



# Recent Advances in Geophysical Reservoir Characterization and Monitoring of CO<sub>2</sub> Sequestration in Carbonate Reservoirs

21–23 May 2024 • Abu Dhabi, UAE



Image Credit:  
Danilo Chamorro Riascos using ChatGPT

# TECHNICAL PROGRAMME

## SPONSORS

DIAMOND



DELEGATE GIFT



ZERO IN™

COFFEE BREAK



## DAY 1 - TUESDAY 21 MAY 2024

Venue: Crystal Ballroom A, Sofitel Abu Dhabi Corniche

08:00 - 09:00	Registration open onsite
09:00 - 09:05	HSE Address by Hotel
09:05 - 09:10	Welcoming by Co-chairs
09:10 - 09:15	Welcoming by SEG
09:15 - 09:35	Opening by ADNOC
09:35 - 09:55	Opening by PDO
09:55 - 10:10	Coffee Break - 15 min
10:10 - 11:40	<p><b>Panel 1</b>  <b>Making CO<sub>2</sub> Storage Projects Commercially Feasible: CCS project Alone is a huge CAPEX. What Technical Options do we have for Vertical Integration to Offset the Costs?</b></p> <p><b>MODERATOR:</b>            Satya Perumalla, GeoMechanics Region Leader (Baker Hughes)  <b>Panelist details to be shared soon</b></p> <p>11:40 - 11:50 <b>Committee and Sponsor Recognition</b></p> <p>11:50 - 12:00 <b>Group Photo</b></p>
12:00 - 13:00	Lunch - 1hr
13:00 - 14:20	<p><b>Session 1</b>  <b>CASE STUDIES AND LESSON LEARNED PART 1</b>            Session Chairs: Pierpaolo Marchesini (BP), Colin Mcbeth (Heriott Watt University)</p> <p><b>KEYNOTE: Passive Downhole DAS Monitoring of Geological Carbon Storage: CO<sub>2</sub>CRC Otway Experience</b>            Roman Pevzner (Curtin University)</p> <p><b>KEYNOTE: Fiber Optic and Seismic Monitoring in a Saline Carbonate Aquifer Carbon Capture Storage Well</b>            Jane Mason (ADNOC)</p> <p><b>Addressing the Desertic Carbonate CCUS Monitoring Challenge: Lessons Learnt from an Omani use case</b>            Messamah Mohamed Yakoub (SpotLight earth)</p> <p><b>Breaking the Norm by Storing CO<sub>2</sub> in Depleted Carbonate Reservoir: Integrated Geophysics Modeling in Determining Monitoring Plan for N Field, Sarawak, Malaysia</b>            Khaireen binti Mohamad (PETRONAS)</p>
14:20 - 14:50	Discussion - 30 min
14:50 - 16:10	<p><b>Session 2</b>  <b>INNOVATIVE MONITORING TOOLS</b>            Session Chairs: Guillaume Cambois (ADNOC), Sandeep Chandola (PETRONAS)</p> <p><b>CO<sub>2</sub> Sequestration Reservoir Characterisation and Monitoring with Distributed Fibre Optic Sensing (DFOS)</b>            Anna Stork (Silixa)</p> <p><b>Nimble Seismic for Shallow Imaging and CO<sub>2</sub> Sequestration Monitoring</b>            Rodney Johnston (BP)</p> <p><b>Towards a Deep Learning Tool for Monitoring the CO<sub>2</sub> Plume Propagation in Carbon Storage Activities</b>            Carlos Augusto Soares Ferreira (Technical University of Denmark)</p> <p><b>KEYNOTE: Proposed Real-time Seismic Monitoring of Shallow CO<sub>2</sub> Contamination by Parsimonious Refraction+Surface Wave Interferometry</b>            Gerard Schuster (University of Utah)</p>
16:10 - 16:40	Discussion - 30 min
17:30 - 19:30	Welcome Reception

