

Adam J. Hauser

Assistant Professor, Department of Physics and Astronomy & MINT, University of Alabama

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EDUCATION

Ph.D. Physics, The Ohio State University (2010)

Advisor: Professor Fengyuan Yang

M.S. Physics, The Ohio State University (2008)

B.S. Physics (Honors), B.S. Astrophysics, Rutgers University (2004)

Advisor: Professor Eva Andrei

EMPLOYMENT AND POSITIONS

The University of Alabama

Assistant Professor, Department of Physics and Astronomy & MINT Center, 2015 – present

University of California, Santa Barbara

Elings Prize Postdoctoral Fellow, California Nanosystems Institute, 2012 - 2015

The Ohio State University

Postdoctoral Research Associate, Center for Emergent Materials, 2011 - 2012

Graduate Research Fellow, Center for Emergent Materials, 2008 - 2010

Graduate Teaching Assistant, Department of Physics, 2004 – 2008

RESEARCH INTERESTS

Complex Functional Materials. How do we create complex materials with sufficient atomic and crystalline ordering (99%+) to determine their intrinsic properties and use them in functional electronic systems?

Airborne Chemical Sensing. How do we identify toxic and industrial chemicals (chemical weapons, explosives, opiates) at trace levels quickly and accurately, to keep warfighters, homeland security, and law enforcement safe?

Precision Time and Frequency. How do we overcome deficits in both training and cybersecure technology, enabling autonomous vehicles and safeguarding reliant defense, finance, telecommunication, and energy interests?

HONORS AND AWARDS

Second Prize, Aldag Innovation Pitch Competition, Culverhouse College of Business, 2020

1st Place, AIME Day Award Competition, NSF UA I-Corps Site, 2019

SEC Travel Award, Southeastern Conference, 2016

ARO Young Investigator Award, Army Research Office, 2016

Short-Term Innovative Research (STIR) Award, Army Research Office, 2015

Best Poster Award, FAME Center 1st Annual Review, Los Angeles, 2013

Elings Prize Postdoctoral Fellowship, California Nanosystems Institute, 2012-2014

Clifford Heer Memorial Graduate Student Award, The Ohio State University, 2010

Institute for Materials Research Best Poster Award, OSU Materials Week Conference, 2010

Hazel Brown Teaching Award, The Ohio State University, 2007

Richard J. Plano Summer Research Award, Rutgers University, 2004

PROFESSIONAL SERVICE AND COMMITTEES

Vice-Chair for Undergraduate Studies, *UA Department of Physics and Astronomy* 2020 -

Organizing Committee, World Chemistry Conference & Exhibition (WCCE) 2020 -

Faculty Senate Member, *University of Alabama* 2018 - 2020

-2019-20: Committee Member, Research & Service	
-2019-20: Standing Committee Representative, Research Grants	
-2018-19: Committee Member, Academic Affairs	
DMP Focus Topic Organizing Committee , 2018 APS March Meeting	2017
Treasurer , Alabama Chapter of IEEE Magnetics Society	2017 -
American Physical Society Bridge Program Liaison	2016 -
University of Alabama upgraded to Partnership Institution, 2018	
Chair, Faculty Search Committee, Senior Hire in Experimental Precision Timing	2018 - 2020
Chair, Graduate Recruitment Committee , UA Department of Physics and Astronomy	2016 - 2020
Research Grants Committee , University of Alabama	2016 - 2018
Facilities Committee , MINT Center	2016 - 2019
Graduate Recruitment Committee , Department of Physics and Astronomy	2015 -
Educational Outreach Committee , MINT Center	2015 - 2019
Society of Physics Students Advisor	2015 -
Colloquium Committee , Department of Physics and Astronomy	2015 - 2017
Publication Reviewer for (alphabetical order, regular contributions only): <i>Applied Physics Letters</i> , <i>Coatings</i> , <i>Crystals</i> , <i>IEEE Intelligent Transportation Systems Transactions</i> , <i>Indian Journal of Science</i> , <i>Scripta Materialia</i>	

