

Curriculum Vitae

Elizabeth Davis

Fifth year BS-MS, Department of Chemistry,
IISER Kolkata, Kolkata, Nadia, West Bengal, India

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Education

2013-present

BS-MS Dual Degree program

Indian Institute of Science Education and Research(IISER), Kolkata, India

CGPA: 7.93/10 (currently in semester 10)

Major: Chemistry

Higher Secondary Education

2011-2013

Brahmanadhodayam Higher Secondary School, Kalady, Kerala, India

Marks Obtained: 96.2%

Subjects: Chemistry, Physics, Biology, Mathematics

Secondary School Of Education, Central Board of Secondary Education(CBSE), India

2011

Al-Ameen Public School, Sreemoolanagaram, Aluva, Kerala, India

CGPA: 9.6 (out of 10)

Relevant Courses

- General Physical Chemistry
- Physical Chemistry Laboratory
- Inorganic Chemistry I
- Quantum Chemistry I and II
- Inorganic and Spectroscopy Laboratory
- Spectroscopy (Fundamentals and Advanced)
- Reaction Mechanisms in Organic Chemistry (Basic and Advanced)
- Organic Synthesis and Characterization Laboratory (Basic and Advanced)
- Chemistry of Materials
- Chemistry of main group elements
- Chemistry of macromolecules
- Advanced Physical Chemistry Laboratory
- Polymer Chemistry Laboratory
- Organometallic Chemistry and Catalysis
- Chemical Thermodynamics
- Fluorescence Spectroscopy: Principles and Application
- Chemical Perspective of Biological Pathways
- Bioinorganic Chemistry
- Natural products and Medicinal Chemistry
- Physical Methods of Structural Elucidation
- Statistical Thermodynamics

Research Experiences

Undergraduate research- MS Thesis

May 2017-present

Supervisor: [Dr. Raja Shunmugam](#)
Associate Professor, Department of Chemistry
IISER Kolkata, Kolkata, India

Project Title: 'Design, synthesis, characterization of therapeutically important functional monomers'

The aim of the work is the synthesis of new class of monomers towards the development of biodegradable and biocompatible polymers for various therapeutic applications such as drug delivery carriers.

Summer Internship

May 2016- July 2016

Supervisor [Dr. Suresh Bhat](#)
Polymer Science and Engineering Division
CSIR – National Chemistry Laboratory, Pune, India

Project Title: 'Characterization of Thermo Sensitive Polymer Microgel using Light Scattering and Imaging Techniques.'

I studied the important properties of microgels including particle size, molecular weight and surface charge/charge content as a function of pH, temperature and ionic environment.

Summer Internship

May 2015-July 2015

Supervisor [Prof. Dr. Sabu Thomas](#)
Chief Editor, Nano-Structures & Nano-Objects, Elsevier
Professor of Polymer Science and Engineering
Hon: Director, International and Inter University Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kerala, India

Project Title: 'Effect of mixing methods on the dispersion of hybrid nanofillers in natural rubber (NR)/ chlorobutyl (CIIR) rubber blend'

The project was aimed at improving the properties of the polymers that are used in tires. Polymer blends (natural rubber and chlorobutyl rubber) were reinforced by using nanofillers. A fine dispersion of the fillers in the polymer matrix is a basic requirement for optimizing the reinforcement of the polymers. The fine dispersion was attained through different mixing and preparation methods. I studied the effect of the different mixing methods on the dispersion.

Supervisor [Dr. N Ravi Sundaresan](#)
Assistant Professor, Microbiology and Cell Biology
Indian Institute of Science (IISc), Bangalore, India

Project Title: 'Plasmid Isolation and Techniques'

Techniques and Skills

Characterization techniques NMR Spectroscopy, FT-IR, UV-Vis, Fluorescence, GPC, 3-D DLS, SLS, Viscometer, APC

Language skills Malayalam (mother tongue), English (proficient), Hindi

Computer Techniques Microsoft Office, Origin 8, Chemdraw, SciFinder

Fellowships and Grants

[Innovation in Science Pursuit for Inspired Research \(INSPIRE\)](#)

