सीएसआईआर - राष्ट्रीय भूभौतिकीय अनुसंधान संस्थान
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)
उप्पल मार्ग, हैदराबाद, तेलंगाणा, भारत – 500007

CSIR - National Geophysical Research Institute
(Council of Scientific & Industrial Research)
Uppal Road, Hyderabad, Telangana, India-500007

प्रशिक्षण कार्यक्रम
(सीएसआईआर की एक एकीकृत कौशल पहल)

Training Program
(CSIR-Integrated Skill Initiative)

CSIR Integrated Skill Initiative

Subsurface Characterization of Geological Carbon Storage Sites (SC-GCS)

(26-30 October, 2026)

About CSIR-NGRI

The CSIR-National Geophysical Research Institute (CSIR-NGRI), a constituent research laboratory of the Council of Scientific & Industrial Research (CSIR) was established in 1961 with the mission to carry out research in multidisciplinary areas of the highly complex structure and processes of the Earth system and its extensively interlinked subsystems. NGRI has the mandate to conduct research for public-good science to enable government agencies, public and private sector stakeholders to make informed decisions about use of geo-resources sustainably and improve preparedness and resilience to natural hazards.

As a close understanding of Earth processes and its intersections with the growth and development of the human society only can secure the future, it is our vision to develop the knowledge base of Earth system processes and apply it to produce strategies to minimize loss of life and property from natural disaster as well as manage water, energy, and mineral resources for enhancing the quality of life.

The research activities fall broadly under three themes: **Geodynamics**, which revolve round investigating and modeling fundamental aspects of the Earth system and processes, **Earthquake Hazards**, which encompass features on the surface and subsurface of crust which may potentially endanger lives and properties through catastrophes like earthquakes and landslides as well as deterioration in pollution levels of groundwater and soil, changes in climatic conditions and associated environmental issues. The theme **Natural Resources** comprise of implementation of techniques to identify primary geo-resources, which are the pillars of human civilization and fount of economic growth like groundwater, hydrocarbons as well as alternate energy sources and minerals.

The Institute is structured into seven major R&D Groups and twenty one Activities, which include expertise in a variety of geophysical, geochemical, geological techniques like Seismology, Magnetotellurics, GPS, Paleo-seismology, Structural geology, Controlled Source Seismics, Gravity and Magnetics, Geochemistry, Geochronology, Paleomagnetism, Planetary, Polar Geophysics, Geomagnetism, Airborne geophysics, Shallow subsurface geophysics and Rock Mechanics, Hydrochemistry, Paleo-environmental studies and Modeling and simulation of Earth processes.

1. About the Training Program

Geological Carbon Storage (GCS) is a key technology for mitigating CO_2 emissions and addressing climate change. This training programme focuses on subsurface characterization of potential CO_2 storage sites using integrated geological, geophysical, geochemical, and engineering approaches. Participants will gain insights into reservoir characterization, caprock integrity, monitoring, and risk assessment. Successful implementation of CO_2 storage projects requires detailed understanding of subsurface geology, reservoir properties, and long-term containment mechanisms. Critical knowledge gaps exist in reservoir characterization, caprock integrity, induced seismicity, geomechanics, and monitoring strategies. This programme aims to bridge these gaps by providing integrated training on subsurface modeling, risk assessment, and monitoring techniques essential for safe and efficient CO_2 storage.

Introduction to Geological Carbon Storage:

- Regional Geology & Basin Analysis
- Structural Characterization using 3D seismic
- Injection Zone Characterization
- Caprock Integrity Analysis
- Seismic Risk & Induced Seismicity
- Geomechanics & Reservoir Integrity
- Hydrogeology & Groundwater Systems
- Geochemistry of CO2–Rock Interaction
- Injection Rate Design & Pressure Management
- Monitoring, Verification & Risk Management
- Wells & Subsurface Engineering

Methods of Instruction:

Instruction methods involve show-how, Lectures, case studies, demonstrations. The medium of instruction will be in English.