DIVERSITY, OUTREACH, AND MENTORSHIP

Local Organizing Committee , Conferences for Undergraduate Women in Physics	2018
Women in Physics Committee , Department of Physics and Astronomy	2018 -
American Physical Society Bridge Program Liaison	2016 -
University of Alabama upgraded to Partnership Institution, 2018	
Mentor, MINT International Summer Internship Program	2016 - 2019
Mentor, MINT High School Summer Internship Program	2016
2016: Noah Garner	
Undergraduate Mentorship, The University of Alabama	2015 -
2015-16: 10. 2016-17: 11. 2017-18: 15. 2018-2019: 16. 2019-2020: 16.	
UA Safe Zone Ally	2015 -

REFEREED PUBLICATIONS (>1.3k citations, h-index 20, i10-index 32)

45. Sujan Budhathoki, Arjun Sapkota, Ka Ming Law, Smriti Ranjit, Bhuwan Nepal, Brian D. Hoskins, Arashdeep Singh Thind, Albina Y. Borisevich, Michelle E. Jamer, Travis J. Anderson, Andrew D. Koehler, Karl D. Hobart, Gregory M. Stephen, Don Heiman, Tim Mewes, Rohan Mishra, James C. Gallagher, and **Adam J. Hauser**, "Room Temperature Skyrmions in Strain-Engineered FeGe thin films." *Phys. Rev. B: Rapid Communications* **101**, 220405(R) (2020). [[doi](#)]
44. Behrouz Khodadadi, Anish Rai, Arjun Sapkota, Abhishek Srivastava, Bhuwan Nepal, Youngmin Lim, David A Smith, Claudia Mewes, Sujan Budhathoki, **Adam J Hauser**, Min Gao, Jie-Fang Li, Dwight D Viehland, Zijian Jiang, Jean J Heremans, Prasanna V Balachandran, Tim Mewes, and Satoru Emori, "Conductivitylike Gilbert Damping due to Intraband Scattering in Epitaxial Iron." *Phys. Rev. Lett.* **124** (15), 157201 (2020) [[doi](#)]
43. Sujan Budhathoki, Arjun Sapkota, Ka Ming Law, Bhuwan Nepal, Smriti Ranjit, Shambhu KC, Tim Mewes, and **Adam J. Hauser**, "Low Gilbert damping and linewidth in magnetostrictive FeGa thin films." *J. Magn. Mater.* **496**, 165906 (2020) [[doi](#)]
42. Smriti Ranjit, Ka Ming Law, Sujan Budhathoki, Jared Allred, Richard A. Rosenberg, Dong-Soo Park, Scooter D. Johnson, and **Adam J. Hauser**, "Substrate damage and incorporation of sapphire into barium hexaferrite

