

# Thrust areas of research offered for Ph. D.

## Production

- Hydraulic Fracturing
- Re-fracturing
- Proppant characterization
- Diverter Technology
- Proppant transport
- Proppant embedment
- Flow Assurance
- Artificial lift optimization

## Reservoir

- Heterogeneous Reservoir Characterization
- Reservoir Simulation and Modelling
- Molecular level characterization of crude oil
- CO<sub>2</sub> sequestration
- Reservoir management of mature fields

## EOR / IOR

- Chemical EOR
- Microbial EOR
- Nanoparticle applications
- Acoustic EOR
- Low Salinity Water Flooding
- Water injection
- Gas injection

## Drilling/ Cementing

- Nanoparticles in drilling fluids
- Non- damaging drilling Fluids
- Cement slurry design
- Offshore Engineering

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## Geology and Geophysics

- Palaeontology
- Ichnology
- Sequence Stratigraphy
- Basin analysis
- Geophysical prospecting
- Petro-physical Characterization
- Geo-mechanics

## Petrochemical

- Bio-Diesel
- Bio-Surfactants
- Bio-remediation of oil spill
- Molecular characterization of Crude oil for better operational practices.

## Unconventional

- Unconventional hydrocarbon resources
- Tight Reservoir Characterization
- Shale Reservoirs
- Coal Bed Methane
- Methane recovery from gas hydrates
- LNG, CNG & PNG

## Chemical

- Hydrogen generation through water splitting
- Catalyst Synthesis
- Colloids and Interface science
- Molecular Interaction between Ionic Liquids and Polymer