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Dr. Rajeswari Roy Chowdhury

► Objectives

To deliver outcome-based, student-centered education by integrating theoretical concepts with hands-on experimental learning, fostering critical thinking, problem-solving, and practical skills in Engineering Physics. I aim to connect fundamental physics with real-world engineering applications through interactive teaching, inquiry-based laboratories, and continuous assessment, preparing students for successful careers in research, industry, and higher education. I believe in combining both online and offline teaching methods to create a flexible, engaging, and effective learning environment.

► Education

1. PhD., Physics (Experimental Condensed Matter Physics), Saha Institute of Nuclear Physics, India, 2017
2. Post MSc. Associateship program, Saha Institute of Nuclear Physics, India, 2011
3. MSc. (Physics), Rajabazar Science College, University of Calcutta, 2010
4. BSc. (Physics), Asutosh College, University of Calcutta, 2008
5. HS, Bidya Bharati Girls' High School, West Bengal Council for Higher Secondary Examination, 2005
6. Secondary Examination, Bidya Bharati Girls' High School, West Bengal Board of Secondary Examination, 2003

► Work Experience

1. Associate Professor, BSHU Department, Dream Institute of Technology, 2025-Present.
2. Postdoctoral Research Associate, University of South Florida, USA, 2024-2025.
3. DST INSPIRE Faculty, S. N. Bose National Centre for Basic Sciences, 2023-2024.
4. DST INSPIRE Faculty, Indian Institute of Science Education and Research, Bhopal (IISERB), 2018-2023.
5. Postdoctoral Research Fellow, Indian Institute of Science Education and Research, Mohali (IISERM), 2017-2018.

► Achievements and Awards

1. Best Paper Award, Technical Session 18, 4th International Conference on Recent trends in Materials Science & Devices (ICRTMD-2026), JVMGRR College, Charkhi Dadri, Haryana, April 6th – 8th 2026.
2. Best Poster Award at the 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, January 13th – 17th, New Orleans, USA (2025).
3. Received EXCELLENT Grade in performance review meeting of DST INSPIRE Faculty held at JNCASR, Bangalore, December 2022.
4. Materials Research Society of India (MRSI) Best Talk Award at National Conference on Low Dimensional Materials (LDMAT), June 2nd- 4th 2021, Mumbai, India (online presentation).
5. DST-INSPIRE Faculty award in Material Sciences by Department of Science and Technology, India (2018).
6. Senior Research Fellowship from Department of Atomic Energy (DAE), Government of India (2012).
7. Ranked within the first five in the Post. M.Sc. Associateship Program (Physics) at Saha Institute of Nuclear Physics (2011).
8. Junior Research Fellowship from Department of Atomic Energy (DAE), Government of India (2010).
9. Secured ranking within the top 5 students in MSc. (Physics) course of University of Calcutta (2010).

► **Courses taken:**

- **UG course:** Physics-I (BS-PH101, BS-PH201), Physics-I Laboratory (BS-PH191, BS-PH291) following syllabus of Maulana Abul Kalam Azad University of Technology, Physics course (PHY103) for 2019-2020, 2021-2022 at Indian Institute of Science Education and Research Bhopal (IISERB): General Physics Laboratory -I, Physics course (PHY 210) for 2021-2022 at IISERB: General Physics Laboratory -II, Physics course (PHY 101) for 2020-2021 at IISERB: Mechanics. **Guest lecturer** in Behala College under University of Calcutta (2017). Teaching Assistant at IISER Mohali (2018).
- **PG course:** Physics course (PHY 308) for 2020-2021 at IISERB: Advanced Physics Laboratory.

