F01 - Innovative E&P Technologies Paper

Innovation and new technologies enable a more efficient and cost-effective oil and gas industry and help tackle both technical complexities as well as lower emission intensities. Technology drives almost every aspect in our upstream business from reservoir to point of sale. This forum will address the role of new technologies and innovative breakthroughs in geo sciences, production and development to overcome future challenges in finding, exploiting and commercializing increasingly cleaner energy sources.

Chair: Mrs. Jayme Meier, Vice President, Engineering, ExxonMobil Upstream Research Company, USA

Vice Chairs: Dr. Ashraf Tahini, Director, Aramco R&D global centers at the United States, Saudi Aramco, Saudi Arabia

Mr Orlando Ribeiro, Executive Manager of R&D, Petrobras, Brazil

F01 – Papers

Planet Imaging R&D, Pioneering Geophysics and Satellite Technologies to Discover and Produce a Responsible Energy

Florent Bertini, RD Program Director, TOTAL EP, France

Deep Learning Based Production Flow Profiling and Allocation Using Fiber Optic DAS and DTS Data

Weichang Li, AI Team Lead, Aramco Services Company, USA

Co-authors: Frode Hveding, Saudi Aramco, Saudi Arabia

A Deep Dive into Disruptive Technologies in the Oil and Gas Industry

Hossein Rokhsari Azar, CEO, Darcy Partners, USA

Co-authors: David Wishnow, Darcy Partners, USA

Enabling Long Distance Subsea Processing with the World's First Subsea Power Grid

Atle Stromme, Executive Vice President and Deputy CEO, Siemens, Norway

F01 - Posters

Dispersed Source Array Seismic Acquisition: Increasing the Quality of Seismic Data

Abdulrahman Alshuhail, Geophysicist, Saudi Aramco, Saudi Arabia
Managed Pressure Drilling Avoids Losses to Reach Total Depth in Challenging Pre-salt Formation

Peter Dugas, Applications Engineer, Weatherford, USA

Potential Environmental Impact of Nanotechnology During Hydrocarbon Deposits Exploration and Exploitation

Ewa Kukulska-Zajac, Department Manager, Oil and Gas Institute National Research Institute, Poland

Experimental Salt Cavern for Carbon Capture and Storage in Offshore Ultra-deep Water in Brasil

Alvaro Maia da Costa, Director, Modecom Technology in Geomechanics and Computing Modelling, Brazil

Maximizing Lifecycle Value for Deepwater Assets by Holistic Flow Assurance Engagement

Tabish Maqbool, Flow Assurance Engineer, ExxonMobil Upstream Research Company, USA

Clean Fleet Electric Fracturing

Jared Oehring, Chief Technology Officer, US Well Services, USA

A New Method of Reservoir Stimulation: Self-Propping Fracturing Technology

Yuxin Pei, Postdoctoral researcher, PetroChina Dagang Oilfield Company, China
Reservoir Connectivity Assessment Using New Formation Testing Platform Indicates Connectivity Across Large Reservoir Offshore Mexico

Joel Speights, Reservoir Engineer Manager - Mexico, TALOS ENERGY, USA

Co-authors: Francois Dubost, Schlumberger, Mexico; Oliver Mullins, Schlumberger, USA

Pore-scale Modeling and Simulation of Unconventional Reservoirs Using Lattice-boltzmann Method

Cenk Temizel, Sr Reservoir Engineer, Saudi Aramco, Saudi Arabia

Innovation and Application of Seismic Technology to Complex Strike-slip Fault Areas in Southern Turgai Basin

Chen Xin, Chief Geologist, BGP, China

Co-authors: Zhao Yuguang, BGP CNPC, China; Wang Zhaofeng, CNODC CNPC, China; Wei Xiaodong, BGP CNPC, China; Liu Hongwei, CNODC CNPC, China; Gang Chen, BGP CNPC, China; Yang Ke, BGP CNPC, China; Li Qiang, BGP CNPC, China

F02 - Managing Mature Fields

Mature oil and gas fields are the core assets of oil companies and a leading contributor to the world’s energy supply. To maintain effective development, technology innovation and reservoir management are of great importance. This Forum will discuss IOR/EOR technology innovation and best practices learned in reservoir management, as well as well abandonment/ facility decommissioning in both onshore and offshore operations.

Chair: Dr Mike Watts, Managing Director, Pharos Energy, UK

Vice Chairs: Mrs. Farida Ali, Manager Reservoir Management Group, Kuwait Oil Company, Kuwait

Mr Jing Xudong, Manager Shell Technology Oman at Shell, Shell Development Oman LLC, Netherlands

F02 - Papers

Study Of Enhancing Stimulation & Maximizing Hydrocarbon Recovery from a Deep Heterogeneous Sub-hydrostatic Carbonate Reservoir

Talal Almutary, Production Engineer, Saudi Aramco, Saudi Arabia

Co-authors: Naresh Purusharth, Saudi Aramco, Saudi Arabia; Abdul Muqtadir Khan, Schlumberger, Saudi Arabia; Mohamed ElSebaee, Schlumberger, Saudi Arabia

Canadian Thermal In Situ - A Sustainable Source of Global Energy
The Role of Enhanced Oil Recovery Methods in Revitalizing Mature Oilfields of Tatarstan

Il'nur Mukhliev, Deputy Head of Well Intervention Centre, PJSC Tatneft, Russia

Co-authors: Marat Mannapov, PJSC Tatneft, Russia

Research and Practice of Chemical Flooding on Offshore Heavy Oilfield in Bohai Bay of China

Li Yanlai, Senior Engineer, CNOOC, China

Co-authors: Su Yanchun, CNOOC, China; Yang Wei, CNOOC, China; Meng Peng, CNOOC, China; Wang Lilei, CNOOC, China

F02 - Posters

Mitigate Asphaltene Deposition Challenge in Deep Jurassic Wells - A Comprehensive Overview

Abdulaziz Abbas, Petroleum Engineer, Kuwait Oil Company, Kuwait

Co-authors: Jose Peres, Kuwait Oil Company, India; Noura Alkhedhair, Kuwait Oil Company, Kuwait

Multiphysics Integrated Workflow to Estimate Stresses in the Gulf of Mexico Deep Water Wells

Samer Alatrach, Geomechanics Domain Champion, Schlumberger, USA

Co-authors: Allan Reyes, Schlumberger, USA; Vinay Mishra, Schlumberger, USA; Anish Kumar, Schlumberger, USA

New Reserve Development Opportunity in Shallow Low Perm Carbonates in Northern Mexico Through Propped Fracture

Silvano D'Alessio, Geology Coordinator, DEP Petroleo y Gas, Mexico

Co-authors: Alberto Ochoa, DEP Petroleo y Gas, Mexico; Luis Zagaglia, DEP Petroleo y Gas, Mexico

Effective Well Integrity Management for a Matured Sour Oil Field - An Engineer's Perspective

Surajit Haldar, Production Engineer Specialist, Saudi Aramco, Saudi Arabia

Co-authors: Fahmi Aulia, Saudi Aramco, Saudi Arabia

The Troll Story: How Innovation Created One of the Largest Oil Fields Offshore Norway

Ingvild Lygren, Vice President Petroleum Technology, Equinor ASA, Norway

Increasing of Oil Recovery Factor on Mature Fields by Infill Drilling of Wells

Marat Mannapov, Deputy Head of Subsoil Use Department, PJSC Tatneft, Russia
Co-authors: Ilnur Mukhliev, PJSC Tatneft, Russia

Thorough Analysis of Integrated Surface Network System and Produced Water Management in Mature Oil Field

Iyon Maryono, Petroleum Engineer, Saudi Aramco, Saudi Arabia

Co-authors: SANJIV KUMAR, SAUDI ARAMCO, Saudi Arabia; FEHEAD M AL-SUBAIE, SAUDI ARAMCO, Saudi Arabia; AQUEEL M BAHRANI, SAUDI ARAMCO, Saudi Arabia

Evaluation of Chemically Modified Starch As Viscosifying Agent to Enhanced Oil Recovery

Kelly Lúcia Nazareth Pinho de Aguiar, doctoral student, Eloisa Mano Macromolecule Institute of Federal University of Rio de Janeiro, Brazil

Co-authors: Luiz Carlos Magalhães Palermo, Federal University of Rio de Janeiro, Brazil; Claudia Regina Elias Mansur, Federal University of Rio de Janeiro, Brazil; Karen Sá Gomes, Federal University of Rio de Janeiro, Brazil; Matheus Ferreira da Silva Licht, Federal University of Rio de Janeiro, Brazil

The Innovation Effects of Horizontal Wells and Seismic on the Performance of Fractured Gas Reservoirs

Vali Ahmad Sajjadian, Management of Upstream Projects, Masjed Soleyman Bakhtiari Petrochemical Refinery, Iran

Co-authors: Zahra Ghazbani, Kharg Azad University, Iran

Study on Air Foam Driving Test in Ultra-low Permeability Reservoir

Guangming Yu, Deputy Director, Changqing Oil Field Company Exploration and Development Institute, China

Recent Progress in the Field Practice of Chemical Enhanced Oil Recovery Technologies in China

Youyi Zhu, Professor, Petrochina, China

F03 - New Petroleum Resources

As production from discovered petroleum resources continues to decline naturally, enormous capital is being invested in the hunt for new sources of petroleum supply to meet continued growth in demand, while continuing to transition to a lower-carbon future. This hunt increasingly relies on innovative technologies to cost effectively pursue conventional petroleum resources in new remote basins and ever deeper offshore areas and to unlock the huge latent potential of unconventional resources such as shale oil and gas, tight oil and gas, oil sands and gas hydrates, in an environmentally responsible and socially acceptable way. This forum will describe innovative technologies and processes that are critical drivers for the continued growth of petroleum supply.
Chair: Mr Christophe Amadeï, VP Unconventional Development, Total E&P, France

Vice Chairs: Mr. Benjamin Sloan, Manager, Resources to Reserves, Chevron, USA

Mr. Khalid Al Abdul Qader, General Manger, Unconventional Resources, Saudi Aramco, Saudi Arabia

F03 - Papers

New Hydrocarbon Reservoir Sweet Spot Identifier Enabling Optimal Field Development Plans

Ghazi AlQahtani, Advance Simulation Modeling Specialist and Group Leader, Saudi Aramco, Saudi Arabia

Co-authors: Menhal Ismail, Saudi Aramco, Saudi Arabia; Abdulhamed Faleh, Saudi Aramco, Saudi Arabia; Basharat Ali, Saudi Aramco, UK; Fouad Abouheit, Saudi Aramco, USA

Big Data-driven Advanced Analytics: Application of Convolutional and Deep Neural Networks for Seismic Interpretation

Sergey Alyamkin, Chief Data Scientist, AlphaX Decision Sciences, USA

Co-authors: Sammy Haroon, AlphaX Decision Sciences, USA

Strategic Vision for Lacustrine Shale Oil Revolution in China

Zhijun Jin, Member of Chinese Academy of Sciences, Sinopec, China

Co-authors: Maowen Li, Sinopec E P Research Institute, China; Xunyu Cai, Sinopec Upstream Company, China; Mingshui Song, Sinopec Shengli Oilfield Company, China; Jizheng Yi, Sinopec Jianghan Oilfield Company, China

The Hunt for the 100 Billion Boe Resource in the Pre-salt, Santos Basin, Brazil

Marcio Mello, President, Flowmagic Technology Ltda, Brazil

F03 - Posters

Hail the Shale - How Shall India Embrace Shale Gas?

