MAANSI AGGARWAL

Ph.D. CHEMISTRY/PMRF SCHOLAR/GATE QUALIFIED/3+ YOE IN TEACHING

Female, 24 August 1997, Nahan, Himachal Pradesh

https://maansi-aggarwal.vercel.app/ maansi_2121ch12@iitp.ac.in +91 9736126334 LinkedIn Google Scholar

OBJECTIVE

Seeking an **Assistant Chemistry Professor** position in a university where I can leverage my **IIT Patna Ph.D. research expertise, PMRF** fellowship experience, and proven **3+ years of teaching experience**. With **10+ publications** in reputed journals such as ACS, Wiley, and Elsevier, along with **international conference presentations in Singapore and Japan**, I aim to contribute to **innovative teaching, high-quality research,** and active **academic development**.

TEACHING EXPERIENCE

GUEST LECTURER AT NETAJI SUBHAS INSTITUTE OF TECHNOLOGY (NSIT), BIHTA, PATNA AND TEACHING ASSISTANCE AT IIT PATNA

2022 - Present

- Conducted **175+ hours of lectures for ~30 student classes** at NSIT, Bihta, effectively teaching and mentoring students across core subjects such **as Atomic and Molecular Structure, Periodic Properties and Stereochemistry, and Spectroscopic Techniques.**
- Led **chemistry laboratory sessions for a cohort of 100 B.Tech students** at IIT Patna, **supervising experiments**, ensuring adherence to safety protocols, and supporting **grading and evaluation**. Additionally conducted **M.Sc. Inorganic Chemistry lab sessions for 30 postgraduate students**, delivering technical mentoring and managing detailed assessment and grading responsibilities.
- Facilitated **~70 hours of tutorial sessions** for B.Tech students at IIT Patna, **teaching a batch of 35 students** across **Design and Application of Nanomaterials and Introductory Chemistry**.

CHEMISTRY INSTRUCTOR (ONLINE – CANADA)

2020 – 2021

- Delivered **online chemistry classes to Canadian university students**, including learners from the **University of British Columbia** and the **University of Manitoba**. Conducted **Google Meet sessions to teach Physical Chemistry and Introduction to Organic Chemistry**, providing doubt-clearing support, solving course problems, and strengthening their conceptual understanding.

PUBLICATIONS

Published 10 research/review papers in esteemed journals including **Wiley Small, ACS Biomacromolecules, and Elsevier**, demonstrating strong research capabilities and domain expertise. Experienced in conducting high-quality scientific investigations and **fostering collaborations with external labs** and universities to enhance institutional impact. **Research publications include:**

- An Autoclavable, Antifreezing, Fluorescent Biomass Derived DNA Dot Organogel for Simultaneous Self-Sterilization, ROS Regulation and Growth Factor Delivery in Wound Healing Application. **Maansi Aggarwal**, Deepinder Sharda, Vidushi Bajpai, Diptiman Choudhury, Prolay Das (Macromolecular Bioscience, 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)

EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY, PATNA (2021-PRESENT)

Ph.D. in Chemistry
CGPA: 8.79/10

THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY, PATIALA (2018-2020)

M.Sc. in Chemistry
CGPA: 9.74/10

M.C.M DAV COLLEGE FOR WOMEN, CHANDIGARH, PANJAB UNIVERSITY (2015-2018)

B.Sc. Non-Medical
Percentage: 83.25%

HOLY HEART SENIOR SECONDARY SCHOOL, NAHAN, HIMACHAL PRADESH (2014-2015)

12th class (CBSE)
Percentage: 92.00%

HOLY HEART SENIOR SECONDARY SCHOOL, NAHAN, HIMACHAL PRADESH (2012-2013)

10th class (CBSE)
CGPA: 9.8/10

TEACHING COURSES

- CH3102: **Design and Application of Nanomaterials**, IIT Patna
- CH1201: **Chemistry B.Tech Lab**, IIT Patna
- CH103: **Introductory Chemistry**, IIT Patna
- CH440: **Inorganic Practical**, IIT Patna
- PC100103: **Atomic and Molecular Structure**, NSIT, Patna
- PC100203: **Periodic Properties and Stereochemistry**, NSIT, Patna
- PC100203: **Spectroscopic Techniques**, NSIT, Patna
- PC100203: **Thermodynamic Functions and Water Chemistry,** NSIT, Patna
- CHEM130: **Physical Chemistry and Introduction to Organic Chemistry** to Canadian students

- 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 CO_2 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-C_3N_4)" **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 CO_2 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)

PATENT

- "Method To Fabricate Adhesive Patch from Polymeric Protein Dots for Tissue Reinforcement and Wound Healing" **Maansi Aggarwal**, Deepinder Sharda, Diptiman Choudhury, Prolay Das (Patent Filed- 202531045881, 2025)

INSTRUMENTAL SKILLS

- FTIR
- HPLC
- UV
- Circular Dichroism
- Photo Luminescence
- Gel Electrophoresis
- Rheology

AWARDS AND HONOURS

- 2025 **Best Poster Award** at ICCS Conference (IIT Hyderabad)

- 2024 **Best Poster Award** at FINS Conference (NIT Patna)

- 2022 **Prime Minister Research Fellowship and Grant** (ID2702444 July cycle: Biomedical Engineering)

- 2021 **GATE Qualified** (Chemistry)

- 2019 **Summer Internship fellowship programme by IAS-NASI-INSA** (Assigned IIT Ropar)

- 2018 Awarded **Merit Scholarship during M.Sc.** by Thapar Institute of Engineering and Technology, Patiala

- 2018 **IIT JAM Qualified** (Chemistry)

- 2015 Awarded **Merit Scholarship during B.Sc**. by Panjab University, Chandigarh

CONFERENCES

- Material Research Meeting (MRM 2025) at **Pacifico Yokohama, Japan**

- International Conference on Chemistry for Sustainability (ICCS 2025) at **IIT Hyderabad**

- Frontiers in Nanomaterials Science: Aspects in Biotechnology and Chemical Engineering (FINS 2024) at **NIT Patna**

- 18th International Conference on Biomedical Engineering (ICBME 2024) at **NUS, Singapore**

- Recent Trends in Chemical Science and Technology (RTCST 2024) at **IIT Patna**

- International Conference on Advanced Nanomaterial and Nanotechnology (ICANN 2023) at **IIT Guwahati**