



Conference Program – Oral Presentations

Monday – December 02, 2024	
Location: College of Engineering, Building (H07), Qatar University	
8:00 - 9:00	Registration
9:00 - 10:30	Opening ceremony
Plenary Session	
HE Eng. Mohamed Hamel, Secretary General, Gas Exporting Countries Forum (GECF)	
The Role of Natural Gas in the Energy Transition	
10:30 - 11:00	Moderator: Khalid Naji , Dean of the College of Engineering
11:00 - 11:30	Move to Student Affairs Building - I11

Oral Presentations (11:30 – 12:50)				
Location: Student Affairs Building - I11, Qatar University				
Track	Room: C243	Room: E219	Room: E220	Room: C244
	Track 1: Energy Transition I Co-Chairs: Muftah El-Naas Abubakr Abbas	Track 2: G2P, O2C 1 Co-Chairs: Anand Kumar Hamilton Varela	Track 3: Digital Transformation and AI 1 Co-Chairs: Sabla Alnouri Somaya Almaadeed	Track 4: Oil & Gas Production 1 Co-Chairs: Hu Jia Theis Solling
11:30 - 11:50	#Invited 1. Upscaling CO ₂ Electroreduction - Tackling the stability challenge. Dr. Deepak Pant	#48. CO ₂ Production Pathways during Methanol Electro-oxidation on Platinum. Enrique Paredes-Salazar, Maikel Souza, Fabio Lima and Hamilton Varela	#104. Development of An Oil Formation Volume Factor Model for Heavy Oil Reservoirs Using Group Method of Data Handling (GMDH); A comparative Approach. Mohammed Mohammed, Awab Soliman and Mysara Elhaj	#198. Evaluation of Okra (Hibiscus esculentus) and Fenugreek Gum as Eco-Friendly Rheology Modifiers in Drilling Fluids. Musaab Magzoub

The 6th International Gas Conference

December 02-04, 2024

Qatar University, Doha, Qatar

11:50 - 12:10	#188. CO ₂ /Brine/Rock wettability of Nigerian basaltic rock: Potential for CO ₂ storage in Africa. Afeez Gbadamosi, Suaibu Badmus, Nasiru Mohammed, Abdulwahab Bello, Shirish Patil, Bashirul Haq and Muhammad Kamal.	#38. Flare Gas Utilization and Methane Abatement Initiative Abdulaziz Qurashi and Mislav Kovacec.	#127. AI Governance Frameworks in the Energy Sector: A qualitative investigation on the roadblocks for development. Felipe Villasuso	#199. New Class of High-Performance Kinetic Hydrate Inhibitors for Challenging Sour Gas Environments. Mram Zaid Alyami
12:10 - 12:30	#167. A Systems Integration Approach for Optimal Energy Decarbonization. Mohammad Lameh, Dhabia Al-Mohannadi and Patrick Linke	#115. Methane Conversion to Aromatics via Chemical Synergy with Oxidative Coupling of Methane. Maria Ismail Haki, Izabel Medeiros Costa and Ma'Moun Alrawashdeh	#131. Modeling of Drilling Rate of Penetration Using a Machine Learning Approach. Noora Al Mansoori, Musaab Magzoub, Mohammed Ayoub, Almostafa Alhadi, Kaushik, Sivaramakrishnan and Munawar Shaik	#190. A Simulation Study of Natural Gas and Hydrogen Injection and Storage in a Partially Depleted Oil Reservoir for Seasonal Underground Energy Storage. Manal Alshafi, Abdulsalam Abd, Ahmad Abushaikha and Yusuf Bicer
12:30 - 12:50	#86. Adsorption of Carbon Dioxide Gas onto Activated Carbon Nanoparticles From Hydrogels Synthesized Using Gamma Rays. Ahmed Awadallah-F and Shaheen Al-Muhtaseb	#21. The evolution of GTL Technologies from liquid fuels to chemicals: an overview. Touhami Mokrani	#41. Digital Transformation and AI in the to achieve the Sustainability in Oil and Gas Industry. Ahmed Badawi and Mario Elzein	#20. Study on imbibition mechanism of shale oil reservoir considering mineral composition and time-varying law of wettability. Chengcheng Niu, Hu Jia and Wei He

12:50 – 14:00		LUNCH	
Keynotes: 14:00-14:40	Room: C243 Keynote Speaker 1: Prof. Mercedes Maroto-Valer , UK Industrial Decarbonization Research and Innovation Centre, Heriot-Watt. Industrial decarbonization: Key to our global net zero transition.	Room: C244 Keynote Speaker 2: Dr. Sami Alnuaim , Petroleum Engineering Department, KFUPM, Saudi Arabia Former Head of Petroleum Engineering Applications Department, Saudi Aramco Energy Advancement, a New Energy Transition Redefinition!	
	Moderator: Kheiriddine Aroua	Moderator: Ahmad Abushaikha	
14:40 – 14:45		BREAK	

