

CINT 2024 Publications (169)

1. Qu, H.R.; Han, Y.L.; Fortner, J.; Wu, X.J.; Kilina, S.; Kilin, D.; Tretiak, S.; Wang, Y. H. [2+2] Cycloaddition Produces Divalent Organic Color-Centers with Reduced Heterogeneity in Single-Walled Carbon Nanotubes. *Journal of the American Chemical Society* (2024). DOI: 10.1021/jacs.4c08105
2. Wu, A.K.; Guerzi, D.; Fu, Y.X.; Wilson, J.H.; Pixley, J.H. Absence of Quantization in the Circular Photogalvanic Effect in Disordered Chiral Weyl Semimetals. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.110.014201
3. Elsayed, A.; Guleria, T.; Atli, K.C.; Bolmin, O.; Young, B.; Noell, P.J.; Boyce, B. L.; Elwany, A.; Arroyave, R.; Karaman, I. Active Interlocking Metasurfaces Enabled by Shape Memory Alloys. *Materials & Design* (2024). DOI:10.1016/j.matdes.2024.113137
4. Böhm, T. U.; Sirica, N.S.; Jang, B. G.; Liu, Y.; Bauer, E. D.; Huang, Y.; Homes, C. C.; Zhu, J. X.; Ronning, F. Anisotropic Hybridization in CeRhSn. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.110.L121107
5. Yoo, J.; Nam, C.Y.; Bussmann, E. Atomic Precision Processing of Two-Dimensional Materials for Next-Generation Microelectronics. *ACS Nano* (2024). DOI: 10.1021/acsnano.4c04908
6. Kang, M. C.; Islam, F.; Yan, J. Q.; Vaknin, D.; McQueeney, R. J.; Lu, P.; Zhou, L. Atomic-Scale Characterization of Dilute Dopants in Topological Insulators via STEM-EDS Using Registration and Cell Averaging Techniques. *Microscopy and Microanalysis* (2024). DOI: 10.1093/mam/ozae078
7. Shaikhanov, Z.; Al-Madi, M.; Chen, H. T.; Chang, C. C.; Addamane, S.; Mittleman, D. M.; Knightly, E. W. Audio Misinformation Encoding via an On-Phone Sub-Terahertz Metasurface. *Optica* (2024). DOI: 10.1364/OPTICA.531175
8. Startt, J.; McCarthy, M. J.; Wood, M. A.; Donegan, S.; Dingreville, R. Bayesian Blacksmithing: Discovering Thermomechanical Properties and Deformation Mechanisms in High-Entropy Refractory Alloys. *Npj Computational Materials* (2024). DOI: 10.1038/s41524-024-01353-z
9. Dingreville, R.; Roberston, A. E.; Attari, V.; Greenwood, M.; Ofori-Opoku, N.; Ramesh, M.; Voorhees, P. W.; Zhang, Q. Benchmarking Machine Learning Strategies for Phase-Field Problems. *Modelling and Simulation in Materials Science and Engineering* (2024). DOI: 10.1088/1361-651X/ad5f4a
10. Velasquez-Guzman, J. C.; Huttanus, H. M.; Morales, D. P.; Werner, T. S.; Carroll, A. L.; Guss, A. M.; Yeager, C. M.; Dale, T.; Jha, R. K. Biosensors for the Detection of Chorismate and Cis,Cis-Muconic Acid in *Corynebacterium Glutamicum*. *Journal of Industrial Microbiology & Biotechnology* (2024). DOI: 10.1093/jimb/kuae024
11. Zhang, B.; Victor, G., Y. G.; Freixas, M.; Shichao Sun; Tretiak, S.; Jiang, J.; Mukamel, S. Cavity Manipulation of Attosecond Charge Migration in Conjugated Dendrimers. *Journal of the American Chemical Society* (2024). DOI: 10.1021/jacs.4c06727
12. Velappan, N.; Biryukov, S. S.; Rill, N. O.; Klimko, C. P.; Rosario-Acevedo, R.; Shoe, J. L.; Hunter, M.; Dankmeyer, J. L.; Fetterer, D. P.; Bedinger, D.; Phipps, M. E.; Watt, A. J.; Abergel, R. J.; Dichosa, A.; Kozimor, S.A.; Cote, C.K.; Lillo, A. M. Characterization of Two Affinity Matured Anti-Yersinia Pestis F1 Human Antibodies with Medical Countermeasure Potential. *Plos One* (2024). DOI: 10.1371/journal.pone.0305034
13. Wong, S.; Loring, T. A.; Cerjan, A. Classifying Topology in Photonic Crystal Slabs with Radiative Environments. *Nature* (2024). DOI: 10.48550/arXiv.2402.10347

14. Li, H. Q.; Su, Y.; Kim, Y. B.; Kee, H. Y.; Sun, K.; Lin, S. Z. Contrasting Twisted Bilayer Graphene and Transition Metal Dichalcogenides for Fractional Chern Insulators: An Emergent Gauge Picture. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.109.245131
15. Smyth, C. M.; Ohta, T.; Chou, S. S.; Lu, T. M. Controlling Electron and Hole Concentration in MoS₂ through Scalable Plasma Processes. *Journal of Vacuum Science & Technology A* (2024) DOI: 10.1116/6.0003486
16. Jones, A. K.; Mourigal, M.; Mounce, A. M.; Lilly, M. P. Cryogenic Platform to Investigate Strong Microwave Cavity-Spin Coupling in Correlated Magnetic Materials. *Journal of Physics-Condensed Matter* (2024). DOI: 10.1088/1361-648X/ad512e
17. Bhatt, M.; Nayak, P. K.; Ghosh, D. Data-Driven Design of Electroactive Spacer Molecules to Tune Charge Carrier Dynamics in Layered Halide Perovskite Heterostructures. *ACS Nano* (2024). DOI: 10.1021/acsnano.4c08208
18. Vizoso, D.; Dingreville, R. Dataset of Simulated Vibrational Density of States and X-Ray Diffraction Profiles of Mechanically Deformed and Disordered Atomic Structures in Gold, Iron, Magnesium, and Silicon. *Data in Brief* (2024). DOI: 10.1016/j.dib.2024.110689
19. Wurden, G. A.; Partesotti, G.; Reimold, F.; Mukai, K.; Peterson, B. J.; Federici, F. Developing a Robust Sensor for Infrared Imaging Bolometers. *Review of Scientific Instruments* (2024). DOI: 10.1063/5.0219535
20. Wijesekera, A.; Vigil, D. L.; Gary S.; Siteng, G.; Zhang Ting Ge. Diblock Rings as Topological Adhesives at Immiscible Polymer Interfaces. *ACS Macro Letters* (2024). DOI: 10.1021/acsmacrolett.4c00446
21. Callanan, J.G.; Martinez, D. T.; Ricci, S.; Brewer, N. K.; Derby, B. K.; Lovato, B. J.; Hollis, K. J.; Fensin, S. J.; Jones, D. R. Dynamic and Quasi-Static Strength of Additively Repaired Aluminum. *Journal of Applied Physics* (2024). DOI: 10.1063/5.0222267
22. Thomas, M.; Oh, H.; Schoell, R.; House, S.; Crespillo, M.; Hattar, K.; Windes, W.; Haque, A. Dynamic Deformation in Nuclear Graphite and Underlying Mechanisms. *Materials* (2024) DOI: 10.3390/ma17184530
23. Aryal, A.; Tiwari, S.; Branch, D. W.; Siddiqui, A.; Busani, T. Edge Treatment for Spurious Mode Suppression in Thin-Film Lithium Niobate Resonators. *Scientific Reports* (2024). DOI: 10.1038/s41598-024-71036-8
