



# UNIVERSITY OF CALCUTTA

## ACADEMIC DEPARTMENT

### FACULTY ACADEMIC PROFILE/ CV

1. **Full name of the faculty member:** Dr. ARINDAM MANDAL
2. **Designation:** ASSISTANT PROFESSOR
3. **Specialization:** CHEMICAL ENGINEERING
4. **Passport size photograph:**



5. **Contact information:**

Department of Chemical Engineering, University of Calcutta, 92, A. P.C. Road, Kolkata-700009, Email: - [amchemengg@caluniv.ac.in](mailto:amchemengg@caluniv.ac.in), arindammandal010@gmail.com.

6. **Academic qualifications:**

College/ university from which the degree was obtained	Abbreviation of the degree
Jadavpur University	B.ChE
Jadavpur University	M.ChE
Jadavpur University	Ph.D

7. **Positions held/ holding:**

- Assistant Professor, Department of Chemical Engineering, University of Calcutta (29<sup>th</sup> December, 2015 – till date).
- Assistant Professor, Department of Chemical Engineering, Heritage Institute of Technology, Kolkata (07<sup>th</sup> July, 2014 – 28<sup>th</sup> December, 2015).

8. **Research interests:**

- Photocatalytic reduction of CO<sub>2</sub> (CCUS)
- Photocatalytic H<sub>2</sub> production
- Fuel Cell

## 9. Select list of publications:

### a) *Journal Paper:*

- Bhattacharjee, J., De, A., Kamila, B. & **Mandal, A.** (2025). Recent scenario of e-waste recycling: chemical engineering. International Journal of Chemical Reactor Engineering. <https://doi.org/10.1515/ijcre-2024-0058>
- **Arindam Mandal** & Kajari Kargupta, Cu-Doped 2D-Bi<sub>2</sub>MoO<sub>6</sub> Nanoribbon/rGO Photocatalysts for Selective Ethanol Production by Photocatalytic CO<sub>2</sub> Reduction, ACS Applied Nano Materials, 2025, 8, 7, 3471–3486. <https://doi.org/10.1021/acsnm.4c06608>
- **Arindam Mandal**, Guruprasad Bhattacharya, Kajari Kargupta, Enhanced yield of methanol using rGO-Bi<sub>2</sub>S<sub>3</sub>/CuO heterojunction photocatalyst for CO<sub>2</sub> reduction. Journal of Materials Research 39, 1935–1950 (2024). <https://doi.org/10.1557/s43578-024-01352-2>
- Arundhati Sarkar, **Arindam Mandal**, Sayantanu Mandal et al. High-Performance rGO-ZnO/WO<sub>3</sub> heterojunction photocatalyst for solar green hydrogen generation. J Chem Sci 136, 2 (2024). <https://doi.org/10.1007/s12039-023-02231-9>
- A. Sarkar, M.K. Mandal, S. Das, S. Mandal, P. Chakraborty, **A. Mandal**, D. Banerjee, S. Ganguly, K. Kargupta, Facile in-situ synthesis of solid mediator based CdS-rGO-WO<sub>3</sub> Z-scheme photocatalytic system for efficient photocatalytic hydrogen generation, Optical Materials, 147, 2024, 114670. <https://doi.org/10.1016/j.optmat.2023.114670>
- Kamila, B., Sadhukhan, A. K., Gupta, P., & **Mandal, A.** (2024). 2D Modeling and Simulation of Pyrolysis of a Thermally Thick Biomass Particle. Combustion Science and Technology, 1–25. <https://doi.org/10.1080/00102202.2024.2368756>
- Kamila, B., **Mandal, A.**, Prabhakar, A., Sadhukhan, A. K., & Gupta, P. (2024). 2-D CFD modeling of gasification of a large biomass char particle in CO<sub>2</sub> environment. Biofuels, 1–14. <https://doi.org/10.1080/17597269.2024.2429055>
- **Arindam Mandal**, Soumyajit Maitra, Subhasis Roy, Baisakhi Hazra, Koustuv Ray and Kajari Kargupta, Selective photo-reduction of CO<sub>2</sub> to methanol using Cu-doped 1D-Bi<sub>2</sub>S<sub>3</sub>/rGO nanocomposites under visible light irradiation, New J. Chem. (RSC), 2023,47, 1422-1434. <https://doi.org/10.1039/D2NJ03892G>