► **Research Interests and experiences:**

- Specializing in experimental Condensed Matter Physics and Quantum Materials. Deep expertise in magnetism, spin and thermal transport, and magneto-optical phenomena in topological quantum materials and 2D devices, driving research toward novel and unexplored computing paradigms.
- Growth of Huesler alloys, High entropy alloys, 2D single crystals and fabrication of devices based on 2D materials.
- Dedicated to the scientific community with over 5+ years of active peer review for internationally renowned journals. Reviewer of American Physical Society Journals: Physical Review B, Physical Review M, IOP Science and Elsevier.
- **Researchgate:** <https://www.researchgate.net/profile/Rajeswari-Roy-Chowdhury>
- **Google scholar:** <https://scholar.google.com/citations?user=OuixHnoAAAAJ&hl=en>

► **Research Grants and Fundings**

1. DST INSPIRE Research grant (Department of Science and Technology, Government of India) (completed)
* Individual-centric research grant, **Role: Principal Investigator**, Duration: Oct. 2018- Feb. 2024
Total budget: ~ 35,00,000 INR
2. RIEC International Cooperative Research Project, Tohoku University (collaborative project with Tohoku University) (**ongoing**), **Role: Co-Investigator**. Duration: Apr 2025- March 2027.
3. RIEC International Cooperative Research Project, Tohoku University (collaborative project with Tohoku University) (completed), **Role: Co-Investigator**. Duration: Apr 2023- Mar 2024. Total budget: ~ 3,00,000 INR
4. RIEC International Cooperative Research Project, Tohoku University (collaborative project with Tohoku University) (completed). Duration: Apr 2021- Mar 2022. Total budget: ~ 3,00,000 INR
5. RIEC International Cooperative Research Project, Tohoku University (collaborative project with Tohoku University) (completed). Duration: Apr 2020- Mar 2021. Total budget: ~ 3,00,000 INR

► **Publication list:**

- **Journal Publications:**

1. Elnaz Jaberolansar, Shah Qasim Jan, **Rajeswari Roy Chowdhury**, Shyam S Mohapatra, Subhra Mohapatra, Hari Srikanth, Synthesis and in vitro evaluation of PEG/PEI-coated Fe₃O₄ nanoparticles for magnetic hyperthermia, Journal of Alloys and Compounds. 1077, 189531 (2026). DOI: <https://doi.org/10.1016/j.jallcom.2026.189531>
2. Shah Qasim Jan, **Rajeswari Roy Chowdhury**, Noah Schulz, Ayomipo Israel Ojo, María González de la Vega, Jesús A Blanco, Pedro Gorria, Darío A. Arena, Hariharan Srikanth, Carbon Confinement as a Design Principle for Multiphase Magnetic Nanocomposites With Broadband Functionality, Advanced Functional Materials, e31306 (2026). DOI: <https://doi.org/10.1002/adfm.202531306>
3. Amit Chanda, Noah Schulz, **Rajeswari Roy Chowdhury**, Manh-Huong Phan, Hariharan Srikanth, Recent progress in anomalous nernst effect in magnetic Heusler alloys, Journal of Physics: Condensed Matter. **37**, 473007 (2025). DOI: [10.1088/1361-648X/ae1ec1](https://doi.org/10.1088/1361-648X/ae1ec1)

