

SPE International Health, Safety, Environment, and Sustainability Conference and Exhibition 2024

Abu Dhabi, United Arab Emirates
10 - 12 September 2024

Volume 1 of 2

ISBN: 979-8-3313-0503-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by Society of Petroleum Engineers
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact Society of Petroleum Engineers
at the address below.

Society of Petroleum Engineers
P. O. Box 833836
Richardson, Texas 75083-3836

Phone: (800) 456-6863
Fax: (972) 952-9435

books@spe.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

RESOURCE MANAGEMENT: WATER AND WASTE MANAGEMENT I

E&P Operations in Water Stressed Areas: An Approach to the Identification, Selection and Implementation of Initiatives for a Sustainable Water Management, Withdrawal Reduction and Water Valorization	1
<i>A. Moglia, L. Bracco, M. Chiolo, M. Buffagni</i>	
Drilling Fluids Waste to Sustainable Resources	14
<i>Tariq Hamdan, Mouza Al Nuaimi, Mohamed Alhammami, Carmelo Arena, Tijana Kostic</i>	
Carbon Light Brine Plant by Using High Efficiency Continuous Ion Exchange Technology to Treat Unusable Brackish Water for Sustainable Water Management.....	24
<i>M. Muhammad, B. Gendron, H. Samouei</i>	
Circular Economy Practices Through Water Management.....	42
<i>Fahad A. Albusaimi, Mohammad S. Al Dabbous, Rakan Al Yateem, Francois P. Pretorius</i>	
Ipieca Method for Assessing Global Flood and Drought Risk Tools for Your Area of Operation.....	48
<i>P. G. Hill, I. Sealy, J. Wong</i>	

BUILDING A SUSTAINABLE FUTURE THROUGH ENVIRONMENTAL PRACTICES

Assessing and Valuing Impacts on Natural Capital: A Whole-O&G Company Approach	56
<i>I. Najera, T. Ostolaza, F. Rodríguez-López, D. Álvarez, J. D. Miranda, C. Ibáñez</i>	
The Circular Economy of Safety: Linking Incident Prevention, Operations Excellence and Sustainability in Oil & Gas Operations	65
<i>Muhammad Tayab, Maryam Lari, Pravin Kumar, Visal Shah, Hamda Al Suwaidi, Abdulla Al Saif, Saud Al Hammadi</i>	
Empowering Sustainable Energy: A collaborative Initiative in Solar Power Installation in Algeria.....	72
<i>Mehdi Medjiteni, Mohamed Kelkouli, Mohamed Said Si Abderrahmane</i>	
Utilization of Stripped Sour Water as Feed to DM Plant.....	81
<i>Fatema Alnuaimi</i>	

HUMAN PERFORMANCE AND HUMAN FACTORS

Human Performance in Practice: Our Refreshed Approach to Safety	90
<i>Shariq Abbasi, Fons Claessen, Robin Bryden</i>	
Holistic Approach to Human Performance Improvement	107
<i>J. C. Lopez, A. Alvarado, A. Villalobos, H. A. Rodriguez, I. M. Murcia, M. E. Arango, M. C. Duran, F. A. Aguilera, C. Botero, G. Miranda, W. Tirado, E. J. Vega</i>	
Safety Critical Task Analysis (SCTA): Identifying & Reducing Opportunities for Human Error.....	121
<i>S. Layton, T. Garner, M. Abdul Karim</i>	

The Application of Behavioral Science for Safety: A Feasibility Study	132
<i>K. Morton, R. Comanescu, R. Saim, J. Lowry, M. Rusu, C. Luca, A. Necula, A. Gradinaru, G. Dragoi, A. Aldea, V. Enache, S. Briquet</i>	

