

Held under the patronage of  
His Excellency Dr. Mohamed bin Mubarak Bin Daina,  
Minister of Oil and Environment,  
Special Envoy for Climate Affairs, Kingdom of Bahrain



# Ethylene Middle East Technology Conference

Gulf Hotel and Convention Centre, Bahrain

**14-15 September 2022**

## EVENT PROGRAM

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# EMET 2022 Conference at a Glance

Timings (Bahrain)	Wednesday 14 September 2022		Thursday 15 September 2022	Timings (Bahrain)
8:00 onwards	Registration		Registration	7:00 onwards
08:00 - 09:00	VIPs & Guests Arrival		VIPs & Guests Arrival	07:30 - 08:00
09:00 - 09:05	<b>Welcome Remarks:</b> Abdel Hadi AlSuhaimi, Conference Chair, Executive President, S-Chem		<b>Opening Remarks from AIChE</b> Shakeel Kadri, Executive Director & CEO, CCPS	08:15 - 08:30
09:05 - 09:15	<b>Opening Remarks:</b> H.E. Dr. Mohamed bin Mubarak Bin Daina, Minister of Oil and Environment, Special Envoy for Climate Affairs, Kingdom of Bahrain		<b>Keynote Session:</b> Mutlaq H. Al Morished, CEO, TASNEE	08:30 - 08:50
09:15 - 09:30	<b>Keynote Session:</b> Mohammed Abdulrahman Al-Zahrani, VP Chemical BU, SABIC		<b>Technical Session:</b> Plant Sustainability Industry 4.0	08:50 - 09:10
09:30 - 10:15	<b>Keynote Session:</b> Innovation Necessary for Driving Success in the Olefins Industry		<b>Technical Session:</b> Using Thermal Imaging and a Cloud Platform to Optimize Cracking Furnace Efficiency in Real Time	09:10 - 09:30
10:15 - 10:30	Coffee Break & Exhibition Networking		Coffee Break & Exhibition Networking	09:30 - 09:45
10:30 - 11:15	<b>Keynote Session:</b> Capturing the Digitalization Opportunity in Ethylene Manufacturing		<b>Executive Panel Discussion:</b> Digitalization for Ethylene	09:45 - 10:45
11:15 - 11:45	Plenary Speech: Capital Efficiency and Competitiveness		Networking Break	10:45 - 11:00
11:45 - 12:40	Prayers, Lunch & Exhibition Networking		<b>Executive Panel Discussion:</b> Actionable Sustainability in Ethylene Manufacture	11:00 - 12:00
12:40 - 14:00	<b>Technical Session:</b> Enhancing Reliability	<b>Technical Session:</b> Application of Big Data, Digitalization and Optimization	Prayers, Lunch & Exhibition Networking	12:00 - 12:45
14:00 - 14:15	Networking Break		<b>Technical Session:</b> Mitigating Risk and Prioritizing Safety	<b>Technical Session:</b> Application of Big Data, Digitalization and Optimization
14:15 - 15:15	<b>Technical Session:</b> Enhancing Reliability	<b>Technical Session:</b> Capital Efficiency and Competitiveness	Networking Break	12:45 - 13:45
15:15 - 15:45	Coffee Break & Exhibition Networking		<b>Technical Session:</b> Enhancing Reliability	<b>Technical Session:</b> Addressing Sustainability Challenges
15:45 - 17:05	<b>Technical Session:</b> Enhancing Reliability	<b>Technical Session:</b> Addressing Sustainability Challenges	<b>Conference Closing</b> <b>Abdel Hadi Al Suhaimi</b> Executive President, Saudi Chevron Phillips (S-Chem)	14:00 - 15:00
17:05 - 19:30	Break			15:00 - 15:15
19:30 - 19:45	Gala Dinner - Guest Arrival			
19:45 - 22:00	Gala Dinner - Guest Arrival (Committee, Speakers, Delegates)			

