



**MEPEC**

MIDDLE EAST PROCESS ENGINEERING  
CONFERENCE & EXHIBITION



**WPC  
DOWNSTREAM  
CONFERENCE**

Integration, strategy and leadership

# TRANSFORMING PROCESS ENGINEERING THROUGH INNOVATION

**14 -16 October 2019**

Bahrain International Exhibition & Convention Centre

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MIDDLE EAST ENERGY EVENTS **ME<sup>3</sup>**

# Day 1 - Monday, 14 Oct 2019

Kingdom of Saudi Arabia

## 09:30 - 09:40 **Opening Remarks**

📍 Palm Hall

Speakers

**Nasser A. Abanmi** Former President , SABIC - KEMYA

**Tor Fjaeran** Manager Investment Arena, Equinor

## 09:40 - 10:00 **Keynote Speech**

📍 Palm Hall

*Adapting to the Shifting Dynamics of the Global Energy Landscape*

Speaker

**Ahmad A. Al Sa'adi** EVP Technical Services, Aramco

## 10:00 - 10:50 **WPC Downstream, Global Leadership Panel - The Future of Refining and Petrochemicals**

📍 Palm Hall

Moderator

**Pedro Miras Salamanca** President, WPC Energy

## 10:50 - 11:10 **Coffee Break**

📍 Exhibition Hall

## 11:10 - 12:30 **Technical Sessions- 3**

| Debottlenecking: Exploiting Opportunities to Boost Performance<br>📍 Al Seef  | Energy Efficiency and Sustainability<br>📍 Al Fanar   | Digital Transformation<br>📍 Palm Hall  |
|--|--|--|
| <i>Optimizing Value Through Converting Residuum Into Clean Fuels or Petrochemicals</i>   | <i>Conceptual Design and Energy Analysis of Integrated Gasification and Reforming Technologies for Syngas Production</i> | <i>The Role of Process in the Digital Transformation</i>   |
| <i>Constant Feed Composition and Performance Analysis Increases Pygas Run Length</i>   | <i>Toward Optimum Design of Industrial Steam and Power Systems</i>   | <i>Process Manufacturing Digital Twin to Achieve Operations Excellence</i>                           |
| <i>Modeling and Optimization of Pressure Distillation to Achieve Pharma Grade Tetrahydrofuran Product From Tetrahydrofuran Water Mixture</i> | <i>Improvements in Residue Gasification Increase Feed Flexibility for Virtually Bottomless Refineries</i>                | Speaker<br><b>Jim Brigman</b> Managing Director, Ingenero Inc  |
|  |  | <i>Sustaining Crude Quality Specifications by Leveraging IR 4.0 Solution in Midstream Processing</i> |

## 12:30 - 13:30 **Lunch Break**

📍 Exhibition Hall

## 13:30 - 14:50 **Technical Sessions- 3**

|                          |                             |                                      |
|--------------------------|-----------------------------|--------------------------------------|
| Revolutionary Technology | Debottlenecking: Exploiting | Energy Efficiency and Sustainability |
|--------------------------|-----------------------------|--------------------------------------|

| AI Seef   | Opportunities to Boost Performance<br>AI Fanar  | Palm Hall  |
|---|---|--|
| <i>Novel Catalytic Cracking Technologies for Producing More Low Carbon Olefins and Light Aromatics</i>  | <i>Mitigation of Hydrate Formation in Module 5 De-Ethanizer Overhead System at Yanbu NGL Fractionation Department</i> | <i>Utility Steam System Energy Optimization Best Practices at Khurais Crude Processing Facilities</i>          |
| <i>Digital Transformation - Using Simulation and Engineering Data with Analytical Sciences to, not only turn Data into Information, but also to Drive the Process</i> | <i>Optimal Process Design Approaches for Diesel Hydrotreater Unit Revamps</i>   | <i>Energy Performance Indices (EPIs) – Self-Benchmarking for Continual Improvement; a Statistical Approach</i> |
| Speaker<br><b>Roy Calder</b> Oil and Gas Industry Principal - New Energies, AVEVA   | <i>Unlocking Potential of a Resid Hydroprocessing Unit Through Reactor Internals – A Case Study</i>                   | <i>Energy Efficiency Improvement Initiatives in KNPC MAA Refinery</i>  |
| <i>Innovations in Catalysts and Processes for Refining Applications</i>   | Speaker<br><b>Mohammed Fahad Ajmi</b> Senior Operations Engineer, Kuwait National Petroleum Company (KNPC)            |  |
| Speaker<br><b>Dr. Theo Maesen</b> Director CLG R&D, Chevron Lummus Global (CLG)   |   |  |