INDIVIDUAL AND COMMUNITY HEALTH PROMOTION

Moving with the Times: Incorporating Emerging Health Threats to Progress Industry Leading Health Performance Indicators	151
<i>Joan Patterson, Kirsty Walker, Wendy Poore, Guillermo Gomez Diaz</i>	
Reversal of Type 2 Diabetes Using Nutrition and Lifestyle Interventions	170
<i>Kingsley Owosela</i>	
Safeguarding Communities: Industrial Hygiene Strategies for Sulfur Dioxide Exposure Emergency Management in Wellhead Blow-Off Incidents	176
<i>Sayed Iqbal, Noura Al Kaabi, Zuleykhha Rasulova</i>	
Effectiveness of Tuberculosis Screening to Detect Active Tuberculosis and Prevent Workplace Transmission Among Workers in Congregate Living Settings in Papua New Guinea	185
<i>Nirven Kumar, Cain Kapiri</i>	
One-Plate Meals for Remote-Site Workers.....	193
<i>H. T. Al Msharrafawee, J. O'Keeffe</i>	

BIODIVERSITY AND ECOSYSTEM SERVICES

Application of Mitigation Hierarchy During the Development Phase of Tilenga Project, Uganda.....	200
<i>Olwa Richard, Macronald Pauline, Ochanda David, Angubo Richard</i>	
Systemizing Biodiversity: Developing Framework of Managing Biodiversity to Achieve Net Positive Impact – Tuban GRR Project Case Study	215
<i>S. Suripno, R. Perdhani, J. Permadi, R. Darmawan</i>	
Understanding Nature Related Challenges and Opportunities in O&G Company	230
<i>N. Kawaguchi</i>	
Securing and Enhancing Avian Diversity Around Onshore O&G Facilities to Improve Biodiversity Restoration: Artificial Nest Box Provision in Ghana.....	238
<i>J. Sali, E. Pavanel, A. O. Ahenkorah, S. M. Y. Mawuyra, L. Allotey, G. C. D Estrada</i>	
Environmental Genomics (eDNA) in Comparison with Conventional Methods for Biodiversity Field Surveys: Case Studies from Italy and Albania	250
<i>Sonja Kaulbarsch, Francesca Diana, Gustavo C. D. Estrada, Elena Pavanel, Vere Ross-Gillespie, Jason Sali, Alessia Marsicano, Valerio Saladini, Davide Gerone, Giusi Gioia, Sara Sanetti, Maurizio Florio, Marta Cassi, Giovanni Marcantonio, Silvia La Gala, Spase Shumka</i>	

ENVIRONMENTAL MANAGEMENT SYSTEMS II

Comparison of Risk Calculation Methods for Offshore O&G Produced Water Discharges	267
<i>K. Cailleaud, O. Ponthieux, C. H. Chaineau</i>	
Oil and Chemical Mapping & Spill Risk Assessment for Offshore Vessels	277
<i>A. Springardi, P. Nunzi, R. Negoi, L. Flori</i>	

ENVIRONMENTAL MANAGEMENT SYSTEMS I & II

Increasing the Reliability of Oil Spill Contingency Using Hair Waste Used as Absorbent Pad Material	287
<i>Teguh Rachman Hidayat, Nadir Faisal Almadani, Jalu Waskito Nugroho, Abdul Rozak Baswedan, Guntur Putra Pranada, Rudi Hartono, Sigid Setiawan</i>	