4. Mona Fadel, Pablo Álvarez-Alonso, M Rivas, A Adawy, JL Sánchez Llamazares, Ricardo López-Antón, Shah Qasim Jan, **Rajeswari Roy Chowdhury**, Darío A Arena, Hariharan Srikanth, Jesús A Blanco, F Suarez-García, Pedro Gorria, Carbonization driven magnetic domain evolution in Ni@C Nanocomposites: Impact on magnetic anisotropy and heating efficiency, *Materials & Design* **259**, 114838 (2025). DOI: <https://doi.org/10.1016/j.matdes.2025.114838>
5. **Rajeswari Roy Chowdhury** *, Natalia F Shkodich, Tufan Roy, Tatiana Smoliarova, Dang K Le, Emmanouil Kasotakis, Masafumi Shirai, Michael Farle, Manh-Huong Phan, Hariharan Srikanth, Large Anomalous Hall Effect in a Nanocrystalline Room-Temperature Ferromagnetic CoCrFeNiGa High-Entropy Alloy, *ACS Nano* **19**, 32967 (2025). (IF: 16.0). DOI: <https://doi.org/10.1021/acs.nano.5c12920>
6. **Rajeswari Roy Chowdhury** *, Daiichi Kurebayashi, Jana Lustikova, Oleg A Tretiakov, Shunsuke Fukami, Ravi Prakash Singh, Samik DuttaGupta, Unraveling effects of competing interactions and frustration in vdW ferromagnetic Fe₃GeTe₂ nanoflake devices, *Appl. Phys. Lett.* **127**, 012409 (2025). DOI: <https://doi.org/10.1063/5.0262983>
7. Deepali Sharma, Asif Ali, Neeraj Bhatt, **R. Roy Chowdhury**, Chandan Patra, Ravi Prakash Singh, Ravi Shankar Singh, Manifestation of incoherent-coherent crossover and non-Stoner magnetism in the electronic structure of Fe₃GeTe₂, *Phys. Rev. B.* **110**, 125119 (2024). DOI: <https://doi.org/10.1103/PhysRevB.110.125119>
8. C. Patra, T. Agarwal, S. Srivastava, **R. Roy Chowdhury**, M. P. Saravanan, and R. P. Singh, Planar Hall Effect and Quasi - 2D Anisotropic Superconductivity in Topological Candidate 1T-NbSeTe, *Advanced Quantum Technologies* **7**, 2300448 (2024). DOI: <https://doi.org/10.1002/qute.202300448>
9. T. Agarwal, C. Patra, A. Kataria, **R. Roy Chowdhury**, and R. P. Singh, Quasi-two-dimensional anisotropic superconductivity in Li intercalated 2H-TaS₂, *Phys. Rev. B*, American Physical Society (APS). Vol-**107**, 174509 (2023). DOI: <https://doi.org/10.1103/PhysRevB.107.174509>
10. D. Rana, S. Dash, M. Bhakar, **R. Roy Chowdhury** et al., Skyrmions and magnetic bubbles in spin-orbit coupled metallic magnets, *Phys. Rev. B* **108**, 184419 (2023). DOI: <https://doi.org/10.1103/PhysRevB.108.184419>
11. C. Patra, T. Agarwal, **R. Roy Chowdhury**, and R. P. Singh, Two-dimensional multigap superconductivity in bulk 2H-TaSeS, *Phys. Rev. B*. American Physical Society (APS). Vol-**106**, 134515 (2022). DOI: <https://doi.org/10.1103/PhysRevB.106.134515>
12. **R. Roy Chowdhury***, S. DuttaGupta, C. Patra, A. Kataria, S. Fukami, and R. P. Singh, Anisotropic magnetotransport in the layered antiferromagnet TaFe_{1.25}Te₃, *Phys. Rev. Materials*. American Physical Society (APS). Vol-**6**, 084408 (2022). DOI: <https://doi.org/10.1103/PhysRevMaterials.6.084408>
13. D. Rana, Aswini R, Basavaraja G, C. Patra, S. Howlader, **R. Roy Chowdhury**, M. Kabir, R. P. Singh, and G. Sheet, Spin-polarized supercurrent through the van der Waals Kondo-lattice ferromagnet Fe₃GeTe₂, *Phys. Rev. B*. American Physical Society (APS). Vol-**106**, 085120 (2022). DOI: <https://doi.org/10.1103/PhysRevB.106.085120>
14. **R. Roy Chowdhury***, C. Patra, S. DuttaGupta, S. Satheesh, S. Dan, S. Fukami, and R. P. Singh, Modification of unconventional Hall effect with doping at the non-magnetic site in a 2D van der Waals ferromagnet, *Phys. Rev. Materials*. American Physical Society (APS). Vol- **6**, 014002 (2022). DOI: <https://doi.org/10.1103/PhysRevMaterials.6.014002>
15. **R. Roy Chowdhury***, S. DuttaGupta, C. Patra, S. Sharma, S. Fukami, H. Ohno and R. P. Singh, Unconventional Hall effect and its variation with Co-doping in van der Waals Fe₃GeTe₂, *Scientific Reports* **11**, 14121 (2021). Springer Nature. DOI: <https://doi.org/10.1038/s41598-021-93402-6>
16. S. Datta, A. Vasdev, R. Ramachandran, S. Halder, K. Motla, A. Kataria, Arushi, **R. Roy Chowdhury**, R. P. Singh, and G. Sheet, Spectroscopic evidence of mixed angular momentum symmetry in non-centrosymmetric Ru₇B₃, *Scientific Reports* **11**, 21030 (2021). Springer Nature. DOI: <https://doi.org/10.1038/s41598-021-99878-6>