24. Wagle, K.; Rehn, D. A.; Mattsson, A. E.; Mason, H. E.; Malone, M. W. Effect of Dynamical Motion in Ab Initio Calculations of Solid-State Nuclear Magnetic and Nuclear Quadrupole Resonance Spectra. *Chemistry of Materials* (2024). DOI: 10.1021/acs.chemmater.4c00883
25. Turney, D. E.; Dutta, D.; Banerjee, S.; Lambert, T. N.; Bell, N. S. Electrochemical and Cycle Analysis of Water-in-Salt K-Acetate Electrolyte Zn-Ion Batteries Under Commercially-Relevant Conditions. *Journal of the Electrochemical Society* (2024). DOI: 10.1149/1945-7111/ad5769
26. Oldani, N.; Freixas, V. M.; Ondarse-Alvarez, D.; Sharifzadeh, S.; Gibson, T.; Tretiak, S.; Fernandez-Alberti, S. Electronic Couplings versus Thermal Fluctuations in the Internal Conversion of Perylene Diimides: the Battle to Localize the Exciton. *Journal of Chemical Theory and Computation* (2024) DOI: 10.1021/acs.jctc.4c00486
27. Zhang, R. Q.; Lane, C.; Nokelainen, J.; Singh, B.; Barbiellini, B.; Markiewicz, R. S.; Bansil, A.; Sun, J. W. Emergence of Competing Stripe Phases in Undoped Infinite-Layer Nickelates. *Physical Review Letters* (2024). DOI: 10.1103/PhysRevLett.133.066401

28. Romero, A.; Babicheva, V. E. Enhanced Light Confinement in Nonlocal Resonant Metasurfaces with Weak Multipolar Scatterers. *Journal of Applied Physics* (2024). DOI: 10.1063/5.0221867
29. Mehta, V. K.; Rehn, D. A.; Olsson, P. A. Evaluation of δ -Phase ZrH_{1.4} to ZrH_{1.7} Thermal Neutron Scattering Laws Using Ab Initio Molecular Dynamics Simulations. DOI: *Journal of Nuclear Engineering* (2024). DOI: 10.3390/jne5030022
30. Scheie, A.; Liu, Y.; Ghioldi, E. A.; Fender, S.; Rosa, P. F. S.; Bauer, E. D.; Zhu, J. X.; Ronning, F. Excess Heat Capacity in Magnetically Ordered Ce Heavy-Fermion Metals. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.110.085123
31. Gower, N. L.; Levy, S.; Piperno, S.; Addamane, S. J.; Albo, A. Exploring the Effects of Molecular Beam Epitaxy Growth Characteristics on the Temperature Performance of State-of-the-Art Terahertz Quantum Cascade Lasers. *Scientific Reports* (2024). DOI:10.1038/s41598-024-68746-4
32. Li, Q. Q.; Huang, A. Q.; Fan, C. F.; Yan, L.; Tretiak, S.; Zhou, L. J. Extending the Charge Carrier Recombination Lifetime by Octahedral Rotations in Ruddlesden-Popper Ba₃Zr₂S₇ Perovskites. *Journal of Physical Chemistry Letters* (2024). DOI: 10.1021/acs.jpclett.4c01358
33. Roy, M.; Xiao, Z.; Dong, C.; Addamane, S.; Burghoff, D. Fundamental Bandwidth Limits and Shaping of Frequency-modulated Combs. *Optica* (2024). DOI: 10.1364/OPTICA.529119
34. Adams, D. P.; Kothari, R.; Addamane, S.; Jain, M.; Dorman, K.; Desai, S.; Sobczak, C.; Kalaswad, M.; Bianco, N.; Delrio, F. W.; Custer, J. O.; Rodriguez, M. A.; Boro, J.; Dingreville, R.; Boyce, B. L. Guided Combinatorial Synthesis and Automated Characterization Expedites the Discovery of Hard, Electrically Conductive Ptxau_{1-X} Films. *Journal of Vacuum Science & Technology A* (2024). DOI: 10.1116/6.0003785
35. Clark, M. R.; Shah, S. A.; Piryatinski, A.; Sukharev, M. Harnessing Complexity: Nonlinear Optical Phenomena in L-Shapes, Nanocrescents, and Split-Ring Resonators. *Journal of Chemical Physics* (2024). DOI: 10.1063/5.0220079
36. Wissuchek, F.; Derby, B. K.; Misra, A. Heterogeneous Morphologies and Hardness of Co-Sputtered Thin Films of Concentrated Cu-Mo-W Alloys. *Nanomaterials* (2024). DOI: 10.3390/nano14181513
37. Sikma, R. E.; Vogel, D. J.; Reyes, R. A.; Meyerson, M. L.; Kotula, P. G.; Gallis, D. F. S. High-Entropy Metal-Organic Frameworks (HEMOFs): A New Frontier in Materials Design for CO₂ Utilization. *Advanced Materials* (2024) DOI: 10.1002/adma.202407435
38. Sun, T. Y.; Niu, T. J.; Shang, Z. X.; Shen, C.; Xie, D. Y.; Wang, J.; Wang, H. Y.; Zhang, X. H. High-Temperature Mechanical Behavior of Single-Crystal FeCrAl Alloy Under In-Situ Micropillar Compression. *Advanced Engineering Materials* (2024). DOI: 10.1002/adem.202400820
39. Fowler, J. E.; Ruggles, T. J.; Cillessen, D. E.; Johnson, K. L.; Jauregui, L. J.; Craig, R. L.; Bianco, N. R.; Henriksen, A. A.; Boyce, B. L. High-Throughput Microstructural Characterization and Process Correlation Using Automated Electron Backscatter Diffraction. *Integrating Materials and Manufacturing Innovation* (2024). DOI: 10.1007/s40192-024-00366-2
40. Rasel, M. A.; Schoell, R.; Smyth, C. M.; Hattar, K.; Harris, C. T.; Lu, T. M.; Haque, A.; Wolfe, D. E.; Ren, F.; Pearton, S. J. Influence of Electrical Field on the Susceptibility of Gallium Nitride Transistors to Proton Irradiation. *Journal of Physics D-Applied Physics* (2024). DOI: 10.1088/1361-6463/ad3f29
41. Forde, A.; Evans, A. C.; Nie, W. Y.; Tretiak, S.; Neukirch, A. J. Influence of Material Properties on Surface Chemistry Induced Circular Dichroism in Halide Perovskite: Computational Insights. *Nano Letters* (2024). DOI: 10.1021/acs.nanolett.4c02077

42. Ryan, D.; Meier, K.; Seitz, K.; Hanson, D.; Morales, D.; Palmer, D.; Hanson, B.; Goodwin, P.; Newell, R.; Holmes, R.; Thompson, D.; Werner, J. Infrared Quantum Ghost Imaging of Living and Undisturbed Plants. *Optica* (2024). DOI: 10.1364/OPTICA.527982
43. Renteria, E. J.; Heileman, G. D.; Neely, J. P.; Addamane, S. J.; Rotter, T. J.; Balakrishnan, G.; Christodoulou, CG; Cavallo, F. Infrared-Transparent Semiconductor Membranes for Electromagnetic Interference Shielding of Millimeter Waves. *Advanced Materials Technologies* (2024). DOI:10.1002/admt.202401013
44. Ince, F. F.; Frost, M.; Shima, D.; Rotter, T. J.; Addamane, S.; McCartney, M. R.; Smith, D. J.; Canedy, C. L.; Tomasulo, S.; Kim, C. S.; Bewley, W. W.; Vurgaftman, I.; Meyer, J. R.; Balakrishnan, G. Interband Cascade Light-Emitting Diodes Grown on Silicon Substrates Using GaSb Buffer Layer. *Applied Physics Letters* (2024) DOI: 10.1063/5.0209740
