

AYAN MULLICK

2nd Year M.Tech Student
Materials Science and Engineering

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2023 - 2025	M.Tech - Materials Science and Engineering	Indian Institute of Technology, Kanpur	9.5/10
2019 - 2023	B.Tech - Polymer Science and Technology	University of Calcutta	9.13/10
2019	XII(WBCHSE)	Uttarpara Govt. High School	85.2%
2017	X(WBBSE)	Uttarpara Children's Own Home	93.8%

Key Projects

- Improving Corrosion Resistance of Railway Wagons through modified coatings on Mild Steel**
MTech Thesis (June'24 - Present)
Advisor: Prof. Shashank Shekhar, Department of Materials Science and Engineering, IIT Kanpur
 - Prepared and modified mild steel samples with **advanced Epoxy-based coatings** to enhance **corrosion resistance** and durability in various environmental conditions.
 - Optimized **coating compositions** to enhance resistance properties, contributing to longer-lasting railway wagon components.
 - Executed a series of tests, including **Immersion, Open Circuit Potential, Tafel Polarization, and Tape Adhesion test** to systematically assess the corrosion resistance and adhesion strength of coated samples.
- Synthesis and Swelling behaviour of Sodium Alginate and its modified beads for Agricultural application**
BTech Project (July'22 - May'23)
Advisor: Dr. Kishor Sarkar, Department of Polymer Science and Technology, University of Calcutta.
 - Formulated and analyzed three distinct bead types via **ionotropic gelation of Sodium Alginate** with **CaCl₂** solutions, focusing on their swelling behavior.
 - Normal **alginate beads** achieved a maximum water swelling of **388%** with enhanced stability, while **urea-loaded** alginate beads demonstrated a peak swelling capacity of **260%**. **MAP-loaded** alginate beads attained a maximum water uptake of **270%** before reaching equilibrium.
- Course Project (MSE 667) - Materials and Process Selection of Landing Gears in Aircraft** (Mar'24- Apr'24)
Instructor: Prof. Niraj Mohan Chawake, Department of Materials Science and Engineering, IIT Kanpur
 - Conducted in-depth analysis using **Ashby Chart** and **Materials Indices (MI)** to evaluate and select optimal materials, emphasizing **high strength, low weight**, and **superior fatigue resistance**.
 - Evaluated MI of advanced materials such as **high-strength steels, Ti alloys, Al alloys, and Mg alloys** on performance and manufacturing process of the component.

Internship

- Internship Trainee, Polycab India Limited, Gujarat** *Certificate* (Mar'23-Apr'23)
 - Acquired hands-on experience in polymer compounding and mixing using **Two Roll Mill**.
 - Conducted comprehensive product performance assessments through **tensile testing (UTM), specific gravity testing, hot set testing, thermal stability, and thermal aging testing**.

Technical Skills

- Languages:** Python
- Softwares:** Origin, X'Pert Highscore, MS Office
- Instrument Handling:** Universal Testing Machine, Optical Microscope, Melt Flow Index (MFI), Compression Molding, Hardness testing, Potentiodynamic Polarization, Phased Array Ultrasonic Testing, Ball milling

Relevant Courses(* BTech)

Polymer Rheology*	Plastics & Rubber Processing Technology*
Advanced Surface Coating Technology*	Plastic & Rubber Product Manufacturing Technology*
Polymer in Adhesive and Packaging*	Structure and Characterization of Materials
Selection and Designing with Engineering Materials	Mathematics and Computational Methods

Scholastic Achievements

- Achieved **A* grade** in **Mathematics and Computational Methods** and **A grade** in **Selection and Designing with Engineering Materials**.
- Qualified GATE 2023 Engineering Sciences (XE) with specialization in Polymer Science & Material Science.

Positions of Responsibility

- PG Core Team Member, Institute Counselling Service, IIT Kanpur** (Apr'24-Present)
 - Led the orientation program for almost **1500 Y24 PG students** for the **7-day event**.
 - Coordinated with various departments to schedule and deliver informative sessions and activities
- Institute Secretary, Academic and Career Council (PG), IIT Kanpur** (Apr'24-Present)
 - Led a team of **15+ members** of Managers and Secretaries to organize career-oriented events and seminars for over **1000 PG students**.
 - Conducted a **5-day** long Ansys workshop for the PG students, with **500+ participation**.
- Campus Director, Hult Prize, University of Calcutta** (Aug'22 - June'23)
 - Directed a team of **20 members**, ensuring effective coordination and execution of Hult Prize event on campus.
 - Implemented effective recruitment and engagement strategies, leading to over **15 teams** participating in the Hult Prize competition, while coordinating workshops and seminars on social entrepreneurship and business planning with industry experts and successful entrepreneurs

Extra-Curricular Activities

- Achieved Gold Medal in MatSoc Tournament (**MSSL**) **Season 1** and secured the second-highest wicket-taker position with **8 wickets**, contributing significantly to the team's success.
- Represented the PG team in the **Institute Cricket Championship (ICC 2.0)**, achieving personal milestones of **10 wickets**, establishing a reputation as a top-performing bowler among participating teams.
- Participated and Presented in **Plastic to Planet-Friendly: Ocean Day Challenge** on World Ocean Day.