17. M. Mandal, Sajilesh K. P., **R. Roy Chowdhury**, D. Singh, P. K. Biswas, A. D. Hiller, and R. P. Singh, Superconducting ground state of the topological superconducting candidates Ti_3X ($\text{X}=\text{Ir}, \text{Sb}$), *Phys. Rev. B.* **103**(5), 054501 (2021). American Physical Society (APS). DOI: <https://doi.org/10.1103/PhysRevB.103.054501>
18. **R. Roy Chowdhury***, S. Dhara, I. Das, B. Bandyopadhyay, and R. Rawat, Anomalous magnetoresistance behavior in NdRu_2Si_2 , *Physica B: Condensed Matter* **586**, 412103 (2020). Elsevier. DOI: <https://doi.org/10.1016/j.physb.2020.412103>
19. S. Kamboj, D. K. Roy, S. Roy, **R. Roy Chowdhury**, P. Mandal, M. Kabir and G. Sheet, Temperature dependent transport spin-polarization in the low Curie temperature complex itinerant ferromagnet $\text{EuTi}_{1-x}\text{Nb}_x\text{O}_3$, *Journal of Physics: Condensed Matter* **31**, 415601 (2019). IOP Publishing. DOI: [10.1088/1361-648X/ab2cbd](https://doi.org/10.1088/1361-648X/ab2cbd)
20. S. Kamboj, S. Das, A. Sirohi, **R. Roy Chowdhury***, S. Gayen, V.K. Maurya, S. Patnaik and G. Sheet, Suppression of transport spin-polarization of surface states with emergence of ferromagnetism in Mn-doped Bi_2Se_3 , *Journal of Physics: Condensed Matter* **30**, 35 (2018). IOP Publishing. DOI: [10.1088/1361-648X/aad3ed](https://doi.org/10.1088/1361-648X/aad3ed)
21. A. Sirohi, S. Das, **R. Roy Chowdhury**, Amit, Y. Singh, S. Gayen, T. Das and G. Sheet, Mixed type I and type II superconductivity due to intrinsic electronic inhomogeneities in the type II Dirac semimetal PdTe_2 , *Journal of Physics: Condensed Matter* **31**, 085701 (2019). IOP Publishing. DOI: [10.1088/1361-648X/aaf49c](https://doi.org/10.1088/1361-648X/aaf49c)
22. S. Dhara, **R. Roy Chowdhury**, and B. Bandyopadhyay, Disorder in Co-Cu granular alloys studied by ^{59}Co NMR, *Journal of Magnetism and Magnetic Materials* **471**, 355 (2019). Elsevier. DOI: <https://doi.org/10.1016/j.jmmm.2018.09.099>
23. **R. Roy Chowdhury**, S. Dhara, B. Bandyopadhyay, I. Das and R. Rawat, Large positive magnetoresistance in intermetallic compound NdCo_2Si_2 , *Journal of Magnetism and Magnetic Materials* **451**, 625 (2018). Elsevier. DOI: <https://doi.org/10.1016/j.jmmm.2017.11.107>
24. Kalipada Das, **R Roy Chowdhury**, S Midda, Pintu Sen, I Das, Magnetocaloric effect study of $\text{Pr}_{0.67}\text{Ca}_{0.33}\text{MnO}_3\text{-La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3$ nanocomposite, *Journal of Magnetism and Magnetic Materials* **449**, 304 (2018). DOI: <https://doi.org/10.1016/j.jmmm.2017.10.063>
25. **R. Roy Chowdhury**, S. Dhara and B. Bandyopadhyay, Enhancement of magnetocaloric effect in V doped intermetallic compounds $\text{Nd}(\text{Co}_{1-x}\text{V}_x)_2\text{Si}_2$ ($x = 0, 0.2$ and 0.35), *Physica B: Condensed Matter* **517**, 6 (2017). Elsevier. DOI: <https://doi.org/10.1016/j.physb.2017.05.003>
26. **R. Roy Chowdhury**, S. Dhara, B. Bandyopadhyay, Evidence of ferromagnetism in vanadium substituted layered intermetallic compounds $\text{RE}(\text{Co}_{1-x}\text{V}_x)_2\text{Si}_2$ ($\text{RE} = \text{Pr}$ and Nd ; $0 \leq x \leq 0.35$), *Journal of Magnetism and Magnetic Materials* **401**, 998 (2016). Elsevier. DOI: <https://doi.org/10.1016/j.jmmm.2015.10.128>
27. S. Dhara, **R. Roy Chowdhury**, and B. Bandyopadhyay, Observation of resistivity minimum in low temperature in nanostructured granular alloys $\text{Co}_x\text{Cu}_{1-x}$ ($x \sim 0.01\text{-}0.3$), *Physical Review B* **93**, 214413 (2016). American Physical Society (APS). DOI: <https://doi.org/10.1103/PhysRevB.93.214413>
28. S. Dhara, **R. Roy Chowdhury**, B. Bandyopadhyay, Strong memory effect at room temperature in nanostructured granular alloy $\text{Co}_{0.3}\text{Cu}_{0.7}$, *RSC Advances* **5**, 95695 (2015). Royal Society of Chemistry. DOI: <https://doi.org/10.1039/C5RA19178E>
29. S. Dhara, **R. Roy Chowdhury**, S. Lahiri, P. Ray and B. Bandyopadhyay, Synthesis, characterization and magnetic properties of $\text{Co}_x\text{Cu}_{1-x}$ ($x \sim 0.01\text{-}0.3$) granular alloys, *Journal of Magnetism and Magnetic Materials* **374**, 647-654 (2015). Elsevier. DOI: <https://doi.org/10.1016/j.jmmm.2014.09.030>

