



TECHNICAL PROGRAMME

ROLE OF GEOSCIENCES IN CARBON STORAGE

19–21 Mar '24 • Mumbai, India



TECHNICAL PROGRAMME

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ENDORISING SOCIETY



Tuesday, 19 MARCH 2024

Venue: TBC

Day 1

08:00 - 09:00 Onsite Registration
09:00 - 09:05 Hotel Safety Briefing
09:05 - 09:15 Welcome by the Committee co-chairs
09:15 - 09:45 Opening Address by Madam Sushma Rawat, ONGC
09:45 - 10:15 Opening Address by Dr. Ranjit Rath, Oil India Limited
10:00 - 10:45 Discussion with Opening Speakers and Co-Chairs/Director NGRI

10:45 - 10:55 Appreciation Awards
10:55 - 11:05 Group Photo
11:05 - 11:25 Coffee Break - 20 mins

11:25 - 12:00 Keynote Presentation: Khalid Rufaii, Saudi Aramco
12:00 - 12:35 Keynote Presentation: Sandeep Kumar Chandola, PETRONAS

12:35 - 14:05 Lunch

Session 1 **CCUS POLICIES AND NATIONAL REPORTS**
14:05 - 15:25 Session Chairs: TBC

EU Initiaves , policies in Carbon Sequestration
Jonathan Pearce (BGS)
New Initiatives and Related Policy Framework for CCS
Neeraj Sinha (RIL)
Review of CO2 storage research and opportunities in India
Vikram Vishal (IIT-B)
The Green Transition: Oil, Gas, and the Journey to Carbon Neutrality
Sanjeev Rajput (PETRONAS)

15:25 - 15:45 **Q&A Session - 20 min**

15:45 - 16:05 **Coffee Break - 20 mins**

Session 2 **PERMANENT GEOSEQUESTRATION/ BASALT (PART 1)**
16:05 - 17:25 Session Chairs: TBC

Permanent Sequestration of Gigatons of CO2 in Basalt: Indian Perspective
Jyotirmoy Mallik (IISER Bhopal)
The Potential for Permanent Storage of Carbon Dioxide in Offshore Basalt Sequences
Sverre Planke (Volcanic Basin Energy Research)
Icelandic Basalt Drilling Experience and Nature of the Permeability Encountered
Grimur (CARBFIX)
The properties and characterization of lava flow hosted reservoirs
John Millet (Volcanic Basin Energy Research UK Ltd.)

17:25 - 17:45 **Q&A Session - 20 min**

17:45 - 19:15 **Post Event Networking Reception**

Wednesday, 20 MARCH 2024

Venue: TBC

Day 2

09:00 - 09:35 **Keynote Presentation: Dr. Manika Prasad**
09:35 - 10:10 **Keynote Presentation: Professor Mrinal Sen**
10:10 - 11:10 **Panel Session: Aligning Technologies with Regulation Needs**
Sushma Rawat (ONGC)
Khalid Rufai (Saudi Aramco)
Grimur (Carbix)
Ashley D (ExxonMobil)
Sandeep Kumar Chandola (PETRONAS)
Moderated Discussion

11:10 - 11:30 **Coffee Break - 20 min**

Session 3 **STREAM 1 : PERMANENT GEOSEQUESTRATION/ BASALT PART 2**
11:30 - 12:50 Session Chairs: TBC

Indian Trap Basalt and CO2 plume imaging: Perfect targets for CSEM
Kurt Strack (President KMS)
CO2 Mineralization of Deccan Trap Basalts
Finlay Bank (British Geological Survey)
Feasibility for permanent sequestration by mineral carbonation in the Deccan Basalts, India
Achyuta Mishra (RIL)
Effect of Liquid and Supercritical CO2: An Experimental Study of Arkosic Sandstones and Volcanic Ash
Dorothy Kanini Mwanzia (CSM)

12:50 - 13:20 **Q&A Session - 30 min**

13:20 - 14:35 **Lunch**

Session 4 **STREAM 1 : DE-RISKING**
14:35 - 15:35 Session Chairs: TBC

Value of High-Resolution Geological Information for De-Risking CCUS Storage
Somenath Kar (SLB)
CO2 containment risk-based analysis in formulation of effective and efficient measurement, monitoring and verification strategy
Tetsuro Tochikawa (Ocean Geo-Frontier Co., Ltd.)
MTEM Controlled-Source Electromagnetic Method for Monitoring Subsurface Storage of CO2
Anton Ziolkowski (University of Edinburgh)