Oral Presentations (14:45 - 16:25)			
Track	Room: C243	Room: C244	Room: E220
	Track 5: Energy Transition 2 Co-Chairs: Saba Solim Theis Solling	Track 6: Oil & Gas Production 2 Co-Chairs: Mohamed Mahmoud Aziz Rahman	Track 7: Digital Transformation and AI 2 Co-Chairs: Saad Al Sobhi Suhail Diaz
	14:45 - 15:05		
	#200. Zero Flaring During Sea Line Depressurization. Yousef Alsada	#5. 3D Printing Low Temperature Hydrolysable Ultrahigh Strength Frac Balls for Fracturing Stimulation. Wenqin Hong, Xing Liu and Lizhu Wang	#24. Machine learning assisted completion fluid brine Molecular Design. Yu Wang and Jia Hu
	15:05 - 15:25		
	#56. Evaluation of Alkanolamines Corrosivity During CO ₂ Capture and in the Presence of Deep Eutectic Solvent as Inhibitor. Mysara Mohyaldinn, Aleeya Farzana Aidy Mohamed Shawal, Tigabwa Y. Ahmed, Weallfearnus Justin, Victor Damilare Ola and Mohammed Abdalla Ayoub	#85. CO ₂ -Enhanced Gas Recovery in Naturally Fractured Reservoirs: Balancing Energy Security with Environmental Stewardship. Mohamed Abdalla, Nimir Elbashir and Qingsheng Wang	#31. An accurate model for the prediction of the uniaxial compressive strength (UCS). Fahd Saeed Alakbari, Syed Mohammad Mahmood and Ibnelwaleed A. Hussein
	15:25 - 15:45		
	#34. Optimizing Indonesia's PSC Framework: Strategies for Renewable Energy Initiatives. Iswahyudi Sondi Putra, Pityt Puty Hariandy and Badia Juanita Ulina	#57. Complexity of theoretical adsorption models for methane/shale system. Muhammad Shahzad Kamal, Arshad Raza, Mohamed Mahmoud, Saad Alafnan and Guenther Glatz.	#159. Prediction of Boil-Off Gas Rates in LNG Carriers. Nagi Abdussamie, Mohamed Nasery, Hongjun Fan, Hussein Al-Yafei, Amin Esmaeili and Lambros Kaiktsis
	15:45 -		
	#205. Optimizing CARGEN® Based GTL Process Using Heat Integration Techniques. Noora Al-Hussaini, Challiwala, Mohamed Sufiyan, Nimir Elbashir	#9. A review: The trend of proppant development in the past Decade. Wengang Li	#64. A Machine Learning Approach for Developing Effective Novel Green Corrosion Inhibitors. Najam Us Sahar Riyaz, Mazen Khaled and Ibnelwaleed Hussein

16:05 - 16:25	#135. Synergistic Effect of Enzymes and Their Supports on CO ₂ Absorption and Conversion. Sulaiman Al-Zuhair and Shadeera Rouf	#201. Design and Synthesis of Porous SnO ₂ Microspheres for High-Performance Ethanol Sensing. Hassan Idris Abdu	#95. Development of Digital/Visual Twin for Real-Time Leak Detection in Gas Pipelines under Multiphase Flow Conditions. Wahib A. Al-Ammari, Ahmad K. Sleiti, M. Hamilton, Hicham, Ferroudji, Sina Rezaei Gomari, Ibrahim Hassan, Rashid Hasan, and Mohammad Azizur Rahman.
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Tuesday – December 03, 2024

Location: Student Affairs Building - I11, Qatar University

8:30 – 9:10	Room C-243, Building I- 11 Keynote Speaker 1: Prof. Mohamed Gamal El-Din Civil and Environmental Engineering Department, University of Alberta, Canada Produced Water Treatment/Reclamation for Safe Reuse: Targeting Sustainability and Circular Economy	Room C-244, Building I- 11 Keynote Speaker 2: Dr. Petr Musilek Electrical & Computer Engineering Department, University of Alberta, Canada Integrating AI in Energy Storage: Pathways to Justice and Equity
	Moderator: Suhur Saeed	Moderator: Ahmed Massoud
9:10 – 9:15	BREAK	

Oral Presentations (9:15 - 10:35)

Track	Room E219 Track 8: Industrial Wastewater 1 Co-Chairs: Khaled Mahmoud Bassam Tawabini	Room: C244 Track 9: Oil and Gas Production 3 Co-Chairs: Mysara Elhaj Mustafa Nasser	Room: C243 Track 10: Energy Transition 3 Co-Chairs: Majeda Khraishah Abdelbaki Benamor	Room: E220 Track 11: G2P, O2C 2 Co-Chairs: Ma'Moun Alrawashdeh Sulaiman Al-Zuhair
	#Invited. Applications of Two Dimensional Metal Carbides (MXenes)/polymer composites for the removal of emerging contaminants from water. Khaled A Mahmoud	#46. Hydrodynamique behavior of the vertical downward two-phase annular/falling film flow regimes. Faiza Saidj, Hiba Bouyahiaoui and Abdelwahid Azzi	#83.Coal Quality Requirements for an800 MW Supercritical Boiler and Associated EmissionsSeshibe Makgato and Thembi Mukenga	#Invited 2. ArouaWaste Valorization towards Carbon Dioxide Capture and Utilization. Prof. Mohamed Kheireddine

9:35 - 9:55	<p>#89. Treatment of oil produced water using biopolymer based composite- parametric experiments and modeling studies. Natarajan Rajamohan and Abrar Said Saif Al Ajmi</p>	<p>#60. Measurement of Nuclear Radiation in Oil and Gas Field And Its Helth Effect in Nigeria Mohammed Shitu, Ibrahim Inuwa and Fatima Sahabo Magaji</p>	<p>#74. Efficient Solar Module Defect Detection and Analysis Using Deep Learning Techniques Muralikrishna Boddu, Mahra Said Hussein Al-Kaabi, Sara Said, Bakhit Al Saidi, Al Zaharaa Saleh Mohammed Al Senani and Fatema Mohammed Salim Al Mamari"</p>	<p>#134. High valued chemical Production from electrochemical CO₂ conversion. Mansoor Al-Shamari, Nejat Rahmanian, Iqbal Mujtaba, Ahmed Khodary, Han Dong Suk, Fathima Sifani and Izza Fatima</p>
9:55 - 10:15	<p>#1. Treatment of Produced Water Using Pilot-Scale Advanced Electrochemical Oxidation Method. Bassam Tawabini, Abdullah Basaleh and Essam Al-Jundi</p>	<p>#157. Operating Parameters For Homogeneous Nucleation Initiation In A Supersonic Separator With A Methane-Carbon Dioxide Real Gas Mixtures. Vinicius Freitas, Julián Camilo Restrepo Lozano and Jose, Simoes-Moreira</p>	<p>#61. Solar Thermochemical Valorization of CO₂ into Fuels Using Doped Ceria Materials Rahul Bhosale</p> 	<p>#180. Understanding Carbon Deposition in Methane Dry Reforming over Supported Nickel Catalyst: A Numerical Simulation Study Ahmed Aheed Ali Mohammed, Anand Kumar and Mohammed Al-Marri.</p>
10:15 - 10:35	<p>#96. Modification of Polyethylene for Oil - Water Separation in Industrial Wastewater Treatment. Mashaal Almaas, Joel Minier Matar, Altaf Hussain, Gennaro Dicataldo, Igor Krupa, Mabrouk Ouederni, Mariam Al Ali Al-Maadeed and Samer Adham</p>	<p>#19. Study on fluid mobility in shale oil reservoirs considering mineral composition and stress sensitivity. Chengcheng Niu, Hu Jia and Wei He</p>	<p>#17. Retrofitting Gas to Liquid (GTL) process to produce Low Carbon Aviation Fuels (LCAF) Yasmin Abdelkarim, Mohamed Challiwala and Nimir Elbashir"</p>	<p>#27. Assessment of Gas-to-Liquids (GTL) Products: Quality, Market Value, and Sustainability Perspectives Tala Katbeh, Eiman Mohamed, Tagwa Musa and Nimir Elbashir"</p>
10:35 – 12:00	Poster Session (Main Hall)			