USING TECHNOLOGY TO CULTIVATE A CULTURE OF LAND TRANSPORTATION SAFETY

Improving Driving Behaviors Using AI-Enabled Dashcam Technology.....	302
<i>Alejo Ordonez, Eric Englehardt</i>	
Enhancing Road Safety Through Driver Fatigue Monitoring Systems: An HSE Perspective	313
<i>Z. S. Al Shaqsi</i>	
Risk Space and Driving – Elementary Failures in Understanding.....	320
<i>T. G. L. Hudson, P. A. R. Hudson, P. T. W. Hudson</i>	
Transforming Driver Safety Training in the Oil and Gas Industry Through Virtual Reality	331
<i>Hamad Al Shidhani, Sulaiman Al Sulaimi, Waeel Atiah, Ally Al Shidhani, Willem Peuscher</i>	
Implementing Driver Training Technology to Simulate Dangerous Conditions and Real World Hazards on the Road in a Safe Environment	340
<i>Adam North, Alejo Ordonez</i>	
Development of a Six Degrees of Freedom Simulator for Desert Driving Training	349
<i>Hamad Al Shidhani, Sulaiman Al Sulaimi, Waeel Atiah, Ally Al Shidhani, Dick Nijen Twilhaar, Sayed Sarwary</i>	
Driving & Journey Management Transformation, Systematic Automotive Risk Reduction Framework.....	358
<i>Azwen. Budi, BuKhamseen. Raid</i>	

APPLICATIONS AND LESSONS LEARNED FROM INDUSTRY PRACTICES

Are Process Safety Standards and Practices Ready for the Energy Transition?	368
<i>M. Scanlon, G Woodford</i>	
Advances in Fabrication Site HSE Management Through IOGP 577 Framework	376
<i>N. Vassiliev, I. Penney, T. Parsells, R. White, M. Zerafa</i>	
Focusing Industry Learning on Prevention of Fatalities and Life-Changing Injuries.....	391
<i>Kirsty Walker, Wendy Poore, Andrea Parker, Albert Ploeg, Ken Shaw, Darren Swisher, Birte Meier</i>	
Insights and Learning from IOGP Global Upstream Process Safety Event Data	411
<i>D. Fargie, K. Walker, W. M. Poore, S. Norton, I. Husain, L. Decarli, C. Clover</i>	
Uncovering Synergies: A Comprehensive Case Study on Incorporating API Q2 into an Upstream Provider's Integrated Management Framework with a Focus on ISO14001 and ISO45001	426
<i>A. Akram, B. Affandi</i>	

ENGAGING ENGINEERS IN THE NET ZERO CHALLENGE - PURE EPOSTER

A Comprehensive Life Cycle Assessment of Hydraulic Fracturing	435
<i>Abdul Muqtadir Khan, Christine Anderson, Rasika Prabhu, Anna Beletskaya, Pearl Kuan, Samuel Danican, Farshid Mostowfi</i>	
The Impact of Salinity on H ₂ /brine Interfacial Tension at Natural Reservoir Conditions: Implications for Hydrogen Geo-Storage	452
<i>Muhammad Ali, Hussein Hoteit</i>	
Creating Value Through Energy Transition	458
<i>Muhammad Nadeem, Majeed Mohammed Al Harbi, Sultan Ibrahim Al Harmi, Majid Abdul Majeed Abdulla</i>	

BUILDING ENGAGEMENT AND OWNERSHIP IN SAFETY PRACTICES

Transforming Reactive into Proactive Monitoring Through Effective Lessons Learned and Enhanced Safety Culture to Prevent Incidents	465
<i>P. Kumar, A. Veluri, S. V. Palagummi, S. M. Al Dhaheri, A. Bazuhair, S. Surendran</i>	
Structural Understanding Underlying the Safety Culture Ladder.....	473
<i>T. G. L. Hudson, P. A. R. Hudson, P. T. W. Hudson</i>	
Work Safe, No Regrets – A Campaign to Encourage People to Intervene in Case of Unsafe Conditions	484
<i>D. Scotti</i>	
Decision Making in Organizations: New Research and Improvement Strategies	496
<i>T. Meier, K. Bell, T. R. Krause</i>	
Eni's Play&Learn as a Learning Tool for Enhancing HSE Culture	503
<i>L. Boccitto, G. Nicotra, M. Dal Toso, G. Daulova, L. Savioli, S. Tindiglia</i>	

