

Michael Alan McGuire

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Materials Science and Technology Division, Oak Ridge National Laboratory

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Research Interests

Magnetic, thermoelectric, and superconducting materials; cleavable materials; solid state chemistry and crystal growth of complex and new inorganic compounds; magnetic, thermal, and transport properties; 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: 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. Group Leader: Correlated Electron Materials Group

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

Outstanding Referee for Physical Review, American Physical Society, 2023

Highly Cited Researcher, Clarivate Analytics, 2021

R&D 100 Award, 2021 (UCC: Ultraconductive Copper-CNT Composite)

Significant Event Award (Switching in vdW crystals), Oak Ridge National Laboratory, 2020

Highly Cited Researcher, Clarivate Analytics, 2019

Highly Cited Researcher, Clarivate Analytics, 2018

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

R&D 100 Award, 2017 (Additively Printed High Performance Magnets)

Highly Cited Researcher, Thompson Reuters, 2014

Significant Event Award (Critical Materials Institute), Oak Ridge National Laboratory, 2013

Gordon Battelle Prize, Oak Ridge National Laboratory, 2011

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

Scientific Research Team Award, Oak Ridge National Laboratory, 2009

Significant Event Award (iron-based superconductors), Oak Ridge National Laboratory, 2008

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

h-index = 64 [Clarivate](#), **76** [Google Scholar](#); [ORCID](#)

Full Publication List:

(314) D. H. Moseley, C. A. Bridges, L. L. Daemen, Q. Zhang, M. A. McGuire, E. Cakmak, R. P. Hermann, "Structure and Anharmonicity of α - and β -Sb₂O₃ at Low Temperature" **CRYSTALS** 13, 752 (2023). [DOI: 10.3390/cryst13050752](#)

(313) J.-Q. Yan, M. A. McGuire, "Self-selecting vapor growth of transition-metal-halide single crystals", **PHYSICAL REVIEW MATERIALS** 7, 013401 (2023). [DOI: 10.1103/PhysRevMaterials.7.013401](#)

(312) H. Chen, S. Asif, K. Dolui, Y. Wang, J. Tamara-Isaza, V. M. L. D. P. Goli, M. Whalen, X. Wang, Z. Chen, H. Zhang, K. Liu, D. Jariwala, M. B. Jungfleisch, C. Chakraborty, A. F. May, M. A. McGuire, B. K. Nikolic, J. Q. Xiao, M. J. H. Ku, "Above-Room-Temperature Ferromagnetism in Thin van der Waals Flakes of Cobalt-Substituted Fe₅GeTe₂", **ACS APPLIED MATERIALS AND INTERFACES** 15, 3287 (2023). [DOI: 10.1021/acsnano.2c18028](#)

(311) G. Cao, S. Okamoto, J. Guo, E. D. Specht, T. Z. Ward, M. A. McGuire, J. D. Budai, M. F. Chisholm, D. Mandrus, B. C. Sales, Z. Gai, "Magnetocaloric Effect in Lightly-Doped Fe₅Si₃ Single Crystals" **ADVANCED PHYSICS RESEARCH** 2200047 (2023). [DOI: 10.1002/apxr.202200047](#)

(310) H. W. S. Arachchige, W. R. Meier, M. Marshall, T. Matsuoka, R. Xue, M. A. McGuire, R. P. Hermann, H. Cao, D. Mandrus, "Charge Density Wave in Kagome Lattice Intermetallic ScV₆Sn₆" **PHYSICAL REVIEW LETTERS** 129, 216402 (2022). [DOI: 10.1103/PhysRevLett.129.216402](#)

(309) M. Checa, X. Lin, R. Millan-Solsona, S.M. Neumayer, M.A. Susner, M.A. McGuire, A. O'Hara, G. Gomila, P. Maksymovych, S.T. Pantelides, L. Collins, "Revealing Fast Cu-Ion Transport and Enhanced Conductivity at the CuInP₂S₆ – In_{4/3}P₂S₆ Heterointerface" **ACS NANO**, 16, 15348 (2022). [DOI: 10.1021/acsnano.2c06992](#)