Oral Presentations (12:00 - 13:00)

Track	Room: C244	Room: E219	Room: C243	Room: E220
	Track 12: Oil & Gas Production 4 Co-Chairs: Shahzad Kamal Faisal AlHumaidan	Track 13: Process Model & Optimization 1 Co-Chairs: Amr Mohammad Robin Smith	Track 14: Energy Transition 4 Co-Chairs: Sabla Alnouri Antonis Kokossis	Track 15: Energy Transition 5 Co-Chairs: Mustafa Amer Abdelbaki Benamor
12:00 - 12:20	#54. Enhancing Oil Recovery in Fractured Carbonate Model: Investigating the Synergy of PPGs, Surfactant, and Polymer through Visual Observation Abdulaziz Almakimi, Junchen Liu, Baojun Bai and Ibnelwaleed A. Hussein	#138. Advanced Data-driven Process Monitoring in Industrial Processes Nour Basha, Hazem Nounou and Mohamed Nounou	#72. Microfluidic Study of the Phase Transition Behaviors of CH ₄ and CO ₂ Hydrates in Porous Media Wei Yu, Muhammad Habiburrahman and Abdullah Al-Sultan	#42. Screening Lithium-based Salts in Non-Aqueous Electrolyte Solution of Monoethanolamine for Carbon Dioxide Capture Aisyah Ilyani Ismail, Mohd Azlan Kassim, Betar Gallant and Mohamed Kheireddine Aroua
12:20 - 12:40	#15. Numerical Simulation Study of In-Situ Generation of Gas-Water Separation Membranes for Water Control in Gas Wells. Hu Jia and Zili Zhou	#88. Detecting Faults in Distillation Column Using Gamma Ray Techniques Combined with Graphical User Interface Shaker Ebrahim, Omar Al-Boloushi, Mishare Al Qalaf and Hamza Albazzaz	#126. An Optimization Approach to Enhance Power Plant Resilience and Sustainability Aysha Jiffry and Dhabia Al-Mohannadi	#28. Investigating the CO ₂ Fixation Potential and the Commercial Viability of the Dimethyl Carbonate Direct Synthesis Process in the Presence of Different Dehydrating Agents Amera Abdelbar, Hanif Choudhury, Mohamed Challiwala, Gasim Ibrahim and Nimir Elbashir
12:40 - 13:00	#35. Utilising Basic Oxygen Furnace (BOF) Slag and Fly Ash (FA) to Stabilise Wet Flue Gas Desulphurization Gypsum (WFGD) for Building Material Applications Dumisane Mahlangu, Keletso Mpahlele, Nomcebo Mthombeni and Seshibe Makgato	#105. AERMOD based Modelling of Air Pollutants with varied stack parameters of three types of incinerators: A Case Study of Qatar. Adnan Mateen and Majeda Khraisheh	#142. Microplastics as emerging Contaminants: Investigating different routes and sources in Qatar. <u>Sjoood Makeen</u> , Asma Mohamed, Naval Alhamdan, Hadir Ibrahim, Raneem Mohamed, Ala Alardah, Marwa Al-Ani, Noora Al-Qahtani	#185. Global Perspective in Gas Flaring. Hossam Elmasry
13:00 – 14:00		LUNCH		

14:00 – 14:40	Room C-243, Building I- 11 Keynote Speaker 5: Prof. Stefan Iglauer Edith Cowan University	Room C-244, Building I- 11 Keynote Speaker 6: Dr. Alexander van der Made , Shell Netherlands
	Challenges of CO ₂ and H ₂ Storage	The Energy Transition from the Perspective of an International Energy Company.
	Moderator: Ibnelwaleed Hussein	Moderator: Muftah El-Naas
14:40 – 14:45	BREAK	

Oral Presentations (14:45 - 16:25)

Track	Room: 219	Room: E220	Room: C243	Room: C244
	Track 16: Industrial Wastewater 2 Co-Chairs: Ali Alshami Mustafa Nasser	Track 17: Process Model & Optimization 2 Co-Chairs: Fadwa Eljack Muhammad Shariq Khan	Track 18: Energy Transition 6 Co-Chairs: Dhabia Al-Mohannadi Seckin Karagoz	Track 19: Oil & Gas Production 5 Co-Chairs: Fadhil Sadooni Khaled Elraies
14:45 - 15:05	#7. Heavy Metal Removal from Wastewater/Produced Water Streams Through CO ₂ Mineralization Isah Mohammed, Mohamed Mahmoud, Dhafer Al-Shehri and Abdulwahab Bello	#43. Density Modelling of Amine-Salt System. Jun Hui Law, Aisyah Ilyani Ismail, Mohamed Kheireddine Aroua and Muhammed Basheer Jasser"	#84. Performance evaluation of 800 MW Supercritical Boiler:South African Case Study. Thembi Mukenga and Seshibe Makgato	#52. Influence of Cushion Gas on Gas Residual during Drainage Displacement in Sandstone Rocks: Application to Subsurface Hydrogen Storage Ahmed Fatah and Ahmed Al-Yaseri