15:00 - 16:20 **Technical Sessions- 3**

| Debottlenecking: Exploiting Opportunities to Boost Performance<br>AI Seef   | Energy Efficiency and Sustainability<br>AI Fanar  | Digital Transformation<br>Palm Hall   |
|---|---|---|
| <i>De-Butanizer Tower Bypass Facility</i>   | <i>Energy Optimization in Air Separation Units (ASU) Using Advanced Process Control (APC)</i> | Moderator<br><b>Ayman Salamah</b> General Sales Manager , W.R. Grace & Co   |
| <i>Ethylene Unit Reboiler Fouling Improvements</i>  | <i>Solid Slurry Stream Processing and Recovery Using Thin Film Evaporator Technology</i>      | <i>SAMREF FCC DMC Controller Revamp</i>                                     |
| <i>An Innovative Approach in Re-energizing Internal Profit Improvement Programs (PIP)</i>                         | <i>Energy Real-Time Optimizer - Steam &amp; Condensate Balance</i>                            | <i>Combining the Power of Digital Twins With Cloud-Based Collaboration</i>  |
| Speaker<br><b>Ahmed Altarkeet</b> Snr Manufacturing Excellence Engineer, Kuwait National Petroleum Company (KNPC) |   | <i>Improving Distillate Products Quality Using IR 4.0 Digital Solutions</i> |

16:20 - 16:40 **Coffee Break**  
Exhibition Hall

16:40 - 17:30 **Opening Ministerial Session**  
Palm Hall

Introduction  
**Tor Fjaeran** Manager Investment Arena, Equinor

Speakers

**His Excellency Shaikh Mohammed bin Khalifa Al Khalifa** Minister of Oil, Kingdom of Bahrain  
**His Excellency Elnur Soltanov** Deputy Minister of Energy, Republic of Azerbaijan  
**Dr. Sun Xiansheng** Secretary General, International Energy Forum (IEF)

17:30 - 18:20 **WPC Downstream, Panel Discussion - Digital Transformation Strategies in Downstream**  
📍 Palm Hall

Moderator

**Milton Costa Filho** Secretary General, IBP - Brazilian Petroleum, Gas and Biofuels Institute

18:20 - 18:30 **Coffee Break**  
📍 Exhibition Hall

18:30 - 19:15 **Exhibition Inauguration**  
📍 Hall 1

Guest of Honor

**His Royal Highness Prince Khalifa bin Salman Al Khalifa** Prime Minister, Kingdom of Bahrain  
*(invited)*

20:00 - **Gala Dinner**  
📍 Gulf Hotel

Speaker

**His Excellency Shaikh Mohammed bin Khalifa Al Khalifa** Minister of Oil, Kingdom of Bahrain

# Day 2 - Tuesday, 15 Oct 2019

Kingdom of Saudi Arabia

09:00 - 10:30 **WPC Downstream - Keynote Session**

📍 Palm Hall 1

*Shaping the Future for Industrial Gas Customers*

Speaker

**Naji Skaf** President - Middle East, Egypt, Turkey, Air Products

*Developing Future Innovative Workforce to Sustain Reliable Operational Excellence and Value Creation*