- films deposited by aerosol deposition.” *Journal of the American Ceramic Society* **103**, 1542-1548 (2020) [[doi](#)]
41. Liping Guo, Baiyu Zhang, Smriti Ranjit, Jacob Wall, Swapnil Saurav, **Adam J. Hauser**, Guozhong Xing, Lin Li, Xiaofeng Qian, and Feng Yan, "Interface Engineering via Sputtered Oxygenated CdS:O Window Layer for Highly Efficient Sb₂Se₃ Thin-Film Solar Cells with Efficiency Above 7%." *Solar RRL* **2019**, 1900225 (2019) [[doi](#)]
 40. J.C. Gallagher, A.D. Koehler, M.J. Tadjer, N.A. Mahadik, T.J. Anderson, S. Budhathoki, K.M. Law, **A.J. Hauser**, K.D. Hobart, and F.J. Kub, "Demonstration of CuI as a P-N Heterojunction to β -Ga₂O₃." *Applied Physics Express* **12**, 104005 (2019). [[doi](#)] **Selected as 2019 Spotlight Article**
 39. Joseph B. Abugri, Billy D. Clark, Sujun Budhathoki, Pieter B. Visscher, **Adam Hauser**, and Subhadra Gupta, "Structural and Magnetic Properties of CoPd Alloys for Non-Volatile Memory Applications." *2019 IEEE WMED*, 1-5 (2019) [[link](#)]
 38. Coleman R. Harris, Jennifer R. Soliz, Andrew D. Klevitch, Michael J. Bartz, Joseph A. Rossin, Augustus W. Fountain III, **Adam J. Hauser**, and Gregory W. Peterson, "Sensing of NO₂ with Zirconium Hydroxide via Electrical Impedance Spectroscopy." *Dalton Transactions* **46** (33), 10791-10797 (2017) [[doi](#)]
 37. G. W. Peterson, M. McEntee, C. R. Harris, A. D. Klevitch, A. W. Fountain III, J. R. Soliz, A. Balboa, and **A.J. Hauser**, "Detection of an Explosive Simulant via Electrical Impedance Spectroscopy Utilizing UiO-66-NH₂ Metal-Organic Framework." *Dalton Transactions* **45** (43), 17113-17116 (2016). [[doi](#)]
 36. Jennifer R. Soliz, Andrew D. Klevitch, Coleman R. Harris, Joseph Anthony Rossin, Amy Ng, Rhonda Stroud, **Adam J. Hauser**, and Gregory W. Peterson, "Structural Impact on Dielectric Properties of Zirconia," *J. Phys. Chem. C* **120**, 26834-26840 (2016). [[doi](#)]
 35. **Adam J. Hauser**, Evgeny Mikheev, Adam P. Kajdos, and Anderson Janotti, "Small polaron-related recombination in Ba_xSr_{1-x}TiO₃ thin films by cathodoluminescence spectroscopy." *Appl. Phys. Lett.* **108** (10), 102901 (2016). [[doi](#)]
 34. B.D. Esser, **A.J. Hauser**, R.E.A. Williams, L.J. Allen, P.M. Woodward, F.Y. Yang, and D.W. McComb, "Quantitative STEM imaging of order/disorder phenomena in complex oxide thin films." *Phys. Rev. Lett.* **117** (17), 176101 (2016) [[doi](#)]
 33. Ryan Morrow, Jennifer R. Soliz, **Adam J. Hauser**, James C. Gallagher, Michael A. Susner, Michael D. Sumption, Adam A. Aczel, Jiaqiang Yan, Fengyuan Yang, and Patrick M. Woodward, "The effect of chemical pressure on the structure and properties of A₂CrOsO₆ (A= Sr, Ca) ferrimagnetic double perovskite." *Journal of Solid State Chemistry* **238**, 46 (2016). [[doi](#)]
 32. Evgeny Mikheev, **Adam J. Hauser**, Burak Himmetoglu, Nelson E. Moreno, Anderson Janotti, Chris G. Van de Wale, and Susanne Stemmer, "Tuning bad metal and non-Fermi liquid behavior in a Mott material: rare earth nickelate thin films." *Science Advances* **1**, 10, e1500797 (2015) [[doi](#)]
 31. Evgeny Mikheev, Jinwoo Hwang, Adam P. Kajdos, **Adam J. Hauser**, and Susanne Stemmer, "Tailoring resistive switching in Pt/SrTiO₃ junctions by stoichiometry control." *Sci. Rep.* **5**, 11079 (2015). [[doi](#)]
 30. Simon Bubel, **Adam J. Hauser**, Anne M. Glauzell, Thomas E. Mates, Susanne Stemmer, and Michael L. Chabinyc, "The electrochemical impact of electrostatic modulation of the metal-insulator transition in nickelates." *Appl. Phys. Lett.* **106**, 122102 (2015). [[doi](#)]
 29. J.M. Lucy, **A.J. Hauser**, Y. Liu, H. Zhou, Y. Choi, D. Haskel, S.G.E. te Velthuis, and F.Y. Yang, "Depth-resolved magnetic and structural analysis of relaxing epitaxial Sr₂CrReO₆." *Phys. Rev. B* **91**, 094413 (2015). [[doi](#)]
 28. S. James Allen, **Adam J. Hauser**, Evgeny Mikheev, Jack Y. Zhang, Nelson E. Moreno, Junwoo Son, Daniel G. Ouellette, James Kally, Alex Kozhanov, Leon Balents and Susanne Stemmer, "Gaps and pseudo-gaps in perovskite rare earth nickelates." *APL Materials* **3** (6), 062503 (2015). [[doi](#)]
 27. **Adam J. Hauser**, Evgeny Mikheev, Nelson E. Moreno, Jinwoo Hwang, Jack Y. Zhang, and Susanne Stemmer, "Correlation between stoichiometry, strain, and metal-insulator transitions of NdNiO₃ films." *Appl. Phys. Lett.* **106**, 092104 (2015). [[doi](#)]

