



**Indian Institute of Technology (Indian School of Mines), Dhanbad**  
The Office of Dean, Research & Development

Sanction No and Date: 4/3/2020-OIDB 08.10.2020	IIT (ISM) Project No. OIDB/2020-21/739/PE	Date: 03-12-2020
--	--	------------------

**Project Assistant position under (Oil Industry Development Board Sponsored) Project**  
Applications are invited under the sponsored project. The details of the project are as under:

<b>Position</b>	Project Assistant
<b>Number of Position (s)</b>	01
<b>Title of The Project</b>	Foam Assisted Oil-Water Nanoemulsion for Enhanced Oil Recovery: Experimental and Molecular Dynamic Simulation Studies
<b>Principal Investigator</b>	Prof. Ajay Mndal, Department of Petroleum Engineering.
<b>Tenure of Project</b>	21 months
<b>Job Description (in maximum of 100 words)</b>	<p>Overall goal of this project is development of new surfactants/polymers for Enhanced Oil Recovery using molecular dynamics simulations and machine learning methods.</p> <ul style="list-style-type: none"><li>* Develop a molecular library using quantum calculations and experimental data</li><li>* Determination of molecular properties by quantum chemical calculations</li><li>* Evaluation of various thermodynamic parameters (stability, binding-energy, surface tension, viscous force, etc) and surface morphology using molecular dynamics simulations</li><li>* Develop machine learning model using molecular properties and experimental data</li><li>* Shorting of molecules using various computation screening and machine learning methods</li><li>* Validate machine learning model by running molecular dynamics simulations</li></ul> <p><b>The Project assistant will be working under the supervision of Prof Niladri Patra, Chemistry Department.</b></p> <p>The experimental work will be conducted by Prof. Ajay Mandal (PI) and Prof. Keka Ojha (Co-PI) groups, Department of Petroleum Engineering, IIT(ISM) Dhanbad. S</p>



**Indian Institute of Technology (Indian School of Mines), Dhanbad**  
The Office of Dean, Research & Development

<b>Essential Qualification</b>	MSc in Chemistry with more than 60% marks or equivalent CGPA/OGPA. The candidate must be GATE/NET qualified.
<b>Desirable Qualification</b>	Should have working knowledge of computational chemistry software packages (NAMD, GROMACS, Gaussian, Quantum Espresso, etc) and programming will be added advantage.
<b>Age and Relaxation (if any)</b>	Upper limit is 28 years at the time of appointment.
<b>Fellowship</b>	INR 35000.00 per month for 21 months(consolidated)
<b>Last Date &amp; Time</b>	04-01-2021, 5.00 PM. Interested candidates are requested to send the application with detailed bio-data, educational qualifications, age-proof, and GATE/NET certificate to <b>Prof. Niladri Patra by email (npatra2@iitism.ac.in)</b> .
Shortlisted candidates will be informed through email about the interview. The interview would be on online mode (google meet/Zoom) on 06-01-2021. The time along with the online details would be sent to the shortlisted candidates by 05-01-2021 by email. Mere possession of the minimum qualifications does not guarantee an invitation to the interview. Candidates will be shortlisted based on their merits and as per the requirements of the project.	