

Sapta Sindhu Paul Chowdhury, Ph.D. Student

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Education

- 2020 – **Ph.D., IIT Jodhpur** Physics
Thesis title: *Thermal Transport Properties of Two-Dimensional Materials using Molecular Simulations*
- 2017 – 2019 **M.Sc. Physics, Tezpur University**, (CGPA 8.82/10), Specialization in Condensed Matter Physics
Thesis title: *Electronic Structure And Magnetic Phenomena of van der Waals Heterostructure: ab-initio DFT Study.*
- 2014 – 2017 **B.Sc.(Hons.) Physics, Karimganj College**, (CGPA 8.55/10)
Thesis title: *Optical and Static Dielectric Studies of a Laterally Fluorinated Isothiocyanato Nematic Liquid Crystal.*

Research Publications

Journal Articles

- 1 S. Mohapatra, H. Teherpuria, S. S. Paul Chowdhury, *et al.*, “Ion transport mechanisms in pectin-containing ec-litfsi electrolytes,” *Nanoscale*, vol. 16, pp. 3144–3159, 2024. [DOI](#): 10.1039/D3NR04029A.
- 2 H. Teherpuria, S. S. Paul Chowdhury, S. K. Kannam, P. K. Jaiswal, and S. Mogurampelly, “Salt effects on ionic conductivity mechanisms in ethylene carbonate electrolytes: Interplay of viscosity and ion-ion relaxations,” *arXiv (Submitted)*, pp. -, 2024.
- 3 S. S. Paul Chowdhury, A. Samudrala, and S. Mogurampelly, “Modeling interlayer interactions and phonon thermal transport in silicene bilayers,” *Phys. Rev. B*, vol. 108, p. 155 436, 15 Oct. 2023. [DOI](#): 10.1103/PhysRevB.108.155436.
- 4 S. K. Behera, M. Bora, S. S. Paul Chowdhury, and P. Deb, “Proximity effects in graphene and ferromagnetic crbr₃ van der waals heterostructures,” *Phys. Chem. Chem. Phys.*, vol. 21, pp. 25 788–25 796, 46 2019. [DOI](#): 10.1039/C9CP05252F.





Conference Proceedings

- 1 H. Teherpuria, S. S. Paul Chowdhury, S. Mohapatra, P. K. Jaiswal, and S. Mogurampelly, “Diffusion and ion-ion correlations in ec-litfsi electrolytes,” in *Energy Materials and Devices*, Springer Nature, 2024, pp. .-.
- 2 S. Thapliyal, S. S. Paul Chowdhury, and S. Mogurampelly, “Modeling germanene monolayer: Interaction potentials and insights into the phonon thermal conductivity,” in *Energy Materials and Devices*, Springer Nature, 2024, pp. .-.



Presentation in Conferences

- 2023 **Anomalous Phonon Thermal Transport in Germanene Monolayer (Contributed Talk)** presented at Recent Progress in Graphene and 2D materials Research (RPGR-2023), IISc Bangalore, India.
- Temperature Induced Electronic Structure and Phonon Thermal Properties in Bilayer Silicene (Poster)** presented at the 34th IUPAP Conference on Computational Physics (CCP-2023), Kobe, Japan.





Presentation in Conferences (continued)

- 2022  Phonon Mediated In-plane and Out-of-plane Thermal Transport in Silicene Bilayers (*Contributed Talk*) presented at the 33rd IUPAP Conference on Computational Physics (CCP-2022), The University of Texas at Austin.
-  Thermal Transport and The Interplay of In-plane and Out-of-plane Phonon Modes in Two-dimensional Layered Materials (*e-Poster*) presented at Supercapacitors & Batteries - India 2022, IIT Kharagpur.
- 2021  Effect of Uniaxial and Biaxial Strain on Thermal Conductivity in Two-dimensional Layered Materials (*e-Poster*) presented at Condensed Matter Days (CMDays-2021), Central University of Jharkhand.
- 2019  Electric field tunable band topology and magnetic property in vdW heterostructure (*Poster*) presented at Second National Conference on Hard and Soft Condensed Matter Physics (NCHSCMP-2019), Tezpur University.





Experience

- 2020 –  **Teaching Assistant** IIT Jodhpur.
Various B. Tech, M. Sc. Theory and Lab Courses.
- 2019 – 2019  **Junior Research Fellow** Dept. of Physics, Tezpur University, Tezpur
DBT, New Delhi sponsored project on the development of 2D materials for oil recovery.

Skills

- Coding  FORTRAN, Python, C, R, L^AT_EX, . . .
- Softwares  LAMMPS, QUANTUM ESPRESSO, Matlab, GNUPlot, XMGrace, Origin, Minitab,
- Web Dev  HTML, CSS, MySQL, JavaScript
- Languages  Strong reading, writing and speaking competencies for English, Bengali, Assamese, Hindi.

Awards and Achievements

- 2021  National Eligibility Test - Junior Research Fellow Paper: Physical Science, Percentile: 99.47 (Out of 30631 Candidates)
-  Graduate Aptitude Test in Engineering (GATE) Paper: PH-Physics, Percentile: 99.86 (Out of 17499 Candidates)
- 2017-2019  NEC Merit Scholarship for pursuing Postgraduate Degree.
- 2012  INSPIRE Award of the Department of Science and Technology (DST), Represented District in the 2nd State Level INSPIRE Science Exhibition/Competition.

References

Available on Request