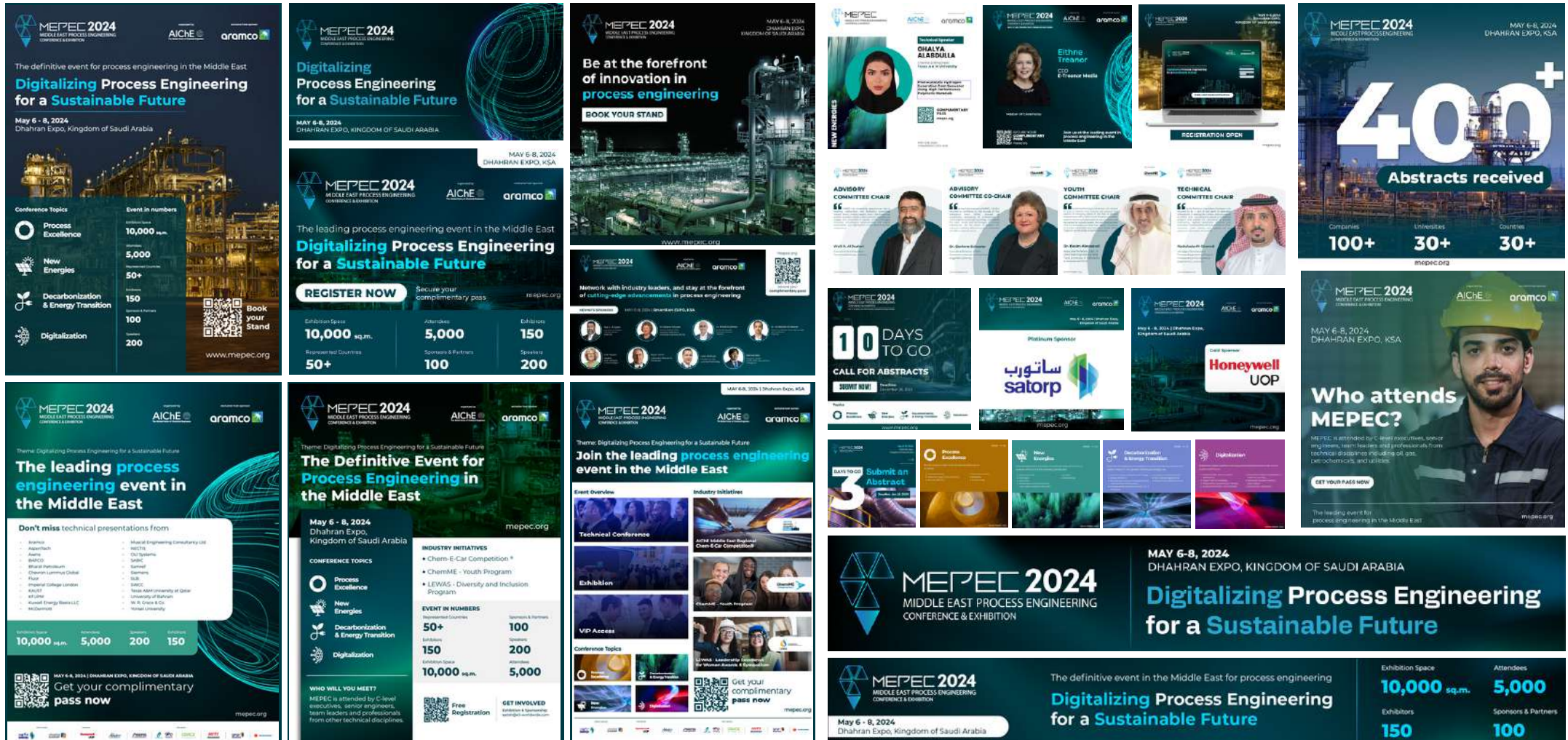
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1,358

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32

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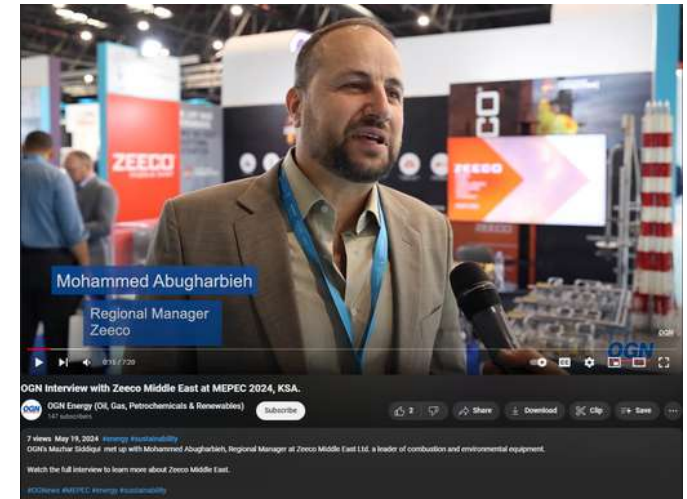
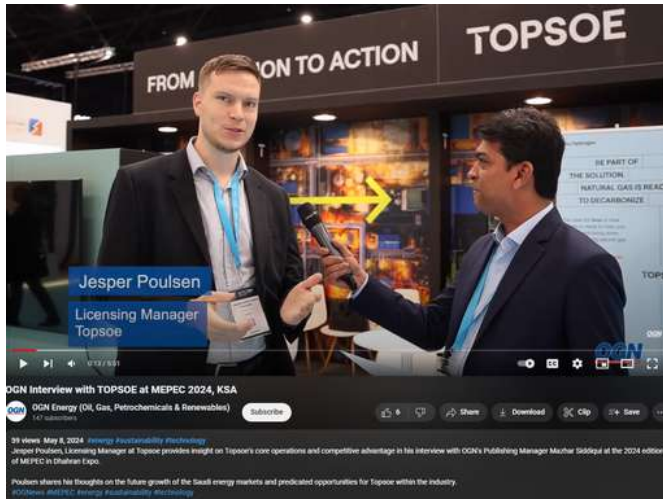
45

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