



Sayan Chakraborty

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OBJECTIVES

- To face the real world challenges and demands in an industry and solving them for the success of the organization.
- To apply my theoretical knowledge in the real world applications.
- To challenge my working capacity and increase my efficiency.

CORE COMPETENCIES

- Good problem solving abilities and communication skills
- Dedicated and smart worker
- Enthusiastic learner
- Flexible, adjustable and punctual

AWARDS AND ACHIEVEMENTS

- Received DAAD fellowship for obtaining highest CGPA in the department, IIT Kharagpur.
- Invited by IPF Dresden, Germany to work as a guest scientist for the completion of master's thesis.
- Got AIR of 291 in GATE Chemistry 2021 with marks 63 out of 100.
- Ranked 4th (State rank) in All India Mathematics Talent Search Examination.
- Participated in National Science Examination and ranked 1st in nationals (group achievement).

PROJECT & INTERNSHIP

Developed a multi functional sensor (stencil printed) using liquid rubber and MWCNT for healthcare monitoring (IIT Kharagpur)

Fabricated elastomer based multifunctional sensor (very cheap and easy to make) using liquid rubber and hydroxyl modified MWCNT which was able to sense change in different external stimuli like temperature, pressure and strain. Electrical conductivity and percolation plot was studied. Temperature sensitivity of the samples were measured. Pressure sensitivity was checked. The developed sensor could give repeatable and accurate data to different physiological tests like determining pulse rate, breathing rate, breathing pattern, muscular and joint movements; when mounted on human body. Detailed study of the output signals could explain whether an individual is fit or unfit.

Fabricating Piezoelectric and Thermoelectric elastomer composite using Liquid rubber and SWCNT (TUBALL)...Currently going on (IPF Dresden)

SWCNT (TUBALL) was oxidized to incorporate acidic group (-COOH group) followed by surface modification of the SWCNTs with barium titanate. The aim of the project was to study two series of samples prepared by using unmodified SWCNT and with Barium Titanate surface decorated SWCNTs and to compare the results obtained in each case in terms of Thermoelectric and Piezoelectric properties. Electrical conductivity was measured for obtaining percolation plot. The percolation threshold was observed

around 0.1 weight% of unmodified SWCNT. Incorporation of SWCNT/ MWCNT leads to excellent electrical conductivity, enhanced mechanical properties as well as incorporates Thermoelectric property. Barium titanate surface modification leads to improved Piezoelectric property. Elastomer composites were prepared using liquid rubber and varying the weight fraction of the filler. The results obtained for both the series will be analyzed and compared.

EDUCATION

M.Tech in Rubber Technology

August-2021 — Ongoing

Indian Institute of Technology, Kharagpur

The curricula involved courses on the basics of Polymer Science and Technology and most of it was dedicated to Rubber Technology. We learnt about different polymers (mainly rubbers) and their characteristic properties, applications and processing techniques. We were also introduced to the different testing techniques of a polymer material, different characterization techniques and to some advanced concepts like viscoelasticity, TPEs, adhesives and many other. Holistically, a comprehensive picture of Polymer Science and Engineering was delivered through the course of the study for first two semesters. The last two semesters are dedicated for carrying out a research internship.

CGPA- 9.36 (Till third semester)

M.Sc in Physical Chemistry (Specialization)

July-2018 — May-2020

Scottish Church College, University of Calcutta

In the first two semesters of the course, we were taught the elementary as well as advanced Physical, Inorganic and Organic Chemistry. The third semester was dedicated to different spectroscopies like NMR, IR and Mass spectroscopy along with Mathematics and Biochemistry as the two optional subjects. The final semester was entirely based on advanced Physical Chemistry.

CGPA- 7.17

B.Sc in Chemistry

August-2015 — April-2018

Scottish Church College, University of Calcutta

The course content was based on deep learning of Physical, Inorganic and Organic Chemistry. Along with it, we were taught Mathematics and Physics as the two elective subjects. The course content was so designed to enrich a student with proper knowledge of practicals as well.

Aggregate- 60.75%

Class XII (CBSE Board)

Kendriya Vidyalaya No.-2, Kharagpur

Aggregate- 90.6%

Class X (CBSE Board)

Kendriya Vidyalaya No.-2, Kharagpur

CGPA-10

SOFTWARE PROFICIENCY

- **Programming language-** FORTRAN 77
- **MS Office-** Word, Excel and Powerpoint

HOBBIES

Listening Music, watching movies, painting and traveling.

REFERENCE

Dr. Titash Mondal

Assistant Professor Grade I

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