45. Qu, C. Y.; Hong, M. Q.; Wei, G.; Ge, W. T.; Guo, E. K.; Zhong, F.; Cai, G. X.; Wang, Y. Q.; Ren, F. Interfaces Enhanced Plasma Irradiation Resistance in CrMoTaWV/W Multilayer Films through Blocking He Diffusion. *Nuclear Fusion* (2024) DOI: 10.1088/1741-4326/ad5aaf
46. Chen, M. J.; Xie, D.Y.; Fensin, S.; Hunter, A.; Li, N.; Zikry, M. A. Intergranular Fracture, Grain-Boundary Structure, and Dislocation-Density Interactions in FCC Bicrystals. *Scientific Reports* (2024) DOI: 10.1038/s41598-024-72033-7
47. Barnard, J. P.; Shen, J.A.; Tsai, B. K.; Zhang, Y. Z.; Chhabra, M. R.; Xu, K.; Zhang, X. H.; Sarma, R.; Siddiqui, A.; Wang, H. Large Area Transfer of Bismuth-Based Layered Oxide Thin Films Using a Flexible Polymer Transfer Method. *Small Science* (2024). DOI: 10.1002/ssm.202400114
48. Eckstein, T.; Mansuroglu, R.; Czarnik, P.; Zhu, J. X.; Hartmann, M. J.; Cincio, L.; Sornborger, A. T.; Holmes, Z. Large-Scale Simulations of Floquet Physics on Near-Term Quantum Computers. *Npj Quantum Information* (2024). DOI:10.1038/s41534-024-00866-1
49. Cleri, A. J.; He, M. Z.; Tolchin, M. J.; Gubbin, C.; Lang, E. R.; Hattar, K.; De Liberato, S.; Caldwell, J. D.; Maria, J. P. Laterally Modulating Carrier Concentration by Ion Irradiation in CdO Thin Films for Mid-IR Plasmonics. *Advanced Optical Materials* (2024). DOI: 10.1002/adom.202401009
50. Patel, S.; Mohanta, N.; Nandy, S.; Mahanti, S. D.; Taraphder, A. Layer-Dependent Electronic Structures and Magnetic Ground States of Polar-Polar LaVO₃/K₂VO₃(001) Heterostructures. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.110.054402
51. Allen, A. E. A.; Lubbers, N.; Matin, S.; Smith, J.; Messerly, R.; Tretiak, S.; Barros, K. Learning Together: Towards Foundation Models for Machine Learning Interatomic Potentials with Meta-Learning. *Npj Computational Materials* (2024). DOI: 10.1038/s41524-024-01339-x
52. Samanta, K.; Deswal, P.; Alam, S.; Bhati, M.; Ivanov, S.A.; Tretiak, S.; Ghosh, D. Ligand Controls Excited Charge Carrier Dynamics in Metal-Rich CdSe Quantum Dots: Computational Insights. *ACS Nano* (2024). DOI: 10.1021/acsnano.4c05638
53. Prokoshin, A; Chow, W. W.; Dong, B. Z.; Grillot, F.; Bowers, J.; Wan, Y. T. Linewidth Narrowing in Self-Injection Locked Lasers: Effects of Quantum Confinement. *APL Photonics* (2024). DOI:10.1063/5.0214254
54. Vadthya, R.; Fetrow, C.; Oladoyin, O.; Wu, J.; Ivanov, S.; Wang, Y.; Chen, D.; Zhou, X.; Wei, S.; Low-Temperature and High-Rate Rechargeable Aluminum Batteries Enabled by Ternary Eutectic Electrolytes. *ChemSusChem* (2024). DOI: 10.1002/cssc.202400983

55. Sherburne, M. D.; Dreier, T. A.; Klitsner, B.H.; Huber, D.L.; Ivanov, S.A.; Parks, C.; Simons, M.T.; Schamiloglu, E. Material Characterization Study of Magnetite Nanocrystals for RF Sensing. *ACS Omega* (2024). DOI: 10.1021/acsomega.4c04589
56. Prignano, L. A.; Stevens, M. J.; Vanegas, J. M.; Rempe, S. B.; Dempski, R. E. Metadynamics Simulations Reveal Mechanisms of Na⁺ and Ca²⁺ Transport in Two Open States of the Channelrhodopsin Chimera, C1C2. *Plos One* (2024). DOI: 10.1371/journal.pone.0309553
57. Chen, H. T. Micro-Patterning of Spintronic Emitters Enables Ultrabroadband Structured Terahertz Radiation. *Light-Science & Applications* (2024). DOI: 10.1038/s41377-024-01579-y
58. Chen, X.; Pozuelo, M.; Gussev, M.; Chancey, M.; Wang, Y. Q.; Balonis, M.; Bauchy, M.; Sant, G. Microstructurally Resolved Electrochemical Evolution of Mechanical- and Irradiation-Induced Damage in Nuclear Alloys. *Npj Materials Degradation* (2024). DOI: 10.1038/s41529-024-00500-7
59. Norman, S.; Seddon, J.; Lu, Y. Z.; Hale, L.; Zaman, B.; Addamane, S. J.; Brener, I.; Degl'Innocenti, R.; Mitrofanov, O. Non-Contact Imaging of Terahertz Surface Currents with Aperture-Type Near-Field Microscopy. *Optics Express* (2024). DOI: 10.1364/OE.531690
60. Lee, S.; Kim, D. Y.; Rosa, P. F. S.; Bauer, E. D.; Ronning, F.; Thompson, J. D.; Lin, S. Z.; Movshovich, R. Normal Fermi Surface in the Nodal Superconductor CeCoIn₅ Revealed via Thermal Conductivity. *Physical Review Letters* (2024). DOI: 10.1103/PhysRevLett.132.236002
61. Nizam, M.; Bohon, J.; Freeman, P.; Kennedy, M.; Kim, D.; Padilla, R.; Prebys, E.; Schumm, B. A.; Smedley, J.; Tarka, M.; Torrecilla, I. S.; Wilder, M. Partial Solvation of Lithium Ions Enhances Conductivity in a Nanophase-Separated Polymer Electrolyte. *Chemistry of Materials* (2024). DOI:10.1021/acs.chemmater.4c02398
62. Kim, D.; Yoo, D.; Sheehan, C.; Jones, A.; Williams, D.; Yi, G. C.; Tu, Q.; Yoo, J.; Nie, W. Y. Perovskite Grown in Gallium Nitride Nanowire Matrix for Stable and High-Efficiency X-Ray Detection. *Advanced Functional Materials* (2024). DOI: 10.1002/adfm.202405717
63. Will-Cole, A. R.; Lauter, V.; Grutter, A.; Dubs, C.; Lidsky, D. A.; Lindner, M.; Reimann, T.; Bhattacharjee, N.; Lu, T. M.; Sharma, P.; Valdez, N. R.; Pearce, C.J.; Monson, T.C.; Matzelle, M.; Bansil, A.; Heiman, D.; Sun, N. X. Probing Intrinsic Magnetization Dynamics of the Y₃Fe₅O₁₂/Bi₂Te₃ Interface at Low Temperature. *Physical Review Materials* (2024). DOI: 10.1103/PhysRevMaterials.8.074409
64. Wu, A.K.; Sarkar, S.; Wan, X.H.; Sun, K.; Lin, S.Z. Quantum-metric-induced Quantum Hall Conductance Inversion and Reentrant Transition in Fractional Chern Insulators. *Physical Review Research* (2024). DOI: 10.1103/PhysRevResearch.6.L032063
65. Sherburne, M.; Harjes, C.; Klitsner, B.; Gigax, J.; Ivanov, S.; Schamiloglu, E.; Lehr, J. Rapid Prototyping for Nanoparticle-Based Photonic Crystal Fiber Sensors. *Sensors* (2024). DOI: 10.3390/s24123707
66. Nizam, M.; Bohon, J.; Freeman, P.; Kennedy, M.; Kim, D.; Padilla, R.; Prebys, E.; Schumm, B.A.; Smedley, J.; Tarka, M.; Torrecilla, I.S.; Wilder, M. Real-time Study of Radiation Damage in Monocrystalline Diamond Sensors. *Journal of Instrumentation* (2024). DOI:10.1088/17480221/19/09/P09018