## DAY 2 - WEDNESDAY 22 MAY 2024

Venue: Crystal Ballroom A, Sofitel Abu Dhabi Corniche

09:00 - 10:30	<p><b>Panel 2</b>  <b>Risk Management in CO<sub>2</sub> Storage Projects: What can go wrong from Capture to Storage and what options we have to Control?</b></p> <p><b>MODERATOR:</b>            Beth Rees, Regional Manager (GeoSoftware)  <b>Panelist details to be shared soon</b></p>
10:30 - 10:50	Coffee Break - 20 min
10:50 - 11:50	<p><b>Session 3</b>  <b>REGULATORY FRAMEWORKS AND MMVS</b>            Session Chairs: Abdelraouf Badawi (ARGAS), Jamal Al Aamri (Oxy)</p> <p><b>KEYNOTE: Carbon Storage - Urgent Mandate to Leverage Knowledge and Technologies</b>            Ahmed Sabry (SLB)</p> <p><b>ADNOC Falaha CO<sub>2</sub> Sequestration Project, Approach to MMV Plan Development and Opportunities Identification</b>            Siqing Xu (ADNOC)</p> <p><b>Measurement, Monitoring and Verification (MMV) of CCS Projects: ENI Approach and way Forward</b>            Gianluca Dell'Elce (ENI)</p>
11:50 - 12:20	Discussion - 30 min
12:20 - 13:20	Lunch - 1hr
13:20 - 14:20	<p><b>Session 4</b>  <b>4D SEISMIC AND VSP</b>            Session Chairs: Beth Rees (Geosoftware), Shotaro Nakayama (INPEX)</p> <p><b>KEYNOTE: Enhancing 4D Seismic Monitoring in Desert Environments with the Smart DAS Uphole Acquisition System</b>            Ezzedeen Alfataige (Saudi Aramco)</p> <p><b>A Time-lapse FWI Study using Walkaway VSP data for CO<sub>2</sub>-EOR and CO<sub>2</sub> Sequestration Monitoring in Carbonate Reservoirs</b>            Takuji Mouri (Japan Organization for Metals and Energy Security (JOGMEC))</p> <p><b>4D Seismic Best Practices for Low Repeatability of Seismic Acquisition in Carbonate Reservoirs</b>            Mohamed Mahgoub (ADNOC)</p>
14:20 - 14:50	Discussion - 30 min
14:50 - 15:10	Coffee Break - 20 min
15:10 - 16:10	<p><b>Session 5</b>  <b>INDUCED SEISMICITY AND MITIGATION MEASURES</b>            Session Chairs: Saif Al-Azri (PDO), Jean-Philippe Avouac (Caltech)</p> <p><b>Real-time Passive Seismic Monitoring using DAS – Today's Solutions and Remaining Challenges</b>            Takashi Mizuno (SLB)</p> <p><b>The Crucial Role of Accurate Velocity Models in Microseismic Monitoring</b>            Ngoc-Tuyen Cao (Baker Hughes)</p> <p><b>Application Prospects of Microseismic Monitoring Technology in CCS Safety Monitoring</b>            Feng Heng (BGP)</p>
16:10 - 16:40	Discussion - 30 min

## DAY 3 - THURSDAY 23 MAY 2024

Venue: Crystal Ballroom A, Sofitel Abu Dhabi Corniche

09:00 - 10:20	<p><b>Session 6</b>  <b>STORAGE CHARACTERIZATION</b>            Session Chairs: Claire Birnie (KAUST), Satya Perumalla (Baker Hughes)</p> <p><b>KEYNOTE: Combining Geophysical Monitoring, Reservoir Modeling and Geomechanical Modeling for Optimized CO<sub>2</sub> Storage Operations</b>            Jean-Philippe Avouac (CalTech)</p> <p><b>KEYNOTE: Reservoir Characterization and Monitoring in Carbonates for CCS: An Overview of Occidental's Projects, Geophysical Technologies, and Challenges</b>            Matthew Burreson (Oxy)</p> <p><b>Seismic Inversion to Reduce Uncertainties in a Central Oman Saline Aquifer CO<sub>2</sub> Storage Site</b>            Fadi Aljiroudi (Petroleum Development Oman)</p> <p><b>Enhancing Carbon Capture Effectiveness: Integrated 4D Seismic and CSEM Approaches in Sarawak's Carbonate Platforms</b>            Nasim Ralim (PETRONAS)</p>
10:20 - 10:50	Discussion - 30 min
10:50 - 11:10	Coffee Break - 20 min
11:10 - 12:30	<p><b>Session 7</b>  <b>NON-SEISMIC METHODS</b>            Session Chairs: Hugo Ruiz (Reach Subsea), Andres Chavarria (Optasense)</p> <p><b>KEYNOTE: Reservoir Monitoring of CO<sub>2</sub> storage Applications by Measuring 4D Gravity and Seafloor Deformation</b>            John Even Lindgård (Reach Subsea)</p> <p><b>Multiphysics Framework for Carbon Storage Monitoring in Carbonate Reservoirs</b>            Daniele Colombo (Saudi Aramco)</p> <p><b>Monitoring CO<sub>2</sub> in Offshore Depleted Gas Fields by Seafloor Deformation and Time-lapse Gravimetry: the Case of the Morecambe Fields</b>            Hugo Ruiz (Reach Subsea)</p> <p><b>Monitoring Containment Integrity using InSAR and Data-driven Geomechanics for CCS in Carbonates: Learnings from Thermal Injection</b>            Kevin Bisdorn (Petroleum Development Oman)</p>
12:30 - 13:00	Discussion - 30 min
13:00 - 14:00	Lunch - 1hr
14:00 - 15:20	<p><b>Session 8</b>  <b>CASE STUDIES AND LESSON LEARNED PART 2</b>            Session Chairs: Amro Abdel-Halim (SLB), Manayer Esam Hasan Al-Abdullah (KOC)</p> <p><b>KEYNOTE: Geophysical Applications for Carbon Capture and Storage: Some Insights from Malaysia</b>            Sandeep K. Chandola (PETRONAS)</p> <p><b>KEYNOTE: Shallow Fault Leakage Monitoring with Distributed Fiber Optic Strain Sensing at the CO<sub>2</sub>CRC Otway Site, Australia</b>            Ziqiu Xue (Research Institute of Innovative Technology for the Earth (RITE))</p> <p><b>Balancing Surface Facilities &amp; Well Design to Comply with Cap-rock Integrity in CO<sub>2</sub> Storage Projects: Experience from UAE</b>            Satya Perumalla (Baker Hughes)</p> <p><b>Optimizing Real-Time Gas Injection for EOR and CCS Projects</b>            Jijun Miao (SimTech LLC)</p>
15:20 - 15:50	Discussion - 30 min