Saurabh Agarwala, Senior Manager, Engineers India Limited, India

Co-authors: Vartika Shukla, Engineers India Limited, India

Non-equilibrium Molecular Dynamics Simulation of Methane Molecular Adsorption-desorption Mechanism in Shale of Sichuan Basin

Changhong Cai, Leader, Petrochina, China

Co-authors: Nong Li, PetroChina, China; Dan Zhao, PetroChina, China; Lin Wang, Sichuan Univercity, China; HongBin Chen, PetroChina, China
Limits on Production-induced Interference Testing in Diagnosis of Optimal Well Spacing in Shale Plays

Clay Kurison, Geoscientist, Saudi Aramco, Saudi Arabia

Co-authors: Ahmed H. Mubarak, Saudi Aramco EUAD, Saudi Arabia; Ahmed M. Hakami, Saudi Aramco EUAD, Saudi Arabia; Fataierge O. Ahmed, Saudi Aramco EUAD, Saudi Arabia

Unconventional Petroleum Basement Reservoirs: A Case Study of the Sab’atayn Basin of Yemen.

Aref Lashin, Professor, King Saud University, Saudi Arabia

Co-authors: Waleed Bawazer, King Saud University, Yemen

The Modified Pyrolytic Production Index For Identifying Oil-saturated Interval In Shale Formation

Thi Nhut Suong Le, Student, Gubkin Russian State University of Oil and Gas, Russia

A New Way of Staged Fracturing: Cluster-by-cluster and Isolated with Proppants Instead of Bridge Plugs

Junlong Li, Director, Downhole Service Company of Chuanqing Drilling Engineering Company of CNPC, China

Co-authors: Xiaozhi Shi, Downhole Service Company of Chuanqing Drilling Engineering Company of CNPC, China; Juhui Zhu, Downhole Service Company of Chuanqing Drilling Engineering Company of CNPC, China

Challenges and Opportunities for the Development of Shale Gas in Indonesia

Josia Simanjuntak, Project Management Officer, SKK Migas, Indonesia

Co-authors: William Fisher, The University of Texas at Austin, USA; Svetlana Ikonnikova, Bureau of Economic Geology UT Austin, USA

Nonequilibrium Molecular Dynamics Simulation of Pore Structure of Kerogen with Different Maturity

Yu Yang, China, PetroChina, China

Co-authors: Nong Li, PetroChina, China; JiaHuan He, PetroChina, China; HongBin Chen, PetroChina, China; DongBo Wang, SiChuan University, China

Fine Characterization of Multi-scale Natural Fractures for Saline Lacustrine Shale Reservoirs in the Qaidam Basin

Qinghui Zhang, Section Chief, PetroChina Qinghai Oilfield Company, China

Study on the Influence of Lithology of Longmaxi Formation Shale on Acoustic Wave Propagation Velocity
F04 - Impact of Digitalisation in the Upstream Sector

Digital Technologies are a growing technology focus area, such as AI, robotics, remote monitoring, and advanced analytics, and essential to solving today’s energy challenges and driving efficiency in all aspects of the upstream business. Digitalisation helps reduce operational costs through increased worker productivity with mobility, driving operational excellence and subsurface data management for the oil and gas industry. Upstream companies need to stay ahead in the digital revolution, developing in-house capabilities and adding external talent for data analytics and other leading technologies. The Forum will look at best practices and innovations in the industry.

Chair: Mr Dariusz Piotrowski, Director, Cognitive & AI Solutions Development, Natural Resources Team, IBM, UK
Vice Chairs: Mr. Masatoshi NISHI, Leader, INPEX Digital Transformation Task Force, INPEX Corporation, Japan
Dr Nikolai Eremin, Deputy Director, Oil & Gas Research Institute of the Russian Academy of Sciences (OGRI RAS), Russia

F04 - Papers

Implementation of Autonomous Ground Robots on Operational Sites

Eric Bartoli, New Generation Facilities Operation Manager, TOTAL, France

Machine Learning Models for Porosity Using Elastic Properties from Well Logs Applied to Pre-salt Carbonates

Carlos Menezes, System Engineer, PETREC, Brazil

Co-authors: Joao Ralha, PETREC, Brazil; Inacio Borges, PETREC, Brazil; Luciana Brelaz, PETREC, Brazil; Alyne Duarte, PETREC, Brazil; Josias Silva, PETREC, Brazil

Real-time Data Driven Hydrocarbon Production Optimization - Digital Twin Model Addressing the Entire Value Chain

Bob Okhuijsen, Portfolio Manager, Siemens, Germany

Advanced Optimization of Non-conventional Upstream Plant Production

Tracey Solomons, Associate Partner Advanced Analytics, IBM, Canada
Co-authors: Jayant Kalagnanam, IBM, Canada

**F04 - Posters**

**Holistic Approach of Digital Data Enabling Reservoir Management Analysis**

*Abdel Nasser Abitrabi*, Consultant, Saudi Aramco, Saudi Arabia

Co-authors: Amer Abuhashoun, Saudi Aramco, Saudi Arabia

**Non Conformance Report Manager**

*Hamad AlGhanim*, Systems Analyst, Kuwait Oil Company, Kuwait

**Digitalisation of Asset Performance Management in Qatargas**

*Hasnaa Al-Qahtani*, Reliability Engineering Lead, Qatargas, Qatar

**Ariel: Autonomous Robot for Identification of Emulsified Liquids**

*Marcelo Andreotti*, Senior Research Engineer, Repsol Sinopec Brasil, Brazil

**Integrating Ensemble-based Workflows for Optimized Production Forecasting**

*Manuel Arroyo*, Upstream Oil and Gas Programs Manager, Emerson Automation Solutions, USA

Co-authors: Usman Aslam, Emerson Automation Solutions, USA

**Real-time Monitoring and Control of Logging Operations Leveraging Data Virtualization, Visualization, and Workflow Orchestration**

*Hani Elshahawi*, Digitalization Lead - Deepwater Technology, Shell, USA

**The Importance of the Use of Unmanned Aerial Vehicles in the Oil and Gas Industry**

*Taha Enes Kon*, Procurement Engineer, Turkish Petroleum Cooperation, Turkey

Co-authors: Merve Akkoc, Thomas Jefferson University, USA; Ajmal Yousuff, Drexel University, USA; Gokhan Benk, Auburn University, USA

**Research and Application of Dynamic Monitoring Technology Applied in Separate Injection Wells in Digital Oilfield**

*Yang Lingzhi*, 710018, Oil and Gas Technology Research Institute Changqing Oilfield Company, China

Co-authors: Liu Yanqing, Oil and Gas Technology Research Institute Changqing Oilfield Company, China; Yu Jiuzheng, Oil and Gas Technology Research Institute Changqing Oilfield Company, China; Yao Bin, Oil and Gas Technology Research Institute Changqing Oilfield Company, China
F05 - Improving Industry Performance

Economic uncertainties coupled with growing technical complexities mandate our industry to improve performance, optimize costs, and reduce risks. From design to contracting and from financing to execution, partnerships must evolve toward better alignment, integration, and collaboration. Unique partnerships with regulatory bodies in terms of fiscal regimes and administrative design can encourage exploration and development of increasingly complex resources while improving performance. Adoption and integration of revolutionary technologies – such as blockchains, and the internet-of-things – provide further means to realize an improved performance. This forum will include presentations that demonstrate the value of such practices.

Chair: Mr. Yuxiang Wei, Vice President, CNPC Central Asia and General Director, CNPC Kazakhstan B.V., CNPC Central Asia, China

Vice Chairs: D.Sc. Augusto Borella, General Manager - Strategy, Organization and Management System, Petrobras, Brazil

Mr Andrey Belevtsev, Director of Digital Transformation, Gazprom Neft, Russia

F05 - Papers

The Effect of Applying a Systematic Innovation Program on Already Established Operation Facility

Mohammed Farran, Main Engineer, Aramco, Saudi Arabia

Predicting the Probability of Persistent Profit

Tobias Hoeink, Sr Director Stimulation Software & AI, Baker Hughes, USA

How Collaborative Innovation is Accelerating the Environmental Performance Improvement of Canada's Oil Sands

Wes Jickling, Chief Executive, Canadas Oil Sands Innovation Alliance, Canada

Tradespace Exploration for Offshore Oil & Gas Developments - a Model Based Systems Engineering Approach

Anderson Leocadio da Nova, Project Engineer, Repsol Sinopec Brasil, Brazil
Qatargas Subsurface Integrated Data Portal - the Key to Subsurface Informed Decisions

Saheena Najeeb, Subsurface Data Specialist, Qatargas Operating Company Limited, Qatar

**F05 - Posters**

**Improving Plant Safety & Performance by Adopting & Adapting of Revolutionary Technologies**

Mostafa ElBaradie, Engineering Consultant, Saudi Aramco, Saudi Arabia

**AI Digital Twin Technology**

Rosana Ellis, C.O.O., PhDsoft Technology Inc, USA

Co-authors: Duperron Ribeiro, PhDsoft Technology Inc, Brazil

**Cross-functional Communication in a Project Aimed to the Efficient Development of Residual Oil Resources Field**

Vasil Gimazetdinov, Drilling engineer, Gazpromneft STC, Russia

**Organic Organizational Structures: Can Boost the Performance in a Rapidly Changing Upstream Industry?**

Vahid Jaleh, Consultant Reservoir and Production Engineer, Dodsal Group, Australia

**Dynamic Integrated Solution for Master Facilities Plan**

Mostafa Kaouri, Senior Systems Analyst, Kuwait Oil Company, Kuwait

Co-authors: Abdulla AlSairafi, Kuwait Oil Company, Kuwait; Bashayer Sadiq, Kuwait Oil Company, Kuwait

**New Way Forward Through Collaboration & Technology - Data Gumbo & The Carnrite Group Collaboration**

Adnan Khan, Associate Director, Carnrite Group, USA

Co-authors: William Fox, Data Gumbo, USA

**Progress of Diverter Technology in the Past Decade for Petroleum Production Applications: A Review**

Wengang Li, Scientist, Saudi Aramco, Saudi Arabia

Co-authors: Qasim Sahu, Saudi Aramco, Saudi Arabia; Mohammed Bataweel, Saudi Aramco, Saudi Arabia

**Integrate Facilities with Reservoir Resources to Make the Marginal Oilfield Fruitful Under Oil Price Winter**

Hongfu Shi, Reservoir Engineer, CNOOC, China
Co-authors: Yifan He, CNOOC, China

**Thriving in a Shallower Profit Pool for Oil and Gas**

* Luis Uriza, Partner and Americas Oil and Gas Leader, Bain and Company, Colombia

Co-authors: John McCreery, Bain and Company, USA; Nitesh Prakash, Bain and Company, UK

**Smooth Cooperation Improving Venture Performance**

* Guo Xu, Senior Finance Manager, Petrokazakhstan, Kazakhstan

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**F06 - Innovative Refining Technologies**

With the need for cleaner gasoline and diesel fuels, new challenges arise with respect to lower sulphur contents in products (particularly of marine fuels, IMO 2020), cleaner feedstocks and resid processing. Improvements, e.g. of catalysts for HDS, FCC and alkylation could help in this respect. Also, emission reduction and co-processing of renewables are big issues. The major question is: Which innovative technologies will have an impact on the future of the refining sector?

