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(a) Education

University of Alabama at Birmingham	Birmingham, AL	Physics	Ph.D 2021
University of Alabama at Birmingham	Birmingham, AL	Physics	M.S. 2017
University of North Georgia	Dahlonega, GA	Physics	B.S 2015

(b) Skills

Pulsed laser deposition, microwave plasma CVD, materials characterization, in situ diagnostics and spectroscopy, automation and robotics, autonomous synthesis, machine learning, programming in Python, C/C++, LabVIEW.

(c) Professional Experience

- 2021 - present Postdoctoral Research Associate, Oak Ridge National Laboratory
- 2018 NSF EPSCoR CIPPTA Appointment, Vista Engineering, Birmingham, AL
- 2016 - 2021 Graduate Fellow, University of Alabama at Birmingham
- 2015 Graduate Teaching Assistant, University of Alabama at Birmingham

(d) Publications

1. S. B Harris, Y. C. Lin, A. P. Puretzky, L. Liang, O. Dyck, T. Berlijn, G. Eres, C. M. Rouleau, K. Xiao, and D. B. Geohegan, Real-time diagnostics of 2D crystal transformations by pulsed laser deposition: Controlled synthesis of Janus WSSe monolayers and alloys, *ACS Nano, Accepted Jan. 2023* .
2. A. Okmi, X. Xiao, Y. Zhang, R. He, O. Olunloyo, S. B. Harris, T. Jabegu, N. Li, D. Maraba, Y. Sherif, O. Dyck, I. Vlassiouk, K. Xiao, P. Dong, B. Xu, and S. Lei, Discovery of graphene-water membrane structure: Toward high-quality graphene process, Advanced Science **9**, 2201336 (2022).
3. S. B. Harris, J. H. Paiste, J. Edoki, R. R. Arslanbekov, and R. P Camata, Experimentally constrained multidimensional simulation of laser-generated plasmas and its application to UV nanosecond ablation of Se and Te, Plasma Sources Sci. Technol. **30**, 105013 (2021).
4. S. B. Harris, J. H. Paiste, T. J. Holdsworth, R. R. Arslanbekov, and R. P Camata, Laser-generated plasmas in length scales relevant for thin film growth and processing: simulation and experiment, J. Phys. D: Appl. Phys. **53**, 015203 (2019).
5. S. B. Harris and R. P Camata, Double epitaxy of tetragonal and hexagonal phases in the FeSe system, J. Cryst. Growth **27**, 104778 (2019).
6. P. A. Baker, S. A. Catledge, S. B. Harris, K. J. Ham, W.C. Chen, C. C. Chen, and Y. K. Vohra, Computational predictions and microwave plasma synthesis of superhard boron-carbon materials, Materials **11**, 1279 (2018).

(e) Synergistic Activities

1. Referee for Applied Physics Letters
2. Experience in Machine Learning Techniques:
   - Materials Research Society Presentation: **S. B. Harris**, Cheng-Chien Chen and R. P. Camata, "Using Machine Learning to Predict the Critical Temperature of New Ternary Superconductors," 2020 Joint MRS Spring and Fall Meeting, November 28, 2020, Boston, MA.
   - IBM AI Engineering Professional Certificate
   - Google Advanced Machine Learning with TensorFlow Specialization Certificate
3. Dedicated academic, evidenced by numerous awards and fellowships:
   - UAB Samuel B. Barker Award for Excellence in Graduate Studies at the Doctoral Level, May 2020 - First ever graduate student from physics to be honored. Selected from pool of graduate students from every department.
   - UAB College of Arts and Sciences' Dean's Award, May 2020 - Selected from pool of graduate students in the Department of Arts and Sciences
   - Outstanding Physics Graduate Student Award, May 2020
   - Alabama Space Grant Consortium (ASGC) Fellowship, Aug 2018-Aug 2021. Maximum renewal
   - NSF EPSCoR Corporate Internship Program on Plasma Technology Applications (CIPPTA) 2018 - Worked with private engineering consulting firm Vista Engineering, Birmin- ham, AL
   - Graduate Assistance in Areas of National Need (GAANN) Fellowship, Jan 2016-Dec 2017. Maximum renewal.
4. Service and Outreach Activities
   - UAB Science Olympiad, Birmingham, AL. February 2019 Demonstration of the Meissner effect to 60+ middle and high school aged students
   - Spring Valley School, Birmingham, AL. March 2019 Demonstration of the Meissner effect and zero resistance properties of superconductors to 25 high school juniors and seniors
   - Central Alabama Regional Science and Engineering Fair, Birmingham, AL. March 2017-2019 Senior physical science category judge
   - 2018-2021 Member of a Plasma Diagnostics Working Group, a group composed of plasma physics experimentalists from 7 Alabama universities participating in NSF EPSCoR CPU2AL projects to share problems and solutions in plasma diagnostic and measurement techniques.