AIR EMISSIONS ABATEMENT STRATEGIES AND TECHNOLOGIES

Application of Drilling Technologies to Manage Emission Footprint During Well Construction.....	510
<i>A. Nifantov, A. Ruzhnikov, M. Corona, R. Alharthi, A. N. Hussein, K. J. Chandran</i>	
DRA Chemical - A Game Changer in Reducing GHG Emission by Reduction of Pumping Power for Long Crude Oil Pipelines.....	517
<i>Kousik De, Himanshu Mehta, Nitin Pasricha, Yaser Al Kuwaiti</i>	
Thermodynamics Behind Rigorous Flared Gas Monetization Analysis	529
<i>G. A. Hay, A. E. Pomerantz, K. R. Pfeiffer</i>	
The Application of a Parametric Model to Track Methane Emissions from Flares – New Insights from a Global Deployment Programme	537
<i>P. Evans, J. Lowe, D. Newman, M. Washington, C. Tao, G. Bottino</i>	
Implementation of Artificial Intelligence for Continuous Greenhouse Gas Monitoring and Leak Detection	547
<i>Blake Gendron, Ammar ElHaggaz, Majid Al Qassabi</i>	

Eni's Fugitive Emissions Reduction Target Achieved while Improvement Efforts Continue with OGMP Gold Standard	556
<i>E. Hamdy, L. Colella, P. Zonta, R. Cislaghi, I. Macci</i>	

EMBEDDING SUSTAINABILITY ACROSS THE ORGANISATION

Impact of ESG on Value Creation for Energy Company: A Case Study on INPEX Corporation.....	565
<i>Sivaneswaran Kamala Kannan, Mohd. Nabhan Fahmi bin Zailani, Syed Yaser Tanvir, Santa Kumar Teaga Rajan</i>	
Improving Diversity and Inclusion Performance Through the Innovative Application of Technology and Data.....	579
<i>C. Sarmiento, M. Al-Qubaisi, L. O. Djibo, J. Packham</i>	
Empowering Stakeholders to Become Sustainability Change Agents.....	588
<i>S. Sharma, N. McClenaghan, J. Ruas, D. Hategan, C. Leith, R. Fox</i>	
Double Materiality Assessment, Implications for the Oil and Gas Sector.....	606
<i>Gautam Dhodhi</i>	
Corporate Sustainability Culture in Oil and Gas Industry – Enablers and Challenges.....	619
<i>A. E. Fryc, C. Marshall Brown</i>	

LOWER CARBON STRATEGIES I

Reconciliation of Source-Level Methane Emissions Measurement with Site-Level Measurement Using a Drone-Mounted Sensor: New Insights for Standardisation and Global Deployment.....	635
<i>I. Stocker, P. Evans, M. Jupp, R. Bose, B. Smith</i>	
Decarbonisation Innovation Approach to Address Global Methane Pledge	642
<i>F. AlRaeesi, D. Bandopadhyay, S. AlMazrouie</i>	
Screening Depleted Reservoirs and Aquifers for CO ₂ Geo-Sequestration, and Assessing Implications for Converting an Offshore Platform for Carbon Capture and Storage Project	655
<i>A. Zeir, M. A. Aboelseoud, M. Mehrem</i>	
Comprehensive Study of Carbon Capture, Utilization, and Storage (CCUS) in the UAE: A Step Towards Sustainable Future.....	672
<i>M. Alqaydi, A. Almazrouei, A. Alameri</i>	
Sealing Efficiency of Caprock in Fractured Tight Reservoirs Considering Multi-Migration Mechanism Simulated using Improved EDFM	694
<i>Luming Shi, Peng Song, Xurong Zhao, Jian Shi, Baishun Shi, Xin Zhao, Abeeb A. Awotunde, Elsa Maalouf</i>	
Accelerating to Net Zero Goal Through Efficient Methane Emissions Management	706
<i>D. K. Chauhan, I. Alkatheeri, J. J. Saceda</i>	
Methane Emissions Quantification: An Important Challenge Taken up to Strengthen our Reporting and Identify Further Areas of Improvement	716
<i>I. Macci, L. Colella, R. Cislaghi, M. Vettraino, P. Zonta, E. Hamdy</i>	

