

Shishir Kumar PANDEY

Publications

Published

- 2025 **Anomalous magnetism in 3d-4f double perovskite oxide with Kramers' ion**, *Saurav Kumar, Shantanu Majumder, Francesco Congiu, Giuseppe Muscas, H. Luetkens, S. D. Kaushik, Shishir K. Pandey, Stephen L. Lee, Uday Deshpande, Tapati Sarkar, Soumya Jyoti Ray*, (Accepted in Phys. Rev. B.)
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- 2025 **Electron spectroscopy study of single crystal CrTe**, *A. R. Shelke, C. N. Kuo, Shishir Kumar Pandey, T. L. Nguyen, Y. X. Chen, Y. T. Cheng, F. H. Chang, M. Yoshimura, N. Hiraoka, T. W. Pi, H. J. Lin, C. T. Chen, A. Fujimori, Priya Mahadevan, C. S. Lue, and A. Chainani*, **Phys. Rev. B**, 111, 085142, <https://doi.org/10.1103/PhysRevB.111.085142>
- 2025 **Learning local equivariant representations for quantum operators**, *Zhanghao Zhouyin, Zixi Gan, Shishir Kumar Pandey, Linfeng Zhang, Qiangqiang Gu*, (Accepted in ICLR 2025), <https://openreview.net/forum?id=kpq3lljUD3>
- 2024 **Computational exploration of a viable route to Kitaev-quantum spin liquid phase in OsCl₃**, *Qiangqiang Gu, Shishir Kumar Pandey[†], Yihao Lin*, **Phys. Rev. Res.**, 6 (4), 043309, Link: <https://doi.org/10.1103/PhysRevResearch.6.043309> ([†] corresponding author)
- 2024 **Pitfalls of Exchange-Correlation Functionals in Descriptions of Magnetism: Cautionary Tale of the FeRh Alloy**, *Shishir Kumar Pandey[†], Saikat Debnath, Zhanghao Zhouyina, Qiangqiang Gu*, **Com. Mat. Sci.**, 248, 113561, <https://doi.org/10.1016/j.commatsci.2024.113561>
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- 2024 **Terahertz crystal electric field transitions in a Kondo-lattice antiferromagnet**, *Payel Shee, Chia-Jung Yang, Shishir Kumar Pandey, Ashis Kumar Nandy, Ruta Kulkarni, Arumugam Thamizhavel, Manfred Fiebig, and Shovon Pal*, **Phys. Rev. B**, 109 (7), 075133, <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.109.075133>
- 2023 **A computational method to estimate spin-orbital interaction strength in solid state systems**, *Qiangqiang Gu, Shishir Kumar Pandey[†] and Rajarshi Tiwari*, **Compt. Mat. Sci.**, 221, 112090, Link: <https://doi.org/10.1016/j.commatsci.2023.112090> ([†] corresponding author)
- 2023 **Emergence of bond-dependent highly anisotropic magnetic interactions in Sr₄RhO₆: a theoretical study**, *Shishir Kumar Pandey[†], Qiangqiang Gu, Yihao Lin, Rajarshi Tiwari and Ji Feng*, **Phys. Rev. B**, 107, 115119, Link: <https://doi.org/10.1103/PhysRevB.107.115119> ([†] corresponding author)
- 2022 **Spin interaction and magnetism in cobaltate Kitaev candidate materials: An *ab initio* and model Hamiltonian approach**, *Shishir Kumar Pandey and Ji Feng*, **Phys. Rev. B**, 106, 174411, Link: <https://doi.org/10.1103/PhysRevB.106.174411>
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- 2022 **Silver(II) route to unconventional superconductivity**, Xiaoqiang Liu*, Shishir Kumar Pandey*, and Ji Feng, **Phys. Rev. B** 105, 134519, Link: <https://doi.org/10.1103/PhysRevB.105.134519> (* equal contribution)
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Under active consideration/Preprints/In-communication/In-preparation

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- 2023 **Synopsis of Co-based materials as possible candidates for Kitaev physics**, Shishir Kumar Pandey, Ji Feng, Manuscript in-preparation
- 2023 **Absence of insulator to metal transition at higher band fillings: A model Hamiltonian study**, Shishir Kumar Pandey and Priya Mahadevan, Manuscript in-preparation

- 2023 **Fermi surface instability and sliding charge density waves (CDWs) in the quasi one-dimensional quantum material $(\text{TaSe}_4)_2\text{I}$, Sk Kalimuddin, S. K. Pandey, Ashis K. Nandi, and Mintu Mondal, Manuscript in-preparation (communicating author)**
- 2023 **Fate of anisotropic magnetic interactions in quasi-one dimensional spin chains in face-shared geometry: The case of $\text{K}_3\text{Ir}_2\text{O}_6$, S. K. Pandey, Manuscript in-preparation**