### b) *Book Chapter:*

- A Comparative Study of 0D, 1D, and 2D Nanocatalysts Towards CO<sub>2</sub> Conversion, **Arindam Mandal**, Subhasis Roy, Print ISBN 978-1-83916-311-1, 2022 RSC book-2D Nanomaterials for CO<sub>2</sub> Conversion into Chemicals and Fuels, Editors: Kishor Kumar Sadasivuni, Karthik Kannan, Aboubakr M Abdullah, Bijandra Kumar. <https://doi.org/10.1039/9781839165542-00341>

### c) *Conference/ seminar volumes:*

- Debjani Bhakta, Bhargab Banerjee, Akhter Hossain, Kajari Kargupta, Biswajit Kamila, Arindam Mandal\*, Recent advances in ZnO based photocatalysts for sustainable hydrogen evolution via photocatalytic water splitting, International Conference on Energy Transition:

Challenges and Opportunities, IChE - CHEMCON 2023 (Platinum Jubilee Celebration), Organized by Indian Institute of Chemical Engineers, December 27-30, 2023, Heritage Institute of Technology, Kolkata.

- Jyoti Bhattacharjee, Arghya De, Biswajit Kamila, Arindam Mandal\*, Recent Scenario of E-Waste Recycling: Chemical Engineering, International Symposium on “Chemical Engineering - Environment, Sustainability and the Future” Organized by Calcutta University Chemical Engineering Alumni Association, University of Calcutta, India, December 22-24, 2023.
- Arghya De, Jyoti Bhattacharjee, Biswajit Kamila, Arindam Mandal, An Overview of Antibiotic Production and Global Market Analysis, International Symposium on “Chemical Engineering - Environment, Sustainability and the Future” Organized by Calcutta University Chemical Engineering Alumni Association, University of Calcutta, India, December 22-24, 2023.
- Arindam Mandal\*, Preetam Dutta, Kajari Kargupta, Visible light-driven conversion of CO<sub>2</sub> into green chemicals by Bi<sub>2</sub>MoO<sub>6</sub>/WO<sub>3</sub> photocatalysts, All India Seminar on ‘Cost-effective and Emerging Effluent Treatment Technologies’ Organized by IEI, Durgapur Local Centre during October 7-8, 2023.
- Akradip Majumder, Swastika Paul, Ridipt Mishra, Subhasis Roy, Biswajit Kamila, Arindam Mandal\*, Synthesis and characterization of Cu-doped BiVO<sub>4</sub>/g-C<sub>3</sub>N<sub>4</sub> nanocomposites for enhanced photocatalytic activity, 2nd Online International Conference on Advance Interdisciplinary Research (ICAIR-2023), Digvijai Nath Post Graduate College, Gorakhpur, UP, India, April 07-09, 2023.
- Arindam Mandal\*, Arundhuti Sarkar, Sayantanu Mondal, Kajari Kargupta, Photocatalytic reduction of CO<sub>2</sub> into solar fuels over rGO/Bi<sub>2</sub>S<sub>3</sub>/CuO nanocomposite photocatalysts, International Conference on Chemical Engineering Innovations and Sustainability (ICEIS-2023), Jadavpur University, Kolkata, India, February 26-27, 2023. (**Best Oral Presentation Award**).
- Arindam Mandal\*, Kajari Kargupta, Design of catalyst for photo/electro reduction of CO<sub>2</sub> to produce value added chemicals in the two-day WEBINAR organized by R&D Committee, TEQIP-III, Jadavpur University during February 26-27, 2021.
- Guruprasad Bhattacharya, Kajari Kargupta, Arindam Mandal\*, Visible light irradiated photocatalytic reduction of CO<sub>2</sub> to valuable product using rGO based BiVO<sub>4</sub> catalyst, International Conference on “Sustainable and Renewable Energy-Challenges and Opportunities (ICSARE 2020)”, PIET, Nagpur, India, March 18<sup>th</sup>-19<sup>th</sup>, 2020.
- Baisakhi Hazra, Arindam Mandal\*, Reduction of carbon-dioxide to valuable product using reduced graphene oxide based photocatalyst, 72<sup>nd</sup> Annual Session of Indian Institute of Chemical Engineers “CHEMCON-2019”, IIT Delhi, 16<sup>th</sup>-19<sup>th</sup> December, 2019.
- Sukanya Kundu, Arindam Mandal, A. Das Sharma, J. Mukhopadhyay And R.N. Basu, Fabrication and Characterization of Porous Metal Support for Metal-Supported Solid Oxide Fuel Cell Application, International Conference on Emerging Materials: Characterization & Application (EMCA-2014), Kolkata, December 4-6, 2014.