LOCAL CONTENT THROUGH THE PARTICIPATION OF LOCAL STAKEHOLDERS

Sustainable Operations through Collaborative Initiatives with Local Indigenous Communities: Case Studies in North America	726
<i>Denise Dodds, Deidre LeFevre</i>	
Empowering Futures: Unveiling Indigenous Entrepreneurship Insights Through the Capability Lens for Social Development.....	733
<i>Leslie Lovo</i>	
Monitoring Sentiment Through Natural Language Processing	741
<i>J. Wright, J. Brusset</i>	

VOLUME 2

Developing Workforce Involvement in Sustainability: Local Community Initiative Case Studies.....	748
<i>J. Lerale, K. Jovaisaite, C. BellasBourdin, M. Imran, Z. Akhmadieva, E. Burlacu</i>	

OPTIMISING RISK OVERSIGHT: STRATEGIES FOR ENHANCED RISK MANAGEMENT

Quantitative Risk Assessments - Why They Fall Short and How to Use Them Better.....	756
<i>P. A. R. Hudson, T. G. L. Hudson</i>	
Operationalizing Risk Management	770
<i>R. Bulgachev, G. Kelso</i>	
Riskwashing Identification and Minimization.....	784
<i>N. W. Ritchie, A. S. Simmons</i>	
Understanding Challenges Managers Face in Enforcing Procedures to Reduce High Incident of Accidents Occurring in the Oil and Gas Industry	798
<i>N. George</i>	

INSIGHTS FROM CASE STUDIES: OPERATIONALISING SAFETY

Shell's Strategic Competence Development: Ensuring Capability and Capacity Building Across the Global Operational Safety Skill Pool	808
<i>Allan Gosselin, Shariq Abbasi, Angela Richards</i>	
Non-compliance in Complex Operations - A Case Study Led Discussion	820
<i>T. G. L. Hudson, P. A. R. Hudson, P. T. W. Hudson</i>	
A Structured Approach for Weeps and Seeps Identification, Verification and Control	835
<i>G. Nicotra, A. Ripepi, A. Tortora, L. Ponteggia, S. Cincotta, N. Pozzi, D. Lombardi, A. Rocchi, E. Pisani, A. Fani</i>	
Safe for Life: An HSE Campaign Case Study	853
<i>Jodie Lowry, Ana Leticia S. Menezes, Jorge Gainza</i>	
HSE from Plans to Reality	860
<i>Y. Al Hinai, A. Al Ghafri</i>	

RESOURCE MANAGEMENT: ENERGY, WATER, AND WASTE II

Novel Approach on Utilizing Reverse Osmosis Rejected Saline Stream for Mangrove Trees Restoration & Water Conservation Management	867
<i>Abdullah Alwarthan, Sarah Alaskar, Abdulaziz Mulhim, Maha Hammad, Khalid Bin Rubayan, Omer Alofaisan</i>	
Thinking Differently – Energy Optimization and Flaring Reduction Approach Improvising Sustainable Production	876
<i>S. M. Ahmed, A. Al Ketbi, G. Al Katheiri, M. K. Al Mazrouei, M. Aslam, Y. Alhammadi, F. Haider</i>	

HUMAN RIGHTS AT THE HEART OF SUPPLY CHAIN AND COMMUNITY ENGAGEMENT

Mapping, Monitoring Evaluating, Engaging Stakeholder and Sharing Related Data Throughout the O&G Lifecycle, in Different Countries, for Different Projects, with the Same Web Based Tool.....	884
<i>Roberto Bossi, Cristina Malingher, Marco Davide Lupinetti</i>	
Case Study - Managing Supply Chain Labour Rights Risk in Our North Sea Business	898
<i>A. Young Lai</i>	

