

Dr. Anjali Awasthi

Assistant Professor,

Department of Chemical Engineering,

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Educational Qualifications

- **Ph.D. in Chemical Engineering:** Obtained from Malaviya National Institute of Technology (MNIT), Jaipur in 2022 (CGPA 9). PhD Topic: Application of Solvent Impregnated resins for the treatment of wastewater containing Reactive dyes.
- **M. Tech. in Chemical Engineering:** Obtained from HBTU, Kanpur in 2013 with First Division and Honors (82.3%). Thesis Titled: A Particle Size Distribution Model for Butyl Acrylate Emulsion Polymerization.
- **B.Tech. in Chemical Engineering:** Graduated from AITH, Kanpur in 2011 with First Division (71.78%).
- **Intermediate:** U.P Board, 2026 with First Division and Honors (83.60%)
- **High school:** U.P Board, 2024 with First Division (73.66%)

Academic & Professional Experience

- **Assistant Professor (HBTU, Kanpur):** Since June 2022.
- Guest Lecturer roles:
 - Rajkiya Polytechnic, Kanpur (February 2014 – May 2014)
 - HBTU, Kanpur (July 2014 – June 2016).
 - AITH, Kanpur (September 2016 – June 2017).

Research Interests

- Adsorption techniques and applications
- Biomass- and biowaste-derived materials for environmental remediation
- Hybrid technologies for sustainable wastewater treatment and water reuse

Journal Publications

1. Srivastava, S., **Awasthi, A.**, & Banerjee, S. (2026). Synthesis and characterization of *Parthenium hysterophorus*-derived biochar-supported titanium dioxide–polyvinyl alcohol ternary composite hydrogel for efficient removal of textile dye. *Journal of Dispersion Science and Technology*. <https://doi.org/10.1080/01932691.2026.2741849>.

2. Singh, A. P., **Awasthi, A.**, & Rathoure, A. K. (2026) Recent advances in fabric-based microfluidic fuel cells: textile substrates, catalysts, and electrochemical performance analysis. *Journal of Solid State Electrochemistry*, <https://doi.org/10.1007/s10008-026-06672-3>
3. Kapoor, A., Ponnuchamy, M., Kumar, P., Pal, D., **Awasthi, A.**, Jacob, M., Pakkirisamy, B., Rajagopal, M., & Rangasamy, G. (2026). Performance evaluation, scale-up design, and economic analysis for remediation of iron-containing wastewater using cow manure biocarbon. *Canadian Journal of Chemical Engineering*, **104**(4), 1820–1835. <https://doi.org/10.1002/cjce.70149>
4. Ponnuchamy, M., Kapoor, A., Jacob, M. M., **Awasthi, A.**, Mukhopadhyay, M., Nandagobu, S., Raghav, A., Arvind, D., Chakraborty, P., & Prabhakar, S. (2025). Adsorptive removal of bisphenol A using sugarcane bagasse-derived biochar. *Journal of the Taiwan Institute of Chemical Engineers*, **166**, 105216. <https://doi.org/10.1016/j.jtice.2023.105216>
5. Isah, B. A., Ponnuchamy, M., Rath, B. S., Kumar, P. S., Kapoor, A., Rajagopal, M., **Awasthi, A.**, & Rangasamy, G. (2024). Artificial intelligence-based neural network modeling for phenol removal from aqueous systems. *Desalination and Water Treatment*, **319**, 100564. <https://doi.org/10.1016/j.dwt.2024.100564>
6. **Awasthi, A.**, Maheshwari, V., Rastogi, K., Singh, K., Kumar, S., Kapoor, A., & Sastry, S. V. A. R. (2023). Treatment of textile dyes using modified banyan leaf-based biosorbent: Kinetic and isotherm studies. *Biomass Conversion and Biorefinery*. <https://doi.org/10.1007/s13399-023-05173-x>
7. Pal, D. B., Rathoure, A., **Awasthi, A.**, Gautam, S., Kumar, S., & Kapoor, A. (2025). Microfluidic paper-based lab-on-a-chip chemiluminescence sensing: A review. *Luminescence*, **40**, e70324. <https://doi.org/10.1002/bio.70324>
8. Kumar, P., Ravikumar, H., **Awasthi, A.**, Raghunathan, M., & Kapoor, A. (2025). Sustainable paper-based platforms for cellular studies: A review. *Microchemical Journal*, **212**, 113409. <https://doi.org/10.1016/j.microc.2025.113409>
9. **Awasthi, A.**, & Datta, D. (2019). Application of Aliquat 336 impregnated Amberlite XAD-7HP resin for Reactive Blue-13 dye removal. *Journal of Environmental Chemical Engineering*, **7**(6), 103502.
10. **Awasthi, A.**, Arya, A., Gupta, P., Kumar, R., Singh, J., & Datta, D. (2020). Adsorption of Reactive Blue-13 dye using magnetized activated carbon. *Journal of Chemical & Engineering Data*, **65**(4), 2220–2229.
11. **Awasthi, A.**, & Datta, D. (2021). Removal of Reactive Orange 16 and Reactive Green 19 using Cyphos IL101 impregnated resin. *Environmental Science and Pollution Research*.
12. **Awasthi, A.**, Iqbal, M., Batra, S., Arya, A., & Datta, D. (2020). Ultrasonication-assisted dye removal using solvent impregnated resin. *Journal of the Indian Chemical Society*, **97**, 1–5.
13. Batra, S., **Awasthi, A.**, Iqbal, M., & Datta, D. (2020). Solvent impregnated resins for treatment of aqueous systems: A review. *Reviews in Chemical Engineering*.
14. Sood, A., **Awasthi, A.**, & Bharti, R. (2016). Population balance modeling of butyl acrylate emulsion polymerization. *Indian Chemical Engineering*, **58**(1), 40–60.
15. Iqbal, M., **Awasthi, A.**, & Datta, D. (2021). Removal of methyl orange using Aliquat-336 impregnated resin. *Chemical Data Collections*, **35**.
16. Batra, S., Arya, A., Iqbal, M., **Awasthi, A.**, & Datta, D. (2020). Functionalized Amberlite resin for bisphenol-A separation. *Journal of the Indian Chemical Society*, **97**, 1–4.
17. Sood, A., Bharti, R., & **Awasthi, A.** (2014). Modelling of butyl acrylate emulsion polymerization. *Indian Chemical Engineering*, **54**, 235–244.
18. **Awasthi, A.**, Batra, S., & Datta, D. (2019). Removal of reactive dye using solvent impregnated resin. *International Journal of Chemical Engineering and Applications*, **10**(2), 40–45.

