Curriculum Vitae

Personal Details:

Name: Dr. Koustuv Roy

Address: Chakiavita, Jalpaiguri, West Bengal, 735135

Designation: Assistant Professor in Physics

Email: koustuv.roy@apcrgc.org

Mobile: 8637044377

Date of Birth: 09/07/1994

Education and Qualification:

Examination Name	Institution	Year
Secondary	Siliguri Boys' High School	2010
Higher Secondary	Siliguri Boys' High School	2012
B.Sc. (Hons. in Physics)	A.P.C Roy Govt. College Siliguri	2015
M.Sc. in Physics	IIT Madras	2017
PhD	NISER, Bhubaneswar (Homi Bhabha National Institute)	2023

Other Qualifications:

1. Qualified WBJEE 2012
2. Qualified AIEEE 2012
3. Qualified JEE (Main) 2013
4. Qualified IIT JAM 2015.
5. Qualified CSIR-JRF held on June, 2016.
6. Qualified JEST 2017.
7. Qualified GATE 2017.
8. Qualified UGC-JRF held on December, 2017.

Awards and Achievements:

- Merit scholarship holder of IIT Madras which is awarded to the top 10% students of the institute.
- CSIR Junior research fellow at NISER.
- CSIR Senior research fellow at NISER.
- Best poster award at DAE SSPS-2019 conference held at IIT Jodhpur.

Conference attended:

1. Presented a invited talk at "Fourth International Conference on Nanostructured materials and Nanocomposites (ICMN-2017)" at Mahatma Gandhi University, Kottayam, Kerala, India.
2. Presented a poster in 'International Conference on Magnetic Materials and Applications (ICMAGMA)' in 2018, in NISER, Bhubaneswar, India.
3. Presented a poster in 12th India-Singapore Physics Symposium (ISPS 2019), in 2019, in IOP, Bhubaneswar, India.
4. Presented a poster in 'Bringing The Nanoworld Together (BTNT)' in 2019, in NISER, Bhubaneswar, India.
5. Presented a poster in 64th DAE Solid State Physics Symposium (DAE-SSPS 2019), in IIT Jodhpur, India.
6. Presented a poster in 'AtC-AtG Magnetics International Conference" (AtC-AtG 2021), virtual conference.
7. Presented a poster in 'Indo-Japan Workshop on Interface Phenomena for Spintronics (IJW-IPS 2022)', virtual conference.
8. Invited talk at virtual international seminar on "Modern Trends in Humanities, Science & Technology and Social Sciences for sustainable development" on 2022 at APC Roy Govt. College.
9. Oral presentation in 'AtC-AtG Magnetics International Conference' in 2022 (AtC-AtG 2022), virtual conference.

Expertise on instruments:

- Thin film preparation via electrodeposition.
- LCR meter
- Ferromagnetic resonance spectroscopy
- Magnetron sputtering, e-beam deposition for thin film deposition.
- Atomic force microscope.
- Scanning electron microscope.
- Electron beam lithography.

- Focused ion beam microscope.
- Magneto optic Kerr microscope.

Computational Skills:

- C++, Root, Fortran, Python, SciLab.
- Familiar with the operations of Mathematica, MatLab, Origin.
- Microsoft office operations.
- LATEX.
- LINUX.
- LabView for instrument interfacing.
- Primary Web designing.

Professions:

Working as an Assistant Professor in Physics at A.P.C Roy Govt. College Siliguri from 17th August, 2020.

Teaching Experience:

- Worked as a Teaching Assistant (TA) at NISER in "Advance condensed matter physics" course for the master's students.
- Worked as a Teaching Assistant (TA) at NISER in "Basic electronics" course for the bachelor's students.
- Taught Mathematical Physics-I, Electricity and Magnetism, Optics and Waves, Mathematical Physics-II, Computational Physics, Mathematical Physics-III, Basic Instrumentation Skills, Solid State Physics, Advance Mathematical Physics-I, Statistical Mechanics, Advance Mathematical Physics-II under the CBCS syllabus at APC Roy Govt. College.

Administrative Experience:

- Served as a Nodal Officer of Scholarship schemes, West Bengal Credit Card Scheme at APC Roy Govt. College.
- Served as a convener of Website development committee at APC Roy Govt. College.
- Served as a member of Library development, Student Harassment Cell, Career Counselling committee at APC Roy Govt. College.

Research Experience:

I have an experience on working with magnetic thin films to optimize the magnetic impedance value for magnetic field sensor applications. I have also worked on the spin to charge conversion efficiency in various high spin orbit coupling materials (e.g. heavy metals, oxides, antiferromagnets) for the future spintronics device applications. I am currently working on "antiferromagnetic spintronics" where antiferromagnets are used as an active component in a device for faster response.

Publications:

1. B. B. Singh, **K. Roy**, P. Gupta, T. Seki, K. Takanashi, and S. Bedanta, *High Spin Mixing Conductance and Spin Interface Transparency at the Interface of a Co2Fe0.4Mn0.6Si Heusler Alloy and Pt*, Nature Physics Group Asia Materials **13**, 1 (2021).

2. K. Roy, A. Mishra, P. Gupta, S. Mohanty, B. B. Singh, and S. Bedanta, *Spin Pumping and Inverse Spin Hall Effect in CoFeB/IrMn Heterostructures*, J. Phys. D: Appl. Phys. **54**, 425001 (2021).

3. K. Roy, S. Nayak, P. Gupta, and S. Bedanta, *Spin dynamics and inverse spin Hall effect study in Pt/NiMn/CoFeB system.* Phys. Chem. Chem. Phys. **24**, 24323-24327 (2022).

4. **K. Roy**, A. Mishra, S Nayak, P Gupta, B. B. Jena and S. Bedanta., *Spin to charge conversion in semiconducting antiferromagnetic Co3O4,* ACS Appl Electron Mater **5**, 1575 (2023).

5. P. Gupta, B. B. Singh, **K. Roy**, A. Sarkar, M. Waschk, T. Brueckel, and S. Bedanta, *Simultaneous Observation of Anti-Damping and the Inverse Spin Hall Effect in the La0.67Sr0.33MnO3/Pt Bilayer System*, Nanoscale **13**, 2714 (2021).

6. B. B. Singh, **K. Roy**, J. A. Chelvane, and S. Bedanta, *Inverse Spin Hall Effect and Spin Pumping in the Polycrystalline Noncollinear Antiferromagnetic Mn_3Ga*, Phys. Rev. B **102**, 174444 (2020).

7. B. Sahoo, **K. Roy**, P. Gupta, A. Mishra, B. Satpati, B. B. Singh, and S. Bedanta, *Spin Pumping and Inverse Spin Hall Effect in Iridium Oxide*, Advanced Quantum Technologies **4**, 2000146 (2021).

Hobbies:

- Travelling and exploring the nature.
- Driving.
- Playing and Watching Cricket Matches.