(308) X. Li, S.-H. Do, J. Yan, M.A. McGuire, G.E. Granroth, S. Mu, T. Berlijn, V.R. Cooper, A.D. Christianson, L. Lindsay, "Phonons and phase symmetries in bulk CrCl₃ from scattering measurements and theory" **ACTA MATERIALIA** 241, 118390 (2022). [DOI: 10.1016/j.actamat.2022.118390](#)

(307) Z. Y. Li, X. Y. Li, J. M. He, M. A. McGuire, A. A. Aczel, J. A. Alonso, M. T. Fernandez-Diaz, J.-S. Zhou, "Exotic physical properties in metallic perovskite LaRuO₃: Strong evidence for Hund metal" **PHYSICAL REVIEW B** 106, L081104 (2022). [DOI: 10.1103/PhysRevB.106.L081104](#)

(306) S.-H. Do, J.A.M. Paddison, G. Sala, T.J. Williams, K. Kaneko, K. Kuwahara, A.F. May, J. Yan, M.A. McGuire, M.B. Stone, M.D. Lumsden, A.D. Christianson, "Gaps in topological magnon spectra: Intrinsic versus extrinsic effects" **PHYSICAL REVIEW B** 106, L060408 (2022). [DOI: 10.1103/PhysRevB.106.L060408](#)

(305) M. Checa, I. Ilanov, S.M. Neumayer, M.A. Susner, M.A. McGuire, P. Maksymovych, L. Collins, "Correlative piezoresponse in micro-Raman imaging of CuInP₂S₆-In_{4/3}P₂S₆ flakes unravels phase-specific phononic fingerprint via unsupervised learning" **APPLIED PHYSICS LETTERS** 121, 062901 (2022). [DOI: 10.1063/5.0101395](#)