NAVIGATING SOCIAL RISK FOR PROJECT SUCCESS

Context Mapping — A Digital Platform to Visualize Events and Trends, Anticipate Outcomes, Accelerate Decision-Making	905
<i>J. Wright, J. Brusset</i>	
ADNOC's Journey to Turn Social Risk Management into Action	915
<i>C. W. F. Luca, K. C. van Cranenburgh, J. D. Correa Aguirre</i>	
Managing Societal Aspects of Exploration & Production Operations in Sensitive Area: Case in Mahakam Block	927
<i>Suripno, Frisca Arini, Riana Rahmaingrum, Ahmad Yuli</i>	

EMPOWERING SAFETY PERFORMANCE THROUGH TRAINING AND MENTORING

How Gamified HSE Training Solutions Enhance Employee Engagement: A Middle East Case Study on HSE Performance Improvement	937
<i>M. Pepe, M. Oernskar, S. Ahmed</i>	
Reshaping Stop Work Engagement: A Scenario-Specific Approach with Stop Work Drills	948
<i>Abdelsalam Yasseen, Lamberto Nonno, Diana Lopez Andrade</i>	
Seamless Synergy: Exploring the Interconnection in Learning from Normal Work Tools.....	959
<i>Abdelsalam Yasseen, Lamberto Nonno</i>	

APPLICATIONS OF TECHNOLOGIES IMPACTING SAFETY PERFORMANCE

Video Analytics for Workplace Safety.....	969
<i>Lorenzo Corallo, Angelo Spingardi</i>	

Integrated, Remote, Digital – Confined Space Monitoring in IR4 982
Elie Dahir, Sameh Schoeib

Digital Lockout/Tagout Tracking and Control System 991
H. A. Khawi, A. M. Asmary

WELLBEING, MENTAL HEALTH, AND FATIGUE

Enhancing Workforce Wellbeing: Implementing A Global Mental Health First Aid Program 998
B. Fleming, C. Smith, A. Ackerman, J. O'Keeffe

Bridging the Gap in Mental Health Support Following a Disaster: A Corporate Social Responsibility and Humanitarian Approach 1004
N. Attard, L. Sarieddine

The Psychosocial Factors of Occupational Stress of Oil Exploration Workers 1017
Ya. A. Korneeva, N. N. Simonova

Understanding Psychological Safety to Enhance a Better Working Environment 1026
Salim Al Riyami

ENVIRONMENTAL MANAGEMENT

Contributing Towards the Global Biodiversity Framework (GBF) in a Transitioning Energy System 1034
J. W. Wong, Y. J. Castillo

The Environmental Dimension in the Petroleum Engineering Curriculum at a Global Level:
Importance of the Holistic Education of Professionals Who Will Manage the Energy Industry 1040
Andres F. Yrigoyen, Alfonso Quaglia, Luigi Saputelli

CO2 Estimation Tool – Carbon Footprint of Offshore EPCI Projects in the Digital Era 1053
A. Spingardi, P. Nunzi, R. Negoi, T. Zignani

Implementation of a Management System to Mitigate Carbon Dioxide Emissions from Light Vehicles Transportation Through Improved Driving Behavior in the State of Kuwait 1060
B. M. Al-Hadhrami

EPOSTER SESSION 4 - STATION 6

PAM Water Salinity Evaluation to Enhance Deep-Water Disposal Strategy in Amin Formation 1074
Omar AL Isaee, Dmitrii Smirnov

ELEVATING PROCESS SAFETY AND BARRIER MANAGEMENT

Measuring Process Safety Culture and Identifying Gaps Through PSM Element Focused Interviews 1083
Mohammad Kazmi

Process Safety & Asset Integrity Key Performance Indicators (PS&AI KPIs): An Operative Model for Strengthening the Asset Safety Barriers 1097
G. Nicotra, L. Decarli, L. La Rosa, A. Tortora, A. Nocerino, S. Taddei, L. Ponteggia, A. Mangione, M. Bosco, R. Padovani

Building Effective Bowties Through Various VAP Cycle Stages to Operationalize Them for Frontliners for Effective Barrier Management	1106
<i>R. V. Lodha, R. Nambi, J. Selveraju</i>	

