



5-Days Online Short-Term Course

on

Nanotechnology in the Oil Industry



Coordinator

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Assistant Professor

Centre for Advanced Studies

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Technical University, Lucknow

Date: 18th April- 22nd April 2022

Eligibility: B.Tech. (4th Year
Mechanical/Chemical/Civil/Electronics/Electrical/Environmental Science/Petroleum Engineering)

Infrastructure Available: Materials Chemistry Lab and Characterization facilities

Mode: Online

Number of Seats: 30

Registration Link:

<https://cas.res.in/workshopreg.html>



Contents

- Introduction to Oil and Gas Industry, Introduction to Nanotechnology
- Scope of nanotechnology research in the oil and gas, Drilling and hydraulic fracturing fluids development using nanotechnology, Nano-emulsions for cement spacers, Corrosion inhibition using nanotechnology
- Hydrocarbon detection using nanotechnology, Enhanced oil recovery (EOR) using nanotechnology: transport study, stability control, and core flooding, Heavy oil viscosity reduction using nanotechnology
- Application of Nanotechnology in oil spill cleanups
- End Session and Discussion on Problems

**Free Registration –
Limited seats**

**Last Date of Registration: 7
April, 2022**

HIGHLIGHTS

Course Completion Certificate

Projects Assignments Discussion

Experts Led Discussion

Research Possibilities At CAS



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SCHEDULE

Day	Session	
	Forenoon	Afternoon
Day 1	Introduction to Oil and Gas Industry: <i>History of Industry, Sectors of Industry, About Hydrocarbons and Reservoir Formations, Characteristics of formation matrix imparting in Hydrocarbon Production, Understanding Oil & Gas Production</i>	Introduction to Nanotechnology: <i>Basic Science Behind Nanotechnology, Nanometre: How Big or Small, Materials at Nanoscale, Nanotechnology and the World's Attention, Nanotechnology: Solutions, Nanotechnology in Oil and Gas Industry: Corelation</i>
Day 2	Role of Nanotechnology in Oil and Gas Industry: <i>Scope of nanotechnology research in the oil and gas industry, Drilling and hydraulic fracturing fluids development using nanotechnology</i>	Role of Nanotechnology in Oil and Gas Industry: <i>Nano-emulsions for cement spacers, Corrosion inhibition using nanotechnology</i>
Day 3	<i>Nanotechnology for logging operations, Hydrocarbon detection using nanotechnology</i>	<i>Controlling formation fines during production using nanotechnology, Nanotechnology in Sand Control</i>
Day 4	<i>Enhanced oil recovery (EOR) using nanotechnology: transport study, stability control, and core flooding</i>	<i>Heavy oil viscosity reduction using nanotechnology, Properties Alteration by Nanoscale materials</i>
Day 5	<i>Application of Nanotechnology in oil spill cleanups, Challenges in the Nanotechnology application</i>	<i>End Session and Discussion on Problems</i>