- (304) Q. Zhang, Y. Zhang, M. Matsuda, V.O. Garlea, J. Yan, M.A. McGuire, D.A. Tennant, S. Okamoto, “Hidden Local Symmetry Breaking in a Kagome-Lattice Magnetic Weyl Semimetal” **JOURNAL OF THE AMERICAN CHEMICAL SOCIETY** 144, 14339 (2022). [DOI: 10.1021/jacs.2c05665](https://doi.org/10.1021/jacs.2c05665)
- (303) A.Y. Borisevich, R.K. Vasudevan, K.P. Kelley, S.M. Neumayer, M.A. Susner, M.A. McGuire, A.N. Morozovska, E.A. Eliseev, P. Ganesh, A. O’Hara, B.R Tuttle, S.T. Pantelides, N. Balke, P. Maksymovych, “Role of Defects and Structure Evolution across Ferroelectric Phase Transitions Studied by Quantitative Aberration-Corrected STEM” **MICROSCOPY AND MICROANALYSIS** 28, 2360 (2022). [DOI:10.1017/S1431927622009060](https://doi.org/10.1017/S1431927622009060)
- (302) B.C. Sales, W.R. Meier, D.S. Parker, L. Yin, J. Yan, A.F. May, S. Calder, A.A. Aczel, Q. Zhang, H. Li, T. Yilmaz, E. Vescovo, H. Maio, D.H. Moseley, R.P. Hermann, M.A. McGuire, “Chemical Control of Magnetism in the Kagome Metal $\text{CoSn}_{1-x}\text{In}_x$: Magnetic Order from Nonmagnetic Substitutions” **CHEMISTRY OF MATERIALS** 34, 7069 (2022). [DOI: 10.1021/acs.chemmater.2c01634](https://doi.org/10.1021/acs.chemmater.2c01634).
- (301) T. Zhang, T. Yilmaz, E. Vescovo, H.X. Li, R.G. Moore, H.N. Lee, H. Miao, S. Murakami, M.A. McGuire “Endless Dirac nodal lines in kagome-metal $\text{Ni}_3\text{In}_2\text{S}_2$ ” **NPJ COMPUTATIONAL MATERIALS** 8, 155 (2022). [DOI: 10.1038/s41524-022-00838-z](https://doi.org/10.1038/s41524-022-00838-z)
- (300) M.S. Kesler, M.A. McGuire, B. Conner, O. Rios, B. Murphy, W. Carter, H.B. Henderson, G.M. Ludtka, R.A. Kisner “A rapid heating and high magnetic field thermal analysis technique” **JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY** 147, 7449 (2022). [DOI: 10.1007/s10973-021-11010-y](https://doi.org/10.1007/s10973-021-11010-y)
- (299) S. Gao, M.A. McGuire, Y. Liu, D.L. Abernathy, C. dela Cruz, M. Frontzek, M.B. Stone, A.D. Christianson “Spiral Spin Liquid on a Honeycomb Lattice” **PHYSICAL REVIEW LETTERS** 128, 227201 (2022). [DOI: 10.1103/PhysRevLett.128.227201](https://doi.org/10.1103/PhysRevLett.128.227201)
- (298) R. Baral, J.A. Christensen, P.K. Hamilton, F. Ye, K. Chesnel, T.D. Sparks, R. Ward, J. Yan, M.A. McGuire, M.E. Manely, J.B. Staunton, R.P. Hermann, B.A. Frandsen, “Real-space visualization of short-range antiferromagnetic correlations in a magnetically enhanced thermoelectric” **MATTER** 5, 1 (2022). [DOI: 10.1016/j.matt.2022.03.011](https://doi.org/10.1016/j.matt.2022.03.011)
- (297) M.A. McGuire, Y.-Y. Pai, M. Brahlek, S. Okamoto, R.G. Moore, “Electronic and topological properties of the van der Waals layered superconductor PtTe ” **PHYSICAL REVIEW B** 105, 184514 (2022). [DOI: 10.1103/PhysRevB.105.184514](https://doi.org/10.1103/PhysRevB.105.184514)
- (296) P. Padmanabhan, F.L. Buessen, R. Tutchton, K.W.C. Kwock, S. Gilinsky, M.C. Lee, M.A. McGuire, S.R. Singamaneni, D.A. Yarotski, A. Paramakanti, J.-X. Zhu, R.P. Prasankumar, “Coherent helicity-dependent spin-phonon oscillations in the ferromagnetic van der Waals crystal CrI_3 ” **NATURE COMMUNICATIONS** 13, 4473 (2022). [DOI: 10.1038/s41467-022-31786-3](https://doi.org/10.1038/s41467-022-31786-3)
- (295) Z.Y. Zhao, S. Calder, M.H. Upton, H.D. Zhou, Z.Z. He, M.A. McGuire, J.Q. Yan “Temperature-induced valence-state transition in double perovskite $\text{Ba}_{2-x}\text{Sr}_x\text{TbIrO}_6$ ” **PHYSICAL REVIEW MATERIALS** 6, 054410 (2022). [DOI: 10.1103/PhysRevMaterials.6.054410](https://doi.org/10.1103/PhysRevMaterials.6.054410)
- (294) J. Cui, J. Ormerod, D. Parker, R. Ott, A. Palasyuk, S. McCall, M.P. Paranthaman, M.S. Kelsner, M.A. McGuire, I.C. Nlebedim, C. Pan, T. Lograsso, “Manufacturing Processes for Permanent Magnets: Part II – Bonding and Emerging Methods” **JOM** 74, 2492 (2022). [DOI: 10.1007/s11837-022-05188-1](https://doi.org/10.1007/s11837-022-05188-1)
- (293) H. Chen, S. Asif, M. Whalen, J. Tamara-Isaza, B. Luetke, Y. Wang, X. Wang, M. Ayako, S. Lamsal, A.F. May, M.A. McGuire, C. Chakraborty, J.Q. Xiao, M.J.H. Ku, “Revealing room temperature ferromagnetism in exfoliated Fe_5GeTe_2 flakes with quantum magnetic imaging” **2D MATERIALS** 9, 025017 (2022). [DOI: 10.1088/2053-1583/ac57a9](https://doi.org/10.1088/2053-1583/ac57a9)