\*Session timings and running orders may be subject to changes

## Day 1 - Wednesday, 14 Sep 2022

Grand Hyatt Al Khobar, Kingdom of Saudi Arabia

09:00 - 09:30 **Conference Opening**

09:00 - 09:05 **Welcome Remarks**

📍 Dana Hall 1

09:05 - 09:15 **Opening Remarks**

📍 Dana Hall 1

09:15 - 09:30 **Keynote Session**

📍 Dana Hall 1

09:30 - 10:15 **Keynote Session: Innovation Necessary for Driving Success in the Olefins Industry**

📍 Dana Hall 1

Olefins products are essential to life itself. They preserve food, deliver safe drinking water, package sterile medical supplies, and reduce greenhouse gases by light weighting vehicles and packaging. Yet, this industry is at a cross roads. The industry has a remarkable safety and environmental record, yet its few incidents are often dramatic. Olefins production processes themselves are energy intensive, impacting climate change. Plastics waste is landfilled far too often, or worse yet, ends up in our oceans.

Companies have set aggressive environmental, social, governance (ESG) goals from 2030 to 2050. The industry must quickly improve its carbon footprint and the recycling of its products to survive going forward.

To meet these demands the industry must dramatically accelerate innovation. Risk adversity and sluggish procurement practices are the enemies of innovation. Artificial Intelligence deep learning process control, digital tools and other disruptive technologies that are ready now can improve short term carbon footprints more than 10 percent with low investment if we can remove those barriers. Such projects have short-term payouts and no regrets.

Step changes beyond 15% carbon footprint improvement require more innovation and investment. Governments and customers demand real progress. To win the hearts and minds of our future work force we need to win these key battles. Shareholders demand efficient and profitable solutions as well. Can bio-based feedstocks, carbon capture and utilization or storage, plastics recycling and disruptive technologies really delivery a carbon neutral olefins future by 2050. The answer is yes, but only if we make real changes soon. This address will discuss key changes needed to succeed.

10:15 - 10:30 **Coffee Break & Exhibition Networking**

📍 Exhibition Area

10:30 - 11:15 **Keynote Session: Capturing the Digitalization Opportunity in Ethylene Manufacturing**

📍 Dana Hall 1

The multifold increases in computing speed, communications capability, and increased data storage capacities at a fraction of traditional costs has enabled deployment of Artificial Intelligence, Big Data Analytics, Cloud Computing, 5G, IoT, Extended Reality, Voice Recognition technologies and Drones. Judicious combinations of these technologies can transform the way plants are being operated to tremendously improve efficiency, reduce safety risks, and make operations more reliable and environmentally friendly (sustainable).

However early implementations of these technologies have seen a fair share of expensive failures. Most failures are not on account of the technology but on account of the implementation strategy.

Over the past two decades Ingenero has helped Ethylene manufacturers in the GCC and USA make better use of their data using advanced data analytics and first principle-based modeling. With the criteria of “failure-is-not-an-option”; the experience Ingenero has gained in deploying digital AI-based solutions for process manufacturers has led to a best practices approach to get it right the first time.

These technologies are driving the enhanced future of manufacturing operations and evolving operating paradigms as these technology-based solutions are utilized. Companies able to implement and utilize these technologies have a tremendous profitability advantage. The amount of activation energy in the form of time and money to get it going will vary significantly. This keynote will review successful strategies for Ethylene manufacturers for choosing and synthesizing the right technologies, their implementation, and, perhaps most importantly, for their ongoing effective use.

11:15 - 11:45 **Plenary Speech: Capital Efficiency and Competitiveness**

📍 Dana Hall 1

Introductory Remarks: Mark Eramo, Global Senior Vice President, Oil Markets, Midstream, Downstream, and Chemicals, S&P Global Commodity Insights