Chair: Prof. Rong Guo, Professor, SINOPEC Dalian Research Institute of Petroleum and Petrochemicals, China

Vice Chairs: Dr. Kamala Krishna, Unit Manager, Process Research, Chevron Energy Technology Company, Downstream Technology & Services, USA

* Dr. Rafael Larraz, Engineering Manager, CEPSA, Spain

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**F06 - Papers**

**Converting Heavy Oils into Light Petrochemicals Through Pump-free Ebullated Bed Hydrocracker**

* Bo Chen, Research Assistant, SINOPEC, China

Co-authors: Bo Chen, SINOPEC, China; Zhaohui Meng, SINOPEC, China; Hailong Ge, SINOPEC, China; Ling Liu, SINOPEC, China; Huihong Zhu, SINOPEC, China; Tao Yang, SINOPEC, China

**Hydrodearylation: A New Process to Enhance Btx Yields in an Aromatics Recovery Complex**

* Robert Hodgkins, Senior Scientist, Saudi Aramco, Saudi Arabia

Co-authors: Omer Koseoglu, Saudi Aramco, Saudi Arabia

**Process Technologies to Manage the Global Bunker Fuel Sulfur Cap**

* Carlos Prieto, Manager of Refining Department. Research Center, CEPSA, Spain

Co-authors: Berta Aramburu, CEPSA, Spain; Juana Frontela, CEPSA, Spain

**Isoalky Technology: Innovation in Alkylate Gasoline Manufacturing Technology**
Hye Kyung Timken, Principal Scientist, Chevron, USA

Co-authors: Huping Luo, Chevron, USA; BongKyu Chang, Chevron, USA; Matthew Cole, Honeywell UOP, USA; Rajeswar Gattupalli, Honeywell UOP, USA

F06 - Posters

Development of On-stream Correlation Models to Predict Cloud Point

Madi Asiri, Superintendent, Saudi Aramco Total Refining and Petrochemical Company, Saudi Arabia

LC-LSFO for IMO 2020 Compliant LSFO Production

Julie Chabot, Resid Research and Development Team Leader, Chevron Energy Technology Company, USA

Co-authors: Goutam Biswas, Chevron, USA; Shuwu Yang, Chevron, USA

Hierarchical Hollow Micro/nanostructures of Metal Oxides: Effect of Sulfidation Pressure on Particle Morphology & Hydrodesulfurization

Ramesh Kumar Chowdari, Postdoctoral Researcher, Universidad Nacional Autonoma de Mexico Centro de Nanociencias y Nanotecnologia, Mexico

Co-authors: JorgeNoe DiazdeLeon, Universidad Nacional Autonoma de Mexico Centro de Nanociencias y Nanotecnologia, Mexico; Sergio FuentesMoyado, Universidad Nacional Autonoma de Mexico Centro de Nanociencias y Nanotecnologia, Mexico

Innovative Software Improves Crude Oil Logistics Scheduling

Aurelio Ferrucci, Executive VP, Prometheus SRL, Italy

Petrochina's Gasoline Quality Upgrading Technologies and Applications

Tianshu Li, Senior engineer, China National Petroleum Corporation, China

Co-authors: Tianshu Li, PetroChina Petrochemical Research Institute, China; Yana Ju, PetroChina Petrochemical Research Institute, China; Shaohui Ge, PetroChina Petrochemical Research Institute, China; Qinfeng Zhao, PetroChina Petrochemical Research Institute, China; Haijun Zhong, PetroChina Petrochemical Research Institute, China; Yang Li, PetroChina Petrochemical Research Institute, China; Xuejun Zhang, PetroChina Petrochemical Research Institute, China; Zhongwu Lv, PetroChina Petrochemical Research Institute, China; Zengkun Jiang, PetroChina Petrochemical Research Institute, China; Zhuoran Gao, PetroChina Petrochemical Research Institute, China

Catalytic Cracking of Heavy Crude Oil in Supercritical-Water in the Presence of Modified-Carbon-Clothes-Nanostructures

Maryam Mousavi, Doctoral Student, Shiraz University, Iran
How Refiners Can Capture the Benefits of the Energy Transition and Digitalization

Nitesh Prakash, Partner, Bain and Company, UK

Development of Extending Operation Cycle of Diesel Hydrogenation Unit for Sinopec

Guo Rong, Professor, Dalian Research Institute of Petroleum and Petrochemicals of SINOPEC, China

Advanced Coker Technology for Reduction of Coke Yield

Madhusudan Sau, Chief General Manager Refining Technology, Indian Oil Corporation Limited, India

F07 – Resilient Refining

Demand for petroleum is still expected to rise but in the refining sector there are several uncertainty factors, such as arrival of new crude oil sources including shale oil, changes in the demand structure with the increase of electric vehicles and IMO sulphur regulations, and rapid demand decrease in developed countries due to the Paris Agreement. Consequently, the refining industry will need to become better prepared for future changes by integrating upstream and downstream sectors, adopting new equipment management systems, cutting-edge digital technology etc. This forum will discuss how the oil refining sector can best respond to future uncertainties.

Chair: Mr. Mike Ashar, Consultant, Consulting, Canada

Vice Chairs: Mr Peter Šrámek, Production Director, Slovnaft, Production, Slovakia

Mr. Saad Binmatlig, Manager, Downstream Capital Portfolio Planning, Saudi Aramco, Saudi Arabia

F07 - Papers

Walking the Tightrope
Mark Broadbent, Refining Analyst, Wood Mackenzie, USA

A Novel Approach to Explore Potential Crudes Fitted to the Bottom Upgrading Process

Naoki Kono, Chief Researcher, JXTG Nippon Oil and Energy Corporation, Japan

Master Planning Strategies for a Resilient Refinery and Petrochemical Complex Configuration

Karthick Ramalingam, Manager Technical Services, Mangalore Refinery And Petrochemicals Limited, India

Co-authors: Nandakumar V, Mangalore Refinery and Petrochemicals Limited, India

Achieving Product Resilience for a Complete Robust Portfolio in World-class Refinery and Petrochemical Complex

Faris Subahe, Business Development Engineer, SATORP, Saudi Arabia

F07 - Posters

Heavy Oil Residues Into High-purity Carbon Materials

Alexandra Boytsova, Researcher, TU Freiberg Mining Academy, Russia

Co-authors: Natalia Demchenko, Ukhta State Technical University, Russia; Strokin Sergey, Saint Petersburg Mining University, Russia

Vision for the Refinery of the Future

Marcelo Carugo, VP Global Refining and Chemical Programs, Emerson Automation Solutions, USA

Novel Process for the Production of Environmental Friendly Rubber Process Oils from Low-value Refinery Streams

Valavarsu G., Deputy General Manager, Hindustan Petroleum Corporation Limited, India

Co-authors: Srinivasa Rao Ganagalla, Hindustan Petroleum Corporation Limited, India; Ramachandrarao B, Hindustan Petroleum Corporation Limited, India; Sriganesh Gandham, Hindustan Petroleum Corporation Limited, India

Flexible Upgrading Technique Through Solvent De-asphaltng, Residue Hydrodesulfurization and Residue Fluid Catalytic Cracking

Koichi Matsushita, Chief Researcher, JXTG Nippon Oil and Energy corporation, Japan

Flare Gas Transmission to Value-added Products

Hossein Parsa, Director of R&D, Nouri Petrochemical company, Iran

Higas Sox Scrubbing Technology - An Innovative Answer to Marpol Challenge
**F08 - Chemicals on the Rise**

With accelerated changes in engine technologies and public carbon policies, the consumer side of the downstream equation comes into a transition phase. Petroleum refiners and petrochemical producers sharpen focus to find and accommodate new products in their product portfolio. This Forum will present case studies of how downstream companies develop innovative, economic and sustainable responses in their molecule management for future markets.

**Chair:** Mr Joe Blommaert, Senior Vice President, Global Operations, ExxonMobil Chemical Company, USA

**Vice Chairs:** Mrs Krisztina Petrényiné Szabó, Petrochemical Business Development Director, Downstream Business Development, Hungary

Dr. Olivier Thorel, Executive Director, Chemicals, Saudi Aramco, Saudi Arabia

**F08 - Papers**

**Winning in the New Customer-centric Environment**

Wolfgang Falter, Global Chemicals Leader Deloitte, Deloitte Germany, Germany

Co-authors: Duane Dickson, Deloitte US, USA

**Mol Group Downstream's Opportunities and Challenges in the 'Rise of Chemicals' Era**

Krisztina Petrényiné Szabó, Downstream Business Development Director, MOL Group Downstream Business Development, Hungary

**Main Challenges On The Global Polyolefin Market-from Oversupply To Sustainability**

Roberto Ribeiro, Managing Director, Asterisk Partners, USA

**Novel Reaction Systems Maximizing Conversion of Crude Oil to Chemicals**

KAREEMUDDIN SHAIK, ENGINEERING CONSULTANT, SAUDI ARAMCO, Saudi Arabia

Co-authors: ESSAM ALSAYED, SAUDI ARAMCO, USA; THEODORE MAESEN, CHEVRON, USA; PEDRO SANTOS, MCDERMOTT, USA
F08 - Poster

Hydrogenation of Alkylaromatics over Rh/silica

Feras Alshehri, Assistant Research Professor, King Abdulaziz City For Science And Technology National Center For Petrochemical Technology, Saudi Arabia

Co-authors: S David Jackson, University of Glasgow, UK; H Michal Weinert, University of Glasgow, UK

Lao - An Important Derivative of Ethylene

Shahid Azam, Chief Scientist, Sabic, Saudi Arabia

Co-authors: MOHAMMED ALHAZMI, SABIC, Saudi Arabia

Achieving Self Sufficiency in Petrochemicals Through Alternate Feedstocks: Comparative Case Study for Viability Assessment

Vineet Bakshi, Senior Process Manager Strategy and BD, Engineers India Ltd, India

Co-authors: Anil Kumar Singh, Engineers India Ltd, India; Snigdho Majumdar, Engineers India Ltd, India; Manoj Kumar, Engineers India Ltd, India

Production of High Value, Low Aromatic Specialty Solvents from Lube Refinery

Valavarasu G., Deputy General Manager, Hindustan Petroleum Corporation Limited, India

Co-authors: Pradyutkumar Dhar, Hindustan Petroleum Corporation Limited, India; Ramachandrarao B, Hindustan Petroleum Corporation Limited, India; Sriganesh Gandham, Hindustan Petroleum Corporation Limited, India

Optimization of Dual-functional Metathesis/zeolite Materials for the On-purpose Production of Propylene from 2-butene

Brian Hanna, Laboratory Scientist I, Aramco Services Company, USA

Co-authors: Sergio Fernandez, Aramco Services Company, USA; Maxim Bukhovko, Aramco Services Company, USA; Timothy Kucharski, Aramco Services Company, USA; Michele Ostraat, Aramco Services Company, USA; Sohel Shaikh, Saudi Aramco Oil Company, Saudi Arabia; Munir Khokhar, Saudi Aramco Oil Company, Saudi Arabia

On-purpose Propylene Production from Light Hydrocarbons at Low Energy Consumption with Zeolite-based Composite Catalysts

Shinya Hodoshima, Group Leader, Chiyoda Corporation, Japan

A Fuel Gas Additive for Metal Cutting Operation

Narayanan Krishnamurthy, Chief Manager R&D, HPCL, India
Application and Discussion of Crystalline Stabilizer Masterbatch of Beta Nucleating Agent in PP-RCT Pipe

Jin Ma, Institute of Dushanzi Petrochemical Company CNPC, Institute of Dushanzi Petrochemical Company PetroChina, China

Molecule Valorisation Derived Refinery Configuration of the Future

Srinivas Moturi, Senior Manager, MRPL, India

Behavior Of Partially Hydrolyzed Polyacrylamide/polyethyleneimine Hydrogels Reinforced With Coal Fly Ash

Priscila Oliveira, Researcher, UFRJ, Brazil

Co-authors: Kaique Pereira, UFRJ, Brazil; Kaio Pereira, UFRJ, Brazil; Claudia Mansur, UFRJ, Brazil

F09 - Integration of Refining and PetroChemicals

Integrating refining and petrochemical sites helps reduce volatility in the petroleum value chain. When properly designed, planned and implemented, integration will not only diversify companies’ product portfolio, but will reduce site specific costs, increase capital efficiency and elevate returns. The practical case studies in this Forum will demonstrate how strategic planning and operation of refining and petrochemical conversion units with common utilities capture long term business benefits.