- (292) S.M. Neumayer, Z. Zhao, A. O'Hara, M.A. McGuire, M.A. Susner, S.T. Pantelides, P. Maksymovych, N. Balke, "Nanoscale Control of Polar Surface Phases in Layered van der Waals CuInP₂S₆" **ACS NANO** 16, 2452 (2022). [DOI: 10.1021/acsnano.1c08970](https://doi.org/10.1021/acsnano.1c08970)
- (291) J. Cui, J. Ormerod, D. Parker, R. Ott, A. Palasyuk, S. McCall, M.P. Paranthaman, M.S. Kelsner, M.A. McGuire, I.C. Nlebedim, C. Pan, T. Lograsso, "Manufacturing Processes for Permanent Magnets: Part I—Sintering and Casting" **JOM** 74, 1279 (2022). [DOI: 10.1007/s11837-022-05156-9](https://doi.org/10.1007/s11837-022-05156-9)
- (290) N. Wang, Y. Gu, M.A. McGuire, J. Yan, L. Shi, Q. Cui, K. Chen, Y. Wang, H. Zhang, H. Yang, X. Dong, K. Jiang, J. Hu, B. Wang, J. Sun, J. Cheng, "A density-wave-like transition in the polycrystalline V₃Sb₂ sample with bilayer kagome lattice" **CHINESE PHYSICS B** 31, 017106 (2022). [DOI: 10.1088/1674-1056/ac4227](https://doi.org/10.1088/1674-1056/ac4227)
- (289) V. Barbosa, J. Xiong, P.M. Tran, M.A. McGuire, J.Q. Yan, M.T. Warren, R.V. Aguilar, W. Zhang, M. Randeria, N. Trivedi, D. Haskel, P.M. Woodward, "The Impact of Structural Distortions on the Magnetism of Double Perovskites Containing 5d¹ Transition-Metal Ions" **CHEMISTRY OF MATERIALS** 34, 1098 (2022). [DOI: 10.1021/acs.chemmater.1c03456](https://doi.org/10.1021/acs.chemmater.1c03456)
- (288) M. Checa, S.M. Neumayer, M.A. Susner, M.A. McGuire, P. Maksymovych, L. Collins "Simultaneous mapping of nanoscale dielectric, electrochemical, and ferroelectric surface properties of van der Waals layered ferroelectric via advanced SPM" **APPLIED PHYSICS LETTERS** 119, 252905 (2021). [DOI: 10.1063/5.0078034](https://doi.org/10.1063/5.0078034)
- (287) M.A. McGuire, Q. Zhang, H. Miao, W. Luo, M. Yoon, Y. Liu, T. Yilmaz, E. Vescovo, "Antiferromagnetic Order and Linear Magnetoresistance in Fe-Substituted Shandite Co₃In₂S₂" **CHEMISTRY OF MATERIALS** 33, 9741 (2021). [DOI: 10.1021/acs.chemmater.1c03596](https://doi.org/10.1021/acs.chemmater.1c03596)
- (286) D.H. Moseley, K.M. Taddei, J. Yan, M.A. McGuire, S.A. Calder, D. Vashaee, X. Zhang, H. Zhao, D.S. Parker, R.S. Fishman, R.P. Hermann, "Giant doping response of magnetic anisotropy in MnTe" **PHYSICAL REVIEW MATERIALS** 6, 014404 (2022). [DOI: 10.1103/PhysRevMaterials.6.014404](https://doi.org/10.1103/PhysRevMaterials.6.014404)
- (285) T. Song, Q.-C. Sun, E. Anderson, C. Wang, J. Qian, T. Taniguchi, K. Watanabe, M.A. McGuire, R. Stohr, D. Xiao, T. Cao, J. Wrachtrup, X. Xu, "Direct visualization of magnetic domains and moiré magnetism in twisted 2D magnets" **SCIENCE** 374, 1140 (2021). [DOI: 10.1126/science.abj7478](https://doi.org/10.1126/science.abj7478)
- (284) A. F. May, J.Q. Yan, R. Hermann, M.-H. Du, M.A. McGuire, "Tuning the room temperature ferromagnetism in Fe₅GeTe₂ by arsenic substitution" **2D MATERIALS** 9, 015013 (2022). [DOI: 10.1088/2053-1583/ac34d9](https://doi.org/10.1088/2053-1583/ac34d9)
- (283) Z. Lin, B. Huang, K. Hwangbo, Q. Jiang, Q. Zhang, Z. Liu, Z. Fei, H. Lv, A. Millis, M.A. McGuire, D. Xiao, J.-H. Chu, X. Xu, "Magnetism and its structural coupling effects in 2D Ising Ferromagnetic insulator VI₃" **NANO LETTERS** 21, 9180 (2021). [DOI: 10.1021/acs.nanolett.1c03027](https://doi.org/10.1021/acs.nanolett.1c03027)
- (282) J. Lapano, Y.-Y. Pai, A. Mazza, J. Zhang, T. Isaacs-Smith, P. Gemperline, L. Zhang, H.N. Lee, H. Miao, G. Eres, M. Yoon, R. Comes, T.Z. Ward, B.J. Lawrie, M.A. McGuire, R.G. Moore, C.T. Nelson, A.F. May, M. Brahlek, "Self-regulated growth of candidate topological superconducting parkerite by molecular beam epitaxy" **APL MATERIALS** 9, 101110 (2021). [DOI: 10.1063/5.0064746](https://doi.org/10.1063/5.0064746)
- (281) Q. Zhang, S. Okamoto, G.D. Samolyuk, M.B. Stone, A.I. Kolesnikov, R. Xue, J. Yan, M.A. McGuire, D. Mandrus, D.A. Tennant, "Unusual Exchange Interactions and Intermediate Temperature Weyl State in Co₃Sn₂S₂" **PHYSICAL REVIEW LETTERS** 127, 117201 (2021). [DOI: 10.1103/PhysRevLett.127.117201](https://doi.org/10.1103/PhysRevLett.127.117201)