Efficient Well Barrier Management a Key Contributor to HSE and Sustainability- An Offshore Experience.....	1115
<i>M. Srivastava, M. Gouda, A. Alhosani, M. Al Saadi, H. Al Hammadi</i>	

INSIGHTS FROM CASE STUDIES: LESSONS LEARNED AND ROUTINE OPERATIONS

Safe to Start vs Stop Work when Dangerous: Can we do Better than Stop Work?	1124
<i>T E Osborne, E J Forsyth</i>	

New Methods for Learning from Incidents Involving Human and Organizational Performance	1140
<i>N. W. Ritchie, A. S. Simmons</i>	

The Future of Field Operations: Unmanned Aerial Systems Innovating Safety and Efficiency in Khurais	1159
<i>Abdulla Mashan Alhamraa, A. O. Shahrani, B. N. Dossary, S. N. Obayah</i>	

STRATEGIC RISK MANAGEMENT IN OPERATIONS

Interaction Between Skill and Risk Spaces in Operational Risk	1167
<i>T. G. L. Hudson, P. A. R. Hudson, P. T. W. Hudson</i>	

Natech (Natural Hazard Triggering Technological Disasters) Events Risk Management: An Operational Approach.....	1175
<i>G. Nicotra, E. Rossi, L. Decarli, V. Di Talia, A. Tugnoli, V. Cozzani</i>	

Efficient Tool for Bias-Free HSE Management System Audits.....	1189
<i>W. Tiengtrong, C. Klunngien</i>	

LOWER CARBON STRATEGIES II

Delivery of Methane Measurement Systems for Production Assets Aligned with OGMP 2.0 Levels 4 and 5	1201
<i>Jon Lowe, Peter Evans, David Newman</i>	

Accounting and Monitoring of Methane Emissions at an Oil and Gas Condensate Field: Challenges and Lessons Learned	1210
<i>N. Jallais, R. Mukangaliyev, N. Kuzembayeva, A. Nurmanova</i>	

Developing Strategic Assessment on Methane Emission Management in PERTAMINA	1217
<i>R. Perdhani, T. R. Yuanda, S. Suripno, J. Permadi, R. Darmawan</i>	

NET ZERO: PRACTICAL STEPS FOR ORGANISATIONAL TRANSITION

Decarbonization Technologies Screening for Enabling Net Zero in Onshore Oil and Gas Operations.....	1232
<i>Krish Ravi Ravishankar</i>	

Strategical Resilient Approach Leading Towards Sustainability and Net Zero	1242
<i>S. M. Ahmed, A. Al Ketbi, G. Al Katheiri, M. K. Al Mazrouei, M. Aslam, F. Haider, M. S. Ahmed, Y. Alhammadi, M. Amir</i>	

Estimation of GHG Avoided Emissions: A Way to Quantify How Energy Transition is Enabled.....	1251
<i>F. Chionchio, P. Sclafani, L. Joli, M. Rigolio</i>	

Accelerating Industrial Decarbonization: Harnessing Emerging Technologies and Digitalization for Net-Zero	1261
<i>Renato Finol</i>	

SAFETY LEADERSHIP AND CULTURE

A New Safety Culture Assessment Model: Understanding Employee Engagement in a Company's Safety Program	1270
<i>T. Knodel</i>	

Eni Behavioral Safety & Environmental Coaching: An Approach to Increase Awareness and Enhance HSE Culture.....	1277
<i>L. Savioli</i>	

INNOVATION IN INDUSTRIAL HYGIENE PRACTICE

Novel Approach for NORM Scale Removal	1287
<i>K. Salahat, G. Correia, S. Altamimi, A. Ibrahim, G. Ambrosi, S. Cosendey, Rüdiger B. Richter, G. Evangelista</i>	