Chair: Mr S.M Vaidya, Executive Director (Operations), IndianOil Corporation Limited, India

Vice Chairs: Mr Mikhail Lebedsky-Tamibiev, General Director, LLC "Lengpromneftekhim", Russia

Mr Goran Stojilkovic, Deputy CEO for Petrochemical Business, NIS Gazprom Neft, Serbia

F09 - Papers

Crossing the Chasm to Convergence

Duane Dickson, Oil Gas and Chemicals Leader Deloitte US, Deloitte US, USA

Co-authors: Wolfgang Falter, Deloitte Germany, Germany

On the Direct Conversion of Crude Oil to Petrochemicals: Process and Catalyst Design

Jorge Gascon, Director and full professor: KAUST catalysis center (KCC), King Abdullah University of Science and Technology KAUST, Saudi Arabia

Co-authors: Wei Xu, Saudi Aramco, Saudi Arabia; Ola Ali, Saudi Aramco, Saudi Arabia; Isidoro Morales Osorio, Saudi Aramco, Saudi Arabia; Tuiana Shoinkhorova, KAUST, Saudi Arabia;
Olefin-catalytic-cracking Process-one Upgrading Technology for Refining

Jing Shi, Engineer, SINOPEC Shanghai Research Institute of Petrochemical Technology, China

Co-authors: Guoliang Zhao, SINOPEC Shanghai Research Institute of Petrochemical Technology, China; Jiawei Teng, SINOPEC Shanghai Research Institute of Petrochemical Technology, China

Converting Crude to Chemicals : a Revolution or Just Another Evolution?

Alban Sirven, Refining Technology Lead Expert, TechnipFMC, France

Co-authors: Benjamin Andre, TechnipFMC, France

F09 - Posters

Refining and Petrochemicals Integration: the Future of the Downstream Industry

Raquel Cantón, Business Development Engineer, CEPSA QUIMICA, Spain

Simultaneous Production of Benzene and Gasoline from C-6 Heart Cut of Fcc Gasoline

Madhukar Garg, Head Refining and Petchem Research and Development, Reliance Industries Limited, India

Co-authors: Ajit Sapre, Reliance Industries Limited, India

Refinery Chemical Integration is a Strategic Necessity

Alan Gelder, VP Refining Chemicals and Oil Markets, Wood Mackenzie, UK

Solar Refinery - An Integrated Refinery, Petrochemical and Chemical Plant of Future

Srivardhan Grandhi, Senior Manager, EIL, India

Co-authors: Balaji Namadevan, Engineers India Limited, India; SureshChandra Gupta, Engineers India Limited, India; Sheoraj Singh, Engineers India Limited, India; Vartika Shukla, Engineers India Limited, India

Integration of Refineries and Petrochemicals (case Study: Capital of Iran Energy Petrochemicals and Gas Refineries)

Ali Rahneshin, Commercial Dept, Borzouyeh Petrochemical Complex, Iran

Co-authors: Amin Avazpour, NIOC, Iran; Erfan Hasheminasab, Amirkabir University of Technology, Iran

Co-conversion of Waste Plastic to Light Distillates in Delayed Coking Process
**F10 - Growing Value in Midstream**

This Forum will analyse different strategies and growth drivers to achieve value-chain margin opportunities in the oil and gas midstream segment, including proactively growing the scale and increasing utilization of its assets or looking for a market niche that provides a significant build-out opportunity for midstream providers. Other best practices could cover integrated midstream solutions across products, basins and services as well as investments into the various means of transport (pipeline, shipping, trucking, rail etc) or storage and ways to increase value in the wholesale marketing of crude or refined petroleum products and overcoming barriers to regulatory and commercial entry.

**Chair:**  
Mr Csaba Zsótér, Supply & Trading Director, Downstream Commerce & Optimization, MOL Group, Hungary

**Vice Chairs:**  
Mr. Marcelino Gomes, Executive Manager of Pipeline Production, Petrobras, Brazil  
Ms. Lourdes Rodríguez, Executive Director, Repsol Trading, Spain

**F10 - Papers**

**Using the Surplus Storage Capacity of an Old Refinery: a Trading Strategy to Success**  
Raquel Cantón, Business Development Engineer, CEPSA QUIMICA, Spain

**Bringing Agility to Midstream: A Critical Success Factor**  
Ashley Horstman, Business Strategy Executive, Accenture, USA

**Is the Pipe Half Full or Half Empty?**  
Stephanie Kainz, Senior Associate, RS Energy Group, Canada
Mid-stream Holds the Key for Hydrocarbons Sustainability

Shailendra Mohite, Engineer Manufacturing Div, Kuwait Petroleum International, Kuwait

**F10 - Posters**

Smart Surface Materials Towards Controllable Oil/water Separation

Elaf Ahmed, Research Scientist, Saudi Aramco, Saudi Arabia

Co-authors: Ali Hayek, saudi aramco, Saudi Arabia; mohammad thabet, saudi aramco, Saudi Arabia; Regis Vilagines, saudi aramco, Saudi Arabia

Terminal Planning Board (TPB)

Yassir AlDarazi, IT System Analyst, Saudi Arabia, Saudi Arabia

Values Embedded in the Growth of the Midstream Supply Chain of Natural Gas

Dániel Horváth, Natural Gas Market Specialist, MOL Group, Hungary

Three Trends Reshuffling North America's Midstream Industry

Whit Keuer, Partner, Bain and Company, USA

Co-authors: Ethan Philips, Bain and company, USA; Lili Chahbazi, Bain and Company, UK

Carry out Integrated Port Management (ipman), Pertamina Cuts the Vessel Delay

Fitria Lisdiyanti, Analyst Marine & Distribution Relationship Management, PT Pertamina Persero, Indonesia

Co-authors: Raja Fauzan Lubis, PT Pertamina Persero, Indonesia

Improved Oil Sands Sustainability Through Partial Upgrading

Richard Masson, Chief Commercial Officer, Fractal Systems, Canada

Co-authors: Ed Veith, Fractal Systems, Canada

How to Move from Digitalizing Pipeline Operations to Digitally Transforming Them

Chris Amstutz, Vice President, Oil & Gas Industry Programs, Emerson Automation Solutions, USA

Maximizing Top Quartile Potential: Midstream Strategies for Achieving True Earnings Capacity

Chris Amstutz, Vice President, Oil & Gas Industry Programs, Emerson Automation Solutions, USA

Full Value of Midstream
James Quaye, CEO, Yobel Golden Company Limited, Ghana

Research on Growing Value in Natural Gas Mid-downstream Industry Chain

Jianping Zhang, Director, Research Institute of Nature Gas Economy Southwest Oil and Gas Field Company, China

Co-authors: Lei Yang, Institute of Natural Gas Economics China Petroleum Southwest Oil and Gas Field Company, China; Wei Ren, Marketing Department of PetroChina Southwest Oil and Gas Field Company, China; Qi Mei, Institute of Natural Gas Economics China Petroleum Southwest Oil and Gas Field Company, China; li wang, Petrochina Southwest OilandGasfield Company, China

F11 - Transport, Infrastructure & Storage of Natural Gas

New strategies and technologies for transport and storage of natural gas could change the availability and affordability of this energy source. Infrastructure developments and integration for pipeline and LNG options are essential to ensure the efficiency of the system, reduce duplicity, diversify sources and increase competitiveness for producers, transit countries and consumers. Shorter term gas infrastructure and storage will play an instrumental role in the development of spot markets and a transition to new energy sources. This requires continued, targeted investments and cost-efficient operations. This forum will address technical, financial, regulatory, strategic and geopolitical challenges for industry and governments.

Chair: Mrs. Lydia Johnson, Manager, Americas Marketing & Business Development, ExxonMobil Gas Power & Marketing, USA

Vice Chairs: Mr Kirill Lyats, General Director, LNG Gorskaya llc, LNG Gorskaya Overseas, Russia

Mr Pascal Baylocq, President & CEO, GEOSTOCK, France

F11 - Papers

Intelligent Pipelines, Pipeline Networks: AI Technology Application, Smart Sensing Technology Research and Dynamic Data Application

Yunbin Ma, Deputy Director, Petrochina Pipeline Research Center, China

Co-authors: hongjun dong, PetroChina Pipeline Company, China; yunbin ma, Petrochina Pipeline Research Center, China

Pipeline Pricing: Fixing the Costly Disconnect Between Natural Gas and Wholesale Electricity Markets

N. Jonathan Peress, Senior Director, Environmental Defense Fund, USA

Co-authors: Natalie Karas, Environmental Defense Fund, USA

A Novel Integrated Road Map for Using Depleted Oil Reservoir as Future Underground Gas
Saeed Sajjadian, Reservoir Engineering, NIOC, Iran

Dynamic Delivery - America's Evolving Oil and Natural Gas Transportation Infrastructure

Amy Shank, Director of Pipeline Safety & Asset Integrity, Williams, USA

F11 - Posters

Top Of Line Corrosion (TLC) Investigation And Challenges For Wet Sour Gas Subsea Pipeline

Faisal Alabbas, Consultant, Saudi Aramco, Saudi Arabia
Co-authors: Venkateswa Ganugapenta, Saudi Aramco, Saudi Arabia

RTP Implementation for Gas Application

Abdulateef Alafaleg, Operation Engineer, Saudi Aramco, Saudi Arabia
Co-authors: Mohammad AlKhabrani, NORTH AND CENTRAL GHAWAR GAS PRODUCING, Saudi Arabia; Anwar Parvez, Saudi Aramco, Saudi Arabia

Challenges for Operational Readiness of 1st Lng Regassification and Import Facility in State of Kuwait

Mohammad Fns Alotaibi, Manager Operations LNGI, KIPIC, Kuwait
Co-authors: MOHAMMEDRIYAZ SHAIKH, KIPIC, Kuwait

Biotechnological Solutions: A New Paradigm For Minimizing Pipeline Corrosion in Industry - an Indian Perspective

Megha Chamoli, Executive (Formulation & Development), Windlas Ltd, India
Co-authors: Vinay Kumar Gupta, Oil and Natural Gases Corporation Limited, India; Dhaval Gupta, Schlumberger Asia Services Limited, India


. Eshu, Senior Manager, Bharat Petroleum Corporation Limited, India

Addressing Pipeline Safety Using New Practices and Techniques

Brandon Johnson, Project Manager, ADI Analytics, USA
Co-authors: Uday Turaga, ADI Analytics, USA

Pipeline Shore Crossing Approaches in Arctic Conditions

Lesana Kurbonshoeva, Representative of Russia in the WPC YPC, RNC WPC, Russia
Co-authors: Anatoly Zolotukhin, Gubkin University, Russia; OveT Gudmestad, University of Stavager, Norway
Natural Gas Replacement with LPG-Air and LNG for Peak Shaving

Behrouz Moez, Project Manager, National Iranian Gas Company, Iran

Rapid Access to Global Energy Markets by Clean and Reliable LNG Solutions

Sveinung Stohle, President and CEO, Hoegh LNG, Norway

An International Natural Gas Purchase & Sale Agreement Running on Blockchain

Onur Uyanusta, Energy Expert, Turkish Energy Market Regulatory Authority, Turkey

F12 - Natural Gas and LNG Prospects

The global natural gas market is growing, driven by the availability of shale gas and the increase in LNG trade. LNG provides a viable route to monetize large gas reserves in remote locations, which have no significant markets nearby and limited connectivity. Transformation of natural gas markets from the regional to the global level is not without challenges, but supported by low prices, large supply and lower air pollution compared with other carbon fuels, the role of natural gas in the future energy mix is assured. This forum will discuss the outlook of globalized production and transportation of natural gas, overview of the global gas reserves, supply and demand outlook and regional differences, as well as cost effectiveness and price issues.