26. J.M. Lucy, M.R. Ball, O.D. Restrepo, **A.J. Hauser**, J.R. Soliz, J.W. Freeland, W. Windl, P.M. Woodward, and F.Y. Yang, “Strain-tunable extraordinary magnetocrystalline anisotropy in Sr₂CrReO₆ Epitaxial Films.” *Phys. Rev. B: Rapid Communications* **90**, 180401(R) (2014). [[doi](#)]
25. **Adam J. Hauser**, Jeremy M. Lucy, Michael W. Gaultois, Molly R. Ball, Jennifer R. Soliz, Yongseong Choi, Oscar Restrepo, Wolfgang Windl, John W. Freeland, Daniel Haskel, Patrick M. Woodward, and Fengyuan Yang, “Magnetic structure in epitaxially strained Sr₂CrReO₆ thin films by element-specific XAS and XMCD.” *Phys. Rev. B: Rapid Communications* **89**, 180402(R) (2014). [[doi](#)]
24. T.R. Lemberger, M.J. Hinton, Jie Yong, J.M. Lucy, **A.J. Hauser**, and F.Y. Yang, “Anomalously weak Cooper pair-breaking by exchange energy in ferromagnet/superconductor bilayers.” *J Supercond Nov Magn* **27**:2249-2255 (2014). [[doi](#)]
23. **Adam J. Hauser**, Evgeny Mikheev, Nelson E. Moreno, Tyler A. Cain, Jinwoo Hwang, Jack Y. Zhang, and Susanne Stemmer, “Time-corrected Hall coefficient of NdNiO₃ thin films,” *Appl. Phys. Lett.* **103**, 182105 (2013). [[doi](#)]
22. J.M. Lucy, **A.J. Hauser**, H.L. Wang, J.R. Soliz, M. Dixit, R.E.A. Williams, A. Holcombe, P. Morris, H.L. Fraser, D.W. McComb, P.M. Woodward, and F.Y. Yang, “Buffer-layer enhanced structural and electronic quality in ferromagnetic Sr₂CrReO₆ epitaxial films,” *Appl. Phys. Lett.* **103**, 042414 (2013). [[doi](#)]
21. Chunhui Du, Rohan Adur, Hailong Wang, **Adam J. Hauser**, Fengyuan Yang, and P. Chris Hammel, “Control of Magnetocrystalline Anisotropy by Epitaxial Strain in Double Perovskite Sr₂FeMoO₆ Films,” *Phys. Rev. Lett.* **110**, 147204 (2013). [[doi](#)]
20. **Adam J. Hauser**, Jeremy M. Lucy, Hailong Wang, Jennifer R. Soliz, Alexanne Holcomb, Patricia Morris, Patrick M. Woodward and Fengyuan Yang, “Electronic and magnetic tunability of Sr₂CrReO₆ films by growth-mediated oxygen modulation,” *Appl. Phys. Lett.* **102**, 032403 (2013). [[doi](#)]
19. Evgeny Mikheev, Adam P. Kajdos, **Adam J. Hauser**, and Susanne Stemmer, “Electric field-tunable Ba_xSr_{1-x}TiO₃ films with high figures of merit grown by molecular beam epitaxy,” *Appl. Phys. Lett.* **101**, 252906 (2012). [[doi](#)]
