

CURRICULUM VITAE

Dr. Shubhasikha Das

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EDUCATION

- 2020–2024 **Ph.D. in Environmental Science & Engineering**
Indian Institute of Technology Kharagpur, West Bengal
Thesis: Synthesis, Characterization, and Assessment of High Entropy Materials for Photocatalytic Treatment of Pharmaceutically Active Compounds
- 2018–2020 **M.Tech. in Environmental Engineering**
National Institute of Foundry and Forge Technology, Ranchi
Jharkhand University of Technology
Thesis: Recent Trends in Cyanide Removal from Wastewater
- 2014–2018 **B.Tech. in Civil Engineering**
College of Engineering and Technology, Bhubaneswar
Biju Patnaik University of Technology

WORK EXPERIENCE

- 2025–Present Assistant Professor
Department of Environmental Science and Engineering
Indian Institute of Technology (Indian School of Mines), Dhanbad

JOURNAL PUBLICATIONS

Review Article

1. **Das, S.**, Tiwary, C. S., & Chowdhury, S., "High-entropy based materials for catalysis and sustainable energy-related applications: State of the art and future prospects. *Nanoscale*, 16, 8256-8272." <https://doi.org/10.1039/D4NR00474D>

Research Articles

1. **Das, S.**, Kumar, S., Sarkar, S., Pradhan, D., Tiwary, C.S., & Chowdhury, S., (2024). "High entropy spinel oxide nanoparticles for visible light-assisted photocatalytic degradation of binary mixture of antibiotic pollutants in different water matrixes. *Journal of Materials Chemistry A*." <https://doi.org/10.1039/D4TA02294G>
2. **Das, S.**, Sanjay, M., Kumar, S., Sarkar, S., Tiwary, C. S., & Chowdhury, S., (2023). "Magnetically separable MnFeCoNiCu-based high entropy alloy nanoparticles for photocatalytic oxidation of antibiotic cocktails in different aqueous matrices. *Chemical Engineering Journal*, 476, 146719." <https://doi.org/10.1016/j.cej.2023.146719>

3. **Das, S.**, Sanjay, M., Singh Gautam, A. R., Behera, R., Tiwary, C. S., & Chowdhury, S., (2023). "Low bandgap high entropy alloy for visible light-assisted photocatalytic degradation of pharmaceutically active compounds: Performance assessment and mechanistic insights. *Journal of Environmental Management*, 342, 118081." <https://doi.org/10.1016/j.jenvman.2023.118081>
4. **Das, S.**, Sain, M., Manzoor, Z., Kumar, S., Sarkar, S., Pradhan, D., Tiwary, C.S., & Chowdhury, S., (2025). "High entropy oxide nanoparticles for simultaneous photocatalytic degradation of antibiotics, analgesics, and antiepileptics in real water systems under continuous flow mode. *Journal of Environmental Management*, 388, 125975." <https://doi.org/10.1016/j.jenvman.2025.125975>
5. Parida, V. K., Kumar, Y., Das C., **Das, S.**, Sen, S., (2024). "Novel 3D plate-like g-C₃N₄/BiOCl heterojunction as a highly efficient photocatalyst for the degradation of carbofuran in wastewater under visible light irradiation. *Chemical Engineering Journal*, 499, 155930." <https://doi.org/10.1016/j.ccej.2024.155930>
6. Mohanty, G. C., Chowde Gowda, C., Gakhad, P., **Das, S.**, Sanjay, M., Chowdhury, S., Biswas, K., Singh, A., Tiwary, C. S., (2023). "Iron-cobalt-nickel-copper-zinc (FeCoNiCuZn) high entropy alloy as positive electrode for high specific capacitance supercapacitor. *Electrochimica Acta*, 470, 143272." <https://doi.org/10.1016/j.electacta.2023.143272>
7. Mohanty, G. C., **Das, S.**, Verma, A., (2024). "Fabrication of aqueous asymmetric supercapacitor device by using spinel type (FeCoNiCuZn)₃O₄ high entropy oxide and green carbon derived from plastic wastes. *Ceramics International*, 50, 48938-48947." <https://doi.org/10.1016/j.ceramint.2024.09.152>
8. Mohanty, G. C., **Das, S.**, Verma, A., (2024). "Synthesis of (FeCoNiCuMn)₃O₄ spinel-high entropy oxide and green carbon from agricultural waste for supercapacitor application. *RSC advances*, 14, 33830-33842. " <https://doi.org/10.1039/D4RA05204H>
9. Mohanty, G. C., Chowde Gowda, C., Gakhad, P., Verma, A., **Das, S.**, Chowdhury, S., Bhattacharya, J., Singh, A. K., Biswas, K., Tiwary, C. S., (2024). "Enhanced energy density of high entropy alloy (Fe-Co-Ni-Cu-Mn) and green graphene hybrid supercapacitor. *Energy Storage*, 6, e668." <https://doi.org/10.1002/est2.668>

BOOK CHAPTER

1. **Das, S.**, Parida, V.K., Tiwary, C.S., Gupta, A.K., & Chowdhury, S., (2023). "Emerging Contaminants in the Aquatic Environment: Fate, Occurrence, Impacts, and Toxicity. In K. Vasantharaj (Ed.), *Advancements in Bioremediation of Emerging Contaminants from Water Bodies*. USA: American Chemical Society.

CONFERENCE

1. **Das, S.**, Tiwary, C. S., & Chowdhury, S., (2023). "Development of a quinary high entropy alloy with excellent visible light-driven photocatalytic performance." *FEMS EUROMAT*, Frankfurt am Main, Germany: German Materials Society (DGM).
2. **Das, S.**, Tiwary, C. S., & Chowdhury, S., (2023). "Visible light-assisted photocatalytic degradation of tetracycline over a quinary high entropy alloy." *International Conference on Environmental Sustainability*, Mumbai, India.
3. **Das, S.**, Tiwary, C. S., & Chowdhury, S., (2023). "Enhanced photocatalytic degradation of sulfamethoxazole over a quinary high entropy alloy under visible light." *27th Annual Green Chemistry & Engineering Conference*, California, USA: : American Chemical Society.
4. **Das, S.**, Tiwary, C. S., & Chowdhury, S., (2023). "Visible light-assisted degradation of ibuprofen over a high entropy alloy." *ACS Fall*, San Francisco, USA: American Chemical Society.

PERSONAL DETAILS

Date of Birth : April 28, 1996
Gender : Female
Category : General
Nationality : Indian
Permanent Address : Cuttack, Odisha