



UNIVERSITY OF CALCUTTA

FACULTY ACADEMIC PROFILE



1. **Full name of the faculty member:** Dr. Subhajit Kundu

2. **Designation:** Assistant Professor (Contractual)

3. **Specialization:** Petrochemicals & Petroleum Refinery Engineering

4. **Contact information:**

Department of Chemical Technology, University of Calcutta, 92, A.P.C. Road, Kolkata 700 009, India

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5. **Academic qualifications:**

College/ University from which the degree was obtained	Degree
University of Calcutta	B. Tech. (Chemical Technology with specialization in Petrochemicals & Petroleum Refinery Engineering)
University of Calcutta	M. Tech. (Petrochemicals & Petroleum Refinery Engineering)
University of Calcutta	Ph.D. (Tech.)

6. **Other Degree:** B.Sc. (Honours) in Chemistry

7. **Post-Doctoral Experience:** CSIR Research Associate (Direct)

8. **Research interests:**

- Ionic Liquids
- Process intensification & development of new energy efficient and environment friendly process route
- Waste utilization
- Catalyst development for hydrocarbons processing

9. Research guidance:

- Number of researchers awarded M. Tech. (as guide/co-guide/mentor): 02
- Number of B. Tech. students (as guide/co-guide/mentor): 21

10. Other information:

- **B. Tech. Project title:** Simulation in Biodiesel Plant
- **M. Tech. Thesis title:** Preparation of PMMA-cellulose bio-nanocomposites using a green technique and their characterization
- **Ph.D. Thesis title:** Synthesis of acetate based ionic liquids for desulfurization of model diesel
- **CSIR RA (Direct) Project title:** Extraction of cellulose from waste and its dissolution in synthesized ionic liquids to prepare novel adsorbents for application in separation technology
- **Guest Lecturer Experience (Graduation & Post-Graduation level):** 4 years
- **No. of articles reviewed:** 02 (Elsevier Publication)

11. Selected list of publications:

Journals:

- Synthesis and characterization of a sol-gel-derived zeolite prototype as a prospective hydrocracking catalyst, *Int. Ceram. Rev.*, 67, 28-33, 2018
- Biogenic silver nanoparticle synthesis and stabilization for apoptotic activity; insights from experimental and theoretical studies, *Chem. Pap.* 74, 4089–4101, 2020
- Non-catalytic desulfurization of model diesel using synthesized biodegradable ionic liquid, *Energy Sources A: Recovery Util. Environ. Eff.*, 47, 10457-10468, 2025 (online published in 2021)
- Immobilization of acetate based ionic liquids on silica gel to fabricate a prospective desulfurizing adsorbent, *Soft Mater.*, 20, 344-357, 2022
- Studies on adsorption isotherm and adsorption kinetics to predict the behavior of an ionic liquid based adsorbent in desulfurization of model diesel, *Russ. J. Appl. Chem.*, 95, 1207-1217, 2022
- Influence of chlorite treatment on the fine structure of alkali pretreated sugarcane bagasse, *Biomass Conv. Bioref.*, 13, 567–581, 2023
- An entropy- TOPSIS approach to find PMMA/cellulose based biocomposite with optimum mechanical and bio-degradation properties, *Polymer*, 313, 127696, 2024

Book Chapters:

- Carbon Aerogels in the book *Aerogels I – Preparation, Properties and Applications*, Materials Research Foundations, 84, 133-154, 2020
- Current Status, Opportunities and Challenges of Green Corrosion Inhibitors in the book *Sustainable Corrosion Inhibitors*, Materials Research Foundations, 107, 1-29, 2021
- Advanced Separation Applications of Porous Polymers in the book *Porous Polymer Science and Applications*, CRC Press, 147-160, 2022
- Particulate Reinforced Composites in the book *Toughened Composites – Micro Macro systems*, CRC Press, 55-68, 2023
- Biomedical Applications of Biocomposites Derived From Cellulose in the book *Handbook of Bioplastics and Biocomposites Engineering Applications*, John Wiley & Sons, Inc., 251-274, 2023