15:05 - 15:25	#30. Treatment of injection water in Oil Field Arbaoui Mohamed Ali	#91. Numerical investigation of gas-liquid multiphase flow system with leaks using statistical and wavelet transform approaches. Hicham Ferroudji, Muhammad Saad Khan, Abinash Barooah, Wahib A. Al-Ammari, Ibrahim Hassan, Rashid Hassan, Ahmad K. Sleiti, Sina Rezaei Gomari and Mohammad Azizur Rahman	#6. Impact of Sour Gas Presence on CO ₂ Subsurface Mineralization: Evaluation of Implications. Isah Mohammed, Dhafer Al-Shehri, Abdulwahab Bello, Mohamed Mahmoud and Sagheer Onaizi	#197. Optimizing Underground CO ₂ Injection in Tight Formations using Multi-Resolution Technologies Hamad Alkharraa
15:25 - 15:45	#87. Impact of Seasonal Changes on Fouling in a Pilot Scale Reverse Osmosis System Yousef Elhamarnah, Ali Al-Sharshani, Sabah Solim and Hazim Qiblawey"	#191. Improved Operation of LNG terminal through a corrected storage tank model. Muhammad Shariq Khan and Khurshed B. Ansari	#139. Natural Gas Derived Synthetic Fuels: The History and the Challenges. Tala Katbeh, Yasmin Abdelkarim, Hanif Choudhury, Mohamed S. Challiwala, Reza Tafreshi and Nimir Elbashir	#25. Fluid-loss/gas channeling control mechanism of weighted elastic liquid gel plug and field application Wei He, Hu Jia and Chengcheng Niu
15:45 - 16:05	#67. Polyvinylidene Fluoride-Halloysite Nanotubes Mixed Matrix Membrane for Wastewater Treatment Manisha Karim, Zeinab Jawad, Hazim Qiblawey, Abdul Latif Ahmad, Siew Chun Low and Mohammed Ali S Saad	#120. Reactor Design Analysis for Oxidative Coupling of Methane using a Multi-zone Reactor Optimization Framework. Murtaza Ali Khan, Mamoun Al-Rawashdeh and Patrick Linke"	#123. Optimization of Electrified Heat Systems: A Pathway to Decarbonization. Soha Mousa and Dhabia Al-Mohannadi	#4. Novel Thermochemical Fracturing: A Breakthrough in Sustainable and Efficient Enhanced Geothermal Systems (EGS) Ahmed Alghamdi, Amjed Hassan and Mohamed Mahmoud

16:05 -16:25	<p>#143-Advancing Circular Economy: Eco-bricks for Sustainable Construction and Waste-Reduction.</p> <p>Zakaria Al-Janahi, Abdulrahman Bellegdy, Amine Abdulaziz Kardi, Mennatallah Kuna, Marwa Alani, Naval Alhamdan, Hanin Elsin, Mostafa Sliem, Noora Al-Qahtani</p>	<p>#53. Developing Efficient Solvent Systems: Volumetric properties of 2-Ethylhexylamine (EHA) / Dimethyl Sulfoxide (DMSO) binary mixtures and their molecular interaction by COSMO-RS for CO₂ absorption process.</p> <p>Mohd Azlan Kassim, Abdul Azim Abdul Manam, Rozita Yusoff and Mohamed Kheireddine Aroua</p>	<p>#73. Blend of MEA+1DMA2P for CO₂ Absorption: Modeling-Optimization-Cost Analysis</p> <p>Moeteza Afkhamipour, Mohammad Shamsi, Meisam Ansarpour, Ebad Seifi, Abbas Hekmatian, Tawhid N. Borhani</p>	<p>#66. State of the art technologies in inspection of unpiggable Pipelines</p> <p>Mahdi Eskandarzadeh Asl and Parisa Modabber"</p>
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Wednesday – December 04, 2024			
Location: Student Affairs Building - I11, Qatar University			
8:30 – 9:10	Room		Room
	Keynote Speaker 7: Prof. Robin Smith , Centre for Process Integration, Department of Chemical Engineering, University of Manchester, UK. Finding an Economic Route for the Transition to Net-Zero Greenhouse Gas Emissions for Industrial Energy Systems.		Keynote Speaker 8: Prof. Xinhe Bao , Dalian Institute of Chemical Physics Chinese Academy of Sciences, China Challenges and Opportunities in Energy Catalysis for Carbon Neutrality.
	Moderator: Fadwa Eljack		Moderator: Siham Alqaradawi
9:10 – 9:15	BREAK		

Oral Presentations (9:15 - 10:55)				
Track	Room: C243	Room: C244	Room: E219	Room: E220
	Track 20: Industrial Wastewater 3 Co-Chairs: Zeinab Jawad Mohamed Hassan	Track 21: Process Model & Optimization 3 Co-Chairs: Sabla Alnouri Antonis Kokossis	Track 22: Gas Economics 1 Co-Chairs: Mustafa Amer Ahmed A. Khalifa	Track 23: Sustainable Chemical Processes 1 Co-Chairs: Kamel Eid Mohammad Albeldawi
9:15 - 9:35	#68. Novel nanocomposite based on agriculture waste to creating multifunctional materials with applications in both photocatalysis and energy storage Mohamed Deyab	#Invited 3. Process Integration, Intensification, and Optimization Prof. Moonyong Lee,	#189. Exploring Safety Challenges and Risk in Drilling Equipment Maintenance Operation: A Sequential Explanatory Study of Oil and Gas Industries Dr. Muhammad Mujtaba Asad and Dr. Fahad Sherwani	#Invited Paper 4. Low-carbon alternative fuels in the maritime industry Prof. Antonis Kokossis