Faculty: International faculty experienced in GCS implementation, National faculty experienced in CCUS projects and CSIR-NGRI Scientists.

Selection Procedure:

Selection will be on a first-come, first-served basis, subject to seat availability.

Sponsorship: Established academic institutions/Government organizations/ industrial sectors are welcome to sponsor candidates of their interest.

Duration: 5 Days **Mode of Training Course**: Offline

Number of Seats : 20

Certification : A certificate will be issued to the participants for the successful completion of the course

Venue: CSIR- National Geophysical Research Institute, Uppal Road, Hyderabad - 500007.

2. Eligibility

The Program targets individuals who desire to acquire high-level skills in subsurface characterization of potential CO_2 storage sites using integrated geological, geophysical, geochemical, and engineering approaches.

Educational Qualifications:
A Master's Degree in Earth Sciences (Geophysics /Geochemistry/Environmental Sciences/Geology/Hydrology OR Basic sciences (Chemistry/Physics and equivalent. Bachelor degree in Reservoir/Petroleum/Drilling/Civil engineering) or Allied field..

Nationality: Indian

3. Technical Requirements

Participants are encouraged to bring their own laptops with good computational power (>8 GB RAM), Windows OS/Linux.

4. Required Documents

The interested candidates may apply through online link given below: (https://www.ngri.res.in/cms/skill-development.php) and has to upload the following documents in the application form:

1. Proof of age (SSC/Aadhaar Card/Pan Card)
2. A copy of last examination passed
3. ID proof (College/ Institute/ Employer) & Address proof (Aadhaar Card)
4. No Objection Certificate (NOC) from the Institution / Employer
5. Self Declaration form (for those candidates who are currently not pursuing any higher degree or unemployed/not getting any fellowship).

5. Important Dates

Duration: 26-30 October, 2026

Last Date for Applying: 20 September, 2026

6. Charges

Course Fee:

- Rs. 1500/- +18% GST= 1770/- (for those who are pursuing the Bachelor's/Master's degree)
- Rs. 3,000/- + 18% GST = 3540/- (for those candidates who completed their Master's or pursuing Ph.D or working as Project Assistant/Associate/Senior Project Associate)
- Rs. 6,000/- + 18% GST = 7080/- (for those candidates who have completed their Doctorate degree or pursuing Post Doctorate or Faculty or Industry sponsored)
- Course fee includes Training Fee, Course Material, Working Lunch, Tea, Snacks and Yoga Classes. It should be paid online by the candidate at the time of submitting the application form.

Food:

Breakfast and dinner will be available at nominal rates in the CSIR-NGRI Campus and will be payable by the participants.

Accommodation Charges:

- **CSIR-NGRI Guest House (twin sharing basis):** ₹600/- per head per day for the first 6 days, ₹1200/- per head per day from the 7th day onwards.
- **Skills Development Quarters (twin sharing basis):** ₹100/- per head per day.
- **Staff Quarters/Research Scholars' Hostel (twin sharing basis):** ₹50/- per head per day.

7. Training Coordinator(s)

Dr. Nimisha Vedanti, Scientist-G (Course Coordinator)
Email: nimisha.ngri@csir.res.in
Contact Details: 040-2701 2787 (O)/9703778781

Dr. Uma Vadapalli, Sr. Technical Officer (Course Co-Coordinator)
Email: umavadapalli.ngri@csir.res.in
Contact Details: 040 2701 2328 (O)/9666073756

8. Extra Curriculum Activities

- Yoga Classes with expert Trainer
- Quiz Competition/Running/Cultural Programs (Dance/Singing)

