Shriram Ramanathan
701 W. Stadium Ave, West Lafayette, IN 47907
School of Materials Engineering (ECE Courtesy), Purdue University

EDUCATION

- PhD (Materials Science and Engineering) - Stanford University, 2002
  Concentration: Physics of Solids
- MS (Materials Engineering) - University of Houston, 1997
- BS (Metallurgical Engineering) - Indian Institute of Technology, India, 1996

APPOINTMENTS

- 2015 – Present: Professor, School of Materials Engineering, Purdue University
- 2010 – Present: Associate Professor of Materials Science, School of Engineering and Applied Sciences, Harvard University
- 2006 – 2010: Assistant Professor of Materials Science, School of Engineering and Applied Sciences, Harvard University
- 2002 – 2005: Researcher/Senior Process Engineer, Components Research, Intel Corporation

SELECTED RECENT HONORS AND NAMED/KEYNOTE LECTURES

- Plenary Speaker, Frontiers of Oxide Devices and Materials, Kobe, Japan, 2018
- Keynote Speaker, Functional Oxide Thin Films Conference, Mexico, 2016
- Keynote Speaker, Workshop on Electron Transport and Correlations, Italy, 2015

EDUCATIONAL AND MENTORING ACTIVITIES AT PURDUE

- Teach *Introduction to Materials Engineering* course, *Teaching Practice*, *Physical Properties of Crystals*, *Solid State Materials*, *Atomistic Materials Science*, *Senior Design*
- Presently supervise research of 3 post-doctoral fellows and 4 graduate students

SELECTED RECENT PROFESSIONAL ACTIVITIES

- Regular referee for major journals publishing in physical sciences; e.g. *Nature*, *Science*, *Nature Materials*, *Physical Review Letters*, *PNAS*
- Guest Editor, APL Materials (2017); Optical Materials Express (2018)
- Co-Chair, MRS Symposium on Ionic-Electronic Dynamics (2017)

INVITED TALKS (SELECTED RECENT, TOTAL ~200)

- SPIE DSS, 2020
- IMRS, Cancun, 2019
- APS March Meeting, 2018
- Colloquium, UCSD Physics Department, 2018
- AVS Annual Meeting, 2018
- MRS Fall Meeting, 2017
- Materials Research Society Fall Meeting, Boston, 2016

SELECT RECENT JOURNAL ARTICLES

- Strongly correlated perovskite lithium ion shuttles, Y. Sun, M. Kotiuga, D. Lim, B. Narayanan, M. Cherukara, Z. Zhang, Y. Dong, R. Kou, C. J. Sun, Q. Lu, I. Waluyo,

A. Hunt, H. Tanaka, A. N. Hattori, S. Gamage, Y/ Abate, V. G. Pol, H. Zhou, S. K. R. S. Sankaranarayanan, B. Yildiz, K. M. Rabe, and S. Ramanathan, *Proceedings of the National Academy of Sciences of the USA*, 115, 9672 (2018)

- Perovskite nickelates as electric-field sensors in salt water, Z. Zhang, D. Schwanz, B. Narayanan, M. Kotiuga, J. A. Dura, M. Cherukara, H. Zhou, J. W. Freeland, J. Li, R. Sutarto, F. He, C. Wu, J. Zhu, Y. Sun, K. Ramadoss, S. Nonnenmann, N. Yu, R. Comin, K. M. Rabe, S. K. R. S. Sankaranarayanan and S. Ramanathan, *Nature*, 553, 68 (2018)
- Electrically-Driven Insulator-Metal Transition Based Devices, Part II: Transient Characteristics, J. Lin, S. Ramanathan and S. Guha, *IEEE Transactions on Electron Devices*, 65, 3989 (2018)
- Electrically-Driven Insulator-Metal Transition Based Devices, Part I: Electrothermal model and experimental analysis for DC Experimental Characteristics, J. Lin, S. Ramanathan and S. Guha, *IEEE Transactions on Electron Devices*, 65, 3982 (2018)
- Quantum materials for brain sciences and artificial intelligence, S. Ramanathan, *MRS Bulletin*, 43, 534 (2018)
- Proton-doped strongly correlated perovskite nickelate memory devices, K. Ramadoss, F. Zuo, Y. Sun, Z. Zhang, J. Lin, U. Bhaskar, S. Shin, M. A. Alam, S. Guha, D. Weinstein and S. Ramanathan, arXiv:1805.00527, *IEEE Electron Device Letters*, 39, 1500 (2018)
- Evolution of metallicity in vanadium dioxide by creation of oxygen vacancies, Z. Zhang, F. Zuo, C. Wan, A. Dutta, J. Kim, J. Rensberg, R. Nawrodt, H. H. Park, T. Larrabee, X. Guan, Y. Zhou, S. M. Prokes, C. Ronning, V. M. Shalaev, A. Boltasseva, M. A. Kats, and S. Ramanathan, *Physical Review Applied*, 7, 034008 (2017)
- Flash transition as a possible origin for low open circuit voltage in thin film solid oxide fuel cells, R. Raj and S. Ramanathan, *Journal of Power Sources*, 359, 48 (2017)
- Strongly correlated perovskite fuel cells, Y. Zhou, X. Guan, H. Zhou, K. Ramadoss, S. Adam, H. Liu, S. Lee, J. Shi, M. Tsuchiya, D. D. Fong and S. Ramanathan, *Nature*, 231, 534 (2016)