• **Conference Publications:**

30. **R. Roy Chowdhury**, C. Patra, S. DuttaGupta, *et al.*, Unconventional Emergent Hall Effect Phenomena and its Modification in a van der Waals Ferromagnet Fe₃GeTe₂, 2023 IEEE International Magnetic Conference - Short Papers (INTERMAG Short Papers) 2023, pp. 1-2. (https://www.intermag2023digest.com/EP-08_CPB-09.pdf). DOI: [10.1109/INTERMAGShortPapers58606.2023.10228368](https://doi.org/10.1109/INTERMAGShortPapers58606.2023.10228368)
31. **R. Roy Chowdhury**, S. Dhara, B. Bandyopadhyay, Ferromagnetism in Nd(Co_{1-x}V_x)₂Si₂ (0 < x < 0.5), *Physics Procedia* **54**, 113-117 (2014). DOI: <https://doi.org/10.1016/j.phpro.2014.10.046>
32. S. Dhara, **R. Roy Chowdhury**, B. Bandyopadhyay, Magnetization Study of Co_xCu_{1-x} Nanoparticles, *Physics Procedia* **54**, 38-44(2014). DOI: <https://doi.org/10.1016/j.phpro.2014.10.034>
33. **R. Roy Chowdhury**, S. Dhara, B. Bandyopadhyay, Effect of Vanadium Substitution of Cobalt in NdCo₂Si₂, *Acta Physica Polonica Series A* **128** (4), 530-532 (2015). DOI: [10.12693/APhysPolA.128.530](https://doi.org/10.12693/APhysPolA.128.530)
34. S. Dhara, **R. Roy Chowdhury**, B. Bandyopadhyay, Evidence of Formation of Co_xCu_{1-x} Nanoparticles with Core-Shell Structure, *Acta Physica Polonica Series A* **128** (4), 533-536 (2015). DOI: [10.12693/APhysPolA.128.533](https://doi.org/10.12693/APhysPolA.128.533)
35. **R. Roy Chowdhury***, S. Dhara, B. Bandyopadhyay, Crossover from antiferro-to-ferromagnetism on Substitution of Co by V In RE(Co_{1-x}V_x)₂Si₂ (0 < x < 0.35), *AIP Conference Proceedings* **1665**, 130040 (2015). DOI: <https://doi.org/10.1063/1.4918188>
36. S. Dhara, **R. Roy Chowdhury**, B. Bandyopadhyay, Kondo effect in Co_xCu_{1-x} Granular Alloys Prepared by Chemical Reduction Method, *AIP Conference proceedings* **1665**, 130056 (2015). DOI: <https://doi.org/10.1063/1.4918204>