11:45 - 12:40 **Prayers, Lunch & Exhibition Networking**

12:40 - 14:00 **Parallel Technical Sessions**

Enhancing Reliability 📍 Dana Hall 1	Application of Big Data, Digitalization and Optimization 📍 Dana Hall 2
<i>Increased Ethylene Furnace Efficiency and Control using Imaging Based Temperature Measurement and Visual Verification</i>	<i>Performance Optimization of Charge Gas Compressor In Ethylene Plant - Case Study</i>
<i>Ethane Cracker Furnace Coil Life Extension</i>	<i>Real-Time Statistical Process Control of Ethylene and Its Derivatives</i>
<i>Impact of Sodium Contamination on the Cracking Furnace and Subsequent Cleanup Efforts</i>	<i>Digitalization of Pressure Swing Adsorption (PSA) Control Valves to Improve Operational Reliability</i>
<i>Predicting Radiant Tube Failure Due to Alumina Protective Layer Pitting</i>	<i>Next Generation of Production Optimization Delivers Benefits for Ethylene Manufacturer</i>

14:00 - 14:15 **Networking Break**

📍 Exhibition Area

14:15 - 15:15 **Parallel Technical Sessions**

Enhancing Reliability 📍 Dana Hall 1	Capital Efficiency and Competitiveness 📍 Dana Hall 2
<i>Online Repair of Leaking Condenser and Bypassing Tailing Tower Column</i>	<i>Energy Savings for Steam Cracking Furnaces By Gas Turbine Integration</i>
<i>Thiophene – An Interesting Impurity From Naphtha Cracker</i>	<i>Process Intensification in the Petrochemical Industry: Olefins/Paraffins Separation</i>



*How Transformative Catalyst is Breaking Convention in Ethylene Production*

*Taking a Comprehensive Approach to Achieving 7% Improvement in Naphtha Furnace*

15:15 - 15:45 **Coffee Break & Exhibition Networking**

📍 Exhibition Area

15:45 - 17:05 **Parallel Technical Sessions**

Enhancing Reliability 📍 Dana Hall 1	Addressing Sustainability Challenges 📍 Dana Hall 2
<i>Extending Turnaround Cycle in Ethylene Plant through Continuous Proactive Asset Monitoring</i>	Session Chair <b>Dr. Mohammad Nahid Siddiqui</b> Professor of Chemistry - Chemistry Department and IRC for Membranes & Water Security, King Fahd University of Petroleum & Minerals (KFUPM)
<i>Technology Development for Improving Performance of Cracking Furnace</i>	<i>Low-Emission Cracking Furnace</i>
<i>Protecting Pygas First Stage Hydrogenation Reactor in Ethylene Plant</i>	<i>How to Reduce CO2 Emissions of Steam Cracking Furnaces</i>
<i>Improvement of Acetylene Reactor Run Length</i>	<i>CO2 Reduction: A Cost Effective Solution to Provide Sustainability by Reducing GHG Emissions from an Ethylene Plant</i>
	<i>Sustainable CAPEX Efficient Ethane Cracker Designs</i>

17:05 - 19:30 **Break**

19:30 - 19:45 **Gala Dinner - Guest Arrival**

📍 Dana Hall

19:45 - 22:00 **Gala Dinner - Guest Arrival (Committee, Speakers, Delegates)**

📍 Dana Hall

## Day 2 - Thursday, 15 Sep 2022

Grand Hyatt Al Khobar, Kingdom of Saudi Arabia

### 08:15 - 08:30 **Opening Remarks**

📍 Dana Hall 1

Speaker

**Shakeel Kadri** Executive Director & CEO, CCPS

### 08:30 - 08:50 **Keynote Session - Future Outlook of Ethylene and Olefins**

📍 Dana Hall 1

Mr. Mutlaq H. Al-Morished, CEO of Tasnee will share his insights on the evolving international landscape of the ethylene industry and this will be analysed with emphasis on the Middle East.

### 08:50 - 09:10 **Technical Session - Plant Sustainability Industry 4.0**

📍 Dana Hall 1

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*Plant Sustainability Industry 4.0*

### 09:10 - 09:30 **Technical Session - Using Thermal Imaging and a Cloud Platform to Optimize Cracking Furnace Efficiency in Real Time**

📍 Dana Hall 1

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*Using Thermal Imaging and A Cloud Platform to Optimize Cracking Furnace Efficiency In Real Time*

### 09:30 - 09:45 **Coffee Break & Exhibition Networking**

📍 Exhibition Area

### 09:45 - 10:45 **Executive Panel Discussion: Digitalization for Ethylene**

📍 Dana Hall 1

Ethylene production is one of the most energy intensive petrochemical processes and the pressure to improve is growing. Digitalization can be the most capital efficient means of making ethylene plants more profitable, reliable and sustainable.