67. Lutz, J.J.; Jensen, D.S.; Hubbard, J.A.; Dewyer, A.L.; Zador, J. Relativistic Coupled-Cluster Simulation of the Kinetics of the Hydrolysis of Uranium Hexafluoride. *Molecular Physics* (2024). DOI: 10.1080/00268976.2024.2373345
68. Babicheva, V.E. Resonant Metasurfaces with Van Der Waals Hyperbolic Nanoantennas and Extreme Light Confinement. *Nanomaterials* (2024). DOI: 10.3390/nano14181539

69. Oommen, V; Shukla, K; Desai, S; Dingreville, R; Karniadakis, GE. Rethinking Materials Simulations: Blending Direct Numerical Simulations with Neural Operators. *Npj Computational Materials* (2024). DOI: 10.1038/s41524-024-01319-1
70. Levine, I.; Menzel, D.; Musiienko, A.; MacQueen, R.; Romano, N.; Vasquez-Montoya, M.; Unger, E.; Perez, C.M.; Forde, A.; Neukirch, A.J.; Korte, L.; Dittrich, T. Revisiting Sub-Band Gap Emission Mechanism in 2D Halide Perovskites: The Role of Defect States. *Journal of the American Chemical Society* (2024). DOI: 10.1021/jacs.4c06621
71. Hautzinger, M.P.; Pan, X.; Hayden, S.C.; Ye, J.Y.; Jiang, Q.; Wilson, M.J.; Phillips, A.J.; Dong, Y.F.; Raulerson, E.K.; Leahy, I.A.; Jiang, C.S.; Blackburn, J.L.; Luther, J.M.; Lu, Y.; Jungjohann, K.; Vardeny, Z.V.; Berry, J.J.; Alberi, K.; Beard, M.C. Room-Temperature Spin Injection across a Chiral Perovskite/III-V Interface. *Nature* (2024). DOI: 10.1038/s41586-024-07560-4
72. Nokelainen, J.; Matzelle, M.E.; Lane, C.; Atlam, N.; Zhang, R.Q.; Markiewicz, R.S.; Barbiellini, B.; Sun, J.W.; Bansil, A. Second Dome of Superconductivity in YbA₂C₃O₇ at High Pressure. *Physical Review B* (2024) DOI: 10.1103/PhysRevB.110.L020502
73. Polavaram, K.C.; Evani, S.K.; Drewry, S.M.; Rodriguez, E.T.; Alnaggar, M.G.; Wetteland, C.J.; Page, K.; Popovics, J.S.; Sickafus, K.E.; Le Pape, Y.; Garg, N. Silicon Ion Radiation as a Viable Surrogate for Emulating Neutron Radiation Damage in Silicates. *Npj Materials Degradation* (2024). DOI:10.1038/s41529-024-00506-1
74. Weng, S.Z.; Wang, Y.; Price, C.; Blackwood, H.R.; Choffel, M.; Miller, A.; Li, R.X.; Chen, M.R.; Lu, P.; Ilkhani, S.; Majumdar, A.; Johnson, D.C.; Cronin, S.B. Simultaneous Characterization of In-Plane and Cross-Plane Resistivities in Highly Anisotropic 2D Layered Heterostructures. *ACS Nano* (2024) DOI: 10.1021/acsnano.3c13232
75. Lee, Y. J.; Kim, M.; Yoo, J.; Werner, J.H.; Kortshagen, U. Single-Step Nonthermal Plasma Synthesis of Water-Soluble and Near-Infrared-Emitting Si Quantum Dots for Bioimaging Applications. *ACS Applied Nano Materials* (2024). DOI:10.1021/acsanm.4c03643
76. Ou, J. T.; Brown, M. K.; Kaff, J. D.; Hughes, R. W.; Huber, D. L.; Sumerlin, B. S.; Winey, K. I.; Taylor, M. K. Structural Effects on Solubility and Crystallinity in Polyamide Ionomers. *ACS Applied Polymer Materials* (2024). DOI:10.1021/acsapm.4c02012
77. Fitzgerald, K. M.; Smith, R. G.; Johnson, K. L.; Niederhaus, J. H. J.; Dye, J. A.; Boyce, B. L.; Strong, K. T.; White, B. C. Structural Metamaterials with Innate Capacitive and Resistive Sensing. *Journal of Materials Science* (2024). DOI: 10.1007/s10853-024-10097-6
78. Rezaee, M. D.; Dahal, B.; Watt, J.; Abrar, M.; Hodges, D. R.; Li, W. Z. Structural, Electrical, and Optical Properties of Single-Walled Carbon Nanotubes Synthesized through Floating Catalyst Chemical Vapor Deposition. *Nanomaterials* (2024). DOI:10.3390/nano14110965
79. Supakul, S.; Jain, M.; Yaddanapudi, K.; Gruber, J.; El-Atwani, O.; Tucker, G. J.; Pathak, S. Synthesis, Microstructure and Micro-Mechanical Characterization of Metal (Nb, Ti) - MAX Phase (Ti₂AlC) Nanolaminates. *Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing* (2024). DOI:10.1016/j.msea.2024.146905
80. Li, M.; Curnan, M. T.; House, S. D.; Saidi, W. A.; Yang, J. C. Temperature Dependent Early-Stage Oxidation Dynamics of Cu(100) Film with Faceted Holes. *High Temperature Corrosion of Materials* (2024). DOI:10.1007/s11085-024-10274-7

81. Ahmad, I.; Kachiraju, S. R.; Kunwar, S.; Brown, Z. M.; Roy, P.; Gaddy, M.; Kuryatkov, V.; Kwon, Y.; Bernussi, A. A.; Murphy, J. P.; Ellis, C. T.; Chen, A. P.; Kim, M. H. Temperature-Dependent Optical Constants of Vanadium Dioxide Thin Films Deposited on Polar Dielectrics. *Optical Materials* (2024). DOI: 10.1016/j.optmat.2024.115733
82. Caspi, S.; Baskin, M.; Shusterman, S.; Zhang, D.; Chen, A.; Cohen-Elias, D.; Sicron, N.; Katz, M.; Yalon, E.; Pryds, N.; Kornblum, L. The Role of Interface Band Alignment in Epitaxial SrTiO₃/GaAs Heterojunctions. *ACS Applied Electronic Materials* (2024). DOI: 10.1021/acsaelm.4c01150
83. Cunningham, A.; Kirk, M.; Hong, E.; Yang, J.; Howard, T.; Brearley, A.; Sáenz-Trevizo, A.; Krawchuck, J.; Watt, J.; Henderson, I.; Dokladny, K.; DeAgüero, J.; Escobar, G.P.; Wagner, B. The Safety of Magnetic Resonance Imaging Contrast Agents. *Frontiers in Toxicology* (2024). DOI:10.3389/ftox.2024.1376587
84. Yu, W.; Cuzzo, J.J.; Sapkota, K.; Rossi, E.; Rademacher, D. X.; Nenoff, T.M.; Pan, W. Time Reversal Symmetry Breaking and Zero Magnetic Field Josephson Diode Effect in Dirac Semimetal Cd₃As₂ Mediated Asymmetric SQUIDs. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.110.104510
85. Bohon, J.; Grace, C.; Gulley, M.; Jacobson, B.; Kachiguine, S.; Kim, D.; Martinez-Mckinney, F.; Nagel, N.; Nizam, M.; Padilla, R.; Prakash, T.; Prebys, E.; Rowling, C.; Schumm, B. A.; Torrecilla, I. S.; Smedley, J.; Stuart, D.; Wilder, M.; Zhu, D. Toward an Integrated Multi-Gigahertz Ionizing Particle Diagnostic. *Review of Scientific Instruments* (2024). DOI: 10.1063/5.0213921
86. Perez-Castillo, R.; Freixas, V. M.; Mukamel, S.; Martinez-Mesa, A.; Uranga-Piña, L.; Tretiak, S.; Gelin, M. F.; Fernandez-Alberti, S. Transient-Absorption Spectroscopy of Dendrimers via Nonadiabatic Excited-State Dynamics Simulations. *Chemical Science* (2024). DOI: 10.1039/d4sc01019a
