

Indian Institute of Science Education and Research Kolkata  
Mohanpur, Nadia - 741246  
West Bengal, India  
☎ +91 7063443491  
☎ +91 8967203768  
✉ [evan.soumya@gmail.com](mailto:evan.soumya@gmail.com)  
✉ [sg19rs092@iiserkol.ac.in](mailto:sg19rs092@iiserkol.ac.in)

# Soumya Ghosh

## Curriculum Vitae

### Personal Details

**Date of Birth** 1st August, 1996  
**Gender** Male  
**Citizenship** Indian  
**Current Position** Senior Research Fellow (SRF) at IISER Kolkata; Doing PhD in Atomic & Molecular Physics under Prof. Dhananjay Nandi  
**Home Address** Vill.-Berui, P.O.-Ilsoba Mondalai, P.S.-Pandua, Dist.-Hooghly, West Bengal, India, Pin-712146

### Education

**2020–Present** **PhD**, Indian Institute of Science Education and Research Kolkata, Mohanpur, Nadia-741246  
Topic: Atomic & Molecular Physics, Electron attachment spectroscopy based study of diluted samples like atoms, molecules, ions, molecular clusters.  
**2017–2019** **MSc**, Indian Institute of Technology Kharagpur, Kharagpur, CGPA 8.14 out of 10  
**2014–2017** **BSc**, University of Burdwan, Burdwan, 65.25%  
I had got my B.Sc. degree from Burdwan Raj College, Burdwan. Which is one of the best college under the university of Burdwan.  
**2012–2014** **Higher Secondary**, West Bengal Counsel of Higher Secondary Education, West Bengal, 83.8%  
I had passed H.S. from Jangalpara B.C.K.M. High School.  
**2011–2012** **Secondary**, West Bengal Board of Secondary Education, West Bengal, 88%  
I had passed Secondary Examination from Jangalpara B.C.K.M. High School and Scored 100 out of 100 in Mathematics.

### Publication

- Fragmentation dynamics and absolute dissociative electron attachment cross sections in the low energy electron collision with ethanol**  
Anirban Paul, **Soumya Ghosh**, Dhananjay Nandi  
*Phys. Chem. Chem. Phys.*, 2023, **25**, 28263–28271. DOI: 10.1039/D3CP03601D

### List of Conference (Oral/Poster) Presentation

- Poster presentation at National Conference on Atomic and Molecular Physics 2023 (NCAMP-23):  
Title: Study of Absolute Cross Section for Dissociative Electron Attachment to 1-Propanol

16th-18th Feb. 2023, Thiruvananthapuram, India

## Conference Attended

*Conference Attended* **Attended**, National Conference on Atomic and Molecular Physics 2023 (NCAMP-23) is a prestigious biennial conference conducted by Indian Society of Atomic and Molecular Physics (ISAMP).

## Awards, Achievements & Membership of learned societies

- 2017 IIT-JAM (All India Rank-189)
- 2019 JEST (Marks-36.68, Percentile-94.73, All India Rank-385)
- 2020-2022 Junior Research Fellowship (JRF) at Indian Institute of Science Education and Research Kolkata (IISER Kolkata)
- 2021 Member of Indian Society of Atomic and Molecular Physics (ISAMP)
- 2022- Onwards Senior Research Fellowship (SRF) at Indian Institute of Science Education and Research Kolkata (IISER Kolkata)

## Languages

*Communication Languages* Bengali (Native Language), English (Professional working proficiency), Hindi (Native like)

## Research Interest

*Research Interest*

1. Doctoral student specializing in Atomic and Molecular Physics at the Indian Institute of Science Education and Research Kolkata, supervised by Professor Dhananjay Nandi.
2. *Research focus*: Studying electron-molecule interactions, specifically Dissociative Electron Attachment and Ion Pair dissociation processes at varying electron energies.
3. *Techniques used*: Velocity Map Imaging (VMI) with the Hexanode delay-line Detector to investigate molecules.
4. Developing an Electron Monochromator to explore the vibrational states of the molecules.
5. Currently constructing a setup with a supersonic gas jet to generate molecular clusters, aiming to understand electron interactions within cluster environments.
6. Future research plans include expanding to a liquid jet setup to investigate the interplay between electrons and liquid jets.
7. Research combines VMI, specialized detectors, supersonic molecular clusters, and liquid jets, opening new avenues for exploration.

---

## Skills

### *Developed Skills*

1. Hand-on experience with time-of-flight mass spectrometer
2. Hand-on experience with using and handling Micro-Channel Plates (MCPs) and Hexanode delay line detector.
3. Hand-on experience of working with ultra high vacuum.
4. Working with CoboldPC software from Roentdek for data acquisition
5. For data analysis: Matlab, Python, Origin Lab
6. For Computer interfacing: Labview, Matlab
7. 3D Designing: Solidworks; Ion optics simulation: SIMION
8. Research article writing: L<sup>A</sup>T<sub>E</sub>X, MS office

---

## Activities & Experiences during Higher education (Master's degree)

- Experimental Experiences* I have performed several experiments on *Condensed matter, Optics, Nuclear Physics, Electronics*. Some of the experiments is very beautiful and helps me a lot to grow my knowledge.
1. Michelson & Fabry–Pérot interferometer
  2. Experiments of fibre Optics
  3. Geiger–Müller Counter related experiments
  4. NMR, ESR & VSM experiments in Condensed matter lab
  5. To measure the Surface tension of liquid with a LASER source.
  6. Absorption spectra of Iodine.
  7. Study of Gaussian LASER beam.
- etc.