1. Kapoor, A., **Awasthi, A.**, & Chaudhari, P. (2026). Alginate-based biocomposites for environmental remediation. In R. K. Verma, D. K. Singh, A. K. Mondal, & P. Kyratsis (Eds.), *Hybrid Materials and Advanced Manufacturing: Techniques and Applications* (Vol. 1). CRC Press. <https://doi.org/10.1201/9781003607359-5>
2. Verma, Y., Chauhan, S., **Awasthi, A.**, Mishra, R., & Kapoor, A. (2026). Eco-friendly polymeric films for smart food packaging: Preparation and applications. In A. Chauhan, N. Panchal, & A. C. Joshi (Eds.) *The Global Awakening: Research and Insights on Women and Youth-led Transformation*. Taran Publication
3. Kushwaha, R., Verma, A., Banerjee, S., & **Awasthi, A.** (2026). Rare earth doped metal oxides in heterogeneous catalysis. In S. Chakroborty, S. Moharana, et al. (Eds.), *Doping of Metal Oxides: From Fundamentals to Applications* (pp. 221–249). Elsevier. <https://doi.org/10.1016/B978-0-443-29271-2.00015-5>
4. Kapoor, A., Chaudhari, P., **Awasthi, A.**, Nayak, J., & Kannan, D. (2025). Advances in microfluidics for detection of infectious diseases. In P. G. Ingole & C. M. Hussain (Eds.), *Advances in Separation Sciences: Sustainable Processes and Technologies* (pp. 345–365). Elsevier. <https://doi.org/10.1016/B978-0-323-95292-7.00013-X>
5. Kapoor, A., Vaishampayan, V., **Awasthi, A.**, & Banerjee, S. (2023). Microfluidic synthesis of nanoparticles. In R. K. Singh, R. K. Phanden, B. S. Sikarwar, & J. P. Davim (Eds.), *Advances in MEMS and Microfluidic Systems* (pp. 173–197). IGI Global. <https://doi.org/10.4018/978-1-6684-6952-1.ch009>
6. Banerjee, S., Kapoor, A., **Awasthi, A.**, & Rajasulochana, P. (2025). Polymer nanocomposites for food packaging applications. In S. Mallakpour, & C. M. Hussain (Eds.), *Handbook of nanofillers* (pp 2281–2304). Springer. https://doi.org/10.1007/978-981-96-2407-2_110
7. Arya, A. K., Kapoor, A., Pal, D. B., **Awasthi, A.**, Sastry, S. V. A. R., & Kumar, S. (2024). Molten salt thermal storage systems for solar energy concentrators. In *Solar Energy Concentrators* (pp. 219–234). <https://doi.org/10.1002/9781394204533.ch10>
8. **Awasthi, A.**, Kapoor, A., & Banerjee, S. (2023). Recent advancements in polymer nanocomposites-based adsorbents for chromium removal. In R. K. Verma, D. K. Singh & J. P. Davim(Eds.) *Nanocomposite and Nanohybrid Materials: Processing and Applications* (pp. 315–336). De Gruyter, <https://doi.org/10.1515/9783111137902-016>

