Curriculum Vitae

Amlan Datta

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Educational qualifications

- PhD (ongoing), Ames National Lab and Iowa State University, Ames, US.
  CGPA: 3.79/4.00
- BS-MS Physics, IISER Kolkata, India.
  SGPA: 10.00/10.00, CGPA: 8.30/10.00

Research Interest

- Superconducting materials for quantum computing applications
- Superconductivity and coexisting long range orders like magnetism, CDW etc.
- Novel properties of superconductors and magnetic materials

Research experiences

1. Studying superconducting properties of quantum computing technology relevant novel materials along with understanding coexisting long range orders in exotic magnetic materials. (US, 2021-present)
2. Modeling of spin noise using a modified form of the quantum master equation (India, 2020-2021)
3. Weak measurements in Optics (India, 2020)
4. Experimental and theoretical investigation of photofragmentation mechanisms of polycyclic aromatic hydrocarbons (PAHs) exposed to XUV radiation (Germany, 2019)
5. Measurement of the surface tension and the viscosity of a liquid using the capillary waves as diffraction grating (India, 2017)
6. Entanglement entropy and mutual information of many-body localized quantum system (India, 2017)

Publications

1. Ghimire S.,..., **Datta A.** et al. (2025). **PRB** 111, 054507
2. **Datta, A**. et al. (2024). **SUST** 37(9), 095006.
3. Ghimire S., Joshi K.R., **Datta A.** et al. (2024). **MQT** 4 045201.
4. Oh J.S.,..., **Datta, A.** et al. (2024). **Acta Materialia**, 276, 120153.
5. Ghimire S.,..., **Datta, A.** et al. (2024). **PR Research** 6(1), 013124.
6. Joshi, K.R., **Datta A.** et al. (2023). **PR Applied** 20(2), 024031.
7. Tikhonov D. S., **Datta A.** et al. (2020). **ZPC** 234(7-9), 1507-1531

Instrumentation

- Built and running cryo-free Magneto optical setup (base temp. 3.5 K)
- Working on closed cycle He3 Bender (base temp. 400 mK) for non-destructive qubit characterization
- Running He3 based Tunnel Diode Resonator (base temp. 300 mK)

Computer Skills

- Programming languages: Julia, Python, MATLAB
- Softwares: LATEX, gnuplot, Origin Lab, Mathematica, ImageJ

Achievements and Awards

1. **Best poster award** at **US Quantum Information Science Summer School** at ORNL, Tennessee, US
2. **Richard G. Patrick Award for Teaching Excellence** in 2024 at Iowa State University, US.
3. **Richard G. Patrick Award for Teaching Excellence** in 2023 at Iowa State University, US.
4. **Graduate College Teaching Excellence Award** in 2022 at Iowa State University, US.
5. **INSPIRE Fellow** (2016-2021) by Department of Science and Technology, Govt. of India.

Teaching experiences

1. Introduction to Classical Physics II Lab, Spring'25 at Iowa State University, Ames, Iowa, US.
2. Introduction to Classical Physics II Lab, Spring'24 at Iowa State University, Ames, Iowa, US.
3. General Physics II Laboratory, Spring'23 at Iowa State University, Ames, Iowa, US.
4. Introduction to Classical Physics II & Lab, Fall'22 at Iowa State University, Ames, Iowa, US.
5. Introduction to Classical Physics I & Lab, Spring'22 at Iowa State University, Ames, Iowa, US.
6. Introduction to Classical Physics II & Lab, Fall'21 at Iowa State University, Ames, Iowa, US.
7. Computational Physics, 2021 at IISER Kolkata, India.
8. Mechanics II, 2020 at IISER Kolkata, India.
9. Intro. to Computation, 2020 at IISER Kolkata, India.