Applying data analytics such as machine learning and artificial intelligence to existing data can result in more timely insights that remove variability, identify operational efficiency gaps, and increase unit availability. While digitalization software tools abound; success requires carefully defining the objectives upfront and then crafting a highly customized solution, utilizing the appropriate technology tools that best meet the objective, for the ultimate user. A combination of domain, software and data analytics expertise is necessary and requires ongoing management commitment, to ensure the necessary transformation and continuous value capture

EMET 2022 has a preeminent panel of distinguished experts that includes Ethylene executives that have successfully implemented digitalization programs for their operations and digitalization executives that have provided the software, implementation and expertise to achieve digital transformation for their Ethylene clients. Panelists will provide their perspective on keys to success, problems encountered and the best technology to utilize for the Ethylene industry.

10:45 - 11:00 **Networking Break**

📍 Exhibition Area

11:00 - 12:00 **Executive Panel Discussion: Actionable Sustainability in Ethylene Manufacture**

📍 Dana Hall 1

Ethylene producers have long been focused on several key elements that drive their competitiveness: Attractive Feedstock, Low Capital Cost, High Reliability and Low Operating Costs. Strong performance in these critical areas have been the keys to long term success.

The global focus on Sustainability adds two new critical elements to this list: reduction in greenhouse gas emissions and elimination of plastic waste. New business strategies, investments and technologies will be required to achieve the reductions that global standards will demand in the next few years.

EMET 2022 is pleased to be offering a panel of distinguished experts that will discuss development and implementation of actionable sustainability strategies that apply to the ethylene industry. Panelists will offer perspectives on technology, facilities, regulatory frameworks and geopolitical enablers that will drive this significant change to our industry.

Speaker

**Jim Middleton** Group Vice President, Ethylene Product Line and Technologies, Technip Energies

12:00 - 12:45 **Prayers, Lunch & Exhibition Networking**

12:45 - 13:45 **Parallel Technical Sessions**

Mitigating Risk and Prioritizing Safety 📍 Dana Hall 1	Application of Big Data, Digitalization and Optimization 📍 Dana Hall 2
<i>Impact of Modularisation of Ethylene Plant on HSE Design practices</i>	<i>Improve Margins By Aligning Planning and APC Using Dynamic Real Time Optimization for Ethylene Plants</i>
<i>Effective Learning Curve Through Swiss Cheese Model Application in Incident Management System</i>	<i>Effective Use of Hybrid Modeling Using Big Data to Enhance Process Efficiency &amp; Energy Optimization in Ethylene Plant in Real Time</i>
<i>A Case of Successful &amp; Safe Project Completion - Ethylene Oxide &amp; Propylene Pipeline for Value Park</i>	<i>Delivering on SABIC's Sustainability Goals through Real Time Energy Optimization</i>

13:45 - 14:00 **Networking Break**

📍 Exhibition Area

14:00 - 15:00 **Parallel Technical Sessions**

Enhancing Reliability 📍 Dana Hall 1	Addressing Sustainability Challenges 📍 Dana Hall 2
<i>Optimization in Ethylene Cold Section Distillation Columns (Debutanizer and C3 Splitter Columns)</i>	<i>Hppe Plant Ethylene Purge Recovery Enhancement</i>
<i>Suez WTS Yield Up Anti-Coke Technology for Steam</i>	<i>The Wonder of Garbage: How to Turn Plastic Waste Into Cracker Feedstock?</i>

## *Cracking Furnaces*

*Improved Dilution Steam Generation Operational  
Reliability*

*Addressing Sustainability in Olefins Feedstock Selection  
and Production Planning & Optimization*

15:00 - 15:15

## **Closing Remarks**

📍 Dana Hall 1

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