9. Program Management Committee

Nodal Officer: Dr. Abhey Ram Bansal, Scientist - G
Email: arb.ngri@csir.res.in

Mr. Satendra Singh, Sr. Technical Officer
Email: satendrasingh.ngri@csir.res.in

Ms. Swaroopa G., Senior Project Associate
Email: skills.ngri@csir.res.in

Office Contact: 040-2701 2325/2810

10. Chairman

Dr. Prakash Kumar
Director
CSIR- National Geophysical Research Institute
Email: director.ngri@csir.res.in
Office Contact: 040-2701 2302

11. Visit Us

https://www.ngri.res.in/cms/skill-development.php

Website: https://www.ngri.res.in

Facebook: https://www.facebook.com/csirngrihyd

Twitter: https://twitter.com/csirngri

Youtube: https://www.youtube.com/@csir-ngri

https://maps.app.goo.gl/Yj6pkVvgRCcpnHWP8

CSIR – NATIONAL GEOPHYSICAL RESEARCH INSTITUTE · INTEGRATED SKILL INITIATIVE

Subsurface Characterization of Geological Carbon Storage (GCS) Sites

A Training Program for Industry & Academia

DATES	APPLY BY	MODE	VENUE
26–30 Oct 2026	20 Sept 2026	Physical · 5 Days	CSIR-NGRI, Hyderabad

#	THEME	SPEAKER
1	Introduction, Scope and Career Opportunities	**Dr. Nimisha Vedanti** *CSIR-NGRI*
2	Understanding CO_2 Sequestration Through Rock Physics	**Prof. Manika Prasad (Virtual)** ★ KEYNOTE *Colorado School of Mines, USA*
3	Understanding Soft Rock Geomechanics and Reservoir Simulations for CO_2 Sequestration	**Prof. Jyotirmoy Mallik (Virtual)** *IISER, Bhopal*
4	Understanding Mineralization for CO_2 Sequestration in Basalt	**Dr. Subhadip Adak (Virtual)** *IISER, Bhopal*
5	Understanding Hard Rock Geomechanics for CO_2 Sequestration in Basalt	**Dr. Dip Das** *CSIR-NGRI*
6	Seismic Hazard and Risk Assessment for CO_2 Sequestration Projects	**Dr. Dibakar Ghosal (Virtual)** *IIT Kanpur*
7	Tracking CO_2 Plume Evolution Using Time-Lapse Seismic Monitoring	**Dr. Emmanuel Anthony (Virtual)** *Karlsruhe Institute of Technology (KIT), Germany*
8	Seismic Interpretation for CO_2 Volume Estimation	**Dr. Pankaj Kumar** *CSIR-NGRI*
9	Gravity Methods for CO_2 Sequestration	**Dr. Mahak Singh Chauhan** *CSIR-NGRI*
10	Structural Characterization Using 3D Seismic	**Dr. Fawz Naim (Virtual)** *Pennsylvania State University*
11	Shallow Seismic Studies for Overburden Characterization – MASW Approach	**Dr. Satish Kumar** *CSIR-NGRI*
12	Near Injection Well Fluid-Rock Interaction and Injectivity	**Dr. Uma Vadapalli** *CSIR-NGRI*
13	Thermo-Hydro-Mechanical Modeling and Simulation	**Dr. TNV Pavan** *CSIR-NGRI*
14	Site Suitability Screening Studies: Multi Criteria Decision Making	**Mr. Gyan Prakash** *CSIR-NGRI*
+	*Practical exercises and hands-on training*	

Only 20 seats, Register at the earliest: ngri.res.in/cms/skill-development.php

Miscellaneous queries: 040-2701 2325 **Course-related queries:** umavadapalli.ngri@csir.res.in

ABOUT THE COURSE : SC-GCS provides an integrated view of geological carbon storage, from site characterization and rock physics to geomechanics, reactive transport modeling and understanding mineralization. The program covers structural characterization, plume tracking, seismic hazard assessment and CO_2 volume estimation. It also addresses aspects related to site-suitability screening, thermo-hydro-mechanical simulation, and CO_2 injectivity. This course offers hands-on training and practical exercises.