18. **A.J. Hauser**, J.R. Soliz, M. Dixit, R.E.A. Williams, M.A. Susner, B. Peters, L.M. Mier, T.L. Gustafson, M.D. Sumption, H.L. Fraser, P.M. Woodward, and F.Y. Yang, “Fully Ordered Sr₂CrReO₆ Epitaxial Films: A High Temperature Ferrimagnetic Semiconductor,” *Phys. Rev. B: Rapid Communications (Selected as Editors’ Suggestion)* **85**, 161201(R) (2012). [[doi](#)]
17. D. Reaman, **A.J. Hauser**, F.Y. Yang, H. Colijn, and W. Panero, “Interdiffusion of Earth’s Core Materials to 65 GPa and 2200 K,” *Earth and Planetary Science Letters* **349-350**, 8-14 (2012). [[doi](#)]
16. Inhee Lee, Jongjoo Kim, Yuri Obukhov, Palash Banerjee, Gang Xiang, Denis V. Pelekhov, **Adam Hauser**, Fengyuan Yang, and P. Chris Hammel, “Magnetic force microscopy in the presence of a strong probe field,” *Appl. Phys. Lett.* **99**, 162514 (2011). [[doi](#)]
15. F. Wolny, Y. Obukhov, T. Mühl, U. Weißker, S. Philippi, A. Leonhardt, P. Banerjee, A. Reed, G. Xiang, R. Adur, I. Lee, **A.J. Hauser**, F.Y. Yang, D.V. Pelekhov, B. Büchner, P.C. Hammel, “Quantitative magnetic force microscopy on permalloy dots using an iron filled carbon nanotube probe,” *Ultramicroscopy* **111**, 1360-1365 (2011). [[doi](#)]
14. **Adam J. Hauser**, Robert E.A. Williams, Rebecca A. Ricciardo, Arda Genc, Manisha Dixit, Jeremy M. Lucy, Patrick M. Woodward, Hamish L. Fraser, and Fengyuan Yang, “Unlocking the potential of half-metallic Sr₂FeMoO₆ films through controlled stoichiometry and double-perovskite ordering,” *Phys. Rev. B* **83**, 014407 (2011). [[doi](#)]
13. A. Chen, G. Vieira, T. Henighan, M. Howdysheal, J.A. North, **A.J. Hauser**, F.Y. Yang, M.G. Poirier, C. Jayaprakash, and R. Sooryakumar, “Regulating Brownian Fluctuations with Tunable Microscopic Magnetic Traps,” *Phys. Rev. Lett.* **107**, 087206 (2011). [[doi](#)]
12. Inhee Lee, Yuri Obukhov, **A.J. Hauser**, F.Y. Yang, Denis V. Pelekhov, and P. Chris Hammel, “Nanoscale confined mode ferromagnetic resonance imaging of an individual Ni₈₁Fe₁₉ disk using magnetic resonance force microscopy,” *Journal of Applied Physics* **109**, 07D313 (2011). [[doi](#)]