15:35 - 16:35 **Poster Session 1**
16:35 - 16:55 **Q&A Session - 20 min**

16:55 - 17:15 **Coffee Break - 20 min**

Session 5 **STREAM 1: SEISMIC RESERVOIR CHARACTERIZATION (CASE STUDIES)**
17:15 - 18:15 Session Chairs: TBC

Characterization of a potential CO2 storage complex in the Cambay Basin, India
John Williams (British Geological Survey)
Applications of Quantitative Seismic Interpretation in Carbon Storage Project, A Case Study from Producing Gas Field, Offshore Thailand
Prat Boonyasatphan (PTTEP)
An integrated geophysical study for the assessment and monitoring of CO2 sequestration in Gandhar Oilfield, Cambay Basin, India
Saqib Zia (CSIR - National Geophysical Research Institute)

18:15 - 18:35 **Q&A Session - 20 min**

18:45 - 19:15 **Sandpit Session - Is it challenging to implement GCS in SE Asia and Middle East Regions?**

11:10 - 11:30 **Coffee Break - 20 mins**

Session 3 **STREAM 2: GLOBAL CCS: DEVELOPMENTS AND CASE STUDIES**
11:30 - 12:50 Session Chairs: TBC

CO2 storage case study from Gulf Coast Area, USA
Carlos Uroza (Bureau of Economic Geology)
Providing long-term geologic storage solutions for large-scale industrial CO2 emissions in the Gulf Coast region of the United States
Arindam Pal (Exxon)
Carbon storage site screening in saline aquifers: scalable dynamic and static methods at basin to local scale
Deepender Bora (SLB)
Challenges in permeability prediction concerning geological carbon sequestration: A case study from Ankleshwar oil field, India
Uma Vadapalli (CSIR - National Geophysical Research Institute)

12:50 - 13:20 **Q&A Session - 20 min**

13:20 - 14:35 **Lunch**

Session 4 **STREAM 2: SEISMIC RESERVOIR CHARACTERIZATION (1)**
14:35 - 15:35 Session Chairs: TBC

Leveraging Seismic Data for Carbon Storage, Monitoring and Decision Making
Neville Brookes (CGG)
Seismic characterization of potential CO2 storage sites in offshore pre-salt fractured gas reservoirs enabled by the RGT modelling method
Nicolas Daynac (Eliis.)
Seismic Technology in Deciphering Structural Features for Geological CO2 Storage Sites
Pramesh Kumar Satapathy (Oil and Natural Gas Corporation Ltd. India)

15:35 - 16:35 **Poster Session 1**
16:35 - 16:55 **Q&A Session - 20 min**

16:55 - 17:15 **Coffee Break - 20 min**

Session 5 **STREAM 2: STORAGE MONITORING**
17:15 - 18:15 Session Chairs: TBC

Continuous monitoring of sequestered CO2 at onshore and offshore CO2 storage sites based on small seismic source and distributed acoustic sensing
Takeshi Tsuji (University of Tokyo)
Feasibility of CO2 Monitoring of the Broom Creek Storage Reservoir at the Williston Basin Using Rock Physics
Don Adams (Energy & Environmental Research Center)
Seismic monitoring at the Farnsworth CO2-EOR field using time-lapse elastic-waveform inversion of 3D-3C VSP data" OR "Microseismic monitoring at the Farnsworth CO2-EOR field"
Lianje Huang (LANL)

18:15 - 18:35 **Q&A Session - 20 min**

18:45 - 19:15 **Sandpit Session - Is it challenging to implement GCS in SE Asia and Middle East Regions?**



