Hyejin Jang, Ph.D.

Assistant Professor
Department of Materials Science and Engineering
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EDUCATION

University of Illinois, Urbana-Champaign, USA Aug. 2014 – May 2019

Ph.D., Materials Science and Engineering (degree awarded on May 11, 2019)
Thesis: Thermal Transport in Two-Dimensional Materials and Magnetic Multilayers
Prof. David G. Cahill

Seoul National University, Korea Mar. 2009 – Feb. 2011

M.S., Materials Science and Engineering
Thesis: Thermoelectric Properties of P-Type $A(Ru,Ti)O_3$ Solid Solutions (A=Sr, Ca) and N-Type $CaMnO_{3-\delta}$
PI: Prof. Han-Ill Yoo

Seoul National University, Korea Mar. 2005 