Speaker

**Bassam Al Bokhari** CEO, Saudi Petroleum Services Polytechnic (SPSP)

*Inventing the Future – Chevron’s Commitment to Innovation*

Speaker

**Walt Szopiak** Vice President, Chevron

*Ethical Practice is Foundational to Great Safety*

Speaker

**Deborah L. Grubbe** Owner and President, Operations and Safety Solutions, LLC

10:30 - 10:40 **Coffee Break**

📍 Exhibition Hall

10:40 - 12:00 **Technical Sessions- 3**

| Revolutionary Technology<br>📍 Al Fanar  | Debottlenecking: Exploiting Opportunities to Boost Performance<br>📍 Al Seef  | Energy Efficiency and Sustainability<br>📍 Palm Hall 2  |
|---|--|--|
| <i>Simultaneous Production of Benzene and Gasoline From C-6 Heart Cut of FCC Gasoline</i> | <i>Modifying Aging Assets With Advanced Condition Monitoring Solution to Increase Availability, Reliability and Profitability by Optimizing Operation and Reducing Maintenance Costs</i> | <i>Advanced Process Control in Aromatics Plant</i>   |
| <i>Incremental Value From FCC Catalyst Innovation</i>                                     |  | <i>Technology of Refinery Off-Gas Recovery by Cold Oil Absorption</i>                              |
| <i>Reactor and Catalyst for the Direct Conversion of Crude Oil to Chemicals</i>           | <i>Optimal Temperature Control of a Batch Tank Equipped With a Steam Heating Coil System</i>   | <i>Identifying Energy Saving Opportunities in Fluid Networks via Hydraulic Modeling Techniques</i> |
|   | <i>Capacity Stretch Evaluation Study and Implementation for Polyolefin Plant</i>   |  |



12:00 - 13:00 **Lunch Break**  
 📍 Exhibition Hall

13:10 - 14:30 **Technical Sessions- 3**

| Digital Transformation<br>📍 Al Fanar  | Debottlenecking: Exploiting Opportunities to Boost Performance<br>📍 Al Seef   | Energy Efficiency and Sustainability<br>📍 Palm Hall 2  |
|---|---|--|
| <i>The Digital Refinery: Using Artificial Intelligence to Optimise Utilities Planning</i> | <i>Synergizing De-foamer and Demulsifier Chemicals for Improved Crude Desalting</i>   | <i>A Quantitative Approach for Assessing Automatic Tank Overfilling Protection Systems (AOPS) Requirements</i> |
| <i>Digital Technologies to Support Plant Operations for Profitability</i>                 | <i>Improving Refinery, Petrochemical and Upstream Margins by Closing the Gaps Between Planning, Scheduling and Advanced Process Control</i> | <i>Advanced Digital Twin Solution for CDU Column With Preheat Train Optimization</i>                           |
| <i>Advanced Analytics for Smart Positioner Monitoring and Diagnostics</i>                 | <i>Optimising Chemical Injection Performance &amp; Reducing Cost</i>  | <i>Flare System – Design Optimization Using Reboiler Pinch</i>   |

14:30 - 15:00 **Coffee Break**  
 📍 Exhibition Hall

15:00 - 15:40 **WPC Downstream, Special Session -The Permian Success Story and the Resurgence of the U.S. Refining Sector**  
 📍 Palm Hall 1

15:40 - 17:00 **Technical Sessions- 3**

| Revolutionary Technology<br>📍 Al Fanar  | Debottlenecking: Exploiting Opportunities to Boost Performance<br>📍 Al Seef   | Energy Efficiency and Sustainability<br>📍 Palm Hall 2   |
|---|---|---|
| Moderator<br><b>Gerrit Polhaar</b> Technology Marketing Regional Director, Chevron Lummus Global (CLG)                            | Moderator<br><b>Hamza Alawi</b> Business Development Manager, Lummus Technology   | <i>The Circular Economy in Saudi Aramco: Unlocking New Potential for Supply Chains</i>  |
| <i>Carbon Utilization &amp; Petrochemical Integration: Capturing Value via Residue to Chemicals Projects</i>                      | <i>Advanced Thermodynamic Model for Predicting Hydrochloride Salt Formation and Corrosivity in Crude Distillation Overheads</i> | <i>Energy Efficiency Enhancement Project for Methanol Plant - Exceeding the Expectations</i>  |
| <i>Spray – Drying as an Efficient Method for the Preparation of Catalysts for the Direct Conversion of Crude Oil to Chemicals</i> | <i>SAMREF Sulfur Recovery Unit Retrofits Uplift Performance Sulfur Quality Enhancement</i>                                      | <i>Modeling and Optimization of Microalgae-Based Lead Removal Process Using Response Surface Methodology Articulated With Crow Search Algorithm</i> |
| Speaker<br><b>Tuiana Shoinkhorova</b> PhD Student, King Abdullah University of Science and Technology (KAUST)                     | <i>Flare Gas Recovery System Challenges</i>   |   |

*K-SAAT – A Break-through Solid  
Acid Alkylation Technology*

17:00 - 17:50 **WPC Downstream, Expert Panel Session - Future Feedstocks, and Refinery Integration**

