

Ayush Kumar Gupta

S/o Sh. Krishan Murari Gupta

Ph. D. student

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EDUCATIONAL QUALIFICATION

2022 - Present	Ph. D.	Indian Institute of Technology, Kanpur	9.5
2020 - 2022	M. Sc. (Physics)	Indian Institute of Technology, Kanpur	7.9/10
2017 - 2020	B. Sc.	University of Rajasthan	67%
2016	10+2	Board of secondary education Rajasthan	86%
2014	Matric	Board of secondary education Rajasthan	88.50%

RESEARCH EXPERIENCE

- **Research Project (Aug, 2022 - Dec, 2022): spin Hall nano oscillator** under the supervision of Prof. Rohit Medwal at IIT Kanpur.
- **Research Project (Jan, 2023 - May 2023): Width dependent properties of field free SHNOs** under the supervision of Prof. Rohit Medwal at IIT Kanpur.
- **Research Internship (Dec 2022 / May - June 2023):** Completed under the supervision of Dr. Joseph V Vas, The Ernst Ruska-Centre for Microscopy and Spectroscopy, Germany. Research work was titled **Magnetic vortex dynamics with pure spin current**.
- **M.Sc. Project (December, 2021 - May, 2022): Active dynamics in harmonic well and fluctuation theorem** under the supervision of Prof. Manas Khan at IIT Kanpur.
- **M.Sc. Project (Aug, 2021 - November, 2021): Simulation based investigation of Active Brownian particle in visco-elastic medium** under the supervision of Prof. Manas Khan at IIT Kanpur.

CONFERENCES/WORKSHOPS

- **SAKURA Science** Exchange program (December 2023) at Kyutech, Japan.
- Poster presentation at **International Conference on Functional Materials (ICFM) 2024** at IIT Kharagpur.
- **DST STUTI (Jan 2023): Workshop organised by Department of science and technology**

PUBLICATIONS

- **Ayush K Gupta**, Sourabh Manna, R.S. Rawat, Rohit Medwal. "Magnetization dynamics due to field interplay in external field free spin Hall nano-oscillators", *Phys Rev. B* **109** 134421 (2024)
- Md Rejaul Karim, Sourabh Manna, **Ayush K. Gupta**, John Rex Mohan, Suman Kumar Maharana, et al. "Controlled out-of-plane spin-orbit torque in polycrystalline IrMn3 for field-free perpendicular magnetization switching" (Submitted to PRB)
- Joseph V Vas, **Ayush K Gupta**, Aaron, John R Mohan, Y Fukuma, R Medwal, M Duchamp. "Squiracle trajectories of Magnetic vortex precession using Spin-Orbit Torque" (Submitted)

AWARDS AND HONOURS

- Shortlisted for SHE DST-INSPIRE fellowship.
- Gave a talk titled **Spintronic and spin texture devices for RF generation** at The Ernst Ruska-Centre for Microscopy and Spectroscopy, Germany.
- Awarded Prime Minister's Research Fellowship (PMRF).

TEACHING EXPERIENCE

- Teaching Assistant PHY 111A (Physics laboratory)(Oct 2022 - Feb 2023/March 2022 - June 2023)
- Teaching Assistant PHY 441A (Electronics laboratory)(July 2023 - November 2023)
- Teaching Assistant at Chhatrapati Shivaji Maharaj University, Kanpur(December 2023 - April 2024)

TECHNICAL SKILLS

- **Programming languages:** Python, MATLAB, HTML
- **Tools & OS:** Mumax3, COMSOL Multiphysics, ORIGIN, Jupyter Notebook, Linux, Mathematica
- **IT Skills:** Latex, Shell scripting, HPC, Web development (built Group website home.iitk.ac.in/~rmedwal)

Place:- Kanpur

Dated:- 5-December-2022

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