Patent

1. Tapered Photocatalytic Treatment Device (Design patent granted: 02 July, 2026) Design no. 479734-001.

Awards & Achievements

1. **IICHE NRC Award – 3rd Best Paper (2017)**
For the paper “*A Population Balance Model for Butyl Acrylate Emulsion Polymerization*”, *Indian Chemical Engineer*, **58**, 40–60 (2016).
Awarded at CHEMCON 2017, Indian Institute of Chemical Engineers, Haldia, India, December 27–30, 2017.
2. **2nd Best Presentation Award (2021)**
For the presentation “*Removal of Reactive Green 19 Dye Using Impregnated Resin (Aliquat 336 + Amberlite XAD-7HP) in Batch and Recirculating Stirred Vessel*”.
International Conference on Water Desalination, Treatment & Management & InDACon 2021, MNIT Jaipur, India, March 19–20, 2021.

3. Best Presentation Award (2026)

Awarded at the 4th International Conference organized by IFTDO CWYEE-India in association with Divyatharv Vikas Foundation, co-hosted with R.A. Podar Institute of Management, University of Rajasthan, Jaipur, India, February 13–14, 2026.

Conference Presentations

1. **Awasthi, A.**, Batra, S., & Datta, D. (2019). *Removal of reactive dye using solvent impregnated resin*. Oral presentation, ICCCP 2019, National University of Singapore, Singapore, February 25–28, 2019 (Published).
2. Datta, D., **Awasthi, A.**, Batra, S., & Iqbal, M. (2019). *Synthesis and characterization of Aliquat 336 impregnated porous polymeric resin (Amberlite XAD-7) for methyl orange removal using ultrasonication*. World Congress on Materials Science and Technology, Paris, France, June 4–6, 2019.
3. **Awasthi, A.**, & Datta, D. (2019). *Effective removal of reactive orange 16 dye using impregnated resin*. Oral presentation, CHEMCON, IIT Delhi, India, December 15–19, 2019.
4. **Awasthi, A.**, & Datta, D. (2021). *Removal of reactive green 19 dye using impregnated resin (Aliquat 336 + Amberlite XAD-7HP) in batch and recirculating stirred vessel*. Oral presentation, International Conference on Water Desalination, Treatment, Management & InDACON, MNIT Jaipur, India, March 19–20, 2021.
5. **Awasthi, A.** (2022). *Removal of Fe using animal waste material*. CHEMCON 2022, HBTU Kanpur, India, December 27–30, 2022.
6. **Awasthi, A.** (2022). Participation in International Conference on Sustainability in Chemical Processes through Digitalization, Artificial Intelligence and Green Chemistry (CHEMCON 2022), HBTU Kanpur, India, December 27–30, 2022.
7. Aditi, & **Awasthi, A.** (2023). *Overview of experimental conditions for treatment of wastewater using adsorbents*. Oral presentation, CHEM-TECHNOVA 2023, HBTU Kanpur, India, May 26–27, 2023.
8. Srivastava, S., **Awasthi, A.**, & Banerjee, S. (2023). *Development of biowaste-derived polymer nanocomposites for wastewater treatment*. Oral presentation, CHEMCON 2023 (IICChE), December 27–30, 2023.
9. Aditi, & **Awasthi, A.** (2024). *Treatment of wastewater pollutants using zero-valent iron-based bio-adsorbent composites*. Oral presentation, CHEM-TECHNOVA 2024, HBTU Kanpur, India, March 21–23, 2024.
10. **Awasthi, A.** (2024). *Synthesis of high-performance supercapacitor electrode materials from agricultural waste*. Oral presentation, International Conference on Recent Innovations in Biomaterials and Tissue Engineering (ICRIBTE-2024), in collaboration with HBTU and Galgotias University, December 6th–7th, 2024.
11. Srivastava, S., **Awasthi, A.**, & Banerjee, S. (2025). *Functionalized hydrogels for wastewater treatment: Recent progress, challenges, and future prospects*. Oral presentation, CHEMSCAPE 2025, October 30–November 1, 2025.
12. **Awasthi, A.** (2025). Oral presentation, International Conference on Advances in Sustainable Solutions for Energy Transitions, IIT Guwahati, India, January 2–4, 2025.
13. **Awasthi, A.** (2025). *Agarose hydrogel-based sensing platform for rapid detection of food toxicants*. Oral presentation, APA International Conference, Udaipur, India, October 13–15, 2025.
14. Singh, A. P., Rathoure, A. K., & **Awasthi, A.** (2026). *Recent advances in fabric-based microfluidic fuel cells: Design strategies and performance analysis*. International Conference CHEM-TECHNOVA 2026, March 12–14, 2026.

