

Michael Alan McGuire

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Materials Science and Technology Division, Oak Ridge National Laboratory

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Scientific Expertise and Interests

Experimental condensed matter physics and solid-state chemistry; magnetic, electronic, and topological materials; 2D materials and van der Waals layered compounds; magnetic, thermal, and transport properties; crystal growth, crystallography, and structure-property relationships.

Education

2001 – 2006	Cornell University	Ph.D. Physics
1999 – 2001	University of Mississippi	M.S. Physics
1995 – 1999	University of Mississippi	B.S. Physics

Research Experience

2023 – present **Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN**
Distinguished R&D Staff and Group Leader of the Correlated Electron Materials Group

2007 – present **Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN**
R&D Staff and Eugene P. Wigner Fellow

2006 – 2007 **Department of Chemistry, Princeton University, Princeton, NJ**
Postdoctoral Research Associate

2002 – 2006 **Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY**
Graduate Research Assistant
▪ Dissertation: “*Exploring Thallium Compounds, Chevrel Phases, and Other Chalcogenides as Thermoelectric Materials*”

2000 – 2001 **Department of Physics and Astronomy, University of Mississippi, Oxford, MS**
Graduate Research Assistant
▪ Thesis: “*Resonant Ultrasound Spectroscopy Studies of Clathrate Thermoelectrics*”

Fellowships, Memberships, and Awards

Fellow of the American Association for the Advancement of Science, 2020

Fellow of the American Physical Society, 2017

Member AAAS, American Physical Society, American Crystallographic Association, American Chemical Society

Director’s Award for Outstanding Individual Accomplishment in Science and Technology, ORNL, 2023

Distinguished Researcher Award, and Research Accomplishment Team Award, ORNL 2023

Highly Cited Researcher (6), Clarivate Analytics 2024, 2023, 2021, 2019, 2018, Thompson Reuters 2014

Outstanding Referee for Physical Review, American Physical Society, 2023

R&D 100 Award (2), (Additively Printed Magnets, 2017) (Ultraconductive Copper, 2021)

Significant Event Award (3), ORNL (Switching in vdW crystals, 2020) (CMI, 2013) (Fe superconductors, 2009)

Excellence in Technology Transfer Award, Federal Laboratory Consortium, 2018; Southeast Region, 2017

Gordon Battelle Prize, Battelle, 2011

Directors Award for Outstanding Team Accomplishment, Oak Ridge National Laboratory, 2009

Scientific Research Team Award, Oak Ridge National Laboratory, 2009

Eugene P. Wigner Fellowship, Oak Ridge National Laboratory, 2007-2009

Cornell University Fellowship, Cornell University, 2001-2002

Graduate Student Achievement Award, University of Mississippi, 2001

Taylor Medal, University of Mississippi, 1999

Publications and Patents

350+ papers (see links below), 6 patents with 2 pending

[Google Scholar](#) (h = 86)

[Web of Science](#) (h = 74)

[Scopus](#) (h = 74)

[ORCID](#)