11. M. Rutkowski, **A.J. Hauser**, F.Y. Yang, R. Ricciardo, T. Meyer, P.M. Woodward, A Holcombe, P.A. Morris, and L.J. Brillson, “X-ray photoemission spectroscopy of Sr₂FeMoO₆ film stoichiometry and valence state,” *J. Vac. Sci. Technol. A* **28**, 1240 (2010). [[doi](#)]
10. Inhee Lee, Yuri Obukhov, Gang Xiang, **Adam Hauser**, Fengyuan Yang, Palash Banerjee, Denis V. Pelekhov, and P. Chris Hammel, “Nanoscale scanning probe ferromagnetic resonance imaging using localized modes,” *Nature* **466**, 845-848 (2010). [[doi](#)]
9. T. Henighan, A. Chen, G. Vieira, **A.J. Hauser**, F.Y. Yang, J.J. Chalmers, R. Sooryakumar, “Manipulation of Magnetically Labeled and Unlabeled Cells with Mobile Magnetic Traps,” *Biophysical Journal* **98**, 412-417 (2010). [[doi](#)]
8. J. Pak, W. Lin, K. Wang, A. Chinchore, M. Shi, D.C. Ingram, A.R. Smith, K. Sun, J.M. Lucy, **A.J. Hauser**, and F.Y. Yang, “Growth of epitaxial iron nitride ultrathin film on zinc-blende gallium nitride,” *J. Vac. Sci. Technol. A* **28**, 536 (2010). [[doi](#)]
7. G. Vieira, T. Henighan, A. Chen, **A.J. Hauser**, F.Y. Yang, J.J. Chalmers, and R. Sooryakumar, “Magnetic Wire Traps and Programmable Manipulation of Biological Cells,” *Phys. Rev. Lett.* **76**, 128101 (2009). [[doi](#)]
6. Kangkang Wang, Abhijit Chinchore, Wenzhi Lin, David C. Ingram, Arthur R. Smith, **Adam J. Hauser**, and Fengyuan Yang, “Epitaxial growth of ferromagnetic δ -phase manganese gallium on semiconducting scandium nitride (001),” *Journal of Crystal Growth* **311**, 2265-2268 (2009). [[doi](#)]
5. R.A. Ricciardo, **A.J. Hauser**, F.Y. Yang, H. Kim, W. Lu and P.M. Woodward, “Structural, magnetic, and electronic characterization of double perovskites BixLa_{2-x}MnMO₆ (M = Ni, Co; x = 0.25, 0.50),” *Materials Research Bulletin* **44**, 239-247 (2009). [[doi](#)]
4. **A.J. Hauser**, J. Zhang, L. Mier, R. Ricciardo, P.M. Woodward, T. L. Gustafson, L.J. Brillson, and F.Y. Yang, “Characterization of electronic structure and defect states of thin epitaxial BiFeO₃ films by UV-visible absorption and cathodoluminescence spectroscopies,” *Appl. Phys. Lett.* **92**, 222901 (2008). [[doi](#)]
3. W.C. Liu, C.L. Mak, K.H. Wong, C.Y. Lo, S.W. Or, W. Zhou, **A. Hauser**, F.Y. Yang and R. Sooryakumar, “Magnetoelectric and dielectric relaxation properties of the high Curie temperature composite Sr_{1.9}Ca_{0.1}NaNb₅O₁₅-CoFe₂O₄,” *J. Phys. D: Appl. Phys.* **41** 125402 (2008). [[doi](#)]
2. Thomas R. Lemberger, Iulian Hetel, **Adam J. Hauser** and F.Y. Yang, “Superfluid density of superconductor-ferromagnet bilayers,” *Journal of Applied Physics* **103**, 07C701 (2008). [[doi](#)]
1. X.W. Zhao, **A.J. Hauser**, T.R. Lemberger and F.Y. Yang, “Growth control of GaAs nanowires using pulsed laser deposition with arsenic over-pressure,” *Nanotechnology* **18**, 485608 (2007). [[doi](#)]

