

Raunak Farhaz

Doctoral Student

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Department of Chemistry
Faculty of Mathematics and Natural Sciences
Humboldt-Universität zu Berlin
Brook-Taylor-Str 2, 12489
Berlin, Germany

Education

Humboldt-Universität zu Berlin, Institut für Chemie

Ph.D. (Theoretical Chemistry)

Advisor: PD Dr. Florian A. Bischoff

Dissertation: Molecules in extreme magnetic fields using Multi-Resolution Analysis (MRA)
2021 –

Jadavpur University, Department of Chemistry

B.Sc. & M.Sc. in Chemistry (specialization in physical chemistry)
2015 – 2020

Research Experience

- Research visit at UiT Tromsø, Norway (Oct 2023)
 - serialization of MRA wavelets of wave-functions into a compressed binary format
- Research internship (remote) at HU Berlin, Germany (2020)
 - basic understanding of MRA
- Research internship at IACS Kolkata, India
 - computational study of catalysis of Al-S bond breaking with H₂ evolution

Academic Contribution

- Presented a 5 min. flash talk at **Hylleraas Annual meeting 2023** UiT Tromsø, Norway
- Attended **Numerical Methods in Quantum Chemistry (NMQC) 2023** and presented a poster at UiT Tromsø, Norway.
- Attended **Symposium for Theoretical Chemistry (STC) 2022** at Heidelberg University, Heidelberg, Germany
- Attended and presented a poster in **DFTK Workshop 2022** at Sorbonne University, Paris, France

Grants and Fellowships

- **Research Grants – Doctoral Programmes in Germany, 2021/22** from **Deutscher Akademischer Austauschdienst (DAAD)**
- **INSPIRE scholarship** from **Department of Science and Technology (DST), Govt. of India** for graduate and postgraduate studies in natural sciences
- **Haji Mohd. Mahsin Scholarship, Govt. of West Bengal** (in secondary examination/10th standard) for securing a position among the top 50 students within the state

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Publication: Papers in Preparation

- **Farhaz R.**, Bischoff F. A., Stopkowicz S., Blaschke S. *Behavior of LCAO basis sets in extreme magnetic fields*
- Sardar R., Banik R., **Farhaz R.**, Ghosh S. *The drug induced micelle to super-micelle transition of cetyltrimethylammonium bromide(CTAB) and compares it with acetylenic gemini surfactant: an experimental and DFT study*

Community Contributions

- Organizer of **Numerical Methods in Quantum Chemistry** (NMQC 2025) conference at HU Berlin
- Organized a flash talk series (HU Berlin) **ChemistryCoffeeTalks** as a platform for PhD students for presenting, social gathering and networking of young researchers (2022-24)
- Provided quantum chemistry tutoring during COVID, using earnings to supply internet and books for economically disadvantaged students, bridging the digital divide
- Taught at a NGO as a social service to the school students who are below-poverty level

Teaching Activities

- Summer Semester 2022 at HU Berlin; **title:** Theoretical Molecular Spectroscopy; **level:** masters; **role:** instructor
- Private Tutoring (2020 & 2019); **topics:** Quantum Chemistry and Statistical Thermodynamics; **level:** masters

Computer Skills

- Programming: C++, Wolfram, Julia, Python, bash
- Typesetting: Typst, LaTeX, Quarto

Hobbies

Books, Music, Computers and Cooking

Spoken Languages

- **German** (very good)
- **English** (fluent)
- **Hindi** (very good)
- **Bengali** (mother-tongue)