

Debosmita Ghosh

✉ debosmitaghosh33@gmail.com ☎ 9051134922, 8777544198

[in](https://www.linkedin.com/in/debosmita-ghosh-690a33235) <https://www.linkedin.com/in/debosmita-ghosh-690a33235>

OBJECTIVE

I am a dedicated biomedical researcher with a strong foundation in Regenerative Medicine, Drug Delivery, Biomaterials, and Tissue Engineering. I am deeply passionate about translating scientific discoveries into impactful healthcare solutions and thrive in collaborative, innovation-driven environments.

ACADEMICS DETAILS

Indian Institute of Technology, Kharagpur (Jan-2026- Present)

PhD Scholar

Vellore Institute of Technology, Vellore (September 2022- August 2024)

M.Tech in Biomedical Engineering

Adamas University , Kolkata (August 2017- June 2021)

B.Tech in Biotechnology

SKILLS

Experimental Skills: Cell Culture, 3D cell culture model, Biopolymer Synthesis and Formulation, ELISA, Immunohistochemistry, Immunotechniques, PCR, Western Blot Techniques, Biochemical assay, Microscopy, FTIR analysis, NMR analysis, Rheology Testing, Compression molding, Adhesion Strength, **Technical Proficiency:** Data Handling & Analysis: Microsoft Excel (advanced functions, pivot tables, data visualization), GraphPad Prism, OriginLab

Scientific Writing & Documentation: MS Word (reporting, protocol writing), MS PowerPoint (professional presentations)

Visualization & Illustration: BioRender, Adobe Illustrator

Soft Skills: Team Collaboration, Proactive Communication, Analytical Thinking, Adaptability, Problem Solving.

EXPERIENCE

➤ Research Internship

Indian Institute of Technology, Hyderabad

(September 2023- June 2024)

During my research internship at the Biofabrication and Tissue Engineering Lab, IIT Hyderabad, under the supervision of Dr. Falguni Pati, I developed conductive hydrogel patches using silk, PVA, and conductive polymers for skin-adhesive electrodes aimed at enhancing wound healing. Also culturing human epithelial cells to optimizing cell-material interaction studies to evaluate adhesion, viability, and proliferation, and conducting material characterization (FTIR, NMR, tensile testing, conductivity) to ensure functional performance of the Hydrogel Patch. Also assisted in stem cell culture, decellularization techniques, and molecular assays including PCR, ELISA, and Western blotting. [Certificate](#)

Chittaranjan National Cancer Institute, Kolkata

(June 2019-July 2019)

Engaged in a comprehensive study on Mitochondrial Stress induced by Arsenic under the guidance of Dr. Nabanita Chatterjee, proficiently employed Western Blotting and PCR techniques to explore gene

expression patterns. I acquired valuable expertise in biochemistry-related analysis techniques, enriching my research capabilities.

Industrial Experience

➤ **Trainee**

(November 2024- August 2025)

As a Research Associate Trainee at Pandorum Technologies, I contributed to cell culture process development for advanced 3D in vitro ocular models, including Liquid Cornea hydrogels, bioprinted corneal implants, and suturable lenticule corneal skirts. My work involved maintaining and expanding human epithelial and corneal cell cultures in both 2D and 3D formats, optimizing conditions to enhance cell viability, proliferation, and conducting cell–material interaction studies to assess adhesion, morphology, and biocompatibility. I performed immunostaining and assisted in confocal microscopy for imaging. In parallel, I am working on process development and fill–finish activities for biopolymer-based hydrogel scaffolds, ensuring reproducibility, quality control, and compliance with defined specifications. This included physicochemical characterization (FTIR, NMR, rheology, adhesion strength, optical transmittance), also assisted in exosome release assays, and the development of peptide-based drug delivery systems for sustained and targeted therapeutic delivery.

PUBLICATION:

Journal Article

H. Gnanasambanthan, D. Ghosh, K. Hemavathy, A. Tyagi, S. Addy, and D. Maji, "Study of electrical conductivity, biocompatibility and degradation effect of copper electrodes with hydrogel coatings for use in flexible electronics," Applied Physics A, vol.130, p. 273, 2024/04/02 2024, DOI <https://doi.org/10.1007/s00339-024-07444-4> [2022 IF – 2.7]

CERTIFICATION

NPTEL Online Certification – Organ Printing

Conducted by IIT Hyderabad | Funded by MHRD, Government of India

Completed: [September, 2024]

Gained insights into 3D bioprinting, biomaterials, and techniques used for tissue and organ fabrication.

[Certificate](#)