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Thursday, 21 MARCH 2024

Venue: TBC

Day 3

09:00 - 10:00	Panel Session: Preparing the Work Force to meet the challenge Jonathan Pearce (BGS) Mrinal Sen (UT Austin) Manika Prasad (Colorado Schools of Mines) Lianje Huang (LANL) Anton Ziolkowski (University of Edinburgh) Vikram Shastry (SPG) Moderated Discussion Coffee Break - 20 mins
Session 6	STREAM 1: NEW DEVELOPMENTS IN STORAGE MONITORING: DAS Session Chairs: TBC
10:20 - 11:20	CCS monitoring with surface distributed acoustic sensing: cost-effective conformance monitoring. Mike Branton (SLB) Integrating Geophysics into Geologic Carbon Storage Workflows from Scoping to Monitoring: Example of DAS-Acquired Microseismic Monitoring Joel Le Calvez (SLB) Surface-deployed DAS measurement: potential and challenges in CCS monitoring Shogo Masaya (INPEX)
11:20 - 11:40	Q&A Session - 20 min
11:40 - 13:10	Lunch
Session 7	STREAM 1: SIMULATIONS AND DIGITAL APPLICATIONS Session Chairs: TBC
13:10 - 14:10	Rapid Screening of CCS Sites Using Neural Operator Based Surrogate Model for Flow Simulations Pandu Devarakota (Shell) Sensitivity Analysis of Grid Resolution Effects for Simulations of Geological CO2 Storage Shantnu Brajesh (Rock Flow Dynamics) Carbon storage beyond the basin: Using numerical simulation to investigate physical-chemical feedbacks during CCS in basalt formations Ryan Pollyea (Virginia Tech)
14:10 - 14:30	Q&A Session - 20 min
14:30 - 15:30	Poster Session 2
15:30 - 15:50	Coffee Break - 20 mins
Session 8	STREAM 1: MONITORING Session Chairs: TBC
15:50 - 16:50	A seismic route to CO2 storage monitoring Will Bradbury (TGS) Advancing the Capability of a Passive Seismic CO2 Monitoring Technology Roy Bitrus (TensorGEO) Geo-scientific Evaluation of Caprock Presence and Integrity in the Initial Phases of a CO2 Storage Project Ravi Pathak (Geocoin)
16:50 - 17:10	Q&A Session - 20 min
17:10 - 17:40	Sandpit Session - Can GCS projects make a difference (Coordinator - Jyotirmoy)
17:40 - 17:55	Closing Remarks by the Committee Co-Chairs

Session 6	STREAM 2: EXPLORING NEW SITES Session Chairs: TBC
10:20 - 11:20	Geological sequestration of the CO2 in the potential coal seams from the Raniganj basin Pankaj Kumar (CSIR - National Geophysical Research Institute) Sensitivity studies on micro-scale model of the Hydraulic field for CO2 – enhanced coal bed methane recovery Priyanka Gupta (ONGC) Characterization of Barren Measures Shale for Evaluation of CO2 Storage Potential and Shale Gas Prospects Nasif Ahemed (CSIR - National Geophysical Research Institute)
11:20 - 11:40	Q&A Session - 20 min
11:40 - 13:10	Lunch
Session 7	STREAM 2: STORAGE CHARACTERIZATION Session Chairs: TBC
13:10 - 14:10	Re-processing, re-purposing and re-invigorating legacy seismic: A 2D offshore East Coast India Case Study Rich Bartlett (Shearwater) Evaluating the potential of Tertiary sequence for carbon storage opportunities: A case study from Upper Assam Shelf, India Rituparna Dutta (ONGC Assam Asset) Characterizing Lateral and Vertical Basalt Flow Heterogeneities in Kumbharli Ghat, Koyana: A Subsurface Equivalent Outcrop Analogue Study for Carbon Storage Debasmita Dutta (IIT-Gandhinagar)
14:10 - 14:30	Q&A Session - 20 min
14:30 - 15:30	Poster Session 2
15:30 - 15:50	Coffee Break - 20 mins
Session 8	STREAM 2: NEW INITIATIVES Session Chairs: TBC
15:50 - 16:50	Identification And Assessment Of Potential Co2 Storage Sites In India, An Endeavor In Digital Technology Abhimanyu Maitra (SLB) Continuous CO2 monitoring using natural sources (cosmic ray muons) Jun Matsushima (University of Tokyo) Pathways to Net Zero: Subsurface strategies to unlock storage potential. Akshaya Deshpande (Shell)
16:50 - 17:10	Q&A Session - 20 min
17:10 - 17:40	Sandpit Session - Can GCS projects make a difference (Coordinator - Jyotirmoy)
17:40 - 17:55	Closing Remarks by the Committee Co-Chairs

POST-SYMPOSIUM FIELD TRIP GEOLOGICAL FIELD EXCURSION ON DECCAN BASALT AS A CO2 SINK FOR ROLE OF GEOSCIENCES IN CARBON STORAGE

MUMBAI -PUNE, Coordinator Jyotirmoy Mallik, Associate Professor

Department of Earth and Environmental ScienceIndian
Indian Institute of Science Education and Research, Bhopal

Departure time and date: 22 March 2024 at 6:30 AM

Mode of transport: Travel by road from Mumbai to Pune, its
surroundings and back. Starting location – Mumbai, City Center

Price: \$120 / per person
(Includes Lunch and Transport to site)

Tentative Locations:

1. Chandini Chowk Ghat
2. Jambhulwadi
3. Pirangut Ghat
4. Talegaon Food Plaza