- Thermoelectric Effects in the book Thermoelectric Polymers: Properties and Applications, Materials Research Foundations, 162, 1-23, 2024
- Transition-Metal based catalyst for Petrochemistry in the book Applications for Earth-Abundant Transition Metals, Materials Research Foundations, 179, 356-399, 2025

Patents:

- AQUAPLUS: A humidity dependent water extraction method, IP Australia, Australian Government, April, 2021; Patent Number: 2021100831. (Granted)
- Synthesis of Silver nanoparticles in the template of PVA stabilized Hydroxyapatite fabricated from Fish Scales (Labeorohita) and its characterization, IP Australia, Australian Government, May, 2021; Patent Number: 2021102763. (Granted)

10. Selected Conferences/Seminar volumes:

- 9th Inter University Engineering, Science & Technology Academic Meet 2018 & Innovative Model Competition For A Sustainable Society organized by Forum Of Scientists, Engineers & Technologists (FOSET)
Title: Preparation of PMMA-cellulose biocomposite film using a green technique and their biodegradability study
- International Conference on Pure and Applied Chemistry (IconPAC-2019) organized by K L (Deemed to be University), Vaddeswaram, Guntur, A. P., India, sponsored by DST-SERB
Title: Synthesis of acetate based ionic liquid for room temperature desulfurization of model diesel
- 2nd International Conference on Energy, Functional materials & Nanotechnology & Sustainable Environment Management (ICEFN & SEM 2019) organized by Nanoscience and Nanotechnology Centre Department of Chemistry, Kumaun University, Nainital, India.
Title: Heterocyclic sulfur removal from model diesel by ionic liquid-based adsorbent
- CHEMCON 2019, IIT Delhi
Title: Removal of lead (II) and chromium (VI) from aqueous solutions using a synthesized ionic liquid based adsorbent
- The Third International Conference on material science, 2020, Tripura, India
Title: Ionic liquid based adsorbent by sol-gel methodology and its application in desulfurization
- International Conference on Recent Advances in Materials Chemistry and Catalysis, 2023, Dibrugarh University, India
Title: Elucidation of the interaction between ionic liquid based adsorbent and heterocyclic sulfur during desulfurization of model diesel
- International Chemical Engineering Conference on Energy, Environment and Sustainability (ICECEES-2024), 2024, IIT Roorkee, India
Title: Optimizing the composition of ionic liquids based adsorbents by Entropy-TOPSIS method for desulfurization of model aviation turbine fuel
- The 27th IUPAC International Conference on Chemistry Education (IUPAC ICCE-2024), 2024, Royal Cliff Hotel, Pattaya, Thailand
Title: Optimizing the composition of ionic liquids based adsorbents by Entropy-TOPSIS method for desulfurization of model diesel
- International Conference on Chemical Advances in Chemical Science Research and Education (CACSRE-2024), 2024, Mizoram University, India

Title: Studies on adsorption isotherms and adsorption kinetics for the removal of lead (II) and chromium (VI) from water by ionic liquids based adsorbents

- International Conference on Chemical Resilience & Sustainable Practices: Advanced materials in water purification strategies for Desalination, Energy production & Environmental conservation (INDACON 2025), Harcourt Butler Technical University, Kanpur, India

Title: Extraction of cellulose from rice husk to prepare cellulose-Ionic Liquid based adsorbent for heavy metals removal from model waste water

10. **Awards:**

- CSIR Research Associate (Direct)
- IUPAC Conference Scholarship in The 27th IUPAC International Conference on Chemistry Education, 2024, Pattaya, Thailand
- RSC Polymer Chemistry Best Poster Award in The Third International Conference on Material Science, 2020, Tripura, India
- DST PURSE Senior Research Fellowship
- SVMCM Scholarship
- 1st class 1st in M. Tech.