

List of Publications

Publications included in the thesis

1. “Anti-site disorder and Berry curvature driven anomalous Hall effect in spin gapless semiconducting Mn_2CoAl Heusler compound”, **Nisha Shahi**, A. K. Jena, G. K. Shukla, V. Kumar, S. Rastogi, K. K. Dubey, I. Rajput, S. Baral, A. Lakhani, S.-C. Lee, S. Bhattacharjee, and Sanjay Singh, *Phys. Rev. B* **106**, 245137 (2022).
2. “Possible topological Hall effect in a spin gapless semiconducting Mn_2CoAl Heusler compound”, **Nisha Shahi**, S. Rastogi, and Sanjay Singh, *Phys. Status Solidi - Rapid Res. Lett.*, 2300352 (2023).
3. “Scaling analysis of anomalous Hall resistivity and magnetoresistance in magnetic shape memory Heusler compound: Mn_2NiGa ”, **Nisha Shahi**, A. K. Jena, S.-C. Lee, S. Bhattacharjee, and Sanjay Singh, (under preparation).
4. “Band splitting-driven Berry curvature and sign reversal of anomalous Hall effect in the manganese pnictide MnSb ”, **Nisha Shahi**, G. K. Shukla, and Sanjay Singh, (under preparation).
5. “Observation of magnetic transitions and Kondo effect in the electrical resistivity of Mn_3GaN antiperovskite thin film”, **Nisha Shahi**, Sanjay Singh, and Dhananjai Pandey, *Phys. Rev. Mater.* (under review).

Publications not included in the present thesis

6. “Atomic disorder and Berry phase driven anomalous Hall effect in a Co_2FeAl Heusler compound”, G. K. Shukla, A. K. Jena, **Nisha Shahi**, K. K. Dubey, I. Rajput, S. Baral, K. Yadav, K. Mukherjee, A. Lakhani, K. Carva, S.-C. Lee, S. Bhattacharjee, and Sanjay Singh, *Phys. Rev. B* **105**, 035124 (2022).
7. “Anomalous Hall effect from gapped nodal line in the Co_2FeGe Heusler compound”, G. K. Shukla, J. Sau, **Nisha Shahi**, A. K. Singh, M. Kumar, and Sanjay Singh, *Phys. Rev. B* **104**, 195108 (2021).
8. “Revealing the origin of the topological Hall effect in the centrosymmetric shape memory Heusler alloy Mn_2NiGa : A combined experimental and theoretical investigation”, Shivani Rastogi, **Nisha Shahi**, V. Kumar, G. K. Shukla, S. Bhattacharjee, and Sanjay Singh, *Phys. Rev. B* (2023) (accepted).
9. “Experimental and computational approaches to study the high temperature thermoelectric properties of novel topological semimetal CoSi ”, Shamim Sk, **Nisha Shahi**, S. K. Pandey, *J. Phys. Condens. Matter.* **34**, 26 (2022).
10. “Existence of exotic magnetic phases along with exchange bias and memory effect in frustrated beta-Mn Heusler alloy”, Srishti Dixit, L. Ghosh, M. Alam, S. V. Kumar, N. Patel, S. Ghosh, **Nisha Shahi**, Sanjay Singh, Sandip Chatterjee, *J. Appl. Phys.* **133**, 013904 (2023).
11. “Nature of magnetic transitions and evidence for magnetoelastic coupling in the biskyrmion-host hexagonal compound MnNiGa ”, Anupam K Singh, P. Devi, **Nisha Shahi**, K. K. Dubey, Sanjay Singh, Dhananjai Pandey, *J. Alloys Compd.* **954**, 170082 (2023).
12. “Topological Hall effect in $(\text{Mn}_{1-x}\text{Fe}_x)_{3.25}\text{Ge}$ ($x=0.4$) hexagonal magnet”, V. Kumar, G. K. Shukla, **Nisha Shahi**, Sanjay Singh, *Phys. Status Solidi - Rapid Res. Lett.*, **17** 2300174 (2023).