87. Barnett, A. K.; Hussein, O.; Alghalayini, M.; Hinojos, A.; Nathaniel, J. E. II; Medlin, D. L.; Hattar, K.; Boyce, B. L.; Abdeljawad, F. Triple Junction Segregation Dominates the Stability of Nanocrystalline Alloys. *Nano Letters* (2024). DOI:10.1021/acs.nanolett.4c02395
88. Zhang, D.; Shen, J.N.; Song, J.W.; Lu, P.; Gao, X.Y.; He, Z.H.; Lu, J.J.; Zhang, Y.Z.; Dou, H.Y.; Chen, A.P.; Wang, H.Y. Two-dimensional Perovskite Supercells Incorporated with Plasmonic and Ferromagnetic Secondary Phases toward Multifunctionalities. *MRS Communications* (2024). DOI: 10.1557/s43579-024-00649-x
89. Mei, B.; Grest, G. S.; Liu, S.; Schweizer, K. S. Unified Understanding of the Impact of Semiflexibility, Concentration, and Molecular Weight on Macromolecular-scale Ring Diffusion. *PNAS* (2024). DOI: 10.1073/pnas.2403964121
90. Alolaiyan, O.; Albawardi, S.; Alsaggaf, S.; Tabbakh, T.; DelRio, F. W.; Amer, M. R. Unlocking High-Performance, Ultra-Low Power van der Waals Photo-Transistors: Toward Back-End-of-Line in-Sensor Machine Vision Applications. *ACS Applied Materials and Interfaces* (2024). DOI: 10.1021/acsaami.4c07231
91. Hausladen, M. M.; Baca, E.; Nogales, K. A.; Appelhans, L. N.; Kaehr, B.; Hamel, C. M.; Leguizamon, S. C. Volumetric Additive Manufacturing of Dicyclopentadiene by Solid-State Photopolymerization. *Advanced Science* (2024). DOI:10.1002/advs.202402385
92. Ahmed, S. Z.; Hasan, M.; Kim, K.; Kim, S. Zero-Crosstalk Silicon Photonic Refractive Index Sensor with Subwavelength Gratings. *Nano Convergence* (2024). DOI:10.1186/s40580-024-00446-1
93. Vigil, D. L.; Ge, T.; O'Connor, T.C.; Grest, G. S. Measuring Topological Constraint Relaxation in Ring-Linear Polymer Blends. *Physical Review Letters* (2024). DOI:10.1103/PhysRevLett.133.118101

94. Kumari, A.; Ghosh, D. Fast Carrier Recombination, Nanoconfinement, and Defects Boost Solar-Driven Hydrogen Evolution Reactions at Z-Scheme Heterojunctions. *ACS Applied Energy Materials* (2024). DOI: 10.1021/acsaem.4c02101
95. Miller, C. E.; Edwards, J.; Matsumura, C.; Schneider, M. M.; Eley, S.; Mathaudhu, S. N.; Hildreth, O. J. Combinatorial Printing of Iron and Cobalt Reactive Inks to Produce Magnetic Amorphous and Nanocrystalline Metals. *ACS Applied Nano Materials* (2024). DOI: 10.1021/acsanm.4c05047
96. Olasupo, O. J.; Le, T. H.; Shonde, T. B.; Liu, H.; Bouchard, A.; Bouchard, S.; Gamaralalage, T. N. D. D.; Adewolu, A. M.; Manny, T. F.; Lin, X.; Hu, Y. Y.; Nie, W.; Ma, B. Direct X-ray Detectors Based on an Eco-Friendly Semiconducting Zero-Dimensional Organic Zinc Bromide Hybrid ACS Energy Letters. (2024). DOI:10.1021/acsenenergylett.4c02662
97. Wu, Y.; Schreiber, M. A.; Kim, A. D.; Addamane, S. J.; Jirauschek, C.; Williams, B. S. Harmonic and Subharmonic RF Injection Locking of THz Metasurface Quantum-Cascade VECSEL. *ACS Photonics* (2024). DOI: 10.1021/acsp Photonics.4c00608
98. Nazarov, A.; Bloom, Y.; Lubotzky, B.; Abudayyeh, H.; Mildner, A.; Baldessarini, L.; Shemla, Y.; Bowes, E. G.; Fleischer, M.; Hollingsworth, J. A.; Rapaport, R. Ultrafast and Highly Collimated Radially Polarized Photons at Room Temperature from a Colloidal Quantum Dot Coupled to a Hybrid Nanoantenna. *ACS Photonics* (2024). DOI: 10.1021/acsp Photonics.4c01516
99. Dillon, S. J.; Schoell, R. M.; Wright, A.; Luo, J.; Rabkin, E.; Hattar, K. Creep and Failure at Metal-Oxide Interfaces. *Acta Materialia* (2024). DOI: 10.1016/j.actamat.2024.120563
100. Tunes, M. A.; Parkison, D.; Huang, Y.; Chancey, M. R.; Vogel, S. C.; Mehta, V. K.; Torrez, M. A.; Luther, E. P.; Valdez, J. A.; Wang, Y.; Yu, J.; Cinbiz, M. N.; Shivprasad, A. P.; Kohnert, C. A. Challenges in Developing Materials for Microreactors: A Case-Study of Yttrium Dihydride in Extreme Conditions. *Acta Materialia* (2024). DOI:10.1016/j.actamat.2024.120333
101. Fitzgerald, K. M.; Carroll, J. D.; Cillessen, D. E.; Garland, A.; Ruggles, T. J.; Johnson, K. L.; Boyce, B. L. Near-Surface Microstructures Convolute Mechanical Properties in Additively Manufactured Metals. *Additive Manufacturing* (2024). DOI: 10.1016/j.addma.2024.104477
102. Barnard, J. P.; Zhang, Y.; Quigley, L.; Shen, J.; Tsai, B. K.; Chhabra, M. R.; Noh, J.; Jung, H.; Mitrofanov, O.; Sarma, R.; Siddiqui, A.; Brener, I.; Doiron, C. F.; Wang, H. Transfer of Millimeter-Scale Strained Multiferroic Epitaxial Thin Films on Rigid Substrates via an Epoxy Method Producing Magnetic Property Enhancement. *Advanced Electronic Materials* (2024). DOI: 10.1002/aelm.202400492
103. Bischoff, A.; Bawcutt, C.; Sorkin, M.; Yazzie, J.; C. Cook, C.; Leguizamon, S. C.; Cook, A. W.; Roach, D. J. Monodomain Liquid-Crystal Elastomer Lattices for Broad Strain-Rate Mechanical Damping. *Advanced Engineering Materials* (2024). DOI: 10.1002/adem.202401796
104. Herman, J. A.; Telles, R.; Cook, C. C.; Leguizamon, S. C.; Lewis, J. A.; Kaehr, B.; White, T. J.; Roach, D. J. Digital Light Process 3D Printing of Magnetically Aligned Liquid Crystalline Elastomer Free-forms. *Advanced Materials* (2024). DOI: 10.1002/adma.202414209
105. Sikma, R. E.; Vogel, D. J.; Reyes, R. I. A.; Meyerson, M. L.; Kotula, P. G.; Gallis, D. F. S. High-Entropy Metal-Organic Frameworks (HEMOFs): A New Frontier in Materials Design for CO₂ Utilization. *Advanced Materials* (2024). DOI: 10.1002/adma.202407435
106. Jung, H.; Brener, I.; Addamane, S. J.; Luk, T. S.; Harris, C. T.; Subramania, G.; Mitrofanov, O. InAs Terahertz Metalens Emitter for Focused Terahertz Beam Generation. *Advanced Photonics Research* (2024). DOI: 10.1002/adpr.202400125