15. **Awasthi, A.** (2026). *Role of sulfonation in enhancing dye removal efficiency of ternary composite hydrogel films*. Oral presentation, InDACon International Conference, MNIT Jaipur, India, March 27–28, 2026.

Workshops

1. AICTE Sponsored Short-Term Course on “*Recent Advances in Wastewater Treatment (RAWT-2017)*”, June 26–30, 2017, IIT BHU, Varanasi, India.
2. TEQIP Workshop on “*Advanced Materials Characterization Techniques*”, August 27 – September 1, 2019, IIT Hyderabad, India.
3. TEQIP III Workshop on “*Cleaner Technologies for Sustainable Environment*”, December 21–25, 2020, IIT Hyderabad, India.
4. AICTE Training and Learning (ATAL) on “*Advance of Pollution Control Technologies and Sustainable Development*”, August 2–8, 2021, MNIT Jaipur, India.
5. Workshop on “*Process Simulators for Chemical Engineering Applications (ASPEN & DWSIM)*”, January 13–17, 2022, MNIT Jaipur, India.
6. IEEE UP Section Workshop on “*Research Related Solutions for Faculty and Research Scholars*”, January 31 – February 4, 2022, Rajiv Gandhi Institute of Petroleum Technology, Amethi, India.
7. International Workshop on “*Advances in Water Purification and Wastewater Treatment*”, November 18–19, 2022, HBTU Kanpur, India.
8. Workshop on “*Recent Advances in Water Purification and Wastewater Treatment*”, November 29–30, 2023, HBTU Kanpur & Indian Desalination Association.
9. Two-Day Workshop on “*Intellectual Property Rights*”, December 5–6, 2023, HBTU Kanpur, India.
10. Two-Day Workshop on “*Mathematical and Statistical Methods in Engineering, Science and Management*”, July 7–8, 2025, HBTU Kanpur, India.
11. Two-Day Workshop on “*Analytical Approaches, Standards, and Regulation for Clean Water*”, March 12–13, 2026, IIT Kanpur, India.

Trainings & Faculty Development Programs (FDPs)

1. **Five-Day Online Short-Term Course** on “*Process Simulators for Chemical Engineering Applications (Aspen Plus & DWSIM)*”, January 13–17, 2022, Malaviya National Institute of Technology (MNIT), Jaipur, India.
2. **One-Week Online FDP** on “*Microbes’ Potential to Bail Out the Energy Crisis*”, December 15–20, 2022, Harcourt Butler Technical University (HBTU), Kanpur, India.
3. **Training Programme** on “*Wastewater Characterization, Treatment and Reuse (WCTR-2023)*”, April 10–11, 2023, Indian Institute of Petroleum and Energy, Vishakhapatnam, India.
4. **AICTE Training and Learning (ATAL) Program** on “*Recent Development of Sustainable Processes in Chemical and Allied Industries*”, February 5–10, 2024, Dr. Ambedkar Institute of Technology for Handicapped, Uttar Pradesh, India.
5. **Three-Day Training Programme** on “*Best Practicable and Available Technologies for Sugar Factories and Distillers in Control of Pollution and Mitigation Technologies*”, March 12–14, 2024, National Sugar Institute, Kanpur, India.
6. **Teacher Training Programme** on “*NEP 2020 Orientation & Sensitization Program*”, July 14–23, 2025, Malaviya Mission Teacher Training Centre (MMTTC), Shri Mata Vaishno Devi University, Katra, Jammu & Kashmir, India.
7. **Two-Day FDP** on “*Recent Advances in Bioelectronics and Energy Materials for Healthcare and Sustainable Development*”, July 21–31, 2025, Electronics and ICT Academy, NIT Patna, India.