► **Invited/contributory Talks/Presentations in conferences/symposium:**

1. **R. Roy Chowdhury**, “Large Anomalous Hall Effect in a Room Temperature Magnetic High Entropy Alloy”, *4th International Conference on Recent Trends in Materials Science & Devices (ICRTMD-2026)*, 6-8th April 2026, Haryana, India.
2. **R. Roy Chowdhury**, “Unconventional emergent Hall effect phenomena and its modification in a van der Waals ferromagnet Fe₃GeTe₂”, Physics of Strongly Correlated Electron Systems (PSCES) 2023, March 15- 17th 2023, IISER Pune, India.
3. **R. Roy Chowdhury**, “Unconventional emergent Hall effect phenomena and its modification in a van der Waals Ferromagnet Fe₃GeTe₂”, PRL conference on Condensed Matter Physics, Feb 6- 8th 2023, Physical Research Laboratory, Ahmedabad, India.
4. **R. Roy Chowdhury**, “Unconventional Magnetotransport Phenomena in a van der Waals Ferromagnet Fe₃GeTe₂”, National Assembly of Researchers in Physics, Aug 25-27th 2022, IISER Bhopal, India (**Invited Talk**).
5. **R. Roy Chowdhury*** *et al.*, “Anomalous Hall effect in a room temperature magnetic high entropy alloy”, February 19th 2026, RIEC Projects, Tohoku University, Japan.
6. **R. Roy Chowdhury*** *et al.*, “Anomalous Hall effect in a room temperature magnetic high entropy alloy”, January 13th - 17th 2025, The 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, New Orleans, USA.
7. **R. Roy Chowdhury***, H. Srikanth, R. P. Singh and M.-H. Phan, “Emergent Spin Textures and Magnetoresistive Anomalies in Doped Fe₃GeTe₂: Unraveling Complexities in 2D Ferromagnets”, January 13th - 17th 2025, The 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, New Orleans, USA.
8. D. Lee, **R. Roy Chowdhury**, W. Zhao, J. Karel, H. Srikanth, J.D. Gayles and M.-H. Phan, “Probing

Magnetic Anisotropy and Switching Fields in TbMn6Sn6 Kagome Quantum Magnet: Impact of Spin Reorientation", The 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, New Orleans, USA.