107. de Quesada, F. A.; Muscher, P. K.; Krakovsky, E. S.; Sood, A.; Poletayev, A. D.; Sie, E. J.; Nyby, C. M.; Irvine, S. J.; Zajac, M. E.; Luo,.; Shen, X.; Hoffmann, M. C.; Kramer, P. L.; England, R. J.; Reid, A. H.; Weathersby, . P.; Dresselhaus-Marais, L. E.; Rehn, D. A.; Chueh, W. C.; Lindenberg, A. M. Electrochemical Control of the Ultrafast Lattice Response of a Layered Semimetal Advanced Science. (2024). DOI: 10.1002/advs.202411344
108. Tsironi, I.; Maleszka, J. A.; Kriebisch, B. A.; Wilson-Kovacs, R. S.; Acevedo, O.; O'Leary, S. L.; Watt, J.; Boekhoven, J.; Olivier, J. Fuel-driven π -conjugated Superstructures to Form Transient Conductive Hydrogels. *Angewandte Chemie-International Edition* (2024). DOI: 10.1002/anie.202417109
109. Lo, C.-A.; Wang, Y.; Kankanallu, V. R.; Singla, A.; Yen, D.; Zheng, X.; Naik, K. G.; Vishnugopi, B. S.; Campbell, C.; Raj, V.; Zhao, C.; Ma, Lu; Bai, J.; Yang, F.; Li, R.; Ge, M.; Watt, J.; Mukherjee, P. P.; Mitlin, D.; Chen-Wiegart, Y.-C. K. Interdependence of Support Wettability - Electrodeposition Rate- Sodium Metal Anode and SEI Microstructure. *Angewandte Chemie-International Edition* (2024). DOI: 10.1002/anie.202412550
110. Cerjan, A.; Loring, T. A. Classifying Photonic Topology Using the Spectral Localizer and Numerical K-Theory. *APL Photonics* (2024). DOI: 10.1063/5.0239018
111. Nikor, S. S.; Sumon, M. S.; Sankar, S.; Ma, L.; Patel, V. J.; Hawkins, S. D.; Addamane, S. J.; Arafin, S. Optical and Electrical Properties of Proton-Implanted p-GaSb for Electrical Isolation. *Applied Physics Express* (2024). DOI: 10.35848/1882-0786/ad9377
112. Kehayias, P.; Delaney, M. A.; Haltli, R. A.; Clark, S. M.; Revelle, M. C.; Mounce, A. M. Fault Localization in a Microfabricated Surface Ion Trap Using Diamond Nitrogen-Vacancy Center Magnetometry. *Applied Physics Letters* (2024). DOI: 10.1063/5.0234269
113. Eeso, K.; Wygant, B. R.; Chen, Z.; Sarswat, A.; Lambert, T. N.; Liu, N. The Thermal Instability of Hydrogen-Substituted Graphdiyne and its Role in Lithium-Sulfur Batteries. *Chemical Communications* (2024) DOI:10.1039/d4cc04459b
114. Kulichenko, M.; Nebgen, B.; Lubbers, N.; Smith, J. S.; Barros, K.; Allen, A. E. A.; Habib, A.; Shinkle, E.; Fedik, N.; Li, Y. W.; Messerly, R. A.; Tretiak, S. Data Generation for Machine Learning Interatomic Potentials and Beyond. *Chemical Reviews* (2024). DOI: 10.1021/acs.chemrev.4c00572
115. Quigley, L.; Shen, J.; Lu, J.; Mihalko, C. A.; Barnard, J. P.; Zhang, Y.; Bhatt, N. A.; Evancho, K.; Sarma, R.; Siddiqui, A.; Wang, H. Target Configuration Effect on Microstructures and Properties of Vertically Aligned Nanocomposites. *Crystal Growth & Design* (2024). DOI:10.1021/acs.cgd.4c00958
116. Petluru, P.; Allemang, C. R.; Liu, S.; Liu, J.; Lu, T.-M. Ambipolar Transport in Polycrystalline GeSn Transistors for Complementary Metal-Oxide-Semiconductor Applications. *IEEE Journal of Selected Topics in Quantum Electronics* (2024). DOI: 10.1109/JSTQE.2024.3499859
117. Seth, S.; Reilly, K. J.; Ince, F. F.; Kalapala, A.; Gautam, C.; Rotter, T. J.; Neumann, A.; Addamane, S.; Thompson, B.; Gibson, R.; Zhou, W.; Balakrishnan, G. Thermal Stability of the Dot-in-Well Gain Medium for Photonic Crystal Surface Emitting Lasers. *IEEE Journal of Selected Topics in Quantum Electronics* (2024). DOI: 10.1109/JSTQE.2024.3486672
118. Miller.; Lefebvre, J. C.; Vattipalli, S.; Sarkar, N.; Lily, M. P.; Cybart, S. A. Electrical Transport Study of YBCO Thin Films at Millikelvin Temperatures. *IEEE Transactions on Applied Superconductivity* (2024). DOI: 10.1109/TASC.2024.3504485
119. Custer, J. O.; Kalaswad, M.; Kothari, R. S.; Kotula, P. G.; Ruggles, T.; Hinojos, A.; Dingreville, R.; Henriksen, A.; Adams, D. P. Sputter-Deposited Mo Thin Films: Characterization of Grain Structure and

- Monte Carlo Simulations of Sputtered Atom Energies and Incidence Angles. *Integrating Materials and Manufacturing Innovation* (2024). DOI: 10.1007/s40192-024-00387-x
120. Koulali, A.; Ziółkowski, P.; Radomski, P.; De Sio, L.; Zieliński, J.; Nevárez Martínez, M. C.; Mikielawicz, D. Analysis of Heat Transfer and AuNPs-Mediated Photo-Thermal Inactivation of *E. coli* at Varying Laser Powers Using Single-Phase CFD Modeling. *International Journal of Numerical Methods for Heat & Fluid Flow* (2024). DOI: 10.1108/HFF-04-2024-0252
121. Newell, A. T.; Carrasco, R. A.; Hains, C. P.; Logan, J. V.; Balakrishnan, G.; Maestas, D.; Morath, C. P.; Webster, P. T. Analytic Modeling of Sensitivity in Diffusion-Limited Type-II Superlattice Mid-Wave Infrared nBn Photodetectors for Design Optimization for Low-Irradiance Conditions. *Journal of Applied Physics* (2024). DOI: 10.1063/5.0244019
122. Alsaad, Z. M.; Logan, J. V.; Morath, C. P.; McMahon-Crabtree, P. N.; Kulesza, L. N.; Theis, Z.; Maestas, D.; Graca, R.; McReynolds, B. J.; Zarkesh-Ha, P.; Webster, P. T. DC Characteristics of a Dynamic Vision Sensor's Photoreceptor Circuit Evaluated for Event-Based Sensing in the Mid-Wave Infrared. *Journal of Applied Physics* (2024) DOI: 10.1063/5.0234266
123. Bradicich, A.; Petluru, P.; Davari, S.; Zhao, H.; Gangwal, S.; Liu, C.-Y.; Vasileska, D.; Zeng, Y.; Churchill, H.; Li, J.-Y.; Lilly, M. P.; Lu, T. M. Study of Phase Decoherence in GeSn (8%) Through Measurements of the Weak Antilocalization Effect. *Journal of Applied Physics* (2024) DOI: 10.1063/5.0233728
124. Alfonso-Hernandez, L.; Freixas, V. M.; Gibson, T.; Tretiak, S.; Fernandez-Alberti, S. Tuning Electronic Relaxation of Nanorings Through Their Interlocking. *Journal of Computational Chemistry* (2024). DOI: 10.1002/jcc.27533
125. Bianco, N.; Fitzgerald, K.; Cillessen, D.; Brown, N.; Carroll, J.; Garland, A.; Bassett, K. L.; Schroder, J. B.; Boyce, B. L. Toughness from Imagery: Extracting More from Failure Analysis Using Deep Convolutional Neural Networks. *Journal of Failure Analysis and Prevention* (2024). DOI: 10.1007/s11668-024-02045-y
