



Michael Wojnar, Ph.D.

Technical Specialist

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Michael ("Mikey") Wojnar is a Technical Specialist with broad experience at the intersection of chemistry, biology, physics, and materials science. Drawing on more than a decade of academic research, he identifies novel and technically significant scientific advances and communicates them clearly in intellectual property matters involving emerging and interdisciplinary technologies.

Mikey has substantial experience in a broad range of fields, including synthetic chemistry, molecular magnetism, biological nanomaterials, and quantum technologies. In addition to his research accomplishments, Mikey has coauthored numerous peer-reviewed scientific publications and has extensive experience communicating complex technical concepts to interdisciplinary audiences. He has collaborated closely with scientists at the National High Magnetic Field Laboratory, Johns Hopkins University's PARADIM Bulk Crystal Growth Facility, MIT's departments of Biological Engineering and Electrical Engineering and Computer Science, and Argonne National Laboratory.

Practices

- Patent Prosecution

Industries

- Chemical Sciences
- Materials Science
- Nanotechnology
- Quantum Technologies

Education

- University of California, Irvine (Ph.D., 2019)
 - Chemistry
- Boston College (B.S., 2013)
 - Chemistry

Background and Credentials

Before joining Marshall Gerstein, Mikey conducted postdoctoral research at Northwestern University and the Massachusetts Institute of Technology, where he used chemical approaches to tackle challenges in quantum information science. His work involved the bottom-up design, synthesis, and characterization of optically addressable molecular qubits, as well as their integration into DNA origami nanomaterial arrays.

Mikey received his Ph.D. in Chemistry from the University of California, Irvine, and his B.S. in Chemistry from Boston College.

Mikey's technical experience includes:

- Organometallic Chemistry
- Organic Chemistry
- Inorganic Chemistry
- Materials Science
- X-ray Diffraction and Crystallography
- Spectroscopy
- Molecular Magnetism
- Nanotechnology
- Electron Microscopy
- Quantum Technologies
- Electrochemistry
- Catalysis

Publications and Presentations

- **Wojnar, M. K.**; Johnson, D. A.; Badding, C. K.; Quan, Y.; Dzikovski, B.; Freedman, D. E. "Crystal Symmetry-Driven Spin-Optical Dynamics in Cr³⁺ Molecular Spins" *Inorg. Chem.***2026**, 65, 2884–2893.
- **Wojnar, M. K.**; Kundu, K.; Kairalapova, A.; Wang, X.; Ozarowski, A.; Berkelbach, T. C.; Hill, S.; Freedman, D. E. "Ligand Field Design Enables Quantum Manipulation of Spins in Ni²⁺ Complexes" *Chem. Sci.***2024**, 15, 1374–1383.
- **Wojnar, M. K.**; Ziller, J. W.; Heyduk, A. F. "Two-Electron Mixed Valency in a Heterotrimetallic Nickel–Vanadium–Nickel Complex" *Inorg. Chem.***2023**, 62, 1405–1413.
- Amdur, M. J.; Mullin, K. R.; Waters, M. J.; Puggioni, D.; **Wojnar, M. K.**; Gu, M.; Sun, L.; Oyala, P. H.; Rondinelli, J. M.; Freedman, D. E. "Chemical Control of Spin-Lattice Relaxation to Create Room Temperature Molecular Qubit Candidates" *Chem. Sci.***2022**, 13, 7034–7045.
- **Wojnar, M. K.**; Laorenza, D. W.; Schaller, R.; Freedman, D. E. "Nickel(II) Metal Complexes as Optically Addressable Qubit Candidates" *J. Am. Chem. Soc.***2020**, 142, 14826–14830.
- **Wojnar, M. K.**; Ziller, J. W.; Heyduk, A. F. "Heterobimetallic and Heterotrimetallic Clusters Containing a Redox-Active Metalloligand" *Eur. J. Inorg. Chem.***2017**, 5571–5575.