#### 10. Research Guidance:

- No. of M. Tech. students guided (completed): 5 (ongoing): 0

### **11. Membership of Learned Societies:**

- Indian Institute of Chemical Engineers (LAM- 35389).
- Calcutta University Chemical Engineering Alumni Association (CUCEAA-2018/AM09).
- Jadavpur University Chemical Engineering Alumni Association (JCEAA-LM-206).

### **12. Awards:**

- Research Fellow in Project No.ESC0104, FC&BD at CSIR-CGCRI, Kolkata (10<sup>th</sup> July, 2013 - 26<sup>th</sup> June, 2014).

### **13. Other notable activities:**

- ❖ **Chaired a Technical Session in IChE - CHEMCON 2023** (Platinum Jubilee Celebration), Organized by Indian Institute of Chemical Engineers held at Heritage Institute of Technology, Kolkata during December 27-30, 2023,
- ❖ **Course Coordinator:**
  - Workshop on “Industrial Safety & HAZOP analysis” organized by Chemical Engineering Department Heritage Institute of Technology (H.I.T) at Kolkata on 17<sup>th</sup> March, 2015.
- ❖ **Workshops attended :**
  - Inter/Multidisciplinary Refresher Course in Environmental Studies from 08<sup>th</sup> – 21<sup>st</sup> December 2023 (two week) organized by HRDC/ASC, University of Calcutta, 92, A.P.C. Road, Kolkata - 700 009.
  - Short Term Course in Hazards and Disaster Management during February 27-March 05, 2023 (One week) organized by HRDC/ASC, University of Calcutta, 92, A.P.C. Road, Kolkata -700 009.
  - AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Waste Valorization towards a Sustainable Environment" from 2021-06-14 to 2021-06-18 at National Institute of Technology Durgapur.
  - Refresher course (IDC) in Chemical Sciences, Engg. & Technology during Aug.26 -Sept.09, 2019 organized by HRDC/ASC, University of Calcutta, 92, A.P.C. Road, Kolkata -700 009.
  - 123<sup>th</sup> Orientation Programme during Sep. 04 - Oct.3, 2018 in the HRDC/ASC, University College of Science and Technology, 92, A.P.C. Road, Kolkata -700 009 .
  - Short Term Course” (Sponsored by TEQIP III) on "Recent Refinery Practices” during June 04-08, 2018 at Chemical Engineering Department , Jadavpur University, Kolkata.
  - Short Term Program on “ Recent Advancement in Upstream and Downstream Operation of Petroleum Industries” organized by Chemical Engineering Department, NIT Durgapur during June 13-17, 2016.
  - Faculty Development Programme for Effective Teaching during 17<sup>th</sup> to 19<sup>th</sup> November, 2014 at IIT Kharagpur.

- Industry -Academia workshop on "Instrumentation and control" organized by Petroleum Federation of India with IOCL Haldia Refinery during 10<sup>th</sup> to 11<sup>th</sup> November, 2014 at Indian Oil Management Academy, Haldia.