126. Kennedy, E. R.; Valdez, J. A.; Wang, Y.; Ribet, S. M.; Sickafus, K. E.; Kreller, C. R.; Uberuaga, B. P.; Derby, B. K. Insights into Defect Kinetics, Mass Transport, and Electronic Structure from Spectrum Effects in Ion-Irradiated Bi₂O₃. *Journal of Materials Chemistry A* (2024). DOI: 10.1039/d4ta05283h
127. Rajput, A.; Kumari, A.; Basak, H. K.; Ghosh, D.; Chakraborty, B. Tracking the Active Phase and Reaction Pathway of the OER Mediated by an MnMoO₄ Microrod Electro(pre)-Catalyst. *Journal of Materials Chemistry A* (2024) DOI: 10.1039/d4ta05985a
128. Ghosh, C.; Singh, M. K.; Dongare, A. M.; Carter, C. B. Exfoliation and Cracking in MoS₂ Following in-situ Lithiation. *Journal of Materials Science* (2024). DOI: 10.1007/s10853-024-10399-9
129. Stevens, M.; Rempe, S. Binding of Sulfates and Water to Monovalent Cations. *Journal of Physical Chemistry A* (2024). DOI: 10.1021/acs.jpca.4c05454
130. Koch, L. A.; Dunlap, M. K.; Ryan, D. P.; Werner, J. H.; Goodwin, P. M.; Green, C. M.; Díaz, S. A.; Medintz, I. L.; Susumu, K.; Stewart, M. H.; Gelfand, M. P.; Van Orden, A. Super-Resolved Fluorescence Lifetime Imaging of Single Cy3 Molecules and Quantum Dots Using Time-Correlated Single Photon Counting with a Four-Pixel Fiber Optic Array Camera. *Journal of Physical Chemistry A* (2024). DOI:10.1021/acs.jpca.4c05143
131. Tracy, D.; Fernandez-Alberti, S.; Galindo, J. F.; Tretiak, S.; Roitberg, A. Nonadiabatic Excited-State Molecular Dynamics with an Explicit Solvent: NEXMD-SANDER Implementation. *Journal of Physical Chemistry B* (2024). DOI: 10.1021/acs.jpcc.4c05600

132. Tyagi, B.; Li, H.; Bittner, E. R.; Piryatinski, A.; Silva-Acuña, C. Noise-Induced Quantum Synchronization and Entanglement in a Quantum Analogue of Huygens' Clock. *Journal of Physical Chemistry Letters* (2024). DOI: 10.1021/acs.jpcllett.4c02313
133. Arun, T.; Baboukani, A.R.; Siwakoti, P.; Jungjohann, K.L.; Nwanno, C.E.; Zhang, J.; Wang, C.; Gao, H.; Li, Wenzhi. Binder-Free Tin (IV) Oxide Coated Vertically Aligned Carbon Nanotubes as Anode for Lithium-Ion Batteries. *Journal of Power Sources* (2024). DOI: 10.1016/j.jpowsour.2024.235697
134. Yuan, M.; McNeece, A. J.; Dolgoplova, E. A.; Wolfsberg, L.; Bowes, E. G.; Batista, E. R.; Yang, P.; Filatov, A.; Davis, B. L. Photoinduced Isomerization of [N₂]²⁻ in a Bimetallic Lutetium Complex. *Journal of the American Chemical Society* (2024). DOI: 10.1021/jacs.4c10950
135. Desai, S.; Jain, M.; Addamane, S. J.; Adams, D. P.; Dingreville, R.; DelRio, F. W.; Boyce, B. L. Navigating High-Dimensional Process-Structure-Property Relations in Nanocrystalline Pt-Au alloys with Machine Learning. *Materials & Design* (2024) DOI: 10.1016/j.matdes.2024.113494
136. Pan, W.; Muhowski, A. J.; Martinez, W. M.; Sovinec, C.L.H.; Mendez, J.P.; Mamaluy, D.; Yu, W.; Shi, X.; Sapkota, K.; Hawkins, S. D.; Klem, J. F. Quantum Enhanced Josephson Junction Field-Effect Transistors for Logic Applications. *Materials Science and Engineering B-Advanced Functional Solid-State Materials* (2024). DOI: 10.1016/j.mseb.2024.117729
137. Trask, N.; Martinez, C.; Shilt, T.; Walker, E.; Lee, K.; Garland, A.; Adams, D. P.; Curry, J. F.; Dugger, M. T.; Larson, S. R.; Boyce, B. L. Unsupervised Physics-Informed Disentanglement of Multimodal Materials Data. *Materials Today* (2024). DOI:10.1016/j.mattod.2024.09.005
138. Jeong, J.; Lee, Y.; Lin, S.-Z.; Jeong, Y. H.; Chang, H. J.; Kim, J. Topological Magnetic Defects in a Strong Permanent Magnet Nd₂Fe₁₄B. *Materials Today Quantum* (2024). DOI: 10.1016/j.mtquan.2024.100017
139. Inman, S. B.; Wischhusen, M. A.; Qi, J.; Poon, S.J.; Agnew, S.R.; Scully, J.R. Variation of the Passive Film on Compositionally Concentrated Dual-Phase Al_{0.3}Cr_{0.5}Fe₂Mn_{0.25}Mo_{0.15}Ni_{1.5}Ti_{0.3} and Implications for Corrosion Metallurgical and Materials Transactions. *A-Physical Metallurgy and Materials Science* (2024). DOI: 10.1007/s11661-024-07572-9
140. Bennett IV, T. J.; Taleff, E. M. Imaging and Segmenting Grains and Subgrains Using Backscattered Electron Techniques. *Microscopy and Microanalysis* (2024). DOI: 10.1093/mam/ozae092
141. Dutta, N. S.; Carroll, G. M.; Neale, N. R.; Han, S.-D.; Al-Jassim, M.; Jungjohann, K. Operando Freezing Cryogenic Electron Microscopy of Active Battery Materials. *Microscopy and Microanalysis* (2024). DOI: 10.1093/mam/ozae097
142. Coffman, D. K.; Hattar, K.; Luo, J.; Dillon, S. Spectral Pyrometry for Practical Temperature Measurement in the TEM. *Microscopy and Microanalysis* (2024). DOI: 10.1093/mam/ozae114
143. Nevárez Martínez, M. C.; Kreft, D.; Grzegorzczak, M.; Mahlik, S.; Narajczyk, M.; Zaleska-Medynska, A.; Morales, D. P.; Hollingsworth, J. A.; Werner, J.H. Numerical Simulation of Light to Heat Conversion by Plasmonic Nanoheaters. *Nano Letters* (2024). DOI:10.1021/acs.nanolett.4c04872
144. Patra, B.; Damoah, J.; Habteyes, T.G. Picometer Scale Photothermal Tuning of Plasmonic Nanocavities and Interfacial Processes. *Nano Letters* (2024). DOI:10.1021/acs.nanolett.4c04114
145. Noh, J.; Santiago-Cruz, T.; Sultanov, V.; Doiron, C. F.; Gennaro, S. D.; Chekhova, M. V.; Brener, I. Quantum Pair Generation in Nonlinear Metasurfaces with Mixed and Pure Photon Polarizations. *Nano Letters* (2024). DOI: 10.1021/acs.nanolett.4c04398

146. Prescott, S.; Iyer, P. P.; Addamane, S.; Jung, H.; Luk, T. S.; Brener, I.; Mitrofanov, O. Mie Metasurfaces for Enhancing Photon Outcoupling from Single Embedded Quantum Emitters. *Nanophotonics* (2024). DOI: 10.1515/nanoph-2024-0300
147. Chandrasekaran, V.; DeLaney, C. R.; Trinh, C. T.; Parobek, D.; Lane, C. A.; Zhu, J. X.; Li, Xiangzhi; Zhao, H.; Campbell, M. A.; Martin, L.; Wyckoff, E. F.; Jones, A. C.; Schneider, M. M.; Watt, J.; Pettes, M. T.; Ivanov, S. i A.; Piryatinski, A.; Dunlap, D. H.; Htoon, H. Correlated Excitonic Signatures of Individual van der Waals NiPS3 Antiferromagnet Nanoflakes. *Nanoscale Horizons* (2024). DOI: 10.1039/d4nh00390j