9. N. Schulz, D. DeTellem, G. Datt, A. Chanda, **R. Roy Chowdhury**, A.I. Ojo, T. Sarkar, H. Rodríguez Gutiérrez, S. Witanachchi, D.A. Arena, M. Venkata Kamalakar, M.-H. Phan and H. Srikanth, "*Graphene Induced Invertible Magnetoresistance in Variable Phase Iron Oxide*", The 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, New Orleans, USA.
10. **R. Roy Chowdhury***, S. DuttaGupta, S. Fukami and R. P. Singh, "*Unconventional emergent Hall effect phenomena and its modification in a van der Waals Ferromagnet Fe₃GeTe₂*", 2024 USF Postdoctoral Research Symposium, March 22nd 2024, University of South Florida, USA.
11. **R. Roy Chowdhury***, C. Patra, S. DuttaGupta, S. Fukami and R. P. Singh, "*Unconventional emergent Hall effect phenomena and its modification in a van der Waals Ferromagnet Fe₃GeTe₂*", INTERMAG 2023, May 15th – May 19th 2023, Sendai, Japan.
12. **R. Roy Chowdhury***, C. Patra, S. DuttaGupta, S. Fukami and R. P. Singh, "*Unconventional emergent Hall effect phenomena and its modification in a van der Waals Ferromagnet Fe₃GeTe₂*", Annual Conference on Magnetism and Magnetic Materials (MMM), Oct 31st – Nov 4th 2022, Minneapolis, USA.
13. **R. Roy Chowdhury***, C. Patra, S. DuttaGupta, S. Fukami and R. P. Singh, "*An alternative route for tuning unconventional Hall effect in layered ferromagnet Fe₃(As,Ge)Te₂*", 2022 IEEE Around-the-Clock-Around- the-Globe Conference, Aug 31st, 2022 (*online presentation*).
14. **R. Roy Chowdhury***, S. DuttaGupta, C. Patra, Oleg A. Tretiakov, S. Sharma, S. Fukami, H. Ohno and R. P. Singh, "*Unconventional Hall effect and its modification in 2D van der Waals Fe₃GeTe₂*", Symposium on Magnetism and Spintronics (SMS), Nov 27th- 29th 2021, NISER Bhubaneswar, India (poster) (*online presentation*).
15. **R. Roy Chowdhury***, S. DuttaGupta, C. Patra, S. Sharma, S. Fukami, H. Ohno and R. P. Singh, "*Modification of topological Hall effect with Co-doping in the uniaxial van der Waals ferromagnet (Co_xFe_{1-x})₃GeTe₂*", National Conference on Low Dimensional Materials, June 2nd-4th 2021, UM-DAE Center for Excellence in Basic Sciences, Mumbai, India (*online presentation*).
16. **R. Roy Chowdhury***, S. DuttaGupta, C. Patra, S. Sharma, S. Fukami, H. Ohno and R. P. Singh, "*Modification of topological Hall effect with Co-doping in the uniaxial van der Waals ferromagnet (Co_xFe_{1-x})₃GeTe₂*", 6th International Conference on Nanoscience and Nanotechnology, February 1st-3rd 2021, SRM Institute of Science and Technology, Chennai, India (*online presentation*).
17. S. DuttaGupta, **R. Roy Chowdhury**, O. A. Tretiakov, C. Patra, S. Sharma, S. Fukami, H. Ohno and R. P. Singh, "*Topological spin texture-mediated unconventional Hall effect in 2D ferromagnet Fe₃GeTe₂*", The 82nd JSAP Autumn Meeting, Sep 10th-13th 2021, Meijo University, Japan (*online presentation*).
18. **R. Roy Chowdhury*** and R. P. Singh, '*Magnetic and transport properties of 2D material Fe₃GeTe₂*', In-house Symposium Physics IISER Bhopal, January 24, 2020, Bhopal, India.
19. G. Sheet, A. Sirohi, S. Das, A. Vashist, P. Adhikary, S. Gayen, **R. Roy Chowdhury**, Y. Singh, T. Das, '*Inhomogeneous superconductivity in PdTe₂*', APS March Meeting, March 4-8th 2019, Boston, USA.
20. **R. Roy Chowdhury*** and B. Bandyopadhyay, '*Giant positive magnetoresistance in NdCo₂Si₂*', Young Scientists' Colloquium, MRSI, Indian Association for Cultivation of Sciences, September 20, 2018, Kolkata, India.
21. **R. Roy Chowdhury***, S. Dhara and B. Bandyopadhyay, '*Effect of substitution at transition metal site on the magnetic properties of rare earth ternary silicides*', National Conference on Quantum Condensed Matter, Indian Institute of Science Education and Research Mohali, July 25-27, 2018, Mohali, India.
22. **R. Roy Chowdhury***, S. Dhara and B. Bandyopadhyay, '*Crossover from antiferromagnetism to ferromagnetism in RE(Co_{1-x}V_x)₂Si₂ (RE = Pr, Nd, 0 ≤ x ≤ 0.50)*', 20th International Conference on Magnetism (ICM-2015), July 5 -10, 2015, Barcelona, Spain.
23. **R. Roy Chowdhury***, S. Dhara and B. Bandyopadhyay, '*Crossover from antiferromagnetism to ferromagnetism in RE(Co_{1-x}V_x)₂Si₂ (RE = Pr, Nd, 0 ≤ x ≤ 0.50)*', 59th DAE Solid State Physics Symposium, VIT University, Vellore, Tamil Nadu, December 16-20, 2014, India.
24. **R. Roy Chowdhury***, S. Dhara and B. Bandyopadhyay, '*Ferromagnetism in Nd(Co_{1-x}V_x)₂Si₂ (0 ≤ x ≤ 0.50)*', 13th International Symposium on Physics of Materials, Prague, 31st Aug-4th Sep 2014, Czech Republic, Europe.
25. **R. Roy Chowdhury***, S. Dhara and B. Bandyopadhyay, '*Ferromagnetism in Nd(Co_{1-x}V_x)₂Si₂ (0 ≤ x ≤ 0.50)*', Conference on Magnetic Materials and Applications (MagMA-2013), December 5-7, 2013, Department of Physics, IIT Guwahati, Magnetic Society of India.

