

Sharanya Dattamandal

MTech, Nanoscience and Technology
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EDUCATION

University of Hyderabad, Telangana (2022-present)

MTech, Nanoscience and Technology, School of Engineering Sciences and Technology (SEST)

Project (ongoing) - Synthesis of Mesoporous Calcium Carbonate Nanoparticles (MCNs) and its characterization for drug-delivery application in gastric cancer treatment

CGPA- 9.4

Visva-Bharati University, West-Bengal (2018-2020)

M.Sc. in Physics, Department of Physics

Specialization - Particle Physics

Dissertation - Computational analysis of production of quarks and leptons in the p-p collision at the LHC (Using Monte-Carlo simulation)

CGPA- 7.04

Visva-Bharati University, West-Bengal (2015-2018)

B.Sc. in Physics, Department of Physics

CGPA - 7.31

Visva-Bharati University, West-Bengal (2014-2015)

Pre-Degree (12th standard)

Percentage - 88%

Visva-Bharati University, West-Bengal (2012-2013)

School Certificate (10th standard)

Percentage - 86%

RESEARCH EXPERIENCES

Laboratory of Functional Ceramic Materials, University of Hyderabad

MTech project Supervisor - Prof. Dibakar Das

Objective (Ongoing) - Designing a Nano-delivery system for the treatment of Gastric Cancer

- Synthesis of Calcium Carbonate nanoparticles as the primary delivery system.
- Characterization of the synthesized particles.
- Surface modification of the nanoparticles (including encapsulation and polymerization).
- Drug loading and release treatment.

ICMR-NICED, Kolkata (June-July, 2023)

Summer Internship, Supervisor - Dr. Sushmita Bhattacharya

Project - In-vitro treatment of Glycyrrhizin loaded Calcium carbonate Nanoparticles on AGS cell-line for observing cell viability and autophagy regulation

- Splitting of AGS cell line and performing MTT assay for Cell Viability.
- Protein Estimation for the autophagy inhibitor HMGB1.

High Energy Lab, Visva-Bharati University (2019-2020)

M.Sc. Dissertation Supervisor- Prof. Manas Maity

Objective - Computational study of the production of quarks and leptons in the p-p collision at the LHC

- Analytical study of the quarks and leptons in the p-p collision using Monte Carlo simulation by performing jet clustering.
- Analysis of root plots for transverse momentum, azimuthal angle and rapidity of the particles produced in the jets.

TECHNICAL SKILLS**Material Synthesis**

- Synthesis of Nanoparticles by chemical methods.
- Polymerization and functionalization of nanoparticles.
- Thin film deposition by PVD method.

Instrumentation

- FESEM for particle size analysis.
- EDAX for elemental information.
- UV spectroscopy
- Zeta Potential Analyzer (based on DLS)
- FTIR for functional group identification
- Sample Preparation of TEM

Analytical Techniques

- Using Origin software for particle size determination and plotting analytical data
- Developing image for protein estimation using software

Computer Skills

- OS- Windows and Ubuntu
- C and C++ scripting
- Microsoft Office Tools- Word, Excel, PowerPoint

Cell and Biological Techniques

- Cell splitting and in-vitro treatment of drug
- MTT assay for Cell viability estimation
- Western-Blotting technique for protein estimation (using Lowry method).

TRAINING AND ACHIEVEMENTS

- Indira Gandhi Scholarship for single girlchild (2 years of M.Sc.)
- AICTE fellowship for qualifying GATE, 2022.
- Selected for summer Internship in Bhabha Atomic Research Center (BARC), India during B.Sc., 2016.
- Summer internship in ICMR-NICED, Kolkata during Mtech, 2023.
- Presented poster at the Conference of Indian Ceramic Society, 2023.
- Elected School Councilor of School of Engineering Sciences and Technology (SEST), University of Hyderabad, 2022.