Study on the Efficacy of Wearable Biosensors and 4IR Technologies in Enhancing Heat Stress Mitigation Strategies in the Oil and Gas Industry	1299
<i>Abdullah BinZiad, Abdulmajeed AlDughaither, Fahad Alshammari, Faisal Bukhari</i>	

The Functional States' Dynamics During the Shift Period of Oil Exploration Workers with Different Work and Rest Regimes as a Marker of Their Psychological Safety	1307
<i>N. N. Simonova, Ya. A. Korneeva</i>	

Encompassing Health Protection in Management of Naturally Occurring Radioactive Materials (NORM) in Upstream.....	1317
<i>A. N. Khalid, Z. Rasulova, N. H. Al Kaabi</i>	

INNOVATIVE ENVIRONMENTAL SOLUTIONS AND NEW TECHNOLOGIES

Continuous Measurement of Methane Emissions from Turbines and Compressors Using Predictive Emissions Monitoring (PEMS) Technology – New Insights from a Global Deployment Programme	1327
<i>P. Evans, J. Sandvig, J. Churchill, J. Lowe, D. Newman, M. Weel</i>	

Maximizing Value Through the Adoption of Technologies to Ensure Near Zero Methane Emissions.....	1336
<i>Adnan A Madhi, Vijaya Bhaskar Reddy, Mahmoud Abdelmobdy, Khalid Yousef Al Awadhi, Pierre Bouilhol, Marie Morazzani, Amal Omar AlAwlaqi, Deo Kumar Chauhan, Angela Fandino, Paramjeet Singh</i>	

Let's Talk Flare – Centralized Flare Control and Management for Upstream Facilities. Flaring Diagnostic Tool by Deploying Mathematical Model.....	1351
<i>S. M. Ahmed, A. Al Ketbi, G. Al Katheiri, M. Aslam, F. Haider, Y. Alhammadi, M. S. Ahmed, M. Amir</i>	

See the Invisible Through Drone Base Acoustic Imager Technology	1360
<i>Abdoulelah N. Hannabi, Kazem H. Musabbeh, Salah Alzahrani</i>	

ENGAGING ENGINEERS IN THE NET ZERO CHALLENGE

- Charting Oman's Path to Green Hydrogen: Embracing Opportunities and Overcoming Challenges 1372
H. A. Al-Khayari, M. E. Farrag, M. A. Elgenedy

ADVANCEMENTS IN AI TECHNOLOGY AND DIGITAL SYSTEMS

- Deployment of an Integrated Management of Change Platform Using Gates Concept and Machine Learning Prediction for Effective Change Evaluation: A Case Study 1391
H. Bajwaifer, M. Aldawood, A. Alzahrani, H. Abdul Mohsen, B. Alhussain, A. Al-Hajri
- Leaping into the Future: Artificial Intelligence for Health, Safety and Environmental Management 1400
Ali Osman, Cecilia Tossoni, Edward Kotochigov, Arijit Paul
- Digital Reporting Solution Delivers a New HSE Observation & Intervention Every Minute! 1413
Amit Pamnani, Bharat Bhushan, Mohammed Abdulsalam Albanna, Dhiman Dey
- Leveraging RTLS Applications for Enhanced Safety and Efficiency in Oil and Gas Organizations 1434
Elie Dahir, Sameh Schoeib
- Transforming Safety and Operational Excellence: ADNOC's Implementation of an Integrated Work Management System 1442
Juzar Saleem
- Revolutionizing Tool Management in Oil and Gas Facilities 1454
Elie Dahir, Sameh Schoeib

HEALTH DIGITALISATION

- The Benefits of Nurse Telemedicine Triage: A Case Study from North America 1463
C. Koulache, B. Fleming
- A Framework for Predicting Pandemic Severity and Mortality Using Generative AI and LLMs 1472
Sarafudheen M. Tharayil, Arwa Alnajashi, Abdullah Al-Ahamri, Marwa Shahada
- Investigation of Boiler Feed Water Oxygen Scavenger Adverse Results 1483
Shulaiyi Bu, Y Ahmed

Author Index