9:35 - 9:55	#70. Sustainable Polyvinylidene Fluoride Membrane Distillation Anas Khalid, Zeinab Jawad, Hazim Qiblawey, Abdul Latif Ahmad, Siew Chun Low, Mohammed Ali S Saad	#33. Elucidation with the aid of NMR distance-restricted molecular dynamics simulation of Photo-AKH in water and a mimetic membrane. Ibrahim Abdulganiyyu, Graham Jackson, Heather Marco	#40. Advantages on gas projects with modular plants. Emilio Pérez Debarbieri	#150. Oilfield Scale Inhibition and Trends in a Homologous Series of Phosphonated Linear Amino Acids Mohamed Mady, Maryam Warsame, Adilla Pires, Ahmed Abdelhay, Malcolm Kelland, Ibnelwaleed Hussein and Konstantinos Demadis
9:55 - 10:15	#44. Development of Sustainable Construction Materials Using Produced Water and Captured CO ₂ . Roneta Chaliulina, Aiste Zukaityte, Ammar Elhoweris and Yousef Alhorr	#179. Enhancing Flare Gas Treatment: A Systematic Evaluation of Dual-Stage (Amine, CO ₂ Supercritical), and Hybrid Approaches using HYSYS. Khaled Elraies	#116. Resilience Assessment and Enhancement for Food Supply Chains in the Face of Extreme Airborne Events. Khadija Al Nabhani, Sumaya Abdul Rahman and Konstantinos Kakosimos	#23. Upcycling Spent coffee grounds in Ni/Cu/ZSM-5 catalyzed fast pyrolysis for enhanced biofuel production. Imad A. Idris, Jurarat Nisamaneenate, Duangduen Atong and Viboon Sricharoenchaikul
10:15 - 10:35	#124. Membrane Distillation for Wastewater Treatment. Rose Anne Patrice L. Ramirez, Maryam Hoe, Manisha Karim and Zeinab Jawad	#197. Optimizing Underground CO ₂ Injection in Tight Formations using Multi-Resolution Technologies. Hamad Alkharraa	#79. Bridging energy sustainability and economic development - energy modeling study to 2050. Mustafa Amer	#49. Effect of nitrogen and oxygen functional groups of bio-based porous carbon modified using hydrothermal treatment on improving CO ₂ adsorption performance. Farihahusnah Hussin and Mohamed Kheireddine Aroua
10:35 - 10:55	#122. Enhanced Heavy Metal and Microplastic Removal Using Solution-Blown Spun PLA Nanofiber-Supported Graphene Polyamide Composite Membranes. Hammad Siddiqui, Ahsan Kahlid Hafeez, Arqam Shahab and Syed Javaid Zaidi	#106. Modelling the Environmental Impact of PCDD/F Emissions from Multichambered Incinerators in Qatar. Adnan Mateen and Majeda Khraisheh	#132. Enhancing Circular Economy through Utilizing the VPA for Carbon Permit Allocation. Mustafa O. Afacan and Ahmed A. Khalifa"	#163. Blue Ammonia and the Supply Chain Pioneering Sustainability Assessment for a Greener Future. Hussein Al-Yafei, Ahmed Alnouss, Saleh Aseel, Nagi Abdussamie, Talal Al Tamimi, Hamad Al Mannaei, Heba

				Ibrahim, Noor Abu Hashim, Bader Al Delayel and Hagar Nasr"
10:55 - 11:20		BREAK		

Oral Presentations (11:20 - 13:00)				
Track	Room: C243 Track 24: Oil & Gas Production 6 Co-Chairs: Hassan Dehghanpour Wan Li Kang	Room: C244 Track 25: Process Model & Optimization 4 Co-Chairs: Donghyun Kim Nejat Rahmanian	Room: E219 Track 26: Gas Economics 2 Co-Chairs: Mahmoud Abdullatif Boumediane Ramadani	Room: E220 Track 27: Sustainable Chemical Processes 2 Co-Chairs: Sami Sayadi Hassan Nimir
11:20 - 11:40	#147.Optimizing SAGD Performance Through Steam Chamber Control Nitrogen-and Assisted Injection in the Guantao Super-Heavy Oil Reservoir. Qiang Meng, Qun Shen, Lulu He, Chongxin Xiao, Qiang Wang, Ye Tian, Lin Han, Shimeng Qu and Yanwei Wang	#128. Detecting Faults in Distillation Column using Gamma Ray Techniques Combined with Graphical User Interface. Shaker Ebrahim, Omar Alboloushi, Mishare Al Qalaf and Hamza Albazzaz.	#97. Techno-Economic Revamp of Natural Gas Sweetening: Evaluating Sulfinol-D vs. Sulfinol-M. Mahdi Kheirnik, Mahdi Garmsiri, Ali Tahmasebi and Nejat Rahmanian	#77. Catalytic Methane splitting for carbon neutral hydrogen production. Mohammad Hamdan and Joseph Zeaiter
11:40 - 12:00	#3. Analyzing Adsorption Parameters for Optimal Shale Reservoir Production Profiles: A simulation study. Arshad Raza, Mohamed Mahmoud, Saad Alafnan, Abdullah Almubarak and Farzain Kirmani	#169. Fair and Efficient Management of a Community Energy Storage System Using LSTM Forecasts Noon Hussein and Petr Musilek	#207.Energy efficiency contribution to climate objective. Fateh Belaid	#100.Separation of sulfide minerals using oxalic acid in Pb-Zn flotation system for sustainable mineral processing. Doaa Eladl, Gde Suyantara, Hajime Miki and Naoko Okibe

