1. Adaptive data analysis techniques in geophysical data analysis
2. Application of AI/ML techniques in Oil and Gas sector
3. Magnetotelluric investigations of geothermal regions along the west-coast of India
4. Wavelet analysis of broad-band Magnetotelluric data
5. Storage site characterization and development in CO2 enhanced oil recovery
6. Geomechanical risk assessment in CO2 enhanced oil recovery
7. CO2 storage site characterization and risk assessment in enhanced coalbed methane recovery
8. Kinetic and geomechanical factors during CO2 mineralization in basalts
9. Assessment of feasibility of CO2 storage in saline aquifers (For Self-finance/ External candidates)
10. Assessment of CO2 storage potential in Lower Sahyadri Formations of Deccan Volcanic Province (For Self-finance/ External candidates)
11. Groundwater prediction using near-surface geophysical data and an AI-based algorithm
12. Landslide prediction using real-time monitoring of geophysical data and AI tools
13. Leveraging Machine Learning and Geophysics for Rare Earth Element Mineralization mapping
14. High-resolution passive seismic imaging method development for a mineral exploration using Distributed Acoustic sensing (DAS)
15. Global-scale tomography using a very long period seismic data
16. Upper crustal structure imaging and intraplate seismicity beneath the Deccan Volcanic Province (DVP).
17. Bayesian inverse problem in seismology and its application in deep earth’s interior imaging
18. 2D Seismic tomography of the Aravalli-Delhi fold belt
19. Ambient noise tomography of the Aravalli-Delhi fold belt
20. Physics informed machine learning for seismic imaging
21. Reservoir characterisation of carbonate/clastic reservoirs from Mumbai Offshore Basin
22. Reservoir modelling and simulation of hydrocarbon-bearing reservoirs from Mumbai Offshore Basin
23. Development of Machine learning algorithms for analysis of 3D petrophysical data
24. Magnetic field modelling of lunar data
25. Multiscale modelling of geophysical data
26. Sedimentary facies analysis, ichnology, and high-resolution sequence stratigraphy of the Cretaceous interval of the petroliferous basins of Rajasthan
27. Sedimentary facies, ichnological, and geomechanical analyses, and depositional modeling of the Barail Group from the Naharkatia Oil field, Assam
28. High-resolution Mesozoic stratigraphy of the South Rewa Basin: Insights from sedimentological and paleobiolocal data
29. Isotopic and geochemical studies on sedimentary basins of India
30. Understanding Tectonics-Landscape evolution based on Low-temperature thermochronology
32. Evaluating the crustal evolution and geodynamic regime of crust formation in Archean: A perspective from U-Pb-Hf isotopes and trace element chemistry of zircon grains from met igneous and metasedimentary rocks.
33. Understanding the petrogenesis and rare metal enrichment in the Carbonatite system using in situ mineral, melt/fluid inclusion elemental, and isotopic composition
34. Analyzing GRACE and GRACE-Fo Data over the Ganges-Brahmaputra Delta using Deep Learning
35. Modelling hydrological deformation in northeast India using GRACE and GLDAS
37. 3-D Lithospheric structure of the northern Bay of Bengal based on geopotential data modeling.
38. Multi-scale geophysical data analysis for subsurface characterization and mineral prospectivity assessment in northeast India
39. Cretaceous and Recent Foraminifera of Stressed Environments
40. Heavy Mineral analysis of Basal Clastics in Mumbai offshore Basin