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Publications

PUBLICATIONS

- **Accelerating electron diffraction analysis using graph neural networks and attention mechanisms** *NPJ COMPUTATIONAL MATERIALS*
  Nathani, A., McCray, A. R. C., Liu, Y., Ding, H., Kazempoor, P., Xu, S., Ophus, C., Ghamarian, I.
  2026; 12 (1)

- **Accelerating iterative ptychography with an integrated neural network.** *Journal of microscopy*
  McCray, A. R., Ribet, S. M., Varnavides, G., Ophus, C.
  2025

- **A Gaussian Parameterization for Direct Atomic Structure Identification in Electron Tomography**
  Singh, N. M., Chien, T., McCray, A. R. C., Ophus, C., Waller, L., IEEE
  IEEE.2025

- **Direct observation of twisted stacking domains in the van der Waals magnet CrI₃** *NATURE COMMUNICATIONS*
  Jang, M., Lee, S., Cantos-Prieto, F., Kosic, I., Li, Y., McCray, A. R. C., Jung, M., Yoon, J., Boddapati, L., Deepak, F., Jeong, H., Phatak, C. M., Santos, et al
  2024; 15 (1): 5925

- **Simulation-trained machine learning models for Lorentz transmission electron microscopy** *APL MACHINE LEARNING*
  McCray, A. R. C., Bender, A., Petford-Long, A., Phatak, C.
  2024; 2 (2)

- **Topological Spin Textures in an Insulating van der Waals Ferromagnet.** *Advanced materials (Deerfield Beach, Fla.)*
  Grebenchuk, S., McKeever, C., Grzeszczyk, M., Chen, Z., Šiškins, M., McCray, A. R., Li, Y., Petford-Long, A. K., Phatak, C. M., Ruihuan, D., Zheng, L., Novoselov, K. S., Santos, et al
  2024; 36 (24): e2311949

- **AI-enabled Lorentz microscopy for quantitative imaging of nanoscale magnetic spin textures** *NPJ COMPUTATIONAL MATERIALS*
  McCray, A. R. C., Zhou, T., Kandel, S., Petford-Long, A., Cherukara, M. J., Phatak, C.
  2024; 10 (1)

- **Understanding the Effect of Curvature on the Magnetization Reversal of Three-Dimensional Nanohelices.** *Nano letters*
  Fullerton, J., McCray, A. R., Petford-Long, A. K., Phatak, C.
  2024; 24 (8): 2481-2487

- **Raman Shifts in Two-Dimensional van der Waals Magnets Reveal Magnetic Texture Evolution.** *Nano letters*
  Huang, Z., McCray, A. R., Li, Y., Morrow, D. J., Qian, E. K., Young Chung, D., Kanatzidis, M. G., Phatak, C., Ma, X.
  2024; 24 (5): 1531-1538

- **Direct Observation of Magnetic Bubble Lattices and Magnetoelastic Effects in van der Waals Cr₂Ge₂Te₆** *ADVANCED FUNCTIONAL MATERIALS*

McCray, A. R. C., Li, Y., Qian, E., Li, Y., Wang, W., Huang, Z., Ma, X., Liu, Y., Chung, D., Kanatzidis, M. G., Petford-Long, A. K., Phatak, C.
2023; 33 (26)

- **Thermal Hysteresis and Ordering Behavior of Magnetic Skyrmion Lattices.** *Nano letters*
  McCray, A. R., Li, Y., Basnet, R., Pandey, K., Hu, J., Phelan, D. P., Ma, X., Petford-Long, A. K., Phatak, C.
  2022; 22 (19): 7804-7810
- **In situ observation of the magnetization configuration and reversal in cylindrical nanowires** *APL MATERIALS*
  Brajuskovic, V., McCray, A., Zhang, Y., Phatak, C.
  2022; 10 (8)
- **Field-Dependent Magnetic Domain Behavior in van der Waals Fe₃GeTe₂** *JOM*
  Li, Y., Basnet, R., Pandey, K., Hu, J., Wang, W., Ma, X., McCray, A. R. C., Petford-Long, A. K., Phatak, C.
  2022; 74 (6): 2310-2318
- **Geometric control of emergent antiferromagnetic order in coupled artificial spin ices** *CELL REPORTS PHYSICAL SCIENCE*
  Li, Y., Barrows, F., McCray, A. R. C., Cote, T., Friedman, D., Divan, R. N. S., Petford-Long, A. K., Phatak, C.
  2022; 3 (4)
- **Understanding Complex Magnetic Spin Textures with Simulation-Assisted Lorentz Transmission Electron Microscopy** *PHYSICAL REVIEW APPLIED*
  McCray, A. R. C., Cote, T., Li, Y., Petford-Long, A. K., Phatak, C.
  2021; 15 (4)
- **Orientational Disorder in Epitaxially Connected Quantum Dot Solids.** *ACS nano*
  McCray, A. R., Savitzky, B. H., Whitham, K., Hanrath, T., Kourkoutis, L. F.
  2019; 13 (10): 11460-11468