- (280) B.C. Sales, W.R. Meier, A.F. May, J. Xing, J.-Q. Yan, S. Gao, Y.H. Liu, M.B. Stone, A.D. Christianson, Q. Zhang, M.A. McGuire, “Tuning the flat bands of the kagome metal CoSn with Fe, In, or In doping” **PHYSICAL REVIEW MATERIALS** 5, 044202 (2021). [DOI: 10.1103/PhysRevMaterials.5.044202](https://doi.org/10.1103/PhysRevMaterials.5.044202)
- (279) Y. Liu, L.-L. Wang, Q. Zheng, Z. Huang, X. Wang, M. Chi, Y. Wu, B.C. Chakoumakos, M.A. McGuire, B.C. Sales, W. Wu, J. Yan “Site Mixing for Engineering Magnetic Topological Insulators” **PHYSICAL REVIEW X** 11, 021033 (2021). [DOI: 10.1103/PhysRevX.11.021033](https://doi.org/10.1103/PhysRevX.11.021033)
- (278) W.R. Meier, B.C. Chakoumakos, S. Okamoto, M.A. McGuire, R.P. Hermann, G.D. Samolyuk, S. Gao, Q. Zhang, M.B. Stone, A.D. Christianson, B.C. Sales “A Catastrophic Charge Density Wave in BaFe₂Al₉” **CHEMISTRY OF MATERIALS** 33, 2855 (2021). [DOI: 10.1021/acs.chemmater.1c00005](https://doi.org/10.1021/acs.chemmater.1c00005)
- (277) S.M. Neumayer, M.A. Susner, M.A. McGuire, S.T. Pantelides, S. Kalnaus, P. Maksymovych, N. Balke, “Lowering of TC in Van Der Waals Layered Materials Under In-Plane Strain” **IEEE TRANSACTIONS ON ULTRASONICS, FERROELECTRICS, AND FREQUENCY CONTROL** 68, 253 (2021). [DOI: 10.1109/TUFFC.2020.3007290](https://doi.org/10.1109/TUFFC.2020.3007290)
- (276) S.K. Karna, D. Tristant, J.K. Hebert, G. Cao, R. Chapai, W.A. Phelan, Q. Zhang, Y. Wu, C. Dhital, Y. Li, H.B. Cao, W. Tian, C.R. Dela Cruz, A.A. Aczel, O. Zaharko, A. Khasanov, M.A. McGuire, A. Roy, W. Xie, D.A. Browne, I. Vekhter, V. Meunier, W.A. Shelton, P.W. Adams, P.T. Springer, D.P. Young, R. Jin, J.F. DiTusa, “Helical magnetic order and Fermi surface nesting in non-centrosymmetric ScFeGe” **PHYSICAL REVIEW B** 103, 014443 (2021). [DOI: 10.1103/PhysRevB.103.014443](https://doi.org/10.1103/PhysRevB.103.014443)
- (275) J. Cenker, B. Huang, N. Suri, P. Thijssen, A. Miller, T. Song, T. Taniguchi, K. Watanabe, M.A. McGuire, D. Xiao, X. Xu, “Direct observation of two-dimensional magnons in atomically thin CrI₃” **NATURE PHYSICS** 17, 20 (2021). [DOI: 10.1038/s41567-020-0999-1](https://doi.org/10.1038/s41567-020-0999-1)
- (274) N.J. Ghimire, R.L. Dally, L. Poudel, D.C. Jones, D. Michael, N.T. Magar, M. Bleuel, M.A. McGuire, J.S. Jiang, J.F. Mitchell, J.W. Lynn, I.I. Mazin, “Competing magnetic phases and fluctuation-driven scalar spin chirality in the kagome metal YMn₆Sn₆” **SCIENCE ADVANCES** 6, eabe2680 (2020). [DOI: 10.1126/sciadv.abe2680](https://doi.org/10.1126/sciadv.abe2680)
- (273) X.B. Liu, M.S. Kesler, M.F. Besser, M.J. Kramer, M.A. McGuire, I.C. Nlebedim, “Effect of processing hydrogen pressure on magnetic properties of HDDR Nd-Fe-B magnet” **IEEE TRANSACTIONS ON MAGNETICS** 57, 1 (2021). [DOI: 10.1109/TMAG.2020.3022739](https://doi.org/10.1109/TMAG.2020.3022739)
- (272) L.D. Sanjeeva, Y. Liu, J. Xing, R.S. Fishman, M.T.K. Kolambage, M.A. McGuire, C.D. McMillen, J.W. Kolis, A.S. Sefat “Stacking Faults and Short-Range Magnetic Correlations in Single Crystal Y₅Ru₂O₁₂: A Structure with Ru^{+4.5} One-Dimensional Chains” **PHYSICA STATUS SOLIDI B**, 2000197 (2020). [DOI: 10.1002/pssb.202000197](https://doi.org/10.1002/pssb.202000197)
- (271) B. Huang, M.A. McGuire, A.F. May, D. Xiao, P. Jarillo-Herrero, X. Xu, “Emergent phenomena and proximity effects in two-dimensional magnets and heterostructures” **NATURE MATERIALS** 19, 1276 (2020). [DOI: 10.1038/s41563-020-0791-8](https://doi.org/10.1038/s41563-020-0791-8)
- (270) M.A. McGuire, “Cleavable magnetic materials from van der Waals layered transition metal halides and chalcogenides” **JOURNAL OF APPLIED PHYSICS** 128, 110901 (2020). [DOI: 10.1063/5.0023729](https://doi.org/10.1063/5.0023729)
- (269) S.R. Singamaneni, L.M. Martinez, J. Niklas, O.G. Poluektov, R. Yadav, M. Pizzochero, O.V. Yazyev, M.A. McGuire, “Light induced electron spin resonance properties of van der Waals CrX₃ (X = Cl, I) crystals” **APPLIED PHYSICS LETTERS** 117, 082406 (2020). [DOI: 10.1063/5.0010888](https://doi.org/10.1063/5.0010888)