26. **R. Roy Chowdhury***, S. Dhara and B. Bandyopadhyay, '*Effect of doping in magnetic properties of RET₂X₂ compounds (RE = rare earth, T = transition metal, X= Si)*', School on 5th IEEE Magnetic Society Summer School in SRM University, Chennai, July 22-27, 2012, Chennai, India.

► **Software Proficiency:**

1. Data post processing and analysis using Mathematica, OriginLab, Labview
2. Magnetic microstructure modelling using micromagnetic simulation (**MUMax3**).

► **International Visits:**

- ❖ One week visit as **RIEC Research Fellow at Research Institute of Electrical Communication**, Tohoku University, Japan (February 2026)
- ❖ Two weeks visit as **RIEC Research Fellow at Research Institute of Electrical Communication**, Tohoku University, Japan (May 2023)
- ❖ Three weeks visit as **RIEC Research Fellow, Research Institute of Electrical Communication**, Tohoku University, Japan (May 2022).
- ❖ Two weeks visit as **RIEC Research Fellow, Research Institute of Electrical Communication**, Tohoku University, Japan (February 2020).
- ❖ Two weeks visit at **Research Institute of Electrical Communication, Tohoku University, Japan** (April 2019).
- ❖ Two weeks visit at **Research Institute of Electrical Communication, Tohoku University, Japan** (December 2018).

► **Instrumentation skills/Expertise:**

1. **Single crystal growth** of van der Waals materials: 2D magnets, 2D superconducting and topological materials.
2. **Optical floating zone** (2200°C) and **Tetra arc** (Czochralski) (CZ) furnaces.
3. Sample preparation by using **arc melting furnace**.
4. Different types of **high temperature furnaces**.
5. **Device fabrication** by mechanical exfoliation, **dry-transfer and wet-transfer** techniques in an inert atmosphere.
6. Sample preparation (nanoparticles) by **chemical reduction** method.
7. **X-ray diffractometer** (Room temperature as well as low temperature XRD).
8. **Photolithography** for patterning and fabrication of mesoscopic devices.
9. **Quantum Design Vibrating sample magnetometer (SQUID-VSM)**: Operation as well as experienced in troubleshooting of SQUID.
10. **Quantum Design Physical Property Measurement System (PPMS)**.
11. **Laue diffraction**.
12. **Glove box operation**.
13. AC susceptibility set up for measurements down to 10 K.
14. **Electrical resistivity and magneto-resistivity** set up down to 2 K and 9 Tesla.
15. **Nuclear magnetic resonance (NMR)**.
16. **Scanning tunneling microscope (STM)**, Scanning tunneling spectroscopy (STS).
17. **Scanning electron microscope**.
18. **Thermal Evaporation, Sputtering**.
19. **Pulsed Laser Deposition**.
20. **Vacuum systems, cryogenic systems (Liquid He & liquid N₂), and electronics**.

► **Personal Profile:**

Date of Birth: 14th November 1986

Sex: Female

Marital Status: Married

Nationality: Indian

► **References:**

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Professor**

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**3. Prof. Dr. Hariharan Srikanth
Distinguished Professor**

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**4. Prof. Dr. Indranil Das
Senior Professor (Retired)**

CMP & SPMS Division
Saha Institute of Nuclear Physics (SINP)

I hereby declare that the above-mentioned information is true and correct to the best of my knowledge.



RAJESWARI ROY CHOWDHURY