

Indranil Ghosh

indranilg@uchicago.edu; [LinkedIn](#)

ESB34, Gordon Center for Integrative
Sciences, 929 E 57th St, Chicago, IL
60637

ACADEMIC QUALIFICATIONS



THE UNIVERSITY OF CHICAGO,

PhD candidate

Sep 2020 - Present

Physical Chemistry with focus on nonlinear optical spectroscopy. Current GPA **3.93** on a scale of 4 (2 quarters).



NATIONAL INSTITUTE OF SCIENCE, EDUCATION AND RESEARCH,

BS-MS

Aug 2015 - Aug 2020

Chemistry Major. GPA **9.29** on a scale of 10 (10 semesters). *Summa cum laude*.



WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION,

Higher Secondary (12th grade) Examination

Mar 2015

Graduated from South Point High School, Kolkata, India. Percentage: **93.80%**



WEST BENGAL BOARD OF SECONDARY EDUCATION,

Secondary (10th grade) Examination

Mar 2013

Graduated from Ramakrishna Mission Vidyalaya, Narendrapur, Kolkata, India. Percentage: **92.87%**

RESEARCH EXPERIENCE



MASTERS PROJECT

Aug 2018 - May 2020

Supervisor: Prof. Arindam Ghosh, NMR Methodology Group, NISER, India

Developing methodologies in multidimensional NMR experiments: Using modern signal processing techniques including Linear Prediction, Filter Diagonalization and Wavelet Packet Denoising to address NMR methodological problems.



SUMMER PROJECT FELLOW

May 2019 - July 2019

Supervisor: Prof. Chad Rienstra, University of Illinois at Urbana-Champaign, Illinois, USA

Biomolecular Solid-State NMR Investigating structure and dynamics of celebrated antifungal Amphotericin-B and its interactions with cholesterol and ergosterol to determine its mechanism of action in a cell.



SUMMER PROJECT FELLOW

May 2018 - July 2018

Supervisor: Prof. Tapan K. Ghanty, Bhabha Atomic Research Centre, India

Theoretical prediction of noble-gas inserted molecules and clusters: Computational calculations undertaken to predict the existence of rare gas inserted chemical species, motivated from similar species found in interstellar space.



SUMMER PROJECT FELLOW

May 2017 - July 2017

Supervisor: Prof. Sourav Pal, Indian Institute of Technology, Bombay, India

Electronic Structure Theory: Studied Hartree-Fock theory, Configuration Interaction, Many Body Perturbation theory and preliminary Density Functional theory.



SUMMER PROJECT FELLOW

May 2016 - July 2016

Supervisor: Prof. Ashis K. Bhattacharya, National Chemical Laboratory, Pune, India

Protection and Deprotection of Amino Acids: Synthesized protected amino acids and performed subsequent steps for the total synthesis of biologically active molecules.

CONFERENCES AND WORKSHOPS



ENVIRONMENTAL DATA SCIENCE BOOTCAMPS

DSEER-NRT program at UChicago funded by NSF

Aug 31 - Sep 9, 2020



WORKSHOP: BASIC ASPECTS AND APPLICATIONS OF NMR SPECTROSCOPY

2018

Sep 24-26,

National Magnetic Resonance Society, India



RSC PUBLISHING WORKSHOP

National Institute of Science Education and Research, Bhubaneswar, India

Sep 21, 2016



JBNSTS SCIENCE WORKSHOP

Jagdish Bose National Science Talent Search, Kolkata, India

Dec 2013

TECHNICAL SKILLS

- **Programming Language:** MATLAB, Python, Shell Scripting
- **Techniques:** NMR spectroscopy, Fluorescence spectroscopy, Circular Dichroism spectroscopy, Machine shop, Spin coating, Plasma etching, Atomic Force Microscopy
- **Scientific Tools:** GNUPlot, Origin, LaTeX
- **Chemistry Software:** Gaussian, GAMESS, Molden, Avogadro, ChemDraw
- **NMR Tools:** TopSpin, matNMR, WaveLab, SIMPSON, XPLOR-NIH
- **Operating Systems:** Linux(Ubuntu), Windows, MacOS

ACCOLADES AND ACHIEVEMENTS

- **Freud fellowship** for the academic year 2020-2021 in the department of chemistry, The University of Chicago.
- Recipient of the *Indo-US Science and Technology Forum* **S. N. Bose fellowship 2019** for a summer internship in the **University of Illinois at Urbana-Champaign, USA**.
- Recipient of **INSPIRE fellowship** from the Department of Science and Technology (DST), Govt. of India from August 2015 to May 2020.
- Recipient of **IAS fellowship** the Indian Academy of Sciences(IAS), Govt. of India from May to July, 2018.
- Attended **VIJYOSHI** 2015 (National Science Camp) organised by Indian Institute of Science, Bengaluru, India.
- **School topper** of the School of Chemical Sciences, NISER for third, fourth, fifth, seventh and ninth semesters.
- Participated in **MIMAMSA 2017** and our institute bagged 3rd position in the final round.
- State rank **sixteenth** in the state of West Bengal (12th grade) in 2015.
- Cracked School Level (Stage I) National Standard Examination in Chemistry (**NSEC**) 2014.

PRESENTATIONS

- **Interactions in Solid-State NMR Spectroscopy**
- **Quantum Mechanics and the realm of Modern Chemistry**
- **Resolving Nonadiabatic Dynamics of Hydrated Electron using Ultrafast Photoemission Anisotropy**
- **Existence of the Time-Dependent Density Functional Theory**

EXTRA-CURRICULAR ACTIVITIES

GRADUATE COUNCIL: R&PD FUND

January 2021 - Present



The University of Chicago, IL, USA

Part of the reviewing committee of applications for the **Research and Personal Development Fund** as part of the Graduate Council of the University of Chicago.

ZAARIYA

Sep 2015 - May 2020



National Institute of Science Education and Research, Bhubaneswar, India

To stimulate social responsibility amongst all students and promote processes which are sustainable, socially inclusive and gender equitable to enable poor and marginalized rural people or communities to achieve a dignified quality of life. **Served as Secretary and President of Zaariya.**

SPICMACAY

Oct 2015 - May 2020



Odisha, India

Currently a volunteer of SPICMACAY Odisha, an all-India movement to promote Indian classical music and culture among the youth.

REFEREE(S)

Prof. Arindam Ghosh

Reader F, School of Chemical Sciences,
NISER Bhubaneswar, P.O.: Bhipur-Padanpur,
Jatni, Odisha, India. PIN: 752050.