148. Gao, X.; He, H.; Sobolewski, S.; Cerjan, A.; Hsu, C. W. Dynamic Gain and Frequency Comb Formation in Exceptional-Point Lasers. *Nature Communications* (2024). DOI: 10.1038/s41467-024-52957-4
149. Ren, Z.; Huang, J.; Tan, H.; Biswas, A.; Pulkkinen, A.; Zhang, Y.; Xie, Y.; Yue, Z.; Chen, L.; Xie, F.; Allen, K.; Wu, H.; Ren, Q.; Rajapitamahuni, A.; Kundu, A. K.; Vescovo, E.; Kono, J.; Morosan, E.; Dai, P.; Zhu, J.-X.; Si, Q.; Minár, J.; Yan, B.; Yi, M. Persistent Flat Band Splitting and Strong Selective Band Renormalization in a Kagome Magnet Thin Film. *Nature Communications* (2024). DOI: 10.1038/s41467-024-53722-3
150. Pokharel, R.; Niu, T.; Ricci, S.; Clausen, B.; Balogh, L.; Ravkov, L.; Martinez, R.; Lee, C.; Vogel, S.; Cady, C. M.; Torrez, M. A.; Derby, B. K.; Gigax, J. G.; Bonora, N.; Li, N.; Fensin, S. J. Alloying Effects on Deformation Induced Microstructure Evolution in Copper. *Nature Scientific Reports* (2024). DOI: 10.1038/s41598-024-73926-3
151. Wen, Y. H.; Heim, D.; Zimmermann, M.; Shugayev, R. A.; Dong, M.; Leenheer, A. J.; Gilbert, G.; Heuck, M.; Eichenfield, M.; Englund, D. R. Strain-Concentration for Fast, Compact Photonic Modulation and Non-Volatile Memory. *Optica* (2024). DOI: 10.1364/OPTICA.529094
152. Andreasen, J.; Robertson, W. D.; Brown, R.; Shank, J.; Kaehr, B.; Henry, D.; Smith, S.; Spoerke, E.; Scrymgeour, D. A. Reproducible Emission from Nonlinear Random Lasers. *Optics Communications* (2024). DOI: 10.1016/j.optcom.2024.131426
153. Zhu, Z.; Sarma, R.; Smith-Dryden, S.; Li, G.; Pang, S. S. Mode-multiplexed photonic integrated vector dot-product core from inverse design. *Photonics Research* (2024). DOI: 10.1364/PRJ.524419
154. Tucker, K.; Rege, A. K.; Smith, C.; Monteleoni, C.; Albash, T. Hamiltonian Learning Using Machine-Learning Models Trained with Continuous Measurements. *Physical Review Applied* (2024). DOI: 10.1103/PhysRevApplied.22.044080
155. Xie, T. Y.; Zhu, W.; Zhu, J. X. Impurity Effects on Local Electronic Structure of Twisted Bilayer Cuprates. *Physical Review B* (2024). DOI: 10.1103/PhysRevB.110.134514
156. Doiron, C.; Brener, I.; Cerjan, A. Dual-Band Polarization Control with Pairwise Positioning of Polarization Singularities in Metasurfaces. *Physical Review Letters* (2024). DOI: 10.1103/PhysRevLett.133.213802
157. Zhang, H.; Lin, S.-Z. Multipolar Skyrmion Crystals in Non-Kramers Doublet Systems. *Physical Review Letters* (2024). DOI: 10.1103/PhysRevLett.133.196702
158. Shishkov, V. Yu.; Andrianov, E. S.; Tretiak, S.; Whaley, K. B.; Zasedatelev, A. V. Sympathetic Mechanism for Vibrational Condensation Enabled. *Physical Review Letters* (2024). DOI:10.1103/PhysRevLett.133.186903
159. Zappala, E.; Elmslie, T. A.; Morris, G. D.; Meisel, M. W.; Dingreville, R.; Hamlin, J. J.; Frandsen, B. A. Tuning the Spin Dynamics and Magnetic Phase Transitions of the Cantor Alloy via Composition and Sample Processing Protocols: A Muon Spin Relaxation Study. *Physical Review Materials* (2024). DOI: 10.1103/PhysRevMaterials.8.104408

160. Alharbi, G. H.; Wong, S.; Gong, Y.; Oh, S. S. Asymmetrical Temporal Dynamics of Edge Modes in Su-Schrieffer-Heeger Lattice with Kerr Nonlinearity. *Physical Review Research* (2024). DOI: 10.1103/PhysRevResearch.6.L042013
161. Lee, S.E.; Windsor, Y. W.; Zahn, D.; Kraiker, A.; Kummer, K.; Kliemt, K.; Krellner, C.; Schuessler-Langeheine, C.; Pontius, N.; Staub, U.; Vyalikh, D. V.; Ernst, A.; Rettig, L. Controlling 4f Antiferromagnetic Dynamics via Itinerant Electronic Susceptibility. *Physical Review Research* (2024). DOI: 10.1103/PhysRevResearch.6.043019
162. Lively, K.; Bode, T.; Szangolies, J.; Zhu, J.-X.; Fauseweh, B. Noise Robust Detection of Quantum Phase Transitions. *Physical Review Research* (2024). DOI: 10.1103/PhysRevResearch.6.043254
163. Dalvit, D. A. R.; Volkoff, T. J.; Choi, Y. -S.; Azad, A. K.; Chen, H. -T.; Milonni, P. W. Quantum Frequency Combs with Path Identity for Quantum Remote Sensing. *Physical Review X* (2024). DOI:10.1103/PhysRevX.14.041058
164. Rosenthal, E. I.; Biswas, S.; Scuri, G.; Lee, H.; Stein, A. J.; Kleidermacher, H. C.; Grzesik, J.; Rugar, A. E.; Aghaeimeibodi, S.; Riedel, D.; Titze, M.; Bielejec, E. S.; Choi, J.; Anderson, C. P.; Vučković, J. Single-Shot Readout and Weak Measurement of a Tin-Vacancy Qubit in Diamond. *Physical Review X* (2024). DOI:10.1103/PhysRevX.14.041008
165. Bhandari, U.; Ding, H.; Zeng, C.; Yang, S.; Karoui, A.; Kim, H.; Zhu, P.; Chancey, M. R.; Wang, Y.; Guo, S. Study of Helium Irradiation Effect on Al6061 Alloy Fabricated by Additive Friction Stir Deposition. *Processes* (2024). DOI:10.3390/pr12102144
166. Krivos, M.; Floyd, N. C.; Tang, Z.; Morris, C. L.; Blatnik, M.; Clayton, S. M.; Cude-Woods, C. B.; Holley, A. T.; Hooks, D. E.; Ito, T. M.; Liu, C. - Y.; Makela, M.; Martinez, I. F.; Martinez, M. R.; Navazo, A. S. C.; O'Shaughnessy, C. M.; Pattie, R. W.; Renner, E. L.; Singh, M.; Surbrook, J.; Young, A. R. Cerium Doped Yttrium Aluminum Perovskite Scintillator as an Absolute Ultracold Neutron Detector. *Review of Scientific Instruments* (2024). DOI: 10.1063/5.0211059
167. Campbell, Q. T.; Paudel, N.; Acharya, K.; Wygant, B. R.; Vasiliev, I.; Lambert, T. N. First-Principles Investigation of High Capacity, Rechargeable CF_x Cathode Batteries Based on Graphdiyne and Holey Graphene Carbon Allotropes. *Physical Chemistry Chemical Physics* (2024). DOI: 10.1039/D4CP03643C
168. Lang, E.; Hattar, K. The Isotopic Limit of Recycling. *Sustainability* (2024). DOI: 10.3390/su16219149
169. Collett, C. A.; Davvetas, S. M.; Alsuhaymi, A.; Timco, G. A. A Configurable Two-Tone Electron Spin Resonance Spectrometer. *The Review of Scientific Instruments* (2024). DOI:10.1063/5.0231566