



Maansi Aggarwal

Research Scholar, IIT Patna

Objective: To contribute to the ever-expanding field of biochemistry with carbon dot conjugation and biomass polymers for the advance development in nanosized bioadhesives.

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#206, Department of Chemistry, IIT Patna

Academic Background

Ph.D. in Chemistry 2021-Present

Indian Institute of Technology, Patna

CGPA: 8.79/10

M.Sc. in Chemistry 2018-2020

Thapar Institute of Engineering and Technology, Patiala

CGPA: 9.74/10

B.Sc. Non-Medical 2015-2018

M.C.M DAV College for Women, Chandigarh, Punjab University

Percentage: 83.25%

12th Class (CBSE) 2014-2015

Holy Heart Senior Secondary School, Nahan, Himachal Pradesh

Percentage: 92%

10th Class (CBSE) 2012-2013

Holy Heart Senior Secondary School, Nahan, Himachal Pradesh

CGPA: 9.80

Publications

- Method To Fabricate Adhesive Patch from Polymeric Protein Dots for Tissue Reinforcement and Wound Healing. **Maansi Aggarwal**, Diptiman Choudhury, Prolay Das ([Patent Filed, 2025](#))
- Bromine-doped Carbon Dot: Concentration-Dependent Multicolor Emission, Nanozyme Activity, and Visible-light-induced Photodynamic Bacterial Inactivation. Suman Nayak, **Maansi Aggarwal**, Prolay Das ([Carbon Letters, 2025](#))
- Carbonized Polymer Dot-Tannic Acid Nanoglue: Tissue Reinforcement with Concurrent Fluorescent Tracking, Insulin Delivery, and Reactive Oxygen Species Regulation for Normal and Diabetic Wound Healing. **Maansi Aggarwal**, Deepinder Sharda, Shruti Srivastava, Dinesh Kumar Kotnees, Diptiman Choudhury, Prolay Das ([Small, 2024](#))
- Multifunctional Self-Healing Carbon Dot–Gelatin Bioadhesive: Improved Tissue Adhesion with Simultaneous Drug Delivery, Optical Tracking, and Photoactivated Sterilization. **Maansi Aggarwal**, Harekrishna Panigrahi, Dinesh Kumar Kotnees, Prolay Das ([Biomacromolecules, 2024](#))
- Machine Learning-Mediated Ultrasensitive Detection of Citrinin and Associated Mycotoxins in Real Food Samples Discerned from a Photoluminescent Carbon Dot Barcode Array. **Maansi Aggarwal**, Pranab Sahoo, Sriparna Saha, Prolay Das ([Journal of Agricultural and Food Chemistry, 2023](#))
- Simultaneous Sustained Drug Delivery, Tracking, and On-Demand Photoactivation of DNA–Hydrogel Formulated from a Biomass-Derived DNA Nanoparticle. Ravi Shankar, Suman Nayak, Sneha Singh, Abhik Sen, Nitesh Kumar, Rashmi Bhushan, **Maansi Aggarwal**, Prolay Das ([ACS Applied Bio Materials, 2023](#))
- Preparation and Characterization of Curcumin Incorporated Soy Protein Isolate Biopolymeric Films. Shikha Rani, Priya Rani, **Maansi Aggarwal**, K Dinesh Kumar, Rakesh Kumar ([Journal of Polymers and the Environment, 2022](#))
- Two-dimensional ultrathin metal-based nanosheets for photocatalytic CO₂ conversion to solar fuels. **Maansi Aggarwal**, Nagaraj P Shetti, Soumen Basu, Tejraj M Aminabhavi ([Journal of Environmental Management, 2022](#))
- Photocatalytic carbon dioxide reduction: Exploring the role of ultrathin 2D graphitic carbon nitride (g-C₃N₄). **Maansi Aggarwal**, Soumen Basu, Nagaraj P.Shetti, Mallikarjuna, N.Nadagouda, Eilhann, E.Kwon, Young-Kwon Park, Tejraj M.Aminabhavi ([Chemical Engineering Journal, 2021](#))
- Photocatalytic conversion of CO₂ into valuable products using emerging two-dimensional graphene-based nanomaterials: A step towards sustainability. **Maansi Aggarwal**, Soumen Basu, Nagaraj P Shetti, Mallikarjuna N Nadagouda, Tejraj M Aminabhavi ([Chemical Engineering Journal, 2021](#))

Awards and Honours

- 2024 Best Poster Award at FINS Conference
- 2022 Prime Minister's Research Fellow (ID-2702444 July cycle)
- 2021 GATE Qualified (Chemistry)
- 2019 Summer Internship fellowship programme by IAS-NASI-NSA (Assigned IIT Ropar)
- 2018 Merit Scholarship during M.Sc. awarded by Thapar Institute of Engineering and Technology
- 2018 IIT JAM Qualified (Chemistry)
- 2015 Merit Scholarship during B.Sc. awarded by Punjab University

Teaching Experience

- CH-103: Introductory Chemistry, IIT Patna
- CH-440: Inorganic Practical, IIT Patna
- PC-100103: Atomic and Molecular Structure, NSIT, Patna
- PC-100203: Periodic Properties and Stereochemistry, NSIT, Patna
- PC-100203: Spectroscopic Techniques, NSIT, Patna
- PC-100203: Thermodynamic Functions and Water Chemistry
- CHEM 130: Physical Chemistry and Introduction to Organic Chemistry to Canadian students

Conferences

- 18th International Conference on Biomedical Engineering (ICBME 2024) at NUS, Singapore
- Frontiers in Nanomaterials Science: Aspects in Biotechnology and Chemical Engineering (FINS 2024) at NIT Patna
- International Conference on Advanced Nanomaterial and Nanotechnology (ICANN 2023) at IIT Guwahati
- Recent Trends in Chemical Science and Technology (RTCST 2024) at IIT Patna