PATENTS

1. **A.J. Hauser**, S. Ranjit, and J.R. Soliz, “Portable Impedance Based Chemical Sensor.” US Patent Application No. 62/799,660 (2019).
2. Peterson, G.W., Fountain, A.W., Soliz, J.R., and **Hauser, A.J.** (Harford Co., USA). “Use of Metal-Organic Frameworks and Metal Oxides for Sensing Explosives and Toxic Chemicals using Electrical Impedance Spectroscopy.” U.S. Pat. No. 10,495,592 (2019)

REFEREED CONFERENCE PROCEEDINGS

6. S.A. Briggs, K.A. Law, **A. Hauser**, and J.A. Cartwright , “Understanding Compositions of Planetary Bodies Through Combined Petrography and Non-Destructive Raman Studies of Meteorites,” *51st Lunar and Planetary Science Conference* (2020) [[link](#)]
5. B.D. Esser, T.M. Smith, **A.J. Hauser**, R.E.A. Williams, F. Yang, M.J. Mills, DW McComb, “Quantifying Ordering Phenomena Through High-Resolution Electron Microscopy, Spectroscopy, and Simulation,” *Microscopy and Microanalysis* **22 (S3)**, 1448-1449 (2016). [[doi](#)]

4. J. Hwang, J.Y. Zhang, J. Son, E. Mikheev, **A.J. Hauser**, and S. Stemmer, "Quantification of Epitaxial Strain and Crystal Structure in Nanoscale Oxide Films Using Position Averaged Convergent Beam Electron Diffraction," *Microscopy and Microanalysis* **19 (S2)**, 686-687 (2013). [[doi](#)]
3. B.D. Esser, M. Dixit, **A. Hauser**, R.E. Williams, F. Yang, H.L. Fraser, D. McComb, "Viability of HAADF-STEM Imaging Contrast and Simulations as a Measure of B-site Ordering for Double Perovskites," *Microscopy and Microanalysis* **19 (S2)**, 610-611 (2013). [[doi](#)]
2. R. Williams, M. Dixit, R. Mishra, W. Windl, D. McComb, H. Fraser, **A. Hauser**, F. Yang, T. Meyers, P. Woodward, "Comparative Study for Simulation of EELS Core Loss for Transition Metals in Double Perovskite Systems," *Microscopy and Microanalysis* **18 (S2)**, 308-309 (2012). [[doi](#)]
1. R. Williams, **A. Hauser**, R. Ricciardo, Manisha Dixit, J. Lucy, P. Woodward, Fengyuan Yang, and H. Fraser, "HR-STEM Imaging and EELS Characterizing of Nano-Scale Defects in Sputter Deposited Thin Films of Double-Perovskite $\text{Sr}_2\text{FeMoO}_6$ (SFMO) and $\text{Sr}_2\text{CrReO}_6$ (SCRO)," *Microscopy and Microanalysis* **17 (S2)**, 1654-1655 (2011). [[doi](#)]

INVITED TALKS

26. "Sputter Beam Epitaxy for Atomic Ordering in Complex Epitaxial Thin Films," *236th Electrochemical Society (ECS) Meeting, Atlanta, GA, 2019*
25. "Enhanced Selectivity via Frequency-Dependent Impedance Fingerprinting," *Electrical and Computer Engineering Departmental Research Seminar, Tuscaloosa, AL, 2019*
24. "Magnetic and Impedance Analysis of Fe_2O_3 Nanoparticles for Chemical Warfare Agent Sensing Applications," *3rd World Chemistry Conference and Exhibition, Brussels, Belgium, 2019*
23. "Invited Panel: Innovation and Entrepreneurship," *APS Conferences for Undergraduate Women in Physics, Tuscaloosa, AL, 2019*
22. "Invited Panel: Applying to Graduate School," *APS Conferences for Undergraduate Women in Physics, Tuscaloosa, AL, 2019*
21. "A grassroots approach to finding faculty partners," *Southeastern Corporate and Foundation Relations Conference, Tuscaloosa, AL, 2019*
20. "Sputter Beam Epitaxy for atomic ordering in complex epitaxial thin films," *Naval Research Laboratory, Washington, DC, 2018*
19. "Sputter Beam Epitaxy for atomic ordering in complex epitaxial thin films," *Kojundo Chemical Laboratory, Sakado, Saitama, Japan, 2018*
18. "Sputter Beam Epitaxy for atomic ordering in complex epitaxial thin films," *TDK Corporation, Tokyo, Japan, 2018*
17. "Frequency-dependent impedance fingerprinting for selective airborne sensing," *Defense Threat Reduction Agency Zero Project Scoping Study, Annapolis Junction, MD, 2018*
16. "Sputter Beam Epitaxy for atomic ordering in complex epitaxial thin films," *64th AVS International Symposium & Exhibition, Tampa, FL 2017*
15. "How 'Plenty of Room at the Bottom' Inspires a Bottom-Up Functional Materials Revolution," *Samford University Department of Physics Colloquium, Homewood, AL, 2017*
14. "Material Matters: The critical role of ordering in complex materials," *Auburn University Department of Physics Colloquium, Auburn, AL, 2017*
13. "Form and Function: Materials physics for forming true functional materials," *Physics Seminar Series, Sewanee: The University of the South, Sewanee, TN, 2016*
12. "Deep magnetism: Techniques for building and understanding tomorrow's magnetic materials," *UAB Department of Physics Colloquium, Birmingham, AL, 2016*