12:00 - 12:20	#10. Enhanced CO ₂ geological storage using enzyme induced carbonate precipitation. Suaibu Badmus, Afeez Gbadamosi, Abdulrauf Adebayo, Abduljamiu Amao and Shirish Patil.	#112. The study on the calculation model of power grid carbon emission factors based on hierarchical decoupling and nodal Balance. Hongliang Chu, Yang Bai, Fan Wang, Xuting Lu, Chengping Zhang and Zhiqiang Zou.	#152. How DLT Can Increase the Attractiveness of Gas Field Investments. Khaled Hantosh, Mohammed Al-Ali, Saad Balhasan and Mortadha Alsaba.	#141. Supercharging Sustainability: Nitrogen Doped Carbon for High-Performance Energy Storage. <u>Naval Alhamdan, Hadir Ibrahim, Marwa Alani, Zainab Baloochi,Ala Alardah, Mostafa H.R. Sliem, Mohammad K. Hassan, Noora Al-Qahtani</u>
12:20 - 12:40	#136. Optimizing Bioremediation Strategies for Crude Oil-Contaminated Soils in North Dakota: Microbial Community Dynamics and Environmental Influences. Hamza Raheel and Marko Davinic	#107. Exergy and Eco-Efficiency Analyses of a DSMR Process in LNG Production. Majeda Khraisheh, Abdulla Alsadi, Abdulaziz Al Ali and Fares Almomani.	#93. Modeling of sulfur dust explosion properties. Asma Abousrafa, Luc Vechot and Tomas Olewski	#76. Low temperature Synthesis of Styrene Via Catalytic Dehydrogenation of Ethylbenzene Using Vanadia support SnO ₂ catalysts. S. Said, Samira M. Adel-Azim and Aya M. Matloob
12:40 - 13:00	#78. Rising Velocity of Air and Carbon Dioxide Under a Water Column from a Multiphase Flow Leak. Aalyae Maettaoui, Hicham Ferroudji, Ibrahim Hassan, Ahmad K. Sleiti and Mohammad Azizur Rahman.	#103. LNG Process Optimization: A Comparative Study of Differential Evolution and State-of-the-Art Algorithms. Mohamed Hamdy, Abdulaziz Al-Ali, Majeda Khraisheh and Ponnuthurai Suganthan	#206. The opportunities and challenges for introducing environmental taxes in oil exporting countries: the case of Qatar. Mehmood Abdulatif	#151. Exploring Sustainable Pathways for Extracting Divalent Ions Through Mineral Carbonation of Desalination Reject Brine. Nafis Mahmud and Muftah El-Naas"
13:00 – 14:00		LUNCH		
Oral Presentations (14:00 – 15:40)				

Track	Room: C243	Room: C244	Room: E219	Room: C244
	Track 28: Industrial Wastewater 4 Co-Chairs: Mohammad Al-Ghouti Dong Suk Han	Track 29: Oil & Gas Production 7 Co-Chairs: Mohamed Mady Abdulkarem Amhamed	Track 30: Gas Economics 3 Co-Chairs: Hazim Qiblawey Abubakr Abbas	Track 31: Sustainable Chemical Processes 3 Co-Chairs: Abdulrahman Ghannoum Syed Javaid Zaidi
14:00 - 14:20	#146. Chitosan's Clean Sweep: A Natural Solution for Water Purification <u>Ala Alardah</u> , Marwa Alani, Rinad Khataby, Mostafa Sliem, Noora Al-Qahtani	#26. In-situ generation of hydrophobic film to achieve wetting alteration in high-water cut sandstone gas reservoirs. Hu Jia, Wei He, Chengcheng Niu	#160. Comparative Analysis for Inherent Safety for Alternative Blue Ammonia-Urea Pathways. Ahmed Al Ibrahim and Fadwa Eljack	#117. CO ₂ Gasification Efficiency for Varied Carbon Types with and without Nickle Metal. Ahmed Soliman, Yahia Shoeb and Ma'Moun Al-Rawashdeh
14:20 - 14:40	#71. Polysulfone-PolyVinyl Pyrrolidone Blend Membrane for CO ₂ /N ₂ Separation. Soduq Abiodun Bunyamin, Zeinab Jawad, Hazim Qiblawey, Mohammed Ali S Saad	#16. Inversion and Time-Varying Study of Relative Permeability Curves Coupled with Multi-State Nuclear Magnetic Resonance T ₂ Spectrum in Middle-to-High Permeability Reservoirs. Zili Zhou and Hu Jia	#92. Does Carbon Pricing Matter? Evidence from a Global Sample. Ahmed Khalifa, Khalid S. Al-Abdulqader, Abdul-Jalil Ibrahim and Jingkai Ong	#144. Waste-to-Energy Wonder: Harnessing Hydrogen from Fennel Flower Waste <u>Zainab Baloochi</u> , Manal B. Alhamdan, Hadir M. Ibrahim, Naval Alhamdan, Dr. Mostafa H.R.Sliem, Noora Al-Qahtani,
14:40 - 15:00	#145. Emerging Topics in Soil and Water Research: Addressing Local and Global Challenges <u>Hadir Ibrahim</u> , Zainab Baloochi, Wadha Al-Abi, Rowa Mohamed, Amal Ibrahim , Noora Al-Qahtani	#14. Time-variation law characterization based on 'effective water phase flux' and simulator development. Zili Zhou and Hu Jia -		#18. Development of high-strength water plugging agent for fractured tight oil reservoirs and research on water plugging performance. Siqi Liu.

15:00 - 15:20	#110. GO-PAMAM Leaching Reduction from Polysulfone Membrane Matrix Through Cross-linking with APTES. Ahmed Yasir, Abdelbaki Benamor and Alaa Hawari	#140. The Plastic Paradox: A Critical Analysis of PET Bottle Recycling <u>Fajer Al-Muhammadi</u> , Hanin Elsin, Marwa Al-Ani, Noora Al-Qahtani	#155. Electrocatalytic CO ₂ Reduction to Formic Acid: Bridging Lab Experiments with Large-Scale Applications. Muhammad Arsalan, Muneer Ba Abbad and Muftah El-Naas

Conference Program – Poster Session

Tuesday – December 03, 2024		
Location: Student Affairs Building - I11 Main Hall, Qatar University		
	Co-chairs	Hassan Nimir Ahmed Elkhataat

