

List of patents and publications

Patents

Title: A device for measuring magnetocaloric effect.

Application No.: 202511038163

Publications included in the thesis

1. K. K. Dubey, P. Devi, Anupam K. Singh and Sanjay Singh, “Improved crystallographic compatibility and magnetocaloric reversibility in Pt substituted $\text{Ni}_2\text{Mn}_{1.4}\text{In}_{0.6}$ magnetic shape memory Heusler alloy”, J. Magn. Mater. 507 (2020) 166818.
2. K. K. Dubey, S. Rastogi, Ajit K. Jena, Gaurav K. Shukla, Parul Devi, Seung-Cheol Lee, Satadeep Bhattacharjee, Bobby Joseph, and Sanjay Singh, “Pressure driven isostructural phase transition and its implication on the Neel skyrmion host hexagonal PtMnGa”, Phys. Rev. Mater. 8, 125404 (2024).
3. K. K. Dubey, Sanjay Singh, P. K. Biswas, R. Sarkar, F. C. Coomer, Dmitry A. Sokolov, C. Felser, and D. Pandey, “Magnetic state of the martensite phase in $\text{Ni}_2\text{Mn}_{1.4}\text{In}_{0.6}$ magnetic shape memory alloy: A muon spin relaxation study”, Under review in Phys. Rev. B.
4. K. K. Dubey and Sanjay Singh, “Investigation of anomalous and topological Hall effect in $\text{Ni}_{50}\text{Mn}_{34}\text{In}_{15.2}\text{Al}_{0.8}$ magnetic shape memory alloy”, to be submitted.

Publications not included in the thesis

5. P. Devi, C. S. Mejía, M. G. Zavareh, K. K. Dubey, P. Kushwaha, Y. Skourski, C.

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- Felser, M. Nicklas and S. Singh, “Improved magnetostructural and magnetocaloric reversibility in magnetic Ni-Mn-In shape-memory Heusler alloy by optimizing the geometric compatibility condition”, *Phys. Rev. Mater.* 3 (6), 062401 (2019).
6. P. Sivaprakash, S. Esakki Muthu, Anupam K. Singh, K. K. Dubey, M. Kannan, S. Muthukumaran, Shampa Guha, Manoranjan Kar, Sanjay Singh, S. Arumugam, “Effect of chemical and external hydrostatic pressure on magnetic and magnetocaloric properties of Pt doped Ni₂MnGa shape memory Heusler alloys”, *J. Magn. Magn. Mater.* 514 (2020) 167136.
 7. Payal Chaudhary, K. K. Dubey, Gaurav K. Shukla, and Sanjay Singh, “Role of chemical disorder in tuning the Weyl points in vanadium doped Co₂TiSn”, *Phys. Rev. Mater.* 5, 124201 (2021).
 8. Anupam K. Singh, Sanjay Singh, B. Dutta, K. K. Dubey, Bobby Joseph, R. Rawat, and Dhananjai Pandey, “Robust evidence for the stabilization of the premartensite phase in Ni-Mn-In magnetic shape memory alloys by chemical pressure”, *Phys. Rev. Mater.* 5, 113607 (2021).
 9. Gaurav K. Shukla, A. K. Jena, N. Shahi, A.K. Jena, N. Shahi, K.K. Dubey, I. Rajput, S. Baral, K. Yadav, K. Mukherjee, A. Lakhani, K. Carva, S.C. Lee, S. Bhattacharjee and S. Singh, “Atomic disorder and Berry phase driven anomalous Hall effect in a Co₂FeAl Heusler compound,” *Phys. Rev. B* 105, 035124 (2022).
 10. Nisha Shahi, Ajit K Jena, Gaurav K Shukla, Vishal Kumar, Shivani Rastogi, K. K. Dubey and Sanjay Singh, “Antisite disorder and Berry curvature driven anomalous Hall effect in the spin gapless semiconducting Mn₂CoAl Heusler compound”, *Phys. Rev. B* 106, 245137 (2022).
 11. Anupam K. Singh, Sanjay Singh, K. K. Dubey, Parul Devi, Pritam Das, Martin Etter, Ola. G. Grendal, C. Dejoie, Andy Fitch, Anatoliy Senyshyn, Seung-Cheol Lee, Satadeep Bhattacharjee and Dhananjai Pandey, “Evidence for Local Symmetry Breaking in the Skyrmion-Hosting Ni₂In-type Hexagonal Compounds”, arXiv:2412.09158v1.