- (268) S.M. Neumayer, L. Tao, A. O'Hara, M.A. Susner, M.A. McGuire, P. Maksymovych, S.T. Pantelides, N. Balke, "The Concept of Negative Capacitance in Ionically Conductive Van der Waals Ferroelectrics" **ADVANCED ENERGY MATERIALS** 10, 2001726 (2020). DOI: [10.1002/aenm.202001726](https://doi.org/10.1002/aenm.202001726)
- (267) W.R. Meier, M.-H. Du, S. Okamoto, N. Mohanta, A.F. May, M.A. McGuire, C.A. Bridges, G.D. Samolyuk, B.C. Sales, "Flat bands in CoSn-type compounds" **PHYSICAL REVIEW B** 102, 075148 (2020). DOI: [10.1103/PhysRevB.102.075148](https://doi.org/10.1103/PhysRevB.102.075148)
- (266) A.F. May, J.-Q. Yan, M.A. McGuire "A practical guide for crystal growth of van der Waals layered materials" **JOURNAL OF APPLIED PHYSICS** 128, 051101 (2020). DOI: [10.1063/5.0015971](https://doi.org/10.1063/5.0015971)
- (265) A.F. May, M.-H. Du, V.R. Cooper, M.A. McGuire, "Tuning magnetic order in the van der Waals metal Fe₅GeTe₂ by cobalt substitution" **PHYSICAL REVIEW MATERIALS** 4, 074008 (2020). DOI: [10.1103/PhysRevMaterials.4.074008](https://doi.org/10.1103/PhysRevMaterials.4.074008)
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