Posters Session (10:35 - 12:00)	
#	Poster Title
Category	Energy Transition
P-ET1	#108. Direct Utilisation of captured CO ₂ for enhanced acetic acid production: techno-economic and environmental assessment. Mohamed Abou Nada, Ahmed Alnouss, Noor Yusuf, Fares Almomani and Tareq Al-Ansari
P-ET2	#75. Effect of chemical activation on biochar performance for CO ₂ capture prepared by Hydrothermal process. Muneer M. Ba-Abbad, Shamna Mubashir, Dan Jerry Cortes, Sri Rizki Putri Primandari, Law Yong Ng, Ching Yin Ng and Muftah H. El-Naas
P-ET3	#165. A Review on Commercialization Readiness of Carbon Capture and Utilization (CCU) Technologies. Amzan Alsabri and Dr. Fadwa El Jack
Category	Gas to Products
P-G2P 1	#121. Synthesis Of A Stable Nickel Based Hierarchical Zsm-5 Nanorods For Carbon Dioxide Reforming Of Methane To Syngas. Yahuza Nantomah Abdulai, Ijaz Hussain, Saheed Ganiyu and Khalid Alhooshani
P-G2P 2	#154. New Generation of Multielement-Doped Nanodiamond Thin Films by Coaxial Arc Plasma Deposition as Robust Nanocatalysts for Electroreduction of CO ₂ to Valuable Products. Aymen S. Abu Hatab, Abdelrahman Zkria, Yahia H. Ahmad, Mohamed F. Mady, Yasser Hassan, Alesandro Sinopoli, Aboubakr M. Abdullah, Siham Y. Al-Qaradawi, Tsuyoshi Yoshitake and Mazen Khaled
P-G2P 3	#62. Solar Chemical Looping Reforming of Methane Using Metal Oxide-Driven Redox Reactions. Rahul Bhosale

P-G2P 4	#59. The electro-oxidation of small organic molecules on Pd-based catalysts. Bruno Rossi, Henrique Meirelles, Kamel Eid and Hamilton Varela
P-G2P 5	#81. Investigating the Catalytic Activity of LaNixMg1-xO3 Perovskite in Dry Reforming of Methane. Parisa Ebrahimi, Anand Kumar and Mohammed Al-Marri
<i>Category</i>	<i>Industrial Wastewater Management</i>
P-IW 1	#164. Turning Industrial Waste to Energy: Harnessing MFC for Distillery Wastewater Treatment with Bioelectricity Production. Memoona Arooj, Tahir Fazal, Hafiz Muhammad Uzair Ayub, Muhammad Athar and Aamir Alaud Din
P-IW 2	#119. Development of a Novel GO-PEI-SiO2 Doped Polysulfone Membrane for Oily-in-Water Separation.

	Hind Ben Youssef, Ahmed Toky and Abdelbaki Benamor
P-IW 3	#187. Harvesting LCD monitors for advanced electrochemical mercury sensing in Qatari sea water. Maroua Saadaoui, Abdul Hakeem, Assem Mohamed and Abdelbaki Benamor
P-IW 4	#118. Synthesis and Application of Sustainable Adsorbent for Industrial Wastewater Treatment. Muneer M. Ba-Abbad, Shamna Mubashir, Muftah H. El-Naas and Dan Jerry Cortes
P-IW 5	#166. Tea Waste Biochar Prepared Via Hydrothermal Method for 2,4-Dichlorophenol Removal from Wastewater. Farah Salameh, Muneer Baabbad and Bassim Hammadi
P-IW6	#196. Produced Water Treatment using Modified Magnetic Nanoparticles.Zainab Elkahout and Fares Almomani
Category	<i>Process Model and Optimization</i>
P-PMO 1	#181. Process simulation model for Co-gasification of plastic and woody biomass for H ₂ -rich syngas production with subsequent CO ₂ capture. Muhammad Shahbaz, Usman Ali, Hafiz Muhammad Uzair Ayub and Sukarni Sukarni
P-PMO 2	#12. Simulation and Economic Analysis for Separating Propylene and Propane Based on Distillation Column. Ali Ba-Tuq, Badiea Babaqi, Osamah Al-Samawi, Ahmed Al-Jaberi and Aseel Ba-Tuq
P-PMO 3	#182. Simulation-based improvements for the paraffinic-base sustainable aviation fuel process. Usman Ali, Muhammad Shahbaz and Muhammad Uzair Ayub
P-PMO 4	#29. SIZING OF A HEAT EXCHANGER FOR GAS-LIFT OPTIMIZATION. Arbaoui Mohamed Ali
P-PMO 5	#192. Analytical modelling of tank warm-up and cooldown during the ballast voyage of a LH2 carrier. James Wang, Tom Hughes, and Paul Webley.
P-PMO 6	#125. A Guided-Design of Experiment Approach to Enhance RWGS Reaction Modeling. Byanne Malluhi, Mohamed Nounou, Mamoun Al-Rawashdeh and Radhia Fezai
P-PMO 7	#194. Advanced Corrosion Prediction in MDEA Systems: A Physics-Informed Neural Network (PNN) Approach.Ahmed Talkhan, Abdelbaki Benamor, Fadwa Eljack and Aboubakr M. Abdullah
P-PMO 8	#73. Blend of MEA+1DMA2P for CO ₂ Absorption: Modelling-Optimization-Cost Analysis. Morteza Afkhamipour, Mohammad Shamsi, Meisam Ansarpour, Ebad Seifi, Abbas Hekmatian and Tohid N.Borhani
P-PMO 9	#203. : Optimized reduce greenhouse gas emissions in Qatar football stadiums: strategy and mechanism: Mustapha Alaoui and Fahad Abdullah Thani Al zaraa
Category	<i>Sustainable Chemical Processes</i>
P-SCP 1	#99. The use of nanoparticles composites to enhance the heat transfer coefficient during oil transportation. Alpamys Babayev, Altynay Sharipova, Marzieh Lotfi and Raziya Sarsembekova
P-SCP 2	#98. Use of nanofluids as drag-reducing agents in oil transportation. Altynay Sharipova, Marzieh Lotfi, Alpamys Babayev, Saule Aidarova and Raziya Sarsembekova
P-SCP 3	#113. Biowaste-derived porous carbon doped dual-sites FeM-based catalysts for enhanced green ammonia production. Adewale Kabir Ipadeola, Belal Salah, Mostafa Sliem and Aboubakr M. Abdullah

