



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 500007, Telangana, India

प्रशिक्षण कार्यक्रम

(सीएसआईआर की एक एकीकृत कौशल पहल)

Training Program

(CSIR-Integrated Skill Initiative)



CSIR Integrated Skill Initiative

Geosciences for Geothermal Energy Exploration (G2E2) (22-27 February, 2027)



In association with
Centre for Geothermal Energy Research (CGER)



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 Magnetism, Geochemistry, Geochronology, Paleomagnetism, Planetary, Polar Geophysics, Thermal 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

Development of clean and green energy resources, such as geothermal energy, is urgently needed to meet the country's energy requirements and reduce carbon emissions. Utilization of geothermal resources for power generation is still nascent in India, and deciphering the geothermal reservoir and its characteristics is possible only through knowledge of subsurface geological structure, including faults, fluid zone and thermal model of the region through integrated geophysical investigations. In addition, significant design parameters such as reservoir characteristics, including dimension, P-T condition, geochemical nature, and geothermal potential, are needed. The ensuing training course would focus on understanding the concepts of a holistic approach to integrate geological, geochemical and geophysical techniques to decipher the geothermal reservoir and its characteristics. There will be lectures on theoretical aspects and a demonstration of the state-of-the-art instrumentation to provide the participants with key skills and the latest knowledge on the above subject. the training program will cover the following topics related to geothermal energy exploration.

- i. Depth and dimensions of the geothermal reservoir.
- ii. Geological model for the upper crust, including structures, fluid content by geophysical probing (such as ERT, EVRI, MT, GM and ANT).
- iii. Chemical characterization (including major ions, trace and REE) and isotopic composition of the geothermal water.
- iv. Thermal model (heat flow, geothermal gradient, thermophysical properties).
- v. Elastic and mechanical properties of rocks.

Methods of Instruction:

Instruction methods involve lectures by experts on theoretical aspects, demonstration of sophisticated instruments, and hands on training/practice. The medium of instruction will be English only.

Faculty:

The training will be conducted by experts at NGRI and other universities with extensive experience.

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 : 6 Days

Mode of Training Course : Offline

Number of Seats : 30

Certification : A certificate will be issued to the participants after 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 critical knowledge exist for the development of geothermal energy in various hot spring regions of India. The primary beneficiaries of this one week residential training program are postgraduate students, research scholars, and professionals in geothermal research, as well as thermal geophysicists who wish to update or strengthen their understanding of the most recent developments in this field.

Educational Qualifications:

A Master's Degree in Geophysics/ Applied Geophysics/ Geochemistry/ Analytical Chemistry/ Environmental Sciences/ Geology/ Applied Geology/ Hydrology / Physics and any equivalent/ allied

Nationality: Indian

3. Technical Requirements

Participants will be introduced to various Geophysical Methods for Geothermal Exploration and their application in various fields from basic to advanced. Therefore participants are requested 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 have to upload the following documents along with 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 (Aadhar 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: 22-27 February, 2027

Last Date for Applying: 24 January, 2027

6. Charges

Course Fee:

- Rs. 1500/- +18% GST= 1770/- (for those who are pursuing the Master's in Science and Technology)
- 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 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 canteen and will be payable by the participants.

Accommodation Charges:

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

7. Training Coordinator(s)

Dr. Labani Ray, Scientist-G (Course Coordinator)

Email: labani.ngri@csir.res.in

Contact Details: 040-2701 2385 (O), +91 9440474036

Dr. K. Rama Mohan, Scientist-F (Course Co-Coordinator)

Email: krmenviron.ngri@csir.res.in

Contact Details: 040 2701 2632 (O), +91 9490443117

8. Extra Curriculum Activities

- Yoga Classes by 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

Dr. Satendra Singh, Sr. Technical Officer
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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>



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