INSPIRE is an innovative programme developed by the Department of Science and Technology, Government of India for students who are top 1-percent of their respective 12th board exams or are within 10000 rank holders in IIT-JEE to attract talent to the excitement and study of science

Conferences and Symposiums

- One day Symposium on 'Supramolecular and Polymer Assembly' hosted by Indian academy for Cultivation of Science (IACS), Kolkata on 5th January 2017
- 'Chemistry Interfacing with Biology and Physics', National conference on hosted by IISER Kolkata during 27th -28th January 2017
- 'Smart Materials: Methods and Applications (SMMA 2017)', National Conference on organized by Centre for Advanced Functional Materials (CAFM), IISER Kolkata during 20-22 April 2017.
- Indo-Russia Conference on 'Polymeric Hydrogels' hosted by IISER Kolkata on 26th October 26, 2017.
- Participated in 'Vijyoshi- 2017' conducted by DST,INSPIRE and IISER Kolkata, during 10th Dec- 12th Dec 2017
- Frontiers in Organic Synthesis and Catalysis (FOSC)- 2018 organized by Dept. of Chemical Sciences, IISER Kolkata during Jan 10-11, 2018
- Asian Meeting on Metal Oxide assemblies 2017 (AMMOA-2017) organized by Council of Scientific and Industrial Research (CSIR).
- Structural Aspects in Studying Chemistry of Materials-2017(SASCheM-2017) organized by International Union of Crystallography (IUCr).

- Institute Colloquium by Prof. Edward I. Solomon from Stanford University, on the topic ‘Activating Metal Sites for Biological Electron Transfer’.
- Department Seminar by Prof. Armido Studer from University of Muenster, on the topic ‘Radical Cascades using Electron Catalysis’.
- Department Seminar by Dr. Shoubhik Das from George August University Goettingen on the topic ‘Carbon Dioxide as a reagent for fine Chemicals and Pharmaceuticals’.
- Participated in National Science Camp ‘VIJYOSHI 2015’ organized by KVPY and Department of Science and Technology, Government of India.
- The One Day Chemistry Symposium organized by Indian Institute of Science Education and Research Kolkata on The Department Of Chemical Sciences Day.
- Department Seminar by Prof. Susanta Banerjee from IIT-Kharagpur, on the topic, ‘Polymers with cardo units and membranes thereof for efficient gas separation’

Memberships

- The Department of Chemical Sciences, accredited by *Royal Society of Chemistry*
- Affiliate Member of *Royal Society of Chemistry*, Membership ID: 648115 (Students Chapter at IISER Kolkata)

Presentations and Posters

- ‘Enantioselective cyanation of benzylic C-H bonds via copper catalyzed radical relay’, as a part of Organometallic course work in Autumn 2016.
- ‘Thioacids mediated selective and mild N-acetylation of amines, A Simple and Effective Synthesis of Aryl Azides via Arenediazonium Tosylates’, as a part of Organic Synthesis laboratory course work in Spring 2016.
- ‘A study about the role of carbohydrate content in food products towards food finding in ants’, as a part of Ecology laboratory course work in Spring 2015.
- Poster Presentation on ‘Efficient Design to Monitor the Site Specific Sustained Release of Non-emissive Cancer Drug’ for Indo-Russia Conference on Polymeric Hydrogels hosted by IISER Kolkata, on 26th October 2017.

Extracurricular activities and interests

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| ✓ Dance | ✓ Volley Ball | ✓ Lawn Tennis | ✓ Cooking |
| ✓ Badminton | ✓ Reading | ✓ Photography | ✓ Music |

References

Dr. Raja Shunmugam

Associate Professor, Department of Chemical Sciences

IISER Kolkata, Kolkata, India

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Dr. Sabu Thomas

Professor of Polymer Science and Engineering

Hon: Director, International and Inter University Centre for Nanoscience and Nanotechnology

Mahatma Gandhi University, Kerala, India

E-mail: sabuthomas@mgu.ac.in

Dr. Suresh K Bhat

Principal Scientist, Polymer Science and Engineering Division

CSIR-National Chemical Laboratory, Pune, India

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