P-SCP 4	#177. Dual-Function Corrosion and Scale Inhibitors: Novel Phosphonated Amino Acids for Oilfield Applications. Adilla Pires and Mohamed Mady
P-SCP 5	#148. Electrochemical Degradation of 4-Chlorophenol Using Fe-Mg Composite Catalysts: A Rotation Disc Electrode Study. Aromal Ashok, Ibrahim Abu-Reesh and Anand Kumar
P-SCP 6	#174. Eco-friendly Dicarboxylated Inulin for Oilfield Scale Control. Showkat Ali Ganie and Mohamed F. Mady
P-SCP 7	#39. Effect of support on the selective hydroisomerisation of n-heptane over Nickel Phosphide catalyst. Aliya Temirkhan and Saule Aidarova
P-SCP 8	#133. High valued chemical Production from electrochemical CO ₂ conversion. Mansoor Al-Shamari, Nejat Rahmanian, Iqbal Mujtaba, Ahmed Khodary, Han Dong Suk, Fathima Sifani and Izza Fatima
P-SCP 9	#63. A Study on CO ₂ Sorption Coefficient and Compatibility of Blend Cellulose Acetate Butyrate Membrane. Maryam Al-Naimi, Mariam Dalloul, Ruqaya Al-Sada and Zeinab Jawad
P-SCP 10	#80. Evaluation of microplastic sources, pathways, distribution, fate, and legislations in the ArabianGulf and Gulf of Oman. Amr Nasr Fekry and HazimQiblawey
P-SCP 11	# 203. Optimized reduce greenhouse gas emissions in Qatar football stadiums: strategy and mechanism. Mustapha Alaoui and Fahad Abdullah Thani Al zaraa
Category	<i>Oil and Gas Production</i>
P-OGP 1	#178. Harnessing Geothermal Power: A Key to Sustainable Decarbonization. Nesreen Elraeid
P-OGP 2	#162. Concurrent Degradation of Citrus and Olive Waste for Lipid Accumulation by Oleaginous Bacteria. Javeeria Iqbal, Zulfiqar Ahmad, Azeem Khalid, Shahid, Mehmood, Muzammil Anjum, Hira Saleem, Sana Akbar, Rida Abbasi, Konain Khurshid, Nawayab Nadeem, Tahir Fazal and Naureen Zainab
P-OGP 3	#11. Investigating the Impact of Temperature on the Properties of Petroleum Refining Products. Abdel Hakim Kherief Nacereddine and Omar Kholai
P-OGP 4	#161. Prompting Enhanced Methanogenesis Through Co-digestion of Fast-Food Waste and Sewage Sludge: Effect of inoculum carrier on bioenergy production. Iman Fatima, Dr Muzammil Anjum, Samia Qadeer, Sahar Saleem, Rab Nawaz, Zulfiqar Ahmad and Tahir Fazal
P-OGP 5	#129. Sustainable Production Of Boron-Regulated Irrigation Water From Seawater Reverse Osmosis Brine For Hydroponic Systems. Sifani Zavahir, Tasneem Elmakki, Majeda Khraisheh, Maryam Al-Ejji, Sabla Alnory and Dong Suk Han
P-OGP 6	#130. Development Of Innovative Membrane Materials With Molecular Recognition For Efficient Lithium Recovery From Liquids. Adil Abdulhameed, Haseeb Tariq, Nahar Anwar, Usama Javed, Sebastian Cortez, Sifani Zavahir and Dong Suk Han
P-OGP 7	#90. Heat Transfer Enhancement of Multiple Nanofluids in Shell & Tube and Plate Heat Exchanger applications. Yara Soltan, Mustafa Nasser, Fares Almomani and Sagheer Onaizi
P-OGP 8	#153. High-Performance LMO/LAO Electrode for Efficient Lithium Recovery in Membrane Capacitive Deionization Systems. Tasneem Elmakki, Sifani Zavahir, Hokyong Shon, Guillermo Hijos Gago, Hyunwoong Park and Dong Suk Han

P-OGP 9	#50. Insights into Mineral Scale Inhibition Mechanism and Scale Inhibitor Optimization: The Use of Fluorescent Scale Inhibitors.. Nadhem Ismail and Ali Alshami
P-ET1	#108. Direct Utilisation of captured CO ₂ for enhanced acetic acid production: techno-economic and environmental assessment. Mohamed Abou Nada, Ahmed Alnouss, Noor Yusuf, Fares Almomani and Tareq Al-Ansari
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P-ET3	#186. Innovative CO ₂ Capture with Amine Electrolytes and Oxygen Vacancy Enhanced Nanocomposites for Advanced Electrochemical Conversion. Abdul Hakeem Anwer, Assem Mohamed, Maroua Sadaoui and Abdelbaki Benamor
P-ET4	#165. A Review on Commercialization Readiness of Carbon Capture and Utilization (CCU) Technologies. Amzan Alsabri and Dr.Fadwa El Jack
P-ET5	#194. Advanced Corrosion Prediction in MDEA Systems: A Physics-Informed Neural Network (PNN) Approach. Ahmed Talkhan, Abdelbaki Benamor, Fadwa Eljack and Aboubakr M. Abdullah
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P-G2P 3	#62. Solar Chemical Looping Reforming of Methane Using Metal Oxide-Driven Redox Reactions. Rahul Bhosale
P-G2P 4	#59. The electro-oxidation of small organic molecules on Pd-based catalysts. Bruno Rossi, Henrique Meirelles, Kamel Eid and Hamilton Varela
P-G2P5	#172. Decarbonization of conventional methanol production plant, Razan Khawaja, Mohamed Sufiyan Challiwala and Nimir Elbashir