 Palm Hall 1

Moderator

**Dr. Pierce Riemer** Director General, WPC Energy

Speaker

**Keith A. Couch** Senior Director Business Development, Honeywell UOP

17:30 - 18:45 **AICHe Regional Chem-e-Car Competition**

 Hall 1

# Day 3 - Wednesday, 16 Oct 2019

Kingdom of Saudi Arabia

## 09:00 - 10:30 **Keynote Session**

📍 Palm Hall 1

### *Creating Value Through Operational Excellence*

Speaker

**Saad Al-Ayedh** EVP Petrochemicals, TASNEE

### *Modern Refinery Config for R&P Integration*

Speaker

**Keith A. Couch** Senior Director Business Development, Honeywell UOP

### *Strategic Imperatives for the Middle East's Refiners*

Speaker

**Jonathan Forbes-Lane** Regional VP - Catalyst Sales, Shell Catalysts & Technologies

## 10:40 - 12:00 **Technical Sessions- 3**

| Digital Transformation<br>📍 Al Fanar   | Debottlenecking: Exploiting Opportunities to Boost Performance<br>📍 Al Seef  | Energy Efficiency and Sustainability<br>📍 Palm Hall 2                         |
|--|--|---|
| <i>Depropanizer Column Troubleshooting Using AspenTech ProMV</i>                                     | Moderator<br><b>Nikola Georgiev</b> Senior Account Manager Refinery , Topsoe | <i>Gasification in the Era of Crude to Chemicals (CTC)</i>                    |
| <i>Process Analyzers Management System "AMS"</i>   | <i>Upgrading the Hydrogen Plant for New Requirements</i>                     | <i>Optimization of Multi-Effect Evaporators to Minimize Steam Consumption</i> |
| <i>Predictive Maintenance and Asset Management by Combining High-Fidelity and Data-Driven Models</i> | <i>Gasoline Hydrogenation Unit 2nd Stage Reactor Performance Improvement</i> | <i>Opportunities for the Use of First Flush Systems for Water Recovery</i>    |
|  | <i>CDU Revamp: Optimising Cost and Implementation</i>                        |   |

## 12:00 - 13:00 **Lunch Break**

📍 Exhibition Hall

## 13:00 - 14:20 **Technical Sessions- 3**

| Digital Transformation<br>📍 Al Fanar | Debottlenecking: Exploiting Opportunities to Boost Performance<br>📍 Al Seef | Energy Efficiency and Sustainability<br>📍 Palm Hall 2 |
|--------------------------------------|---|---|
|--------------------------------------|---|---|



|  |  |   |
|--|--|---|
| <i>Digital Transformation Journey<br/>"Production Planning, Sustainability<br/>&amp; Energy and Process KPIs<br/>Dashboards in the Distributed<br/>Control System"</i> | <i>Quench System Successful Revamp<br/>and Operation Cycle</i>   | <i>NGL Fractionation Process<br/>Optimization Through Heat<br/>Exchanger Load Shifting</i>                    |
| <i>High Fidelity Digital Twin of<br/>Hydrocracker Units</i>  | <i>Enhancing Ethylene Recovery in<br/>Binary Refrigeration Systems by<br/>Purging H<sub>2</sub> and Further Increase<br/>Through Expander Re-Compressor<br/>System Modifications</i> | <i>Chemical Modeling of Carbon<br/>Capture and Storage Capabilities<br/>From Combustion Gases</i>             |
| <i>Real-Time Predictive Analytics in<br/>Enhancing Base Layer Control Loops</i>  | <i>Deployment of Digital Modelling for<br/>Cracking Furnace Online Yield<br/>Optimization</i>  | Speaker<br><b>Dr. Anthony Gerbino</b> Customer<br>Success Leader , OLI Systems Inc.                           |
|  |  | <i>Furnace Convection Section Rating<br/>for Increased Thermal Efficiency: A<br/>Techno-Economic Analysis</i> |

14:20 - 14:30 **Coffee Break**  
📍 Exhibition Hall

14:30 - 16:00 **Panel Discussion - Process Intensification**  
📍 Palm Hall 1

Moderator

**Gina M. Gatto** Membership Manager , American Institute of Chemical Engineers (AIChE)

16:00 - 16:30 **Closing Ceremony and Raffle Draw**  
📍 Palm Hall 1

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