11. "Off-axis combinatorial magnetron sputtering: A new way forward," *Western Digital Media, Inc, San Jose, CA, 2016*
10. "Solving material challenges by innovation in atomic-precision growth techniques," *Seagate Technology, Fremont, CA, 2016*
9. "Off-axis combinatorial sputtering and characterization for complex magnetic materials," *MINT Center Seminar, University of Alabama, Tuscaloosa, AL, 2015*
8. "Atomic-level ordering of complex oxide half-metals for high-performance spin-based electronics," *Department of Physics and Astronomy Colloquium, West Virginia University, Morgantown, WV, 2015*
7. "Atomic-level ordering of complex oxide half-metals for high-performance spin-based electronics," *Department of Physics & Astronomy Colloquium, University of Alabama, Tuscaloosa, AL, 2015*
6. "Tailoring dielectric response of custom chemical sensors," *Invited Seminar, Edgewood Chemical Biological Center, Aberdeen Proving Grounds, MD 2014*
5. "Atomic-level ordering of complex oxide half-metals for high-performance spin-based electronics," *University of Wyoming Physics and Astronomy Colloquium Series, Laramie, WY, 2014*
4. "Time-corrected Hall measurements in NdNiO₃ thin films," *Nanoscience Research Network in Baden-Wuttemberg visit to CNSI, Santa Barbara, CA, 2013*
3. "Growth and characterization of epitaxial films of the half-metallic ferromagnet Sr₂CrReO₆," *Cornell Center for Materials Research, Ithaca, NY, 2011*
2. "Unlocking the potential of half-metallic Sr₂FeMoO₆ films through controlled stoichiometry and double-perovskite ordering," *Novel Magnetic Materials Workshop, Dresden, Germany, 2010*
1. "Obstacles and solutions for achieving high double perovskite ordering in Sr₂FeMoO₆ epitaxial films," *Institute for Materials Research Materials Week, Columbus, OH, 2010*

CONTRIBUTED TALKS

14. "Observation of Topological Hall and Curie Temperature above Room Temperature in Strain-engineered FeGe Thin Films," *66th AVS International Symposium & Exhibition, Columbus, OH, 2019*
13. "Precision Timing Research and Graduate Programs at the University of Alabama," *2018 Precise Time and Time Interval Meeting, Reston, VA.*
12. "Probing the magnetic structure of Co₂Fe_xMn_{1-x}Si thin films," *2017 American Physical Society March Meeting, New Orleans, LA.*
11. "Probing the magnetic structure of Co₂Fe_xMn_{1-x}Si thin films by XAS/XMCD," *2016 American Physical Society March Meeting, Baltimore, MD.*
10. "Dielectric tuned surface plasmon resonance on metallic gratings," *2015 American Physical Society March Meeting, San Antonio, TX.*
9. "Magnetic structure in epitaxially strained Sr₂CrReO₆ thin films by element-specific XAS and XMCD," *59th Magnetism and Magnetic Materials Conference, Honolulu, HI, 2014*
8. "Magnetotransport of NdNiO₃ thin films," *2014 American Physical Society March Meeting, Denver, CO.*
7. "Effects of strain in highly ordered Sr₂CrReO₆ epitaxial films," *2012 American Physical Society March Meeting, Boston, MA.*
6. "Magnetic and structural properties of Sr₂CrReO₆ epitaxial films fabricated by ultra-high vacuum sputtering," *2011 American Physical Society March Meeting, Dallas TX.*
5. "Surface growth dependence in growth of half-metallic Sr₂FeMoO₆ epitaxial films fabricated by ultra-high vacuum sputtering," *2010 American Physical Society March Meeting, Portland, OR.*
4. "Magnetic and structural properties of half-metallic Sr₂FeMoO₆ epitaxial films fabricated by ultra-high vacuum sputtering," *2009 American Physical Society March Meeting, Pittsburgh, PA.*

3. "Magnetic and structural properties of half-metallic $\text{Sr}_2\text{FeMoO}_6$ epitaxial films fabricated by ultra-high vacuum sputtering," *53rd Magnetism and Magnetic Materials Conference, Austin, TX, 2008*
2. "Measurements of bandgap of epitaxial BiFeO_3 films by UV-Vis absorption and cathodoluminescence spectroscopies," *2008 American Physical Society March Meeting, New Orleans, LA.*
1. "Nonmonotonic superfluid density of Nb/Ni bilayers," *52nd Magnetism and Magnetic Materials Conference, Tampa, FL, 2007*