8. **FDP** on “*Density Functional Theory Computations of Advanced Materials (DFT-Advanced)*”, September 4–13, 2025, Centre for Advanced Computational Research, Delhi, India.
9. **FDP** on “*Green Energy and Sustainable Materials: Innovations for a Net-Zero Future*”, September 7–11, 2026, HBTU, Kanpur.
10. **FDP** on “*Green Energy sustainable materials: Innovations for a Net-Zero Future*”, September 7–11, 2026, HBTU, Kanpur.

Coordination & Session Chair Roles

1. **Coordinator** – *Six-Week Technology-Based Entrepreneurship Development Programme (TEDP)*, January 6 – February 19, 2026; sponsored by DST, New Delhi; organized at HBTU Kanpur, India.
2. **Coordinator** – *Entrepreneurship in Health Informatics*, October 30 – November 10, 2025; sponsored by DST, New Delhi; organized at HBTU Kanpur, India.
3. **Coordinator** – *CHEMCON-2022*, December 27–30, 2022; organized at HBTU Kanpur, India.
4. **Coordinator** – *International Workshop on “Advances in Water Purification and Waste Water Treatment”*, November 18–19, 2022; organized at HBTU Kanpur, India.
5. **Session Chair** – *International Conference on “Sustainability in Chemical Processes through Digitalization, Artificial Intelligence and Green Chemistry, CHEMCON-2022”*, December 27–30, 2022; organized by HBTU Kanpur, India.
6. **Session Chair** – *Technical Paper Presentation*, February 9–17, 2024; organized by Technical Sub Council USAC, HBTU Kanpur, India.

Administrative Responsibilities

- **Executive Member**, Indian Institute of Chemical Engineers (IChE), Kanpur Regional Centre, 2023–2026.
- **Warden**, Saraswati Girls Hostel, Harcourt Butler Technical University (HBTU), Kanpur, Uttar Pradesh, India, from 2023.
- **Convener**, Hobby Sub-Council, USAC, HBTU Kanpur, Uttar Pradesh, India, from 2024.
- **NBA Criteria 6 Coordinator**, HBTU Kanpur.
- **NAAC Criteria 7 Coordinator**, HBTU Kanpur.
- **Co-Coordinator**, UHV Program, HBTU Kanpur.
- **Coordinator**, Industrial Training for UG/PG Students, 2024–2026.
- **UG Project Coordinator**, Department of Chemical Engineering, HBTU Kanpur, from 2023.
- **Lab In-Charge**, CRE Laboratory, HBTU Kanpur.
- **Departmental Audit Coordinator**, HBTU Kanpur.
- **UG Course Coordinator**, Department of Chemical Engineering, HBTU Kanpur
- **Time Table Incharge**, Department of Chemical Engineering, HBTU Kanpur

Professional Memberships

- **Life-Time Associate Member**, Indian Institute of Chemical Engineers (IChE), Membership No. LM-73301.
- **Life-Time Member**, Indian Desalination Association (InDA), Membership No. LM-471.
- **Life-Time Member**, Oil Technologists’ Association of India (OTAI), Membership No. CL-231/25 (2025).

Consultancy/Projects

- **Chemical Analysis of Geological Rock** – Conducted chemical characterization and compositional analysis of geological rock samples.
- **Chemical Analysis of Iron Ore Concentrates** – Performed detailed chemical evaluation and quality assessment of iron ore concentrates.
- **Adequacy Assessment of Effluent Treatment Plant of a Textile Mill** – Evaluated performance, compliance, and efficiency of the textile mill effluent treatment system.

Research Profile Links

Orcid: <https://orcid.org/0009-0005-4813-431X>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57198265063>

ResearchGate: <https://www.researchgate.net/profile/Anjali-Awasthi>