Chair: Mr. Ajay Shah, VP Shell Energy Asia Developing Gas Markets at Shell, Shell International, Netherlands

Vice Chairs: Ms. Anne Rocher, VP LNG, Total, France

Mrs. Laura Rejon-Perez, Wholesale and Gas Trading Division Head, Repsol, Spain

F12 - Papers

Global Gas and LNG Markets: Are the Cycles Becoming More Pronounced?

Kristy Kramer, Head of Markets Gas and LNG Research, Wood Mackenzie, USA

Opportunity for Small Scale LNG Technology - Practical Case for the Kingdom of Saudi Arabia

Calogero Migliore, Science Specialist, Saudi Aramco, Saudi Arabia

Co-authors: Stephen Benchluch, Saudi Aramco, Saudi Arabia

LNG: The Glue Linking Global Gas Markets

Susan Sakmar, Visiting Professor, University of Houston Law Center, USA

How The US LNG Export May Compete On Asian Markets In Increasing Arbitrage

Amina Talipova, Research Associate, Higher School of Economics, Russia

Co-authors: Sergei Parsegov, Halliburton, USA
The Forum will address the role of natural gas in the energy transition and look at its use across all sectors of the global economy – as feedstock for the petrochemical industry and an alternative to liquid transport fuels, as well as to heat, cool and light homes, and power industries. As the cleanest-burning hydrocarbon it helps reduce emissions by replacing coal, but the industry must increase its efforts to reduce the greenhouse gas intensity of its supply chain – from production to delivery to the customer, while ensuring that gas remains competitive with other energy sources.
Sauhard Singh, Senior Research Manager, Indian Oil Corporation Limited, India

Co-authors: SUMIT KUMARMISHRA, INDIAN OIL CORPORATION LIMITED, India; MUKUL MAHESHWARI, INDIAN OIL CORPORATION LIMITED, India; REJI MATHAI, INDIAN OIL CORPORATION LIMITED, India; DEEPAK SAXENA, INDIAN OIL CORPORATION LIMITED, India; SSV RAMAKUMAR, INDIAN OIL CORPORATION LIMITED, India

The Role of Liquefied Natural Gas As a Marine Fuel

Francesco Stipo, President, Houston Energy Club, USA

Global Gas Markets in Different Energy Scenarios

Eirik Waerness, SVP and Chief Economist, Equinor, Norway

F13 - Posters

Molecule Management: Strategies for Making India a Gas Based Economy

Sumit Aggarwal, Manager, Engineers India Limited, India

Natural Gas & NGLs: An Imperative for Shaping India's Future

Vineet Bakshi, Senior Process Manager Strategy and BD, Engineers India Ltd, India

Co-authors: SNIGDHO MAJUMDAR, Engineers India Ltd, India; Anil Kumar, Engineers India Ltd, India; Manoj Kumar, Engineers India Ltd, India

Measuring Methane Emissions From Industrial Facilities With Satellites: From Data To Actionable Insight

JeanFrancois Gauthier, Vice President Sales and Marketing, GHGSat, Canada

Co-authors: JeanFrancois Gauthier, GHGSat, Canada; Stephane Germain, GHGSat, Canada

Is Natural Gas More Than a Transition Fuel?

Antonio Melcon, Natural Gas Vice President, Cepsa, Spain

An Innovative Gas Model to Face the Energy Transition: the Implicit Allocation Mechanism

Pedro Miras, SR. Gas Balance Analyst, Repsol, Spain

Co-authors: Paloma Izquierdo, Repsol, Spain

Natural Gas Consumption in Sao Paulo State, Brazil: an Analyze of Sectors for Further Insertion

Drielli Peyerl, Young Investigator, University of Sao Paulo, Brazil

Co-authors: Mariana Oliveira Barbosa, University of Sao Paulo, Brazil; Drielli Peyerl, Univesity of Sao Paulo, Brazil

Decentralization Of Power Generation And Consumption Model: New Role Of Natural Gas
F14 - Technology Innovation in Mid- and Downstream Gas

Innovative developments in LNG and FLNG are helping to develop new frontiers and make gas more competitive, while digitalisation allows for processes to become more efficient, reservoirs to be re-evaluated and enhanced communications with all customers across the entire value chain. Other potential areas for technological innovation to be discussed include large and small-scale CHP units, capture of CO2 from gas power generation, GTL, more efficient hydrogen production and the development of the next generation of natural gas-powered vehicles. We will also look at the reduction of greenhouse gases, as well as the utilization of all waste products including sulphur.

Chair: Dr. Ammar Al Nahwi, Manager, R&DC, Saudi Aramco, Saudi Arabia
Vice Chairs: Mr. Tongwen Shan, Director, R&D Center, CNOOC Gas and Power Group, China
Dr. Reza Azin, Faculty Member, associate professor of petroleum engineering, Persian Gulf University, Iran

F14 - Papers

Integration of Renewable Power with Gas-to-Liquid and Hydrogen Production for Greenhouse Gas Reduction

Wessel Nel, Associate, Hatch, Canada
Co-authors: Johan Malan, Hatch, USA; Yun Bai, Hatch, Canada; Patrick Mraz, Hatch, Canada

De-butanizer Columns Equipped with Dividing Wall (DW) Eliminating an Existing RVP Column in NGL Fractionation

Hae Yong Noh, Process Engineer, Saudi Aramco, Saudi Arabia

Shell Turbo Trays: Pushing the Limits of Innovation for Increased Gas Processing Capacity and Performance

Karl Stephenne, Development Engineer, Shell Projects and Technology, India
Co-authors: Rajiv Srinivasan, Shell Projects and Technology, India

Direct Conversion of Syngas to Light Olefins

Jiao Wenqian, Engineer, SINOPEC Corp, China
Co-authors: Zhou Haibo, SINOPEC Corp, China; Su Junjie, SINOPEC Corp, China; Liu Su, SINOPEC Corp, China; Wang Yangdong, SINOPEC Corp, China

F14 - Posters
Zero Flaring Journey of Petroleum Development of Oman (PDO)

Tariq Al Battashi, Rotating Equipment Engineer, Petroleum Development of Oman, Oman

More Efficient Process for Hydrogen Recovery Through Simulation of an Industrial Hollow Fiber Module

Majid Esmaeili, Researcher and Project Manager, Research Institute of Petroleum Industry, Iran

Co-authors: Maryam Tavakolmoghadam, Research Institute of Petroleum Industry, Iran; Mahdieh Abolhasani, Petroleum and Gas Engineering Semnan University of Technology, Iran

Research and Field Test of Wireless Production Regulation Technology in Gas Well

Yukun Fu, Engineer, Gas Production Engineering Research Institute of Southwest Oil and Gas Field Company of Petro China, China

Co-authors: Huiyun Ma, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China; Yukun Fu, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China; Chenggang Yu, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China; Qiang Yin, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China; Yunshan Yang, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China; Mingge He, Southwest Oil and Gas Field Company of PetroChina, China

Hydrophilic Network Polymer Membranes for Bulk H2s Removal from Natural Gas

Daniel Harrigan, Research Engineer, Aramco, USA

Co-authors: Benjamin Sundell, Aramco, USA; John Lawrence, Aramco, USA; Jeremy OBrien, Aramco, USA

Digital Tank Gauging for Optimized LNG Measurement and Safety in Full Containment Tanks

Hakan Jubel, Business Development Manager for Tank Gauging Cyrogenic Systems, Emerson Automation Solutions, USA

Biochar Based Decentralized Modular Technology for Hydrogen and Carbon Nanotubes Production with Low Co2 Footprint

Pramod Kumar, Deputy General Manager, Hindustan Petroleum Corporation Limited, India

Co-authors: Lavanya Meesala, Hindustan Petroleum Corporation Limited, India; Ramachandra Rao B, Hindustan Petroleum Corporation Limited, India; Sriganesh Gandham, Hindustan Petroleum Corporation Limited, India
Elucidating Key Structure-property Relationships to Unlock the Next Generation of Membranes for H2s Removal

John Lawrence, Lab Scientist II, Aramco Services Company, USA

Co-authors: Daniel Harrigan, Aramco Services Company, USA; Benjamin Sundell, Aramco Services Company, USA; John Yang, Aramco Services Company, USA; Jeremy OBrien, Aramco Services Company, USA

Branched Nanoparticles Improve Membrane Performance and Stability in Aggressive Natural Gas Feeds

Benjamin Sundell, Senior Research Scientist, Aramco Services Company, USA

Co-authors: Ke Zhang, Aramco, USA; Daniel Harrigan, Aramco, USA; Steven Hayden, Aramco, USA; Zachary Smith, MIT, USA; Lucas Chi, MIT, USA

Polyimide Membranes Development for Sour Gas Feed Separations from Natural Gas

Garba Yahaya, Science Specialist, Saudi Aramco, Saudi Arabia

Co-authors: SEUNGHAK CHOI, SAUDI ARAMCO, Saudi Arabia

High-pressure Pure and Mixed Sour Gas Permeation Properties of Modified Pebax Membranes

John Yang, Senior Research Scientist, Aramco Services Company, USA

Co-authors: Daniel Harrigan, Aramco Services Company, USA; Milind Vaidya, Saudi Aramco, Saudi Arabia

F15 - Low Carbon Technologies and Strategies for Oil and Gas

Society and stakeholders are looking to the oil and gas industry to take a lead in low carbon strategies for the future and to reduce their carbon footprint. Responding to the new energy economy scenarios, oil and gas companies are developing innovative technologies, which may be based on hydrogen, methanol/alcohols, biological sources, or continued use of existing infrastructure incorporating CCUS. This Forum will be looking at a number of ways oil and gas companies can refashion themselves as the low-carbon energy companies of the future.

Chair: Dr Florence Delprat-Jannaud, Program Manager, IFPEN, France

Vice Chairs: Dr Anjan Ray, Director, CSIR - Indian Institute of Petroleum, India

Mr. Yoshihiro Mizuguchi, General Manager, JGC Corporation, Japan

F15 - Papers

Distributed Hydrogen Generator for Effective Blue Hydrogen Supply Using a Hydrocarbon Supply Network
Aadesh Harale, Sr Scientist, Saudi Aramco, Saudi Arabia

Co-authors: Stephen Paglieri, Saudi Aramco, Saudi Arabia; Aqil Jamal, Saudi Aramco, Saudi Arabia; Henk Veen, TNO, Netherlands; Jaap Vente, TNO, Netherlands

The Oil & Gas Industry is Uniquely Positioned to Develop a CCUS Industry

David Nevicato, Research Program Manager, TOTAL SA, France

Addressing the Challenge of Decarbonisation

John O’Brien, Partner, Deloitte Australia, Australia

Shell’s Gas-to-Liquids Technology and Opportunities in Energy Transition

Svetlana van Bavel, Senior Process Engineer Gas-to-Liquids, Shell Global Solutions International, Netherlands

Co-authors: HP Calis, Shell Global Solutions International, Netherlands; Clara Heuberger, Shell Global Solutions International, Netherlands; Maarten Bracht, Shell Global Solutions International, Netherlands; Abhinav Verma, Shell India Markets, India

F15 - Posters

Novel Copper Based Hydrogels for Selective Carbon Dioxide Separation Application

Mona Al Dossary, Lab scientist 1, Saudi Aramco, Saudi Arabia

Co-authors: Harihara Padhy, Department of chemistry Bhopal University, India; omar Eltall, King Abdullah University for Science and Technology, Saudi Arabia; Ali Behzad, King Abdullah University for Science and Technology, Saudi Arabia; feng Xu, King Abdullah University for Science and Technology, Saudi Arabia; Alexander Rothenberger, King Abdullah University for Science and Technology, Germany; Nikolaos Hadjichristidis, King Abdullah University of Science and Technology, Saudi Arabia; Said Shahrani, Saudi Aramco, Saudi Arabia

Carbon Dioxide Capture from Flue Gas: Amine Based Co2 Absorbents, Processing Simulation and Industrial Demonstration

Xi Chen, SINOPEC Nanjing Research Institute Of Chemical Industry Co Ltd, China

Co-authors: songbai mao, sinopec nanjing research institute of chemical industry co ltd, China; yangyang jiang, sinopec nanjing research institute of chemical industry co ltd, China; xiaodong ye, sinopec nanjing chemical industries co ltd, China; xi chen, sinopec nanjing research institute of chemical industry co ltd, China; dong wang, sinopec nanjing research institute of chemical industry co ltd, China; ning ye, sinopec nanjing research institute of chemical industry co ltd, China; benshuai guo, sinopec nanjing research institute of chemical industry co ltd, China
Leveraging Refinery Hydrogen for Direct Use in Low-Temperature Polymer Electrolyte Membrane Fuel Cells

**Sachin Chugh**, Chief Research Manager, Indian Oil Corporation, India

Co-authors: S Meenakshi, IndianOil Corporation Limited, India; Kapil Sonakar, IndianOil Corporation Ltd, India; Alok Sharma, IndianOil Corporation Ltd, India; GS Kapur, IndianOil Corporation Ltd, India; SSV Ramakumar, IndianOil Corporation Ltd, India

Analysis Of Stress-Strain State Of Vertical Steel Tank With Defects Using Computer Modelling

**Alena Dmitrieva**, PhD-student, Saint Petersburg Mining University, Russia

Modelling of Low-carbon Transition Strategies at Integrated Energy Companies

**Jagdish Giri**, Chief Chemist, Oil And Natural Gas Corporation LTD India, India

CO2 Capture at IFPEN : Large Scale Demonstrator and Perspectives for the Future of CCS

**Florent Guillou**, Project Manager, IFP Energies Nouvelles, France

Co-authors: Paul Broutin, IFP ENERGIES NOUVELLES, France; Stephane Bertholin, IFP ENERGIES NOUVELLES, France

Economic Assessment of Flared Gas Recovery

**Ahmed Mohamed Roshdy**, Section Head, Egyptian General Petroleum Corporation, Egypt

Co-authors: Khaled Rady, Egyptian General Petroleum Corporation, Egypt

The Impact of Fuel Properties on Gasoline Compression Ignition

**Yuanjiang Pei**, Technical Specialist, Aramco Services Company, USA

Co-authors: Yu Zhang, Aramco Services Company, USA; Michael Traver, Aramco Services Company, USA; Meng Tang, Argonne National Laboratory, USA; Le Zhao, Argonne National Laboratory, USA

Analysis of the Carbon Storage Potential in the Santos Basin, Brazil

**Drielli Peyerl**, Young Investigator, University of Sao Paulo, Brazil

Co-authors: Drielli Peyerl, University of Sao Paulo, Brazil; Mariana Ciotta, University of Sao Paulo, Brazil

Chevron Oronite Sustainability Initiative and Product Life Cycle Assessment

**Arian Saffari**, Engineer, Chevron, USA

Co-authors: Jean Bruney, Chevron, USA; Barbara Nursey, Chevron, USA
Low Carbon Energy Options: The Future of Renewables and Alternative Energies

Driven by international treaties to reduce global emissions, fast changing technologies and extraordinary cost declines have led to a huge growth in renewables, resulting in alternative energies becoming more mainstream and closing the gap to fossil fuels in attracting new investments. Integrating heat, power and transport energy solutions, we are looking at the way forward for the low carbon energy options, the impact of upcoming policies and regulations on energy markets, pricing and investment models and an analysis of their risk and reward profile.

Chair: Mr Sverre Alvik, Program Director, Energy Transition, DNV GL, Norway
Vice Chairs: Dr S.S.V Ramakumar, Director (R&D), Indian Oil Corporation Limited, India
Mrs. Lauren Savoie, Manager, Development and Engineering, Renewables, Suncor Energy Inc., Canada

F16 - Papers

Power-to-Gas Based on Bioenergy with CCU: an Efficient Storage Cycle Towards Carbon Neutrality

Daniel Fozer, Assistant Professor, Budapest University of Technology and Economics, Hungary
Co-authors: Péter Mizsey, Budapest University of Technology and Economics, Hungary

Small Modular Nuclear Reactors and the Opportunity for the Petroleum Industry

Evan Konarek, Senior Engineer, Hatch Ltd, Canada
Co-authors: Nathan Tedford, Hatch Ltd, Canada

Success Factors for a Low Carbon Future

Marlene Motyka, Global Renewable Energy Leader, Deloitte US, USA

Asset Smart in the Energy Transition - Finding Value in Zero Based Carbon

Andrew Smart, Energy Industry Lead, Accenture, UK
Co-authors: Bruno Berthon, Accenture, France

F16 - Posters

Effect of Guanidinium Salts on the Structural, Morphological, and Photovoltaic Performance of Perovskite Solar Cells

Mohammad Hayal Alotaibi, Associate Professor, King Abdulaziz City for Science and Technology KACST, Saudi Arabia
Dust Repellent Coating Materials for Solar Panels

Mohammed Bahattab, Research Professor, KACST, Saudi Arabia

AGI CO2 Tracer Gases Detection Technique to Monitor CO2 Sequestration at Krechba Field-Algeria

Zeboudj Faycal, Sr Reservoir Engineer, Sonatrach Groupement PTTEP PVEP, Algeria

State of Change: How Texas' Electricity Market Will Evolve in the Next Decade

John Hall, Director, Texas Energy Program, Environmental Defense Fund, USA

Can National Oil Companies in Africa Drive Renewable Energy Transition to Reduce Carbon Emission?

Salisu Isihak, Senior Advisor and Head of Research Division, Nigerian National Petroleum Corporation, Nigeria

The Solar Desalination: Intuitive Scheme for CO2 Emission Cut

Hussam Khonkar, Senior Renewable Energy Researcher, KACST, Saudi Arabia

Managing the Energy Transition: Three Scenarios for Planning

Jorge Leis, Partner, Bain and Company, USA

The Future of Biomethane As a Renewable Energy Within the European Energy Market

Miguel Mediavilla Régil, Natural gas analyst, CORES, Spain

H2 Storage and Transportation Technology - Spera Hydrogen System

Yoshimi Okada, Principal Researcher, Chiyoda Corporation, Japan
The Positive Performance of Floating Solar Panels to Control Dam Water Evaporation

Vahid Sajjadian, Petroleum Engineering Consultant, Namvaran, Iran

Co-authors: Mohammadali Emadi, Pasargard company, Iran; Valiahmad Sajjadian, Masjed Soleyman Bakhtiyari Petrochemical Refinery, Iran

F17 - Regulatory and Policy Drivers

The international petroleum sector is vast and complex and operates in many jurisdictions. The public expects the sector to operate in a safe, efficient, orderly and environmentally responsible manner and has entrusted regulators with oversight responsibility to ensure these objectives. The entire industry benefits from sensible regulatory practices around the world to support high standards of performance across the industry and to enhance its profile with the public. In tandem, sound public policy can drive investor confidence and thereby be a major enabler for the massive capital investment required by the petroleum industry. This forum will highlight innovative regulatory practices and public policy initiatives that support a thriving petroleum industry that meets its responsibilities to all stakeholders.

Chair: H.E Ahmed Alkaabi, Assistant Undersecretary for Petroleum, Gas and Mineral Wealth Affairs, Petroleum Department, Ministry of Energy and Industry, UAE

Vice Chairs: Mr Szabolcs Ferencz, Senior Vice President, MOL Group Corporate Affairs, Hungary

Mr Steven P. Otillar, Partner, White & Case, UK

F17 - Papers

Gas, Renewables and CCS Must Work Together: an Independent Forecast of the Energy Transition

Hans Kristian Danielsen, Vice President, DNVGL, Norway

Co-authors: Liv Hovem, DNVGL, Norway

The Climate and Economic Penalties of the IMO 2020 Sulfur Regulation

Hassan El-Houjeiri, Climate and Sustainability Group Leader, Aramco Services Company, USA

Co-authors: Hassan ElHoujeiri, Aramco Services Company, USA; JeanChristophe Monfort, Aramco Services Company, USA

Lessons Learned in Policy Support for Infrastructure Development: EU's Projects of Common Interest

Martin Jirušek, Assistant Professor, Masaryk University, Czech Republic

Environmental Regulatory Framework for Offshore Oil&Gas Activities: Analysis of Current Status in Five Geographical Regions

Gabriel Negrelli Garcia, Environmental Consultant, Ramboll Brasil, Brazil
Co-authors: Luisa Leite, Ramboll Brazil, Brazil; Raisa Salvi, Ramboll Brazil, Brazil; Eugenio Singer, Ramboll Brazil, Brazil; Sergio Sahlit, Ramboll Brazil, Brazil; Dan McClary, Ramboll New Zealand, New Zealand; Pieter Booth, Ramboll US, USA; Richard Wenning, Ramboll US, USA

F17 - Posters

What to Expect from the East Med Gas Potential up to 2050 and Later?

Oguzhan Akyener, President, Turkey Energy Strategies and Politics Research Center, Turkey

Induced Seismicity Due to Injection Wells

Shivam Dubey, Undergraduate Student, Rajiv Gandhi Institute of Petroleum Technology, India

Circular Economy Sustainable Vectors for Petroleum Refineries

Srinivas Moturi, Senior Manager, ONGC MRPL, India

Co-authors: Aithal U V, MRPL, India; Sanjay Varma, MRPL, India

Doubling Global Rate of Improvement in Energy Efficiency: Sustainable Goal 7

Riverson Oppong, Country Director, Bay Kinetics Ghana Limited, Ghana

Co-authors: Barbara Andoh, GIZ, Ghana

Energy Consumption in India: Is There a Transition or Accumulation?

Debesh Patra, Chief General Manager, Bharat Petroleum Corporation, India

Gas Market Efficiency Assessment and Deregulation: Russian Gas Exchange Mathematical Model Case Study

Amina Talipova, Research Associate, Higher School of Economics, Russia

Co-authors: Sergei Parsegov, Halliburton, USA

Environmental Trilemma of Oil and Gas Companies: Compliance, Digital Transformation and HSE

Claudia Valdés, Auditor Jr, Cepsa, Spain

Capacity Reservation in Pipelines

Asli Yel, Manager, BOTAS, Turkey

F18 - Transportation Energy of the Future

Increasingly efficient transport systems are making the most of digital technologies, smart pricing and changes in consumer behaviour as environmental policies accelerate the move towards lower emission...
transport modes. The Paris Agreement and IMO’s sulphur cap are leading to a growth of low carbon solutions for land, sea and air transport incl. advanced biofuels, fuel cells and hydrogen, while technical innovations continue to improve fuel quality and energy efficiency of the internal combustion engine. What are the technologies, strategies and regulations driving this process and how can the petroleum industry address them to stay competitive?

Chair: Dr. Peter Sauermann, Regional Technology Director Europe, BP Europa SE, Germany

Vice Chairs: Dr. R. K. Malhotra, Director General, Federation of Indian Petroleum Industry (FIPI), India

Dr. Yoshimi Okada, Principal Researcher, Chiyoda Corporation, Japan

F18 - Papers

The Cost of a Low Carbon Transportation Future

Greg Bean, Executive Director Gutierrez Energy Management Institute, University of Houston, USA

Co-authors: Norm Whitton, Electric Interstate Highway Standards Association, USA

New Method for Producing Hydrogen Carrier: Direct MCH for Renewable Energy Use

Koji Matsuoka, Manager, JXTG Nippon Oil and Energy Corporation, Japan

Co-authors: Sasushi Sato, JXTG Nippon Oil and Energy Corporation, Japan; Kota Miyoshi, JXTG Nippon Oil and Energy Corporation, Japan; Hirofumi Takami, JXTG Nippon Oil and Energy Corporation, Japan; Yoshitatsu Misu, JXTG Nippon Oil and Energy Corporation, Japan; Tomomi Nagatsuka, JXTG Nippon Oil and Energy Corporation, Japan

Transportation Future

Hector Perea, Strategy Vice President, Cepsa, Spain

Comparison of Fuel Cells Based On Multiple H2 Pathways with Battery & IC Engine

Alok Sharma, Chief General manager Alternative Energy, Indian Oil Corporation, India

Co-authors: Sachin Chugh, Indian Oil Corporation Ltd, India; Chinmay Chaudhri, Indian Oil Corporation Ltd, India; Tarun Jindal, Indian Oil Corporation Ltd, India; Amit Katiyar, Indian Oil Corporation Ltd, India; GS Kapur, Indian Oil Corporation Ltd, India; SSV Ramakumar, Indian Oil Corporation Ltd, India

Pathways Towards Zero Emission Mobility - Perspectives from an Energy Company

Karsten Wilbrand, Principal Science Expert for Mobility, Shell Global Solutions GmbH, Germany

Co-authors: Andreas Kolbeck, Shell Global Solutions GmbH, Germany
F18 - Posters

Impact of Hydrous Ethanol-Gasoline Blends with Synthesis Gas on Nox Emission and Fuel Consumption

Ahmed Alharbi, Director, King Abdulaziz City for Science and Technology, Saudi Arabia

Co-authors: Abdullah Alkhedhair, King Abdulaziz City for Science and Technology, Saudi Arabia; Abdullah Alabduly, King Abdulaziz City for Science and Technology, Saudi Arabia; Miqad Albishi, King Abdulaziz City for Science and Technology, Saudi Arabia; Mohammed Almorat, King Abdulaziz City for Science and Technology, Saudi Arabia

Challenges in Deploying and Adopting Electrical Cars

Hamed Almujaini, Power system Project engineer, Petroleum development oman, Oman

Co-authors: Aiman Alshukali, Petroleum development Oman, Oman

"Yara Birkeland" Zero Emission Feeder

Knut Glennna, Project Director, Kongsberg Maritime, Norway

Heterogeneous Transesterification of Camelina Sativa Oil to Prepare Biodiesel

Miroslava Malisova, PhD student, Faculty of chemical and food technology Slovak technical university in Bratislava, Slovakia (Slovak Republic)

Co-authors: Michal Hornacek, Faculty of chemical and food technology Slovak technical university in Bratislava, Slovakia (Slovak Republic); Jozef Mikulec, VURUP, Slovakia (Slovak Republic)

Futuristic Green Hydrogen from Bio-oil: Review of Advanced Bio-fuel Technology and Catalysis

Ritesh Mittal, Senior Manager, Engineers India Limited, India

Co-authors: SUBIMAL JANA, ENGINEERS INDIA LIMITED, India; RAVI KANT GUPTA, ENGINEERS INDIA LIMITED, India; SURESH CHAND GUPTA, ENGINEERS INDIA LIMITED, India; VARTIKA SHUKLA, ENGINEERS INDIA LIMITED, India

Advancing the Advanced Fuels

Shailendra Mohite, Engineer Manufacturing Div, Kuwait Petroleum International, Kuwait

Rational Electrode Materials Design for Lithium Ion Battery: Renewable Storage and EV Application

Malay Pramanik, Scientific Officer, Hindustan Petroleum Corporation Limited, India

Co-authors: K Narayanan, HPCL, India; B RamachnadraRao, HPCL, India
Research on Synergetic Development of Automotive Energy Industry from the Perspective of Multi-energy Complementary

Jianping Zhang, Director, Research Institute of Nature Gas Economy Southwest Oil and Gas Field Company, China

Co-authors: fuping wang, Research Institute of Nature Gas Economy Southwest Oil and Gasfield Company, China; yun gao, Research Institute of Nature Gas Economy Southwest OilandGasfield Company, China; zhongke hu, Yunnan Project Team of Huayou Company Southwest OilandGasfield Company, China

**F19 - Risk Management**

As a society, we need to take risks to grow and develop. Oil and gas companies require detailed assessment of risks and uncertainties and the development of practical strategies for risk minimization or mitigation to achieve their objectives. They are dependent on quality data and robust workflow processes and need to have reliable procedures in place to identify, evaluate and address the broad variety of risks inherent in the oil and gas industry, including subsurface risks, project risks, geopolitical risks, economic risks, cyber risks, financial risks, and regulatory changes, as well as continuously monitoring HSE, societal and reputational risk factors. Best practices and strategies for successful risk management as part of a good governance approach will be discussed and presented in this Forum.

Chair: Mr Eyvind Aven, Sr Advisor Risk Management, CFO Corporate Risk, Equinor, Norway

Vice Chairs: Mr. Reynold Tetzlaff, PwC Canada National Energy Leader and Calgary Office Managing Partner, PWC, Canada

Mr. Khalid Al Harbi, Chief Information Security Officer, Information Security Department, Saudi Aramco, Saudi Arabia

**F19 - Papers**

**Oil in the Long Term**

Abhishek Deshpande, Global Head Of Oil Market Research, J P Morgan, USA

**Making Sense of Causation Complexity in Capital Projects - Findings from Global Research**

Toby Hunt, Partner, HKA Global Ltd, UK

**A Sustainable Enterprise Risk Management Program for Oil and Gas Companies**

Iqbal Noor, ERM Specialist, Saudi Aramco, Saudi Arabia

Co-authors: Noora Alfayez, Saudi Aramco, Saudi Arabia

**Leveraging Security Analytics to Mitigate the Risk of Cyberattacks on Oil & Gas Infrastructure**
Leo Simonovich, Vice President and Global Head Industrial Cyber and Digital Security, Siemens, USA

F19 - Posters

Quantification and Efficient Mitigation of Risks at Large Oil and Gas Facilities

Onder Akinci, Senior Civil Engineer, NextDecade LNG, USA

Co-authors: Hyun-Su Kim, Houston Offshore Engineering, USA; Krishna Parvathaneni, Suncor, Canada; Michael Stahl, Atkins, USA

Digital Process Safety and Operations Management Solutions

Ibrahim AlJahwari, Industrial Engineer and Solutions Architect, Saudi Aramco Process and Control Systems Department, Saudi Arabia

Co-authors: Shual AlHamra, Saudi Aramco Process and Control Systems Department, Saudi Arabia

Management of Future Mega-risks in Oil and Gas

Greg Bean, Executive Director Gutierrez Energy Management Institute, University of Houston, USA

Co-authors: Chris Ross, University of Houston, USA

Petroleum Hydrocarbon Contamination Investigation and Risk Assessment of an Abandoned Refinery Site and Countermeasure Research

Chen Changzhao, Engineer, Research Institute of Safety and Environmental Technology of CNPC, China

Co-authors: Quanwei Song, Research Institute of Safety and Environmental Technology of CNPC, China; Xingchun Li, Research Institute of Safety and Environmental Technology of CNPC, China; Jiacai Xie, Research Institute of Safety and Environmental Technology of CNPC, China

Design Integrity & Plant Assessment (DIPA)-a Methodology to Sustain Operation Excellence & Risk Mitigation

Partha Pratim Chaudhury, Process Engineer, Saudi Aramco, Saudi Arabia

Co-authors: Wasim Arshad, SAUDI ARAMCO, Saudi Arabia

The "Black Gold": Battle to Defend the Most Treasured Assets in World

Anas Faruqui, CyberSecurity, Aramco, Saudi Arabia

Co-authors: Abdulatif Rushaid, Saudi Aramco, Saudi Arabia
Modelling of Integrated Complex Offshore Network To Mitigate Uncertainties And Minimize Risk For Hydrocarbon Evacuation

Sukrut Kulkarni, Executive Network Simulation Gas, Petronas, Malaysia

Co-authors: Masnizah Supu, PETRONAS, Malaysia

The Study of Risk Analysis and Countermeasure on Overseas Petroleum Companies' Upstream Project

Lianmin Li, senior engineer, CNPC, China

Co-authors: Taotao YUE, CNPC, China

Developing a Robust Risk Management Framework by Integrating Material Concerns with Business Risks

Keshav Singhal, Manager-Sustainability, Hindustan Petroleum Corporation Limited, India

Co-authors: Zakir H Molla, Hindustan Petroleum Corporation Limited, India

Role of Trust in Mega Oil and Gas Project Risk Management

Maryam Sohrabi, Senior Energy Analyst, IIES, Austria

Co-authors: Erfan Vafaie Fard, IIES, Iran

F20 - Accelerating Energy Access

Ten years before the UN’s deadline to provide everyone with access to electricity and clean cooking facilities, we will assess global energy poverty alleviation initiatives and share best practices for tailor-made programmes across the world. With multi-stakeholder approaches, new financing solutions and partnerships between countries, energy providers and NGOs, the energy access challenges are a great stimulus for innovative energy solutions. How can companies embed energy access into their strategy? How can they leverage their capabilities, technology and innovation leadership to develop new business models to provide energy access for all? And how can we maximize these strategies to create sustainable benefits for the communities?

Chair: Mr Ivan Marten, Senior Partner, Emeritus, BCG, Spain

Vice Chairs: Mr Daniel Domeracki, Vice President, Government and Industry Relations, Schlumberger, France

Mr Faris Hasan, Director of Strategic Planning & Economic Services, OFID, Austria

F20 - Papers

Eradicating Energy Poverty- Efforts of Indian Hydrocarbon Sector Towards Achieving United Nations Sustainable Development Goals

Amanpreet Singh Chopra, Dy General Manager, Engineers India Limited, India
Project Ujjwala (PMUY) - Access to Clean Fuel (LPG) by Masses

Eshu, Senior Manager, Bharat Petroleum Corporation Limited, India

Promoting Energy Poverty Alleviation Initiatives in Peru from Petroleum Industry

Cecilia Fernandez Canchos, Adviser, Petroperu, Peru

Increasing Energy Access in the Developing World - a Data Driven Approach

Mansoor Hamayun, CEO, BBOXX, UK

F20 - Posters

Leveraging Predictive Analytics to Inform Strategic Development of Petroleum Distribution Infrastructure in Nigeria

Ade Agbonyin, PhD Researcher, University of Sheffield, UK

Co-authors: Oruaro Ogbo, PwC, UK

How Oil and Gas Can Ensure the Energy Access: Making Profit by Bringing Impact

Anna Illarionova, WPC YP representative Russia (alternate), WPC Russian National Committee, Russia


Ritesh Mittal, Senior Manager, Engineers India Limited, India

Co-authors: SUBIMAL JANA, ENGINEERS INDIA LIMITED, India; RAVIKANT GUPTA, ENGINEERS INDIA LIMITED, India; SURESH CHAND GUPTA, ENGINEERS INDIA LIMITED, India; VARTIKA SHUKLA, ENGINEERS INDIA LIMITED, India

Geospatial Electrification Planning for the Achievement of SDG7: An OnSSET-based Case Study for Nigeria

Salisu Mukhtar, Technical Assitant to the Managing Director PPMC, Nigerian National Petroleum Corporation, Nigeria

Co-authors: Salisu Mukhtar, Nigerian National Petroleum Corporation, Nigeria; Uduak Alpan, SPIDER Solution Nigeria Ltd, Nigeria

F21 - Digitalisation of the Petroleum Industry: Opportunities and Impacts

Digital technologies have a significant role in improving efficiency and performance, leveraging innovation, transforming operations and increasing profitability, as well as providing consumer benefits. Artificial intelligence, big data, blockchain, the Internet of Things, 3-D seismic, linear program modelling and advanced process control for operations etc, boost organisations’ performance higher, faster, and to a greater scale than has previously been possible. This forum will present innovative
developments in digitalisation and their challenges, opportunities and impacts for the oil and gas sector. What are the next big milestones and how can we get there safely and securely?

Chair: **Mr Torbjørn Folgerø**, SVP & Chief digital officer, Equinor ASA, Norway

Vice Chairs: **Ms. Jacquelyn Niccum**, Process Engineering Unit Manager, Chevron Corporation - Energy Technology Company, USA

**Mr Alexander Boekhorst**, VP Digitalisation and Computational Technology at Shell, Shell Projects & Technology, Netherlands

**F21 - Papers**

**Application of Digital and Computational Technologies to Material Property Characterization**

**Faruk Alpak**, Principal Research Reservoir Engineer, Shell International Exploration and Production, USA

Co-authors: Nishank Saxena, Shell International Exploration and Production Inc, USA; Majeed Shaik, Shell India Markets Pvt Ltd, India; Kunj Tandon, Shell India Markets Pvt Ltd, India; Justin Freeman, Shell International Exploration and Production Inc, USA

**New Developments in Natural Language Processing to Foster Knowledge Transfer**

**Annie Audibert-Hayet**, Corporate Technology Group General Secretary, Total sa, France

Co-authors: Pierre Jallais, Total sa, France; Fabrice Leclercq, Total RC, France; JeanChristophe Courcol, Total RC, France

**Computer Vision for Real-time ESP Failure Detection and Diagnostics**

**Rafael Lastra**, Engineering Consultant, Saudi Aramco, Saudi Arabia

**Big Industry, Big Data, Big Impact: How a Data Foundation Transforms the Way We Work**

**John Markus Lervik**, Founder and CEO, Cognite, Norway

Co-authors: Carl Fredrik, Cognite, Norway

**F21 - Posters**

**A Machine Learning Approach to Predict Phase Separation in Branching T-junctions**

**Thamer Al Olayet**, IT Systems Analyst, Saudi Aramco, Saudi Arabia

Co-authors: Mansour Khelifa, Schlumberger, France; Suha Kayum, Saudi Aramco, Saudi Arabia

**The Shale Revolution Next Frontier: Enabling a Digital Twin for Every Well**
Impact of Blockchain in the Oil and Gas Industry

Juan Benavente, Industry 40 and Blockchain Expert, CEPSA, Spain

Digital Modernization of Arctic Gas Fields

Nikolai Eremin, Deputy Director, Federal State Budgetary Institution of Science Oil and Gas Research Institute of Russian Academy of, Russia

Development of Abnormality-detection Techniques Aimed at Safety Operations in a Refinery

Haruhisa Goto, Principal Researcher, JXTG Nippon Oil Energy Corporation, Japan

Case Study: Predicting Production-impacting Events on Remote Platforms

Philippe Herve, VP Solutions, SparkCognition, USA

Implementation of Artificial Intelligence to Localize Residual Recoverable Reserves

Farid Khazipov, Head of Department, Tatneft, Russia

Digital Transformation Through 8 Integrated Power & Process Strategies

Constantine Lau, Global Director Oil and Gas, Schneider Electric, United States Minor Outlying Islands

Digitalization - A Way of Improved Life in HPCL-Visakh Refinery

Tirupati Naidu A, General Manager, Hindustan Petroleum Corporation Limited, India

Pertamina Digital Transformation; a Journey to Increase Competitive Advantage in the Oil and Gas Business

Johan Pranoto, Analyst Upstream Relationship Management, Pertamina, Indonesia
F22 - Improving the Public Perception of the Oil and Gas Industry

In a continuously changing industry and business environment, we need to consistently review public awareness and our sector’s reputation. To effectively sustain its role to produce and deliver hydrocarbons to all, our industry has to improve its credibility. New strategies and communication tools are required to reflect the industry’s key role in society, its safety culture, environmental awareness and ethical values, as well as creating trust, increasing transparency, compliance and social responsibility. This Forum will consider why the public perception of the oil and gas industry is divided, how to address these challenges, and what role stakeholders can play in improving our reputation globally and in the places we operate.

Chair: Dr. Anna Illarionova, WPC YP committee, WPC Russian National Committee, Russia
Vice Chairs: Dr Cengiz Soylu, Instructor, Middle East Technical University, Turkey
Mr. Izeusse Braga, Executive Secretary, ARPEL, Uruguay

F22 - Paper

Stakeholder Relations and Value Beyond Compliance - a New Paradigm
Andrew Lane, Energy Resources and Industrials Leader Deloitte Africa, Deloitte Africa, South Africa

How the API Standardization Program Helps Improve Public Perception of the Oil and Gas Industry
David Miller, Director, Standards Development, API, USA

Strategy to Improve Public Perception of State Oil and Gas Companies
Zakir H Molla, General Manager Sustainability, Hindustan Petroleum Corporation Limited, India

Is the Oil and Gas Industry Ready to Contribute to Sustainable Energy Transition?
Maria Morgunova, 1 Researcher 2 PhD candidate, 1 Joint Institute for High Temperatures of RAS 2 KTH Royal Institute of Technology, Russia
Co-authors: Katerina Shaton, Molde University College, Norway

What the Oil Industry Can Learn from Aviation Industry in Having Positive Public Perception
Obaidullah Syed, Reliability Consultant, Saudi Aramco, Saudi Arabia

F22 - Posters

Advocating Trust Building Measures for Stronger Today and Tomorrow
Sumit Aggarwal, Manager, Engineers India Limited, India
Commitment to Corporate Social Responsibility by Implementing Flare Gas Recovery System in Farashband Refinery

Amin Avazpour, Aghar Gas Field Production Operation Supervisor, Iranian Central Oil Fields Company, Iran

The Evolution of Women’s Role in the Oil Industry: A Case History from Venezuela

Maria Angela Capello, Consultant I, Kuwait Oil Company, Kuwait

Co-authors: Maria Capello, Kuwait Oil Company, Kuwait; Antonieta Lorente, Ellington Geological Services, USA; Isabel Serrano, Independent, USA; Ana Marin, Independent, Canada

Innovation and Successful Stakeholder Management for the Former Texaco Lockport Refinery

Carri Douglas, Project Manager, Chevron, USA

Pilot Program for Stakeholder Integration Within E&P Shale Gas Developments in Mexico

Oscar Grijalva Meza, OCTG Test Engineer, Institute of Petroleum Engineering TU Clausthal, Germany

Transforming the Canadian Energy Industry Through Indigenous Partnership and Cross Industry Learning

Gregory John, President, Four Peaks Business Development Ltd, Canada

Alignment of Social Participation Instruments and Public Perception Research Findings in CCS Activities

Karen Mascarenhas, Director of Human Resources and Leadership, RCGI Research Centre for Gas Innovation, Brazil

Co-authors: Raissa Musarra, RCGI Research Centre for Gas Innovation, Brazil; Hirdan Costa, RCGI Research Centre for Gas Innovation, Brazil; Julio Meneghini, RCGI Research Centre for Gas Innovation, Brazil

Methodological Approach for Creating Positive Public Perception of Oil and Gas Sector

Devesh Narula, Assistant Manager, Hindustan Powerprojects Private Limited, India

Co-authors: Keshav Singhal, Hindustan Petroleum Corporation Limited, India

Improving Public Perception of Gas & Petrochemical Industry (Case Study: Capital of Iran Energy)

Ali Rahneshin, Commercial Dept, Borzouyeh Petrochemical Complex, Iran

Co-authors: Amin Avazpour, NIOC, Iran; Erfan Hasheminasab, Amirkabir University of Technology, Iran
The Perception of Students and Young Professionals on the Oil and Gas Industry

Tamara Seres, Secretary General of YPC NNKS and Member of WPC YPC from Serbia, National Petroleum Committee of Serbia and WPC YPC, Serbia

Co-authors: Zaid Al Khateeb, KGOC and WPC YPC, Kuwait

F23 - Competencies and Skills for Innovative Energy Solutions

Oil and gas companies are confronted with three major factors affecting their Human Resources management: economic uncertainties, an aging workforce and rapid technology evolutions, adding pressure to the technical and managerial skills required to continue delivering innovative energy solutions. Attracting and retaining a wide diversity of talent, building the skillset and proficiencies to remain competitive in the future energy landscape, nurturing an innovative culture and accelerating the knowledge transfer is essential for the sustainable growth of the industry. This Forum will showcase the best practices to achieving this goal.

Chair: Mr. Abdullah Al Otaibi, Director, HR Policy & Planning Department, Saudi Aramco, Saudi Arabia

Vice Chairs: Ms Vlada Streletskaya, Director, Russian National Committee of WPC, Russia

Ms Jelena Bacic, Head of Thermal Energy Service, NIS Gazprom Neft - Refinery Pancevo, Serbia

F23 - Papers

"Bouncing Back", Empathic, Creative, Committed - How Resilient People Thrive the Oil and Gas Industry

Anna Illarionova, WPC YP representative Russia (alternate), WPC Russian National Committee, Russia

New Skills for a New Purpose in Oil and Gas

Inge Oosterhuis, Senior Management Consulting Executive, Accenture, Netherlands

Co-authors: Aleek Datta, Accenture, USA

How To Train Your Engineer For Energy Transition: An Adaptive Approach

Maxime Schenckery, Director Center for Energy Economics and Management, IFPEN IFP School, France

Leveraging Augmented Reality, Virtual Reality and AI Technologies to Drive Digital Innovation

Pavan Kumar Vankadaru, Chief Innovation Officer, RandomTrees LLC, USA
F23 - Posters

Knowledge Transfer To Millennials Through Competency Management

Musa B Akgun, Manager, TPAO, Turkey

Accelerated Competency Transformation for Engineers

Almuhammad Basuni, Process Engineer, SAMREF, Saudi Arabia

Succession Plan in Indian Hydrocarbon Industry - Evidence and Case Study of Consultancy Organization

Amanpreet Singh Chopra, Dy General Manager, Engineers India Limited, India

SAOO Innovation Incubation - Innovationplus

Ensan Elayoubi, Facilities Planning Consultant, Saudi Aramco, Saudi Arabia

Future Workforce For A New Energy Industry

Gabriel Freitas, Management Consultant, Accenture, Brazil

Strategic Human Competency Operating Model for Future Carbon Energy Business

Jagdish Giri, Chief Chemist, Oil And Natural Gas Corporation LTD India, India

Training of Personnel with the Help of Artificial Intelligence

Regina Karimova, HR, TATNEFT, Russia

Co-authors: Leasan Khazipova, Tatneft, Russia

Integrating Development, Energy Efficiency and Innovation Through Lean Six Sigma

Bhanumurty Maddala, Senior Operations Engineer, Saudi Aramco, Saudi Arabia

Development of New Generation of Oil and Gas Industry Leaders

Artem Shpakov, Discipline Head, Gazprom Neft Shelf, Russia