Rakshit Jain

Contact Information

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Research Interests

My research interests lie in the field of experimental solid state physics and photonics. I am broadly interested in experimental quantum sensing, optics, control and information.

Education

Indian Institute of Technology Bombay, Mumbai, India *July 2014 – Present*

Final Year (Bachelor of Technology in Engineering Physics with honors), Department of Physics

- **Major Cumulative Performance Index (CPI):** 9.37/10 (Detailed List of Courses)
- **Minor Degree:** Department of Electrical Engineering

Publications and Preprints

- **Jain R.**, Poonia V.S, Ganguly S.; *Sensitive magnetic compass in the presence of decohering nuclear environment* . arXiv:1712.04623 [quant-ph] (to be submitted to Phys. Rev. E)

Key Research Work

Quantum Sensing Lab, University of Basel, Department of Physics
Nonlinear Fano resonance in a single spin coupled to a mechanical oscillator
Guide: Prof. Patrick Maletinsky *Summer 2017*
Side Project: Using Dynamical Decoupling pulses to probe the depth of NV centers
Guide: Prof. Patrick Maletinsky and *Dr. James Wood* *Summer 2017*

Photonics And Quantum Enabled Sensing Technology Lab, Indian Institute of Technology Bombay
Sensing Radical Pair by single defect centers in Diamond
Guide: Prof. Kasturi Saha, with Vishvendra Singh Poonia *May 2017 -*

Quantum Biology and Biomimetics Group, Indian Institute of Technology Bombay
Sensitivity and Coherence in a realistic Radical Pair model
Guide: Vishvendra Singh Poonia and Prof. Swaroop Ganguly; Junior Thesis

Achievements and Awards

- Received DAAD WISE Scholarship for 10 weeks internship in Germany. (offered)
- Received **AP grade** for **exceptional performance** in 3 courses done at IITB - Introduction to Condensed Matter Physics, Introduction to Renewable Technologies and Electronic Devices and Circuits
- Awarded with Medhawi Vidyarthi Protsahan Scholarship for being among the top candidates in High School Certificate Exam

Key Coursework

Physics
Advanced Magnetic Materials, Applied Solid State Physics, Photonics, Quantum Information and Computing, Electromagnetic Theory, Quantum Mechanics I and II, Introduction to Condensed Matter Physics, Introduction to Atomic and Molecular Physics, Analytical Techniques

Electrical Engineering and Energy
Electronic Devices, Analog Circuits, Digital Systems, Signal and Systems, Introduction to Renewable Technologies

Technical Skills

Programming	Mathematica, C/C++, Python, Matlab, HTML/CSS,LaTeX
Software Packages	COMSOL, T-CAD, Origin, Inkscape, Illustrator
Science Software	Python packages: QuTip, NumPy, SciPy and Matplotlib