NEETISH KUMAR MAURYA

ASSISTANT PROFESSOR (PETROLEUM ENGINEERING)
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EDUCATION

Doctor of Philosophy in Petroleum Engineering 2018
Indian Institute of Technology (ISM) Dhanbad
Dissertation Topic: Formulation and Characterization of Nanoparticle based Chemical slugs for their potential application in Enhanced Oil Recovery

Master of Technology in Petroleum Management (Dual Degree) 2012
Indian Institute of Technology (ISM) Dhanbad (**7.97** CGPA)
Dissertation Topic: Performance Prediction of a Coal Bed Methane Reservoir: A Modeling and Simulation Approach

Bachelor of Technology in Petroleum Engineering (Dual Degree) 2012
Indian Institute of Technology (ISM) Dhanbad (**7.97** CGPA)

TEACHING EXPERIENCE

Indian Institute of Technology (ISM) Dhanbad July 2012 till present
Assistant Professor (Petroleum Engineering)

Courses taught

- Petroleum Formation Evaluation, Production and Cased hole logging
- Reservoir Engineering, Reservoir Simulation
- Well completion Design, Enhanced Oil Recovery

EXPERTISE

- Petrophysical interpretation of well logs and core data, porosity, permeability, and water saturation analysis
- Quality control and well log data validation for petrophysical evaluation
- Machine learning methods for reservoir characterization using well log data
- Reservoir characterization, fluid flow analysis, and petroleum reservoir simulation
- Material balance and reserves estimation (oil, gas, unconventional resources)
- Chemical EOR design and evaluation, surfactant-polymer and nanoparticle-based methods, history matching and EOR simulation
- Commercial software: CMG, IP(Interactive Petrophysics), Prosper, Mbal, Python, Kappa

PROFESSIONAL EDUCATION & OUTREACH

Designed and delivered a 12-week online course on ***Petroleum Formation Evaluation***, covering logging tools, interpretation methods, and open hole well log data analysis using theoretical knowledge and software tools.
https://onlinecourses.nptel.ac.in/noc24_ch63/preview (1 run and 3 re-run)

RESEARCH EXPERIENCE

Research Interest

- Chemical enhanced oil recovery, Surfactant and Polymer flooding operations, Data Analytic & Machine Learning, Petrophysics and Petroleum Formation Evaluation

Industry sponsored R&D Projects

- Development of a Novel Formate-Based Injection Method for Enhanced Carbon Storage and Oil Recovery in Cambay Basin Oil Fields: Supporting Energy Security and Net-Zero Goals
  Sponsored agency: ANRF. Status: Ongoing
- Synthesis of Bio-Based Zwitterionic Surfactant for use in Enhanced Oil Recovery (EOR) at High Reservoir Temperature Conditions.
  Sponsored agency: SERB. Status: Ongoing
- Feasibility of using Nanoparticles for Enhanced Oil Recovery in fields of ONGC.
  Sponsored agency: ONGC. Status: Completed

PROFESSIONAL TRAINING

- Schlumberger Academia Connect Programme-2013 (6 weeks)
  - Well log interpretation: Theory and interpretation using Techlog Software
  - Reservoir Characterization: Tools, methods and practical applications
  - Reservoir Simulation: Waterflood performance prediction using Eclipse
- Certified '30-Hours Live online instructed-led training | Faculty Development Program' on "Deep Learning & Open CV in Images & Video Data Analysis." organized by Eduxlabs, India from 1st June to 13th June 2021
- Certified '30-Hours Live online instructed-led training | Faculty Development Program' on "Applied Machine Learning, AI & Its Applications using Python" organized by Eduxlabs, India from 1st June to 13th June 2021
- Certified online training on "Solvents - Additives EOR Modelling using STARS" organized by CMG, Computer Modelling Group Ltd on July 29, 2020
- Certified online training on "Advanced Wellbore Modelling using STARS" organized by CMG, Computer Modelling Group Ltd on July 22, 2020
- Certified online training on "Integrated Reservoir and Production Systems Modelling in CoFlow" organized by CMG, Computer Modelling Group Ltd on July 15, 2020
- Certified online training on "Phase Behaviour Modelling using WinProp", Computer Modelling Group Ltd on July 15, 2020

PUBLICATIONS

SCI-Indexed International Journals

- Dadi, N.R., Maurya, N.K. (2025). Oil Recovery with Hybrid Foams: Experimental Insights into Surfactant–Polymer–Nanoparticle Synergy under Long-Term Thermal Aging at Reservoir Conditions. Energy & Fuels, 39(51), 24045–24064.
- Joshi, D., Ramesh, D.N., Prakash, S., Saw, R.K., Maurya, N.K., Rathi, K.B., Mitra, S., et al. (2025). Formulation and characterisation of polymer and nanoparticle-stabilized anionic surfactant foam for application in enhanced oil recovery. Surfaces and Interfaces, 56, 105615.
- Dadi, N.R. and Maurya, N.K. (2025). Keys to enhancing efficiency in nanoparticle-based foam EOR: Experimental insights into different types of surfactant-nanoparticle interactions. Journal of Molecular Liquids, 422, 126927.
- Joshi, D., Kumar, A., Maurya, N.K. and Mandal, A. (2025). Synthesis and characterization of carbon dots for enhanced oil recovery applications. Journal of Molecular Liquids, 427, 127445.
- Dadi, N.R., Maurya, N.K. and Gupta, P. (2024). Advancing foam EOR: A comprehensive examination of key parameters and mechanisms from surfactants to nanoparticles. Journal of Molecular Liquids, 415, 126177.
- Gupta, P., Krishna, S. and Maurya, N.K. (2024). Thermodynamic, Rheological, and Electrical Properties of Hydrate Inhibitors: Implications for Natural Gas Production and Flow Assurance. Energy & Fuels.
- Saw, R.K., Singh, A., Maurya, N.K. and Mandal, A. (2023). A mechanistic study of low salinity water-based nanoparticle-polymer complex fluid for improved oil recovery in sandstone reservoirs. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 666, 131308.
- Joshi, D., Maurya, N.K. and Mandal, A. (2023). Experimental studies on effectiveness of graphene oxide nanosheets dispersion in water/aqueous PHPA for enhanced oil recovery. Journal of Molecular Liquids, 387, 122728.
- Kannaiah, P.V.D. and Maurya, N.K. (2023). Machine learning approaches for formation matrix volume prediction from well logs: Insights and lessons learned. Geoenergy Science and Engineering, 229, 212086.
- Joshi, D., Maurya, N.K., Kumar, N. and Mandal, A. (2022). Experimental investigation of silica nanoparticle assisted surfactant and polymer systems for enhanced oil recovery. Journal of Petroleum Science and Engineering, 216, 110791.
- Maurya, N.K. and Mandal, A. (2018). Investigation of synergistic effect of nanoparticle and surfactant in macro emulsion based EOR application in oil reservoirs. Chemical Engineering Research and Design, 132, 370–384.
- Maurya, N.K., Kushwaha, P. and Mandal, A. (2017). Studies on interfacial and rheological properties of water soluble polymer grafted nanoparticle for application in enhanced oil recovery. Journal of the Taiwan Institute of Chemical Engineers, 70, 319–330.

- Maurya, N.K. and Mandal, A. (2016). Studies on behavior of suspension of silica nanoparticle in aqueous polyacrylamide solution for application in enhanced oil recovery. Petroleum Science and Technology, 34(5), 429–436.
- Babu, K., Maurya, N.K., Mandal, A. and Saxena, V.K. (2015). Synthesis and characterization of sodium methyl ester sulfonate for chemically-enhanced oil recovery. Brazilian Journal of Chemical Engineering, 32(3), 795–803.

Scopus-Indexed International Journals

- Dangi, S.L., Karaliūtė, V., Maurya, N.K. and Pal, M. (2023). Predicting flow in porous media: a comparison of physics-driven neural network approaches. Mathematical Models in Engineering, 9(2), 52–71.

International Conference Publications

- Joshi, D., Maurya, N.K. and Mandal, A. (2023). Evaluation of Synergetic Rheological Behaviour of Polymer and Silica Nanofluids for Enhanced Oil Recovery. SPE Annual Technical Conference and Exhibition (ATCE 2023), San Antonio, Texas, USA.

- Joshi, D., Kumar, N. and Mandal, A. (2021). Enhanced Oil Recovery Performance of Silica Nanofluid in Sandpack Model. 82nd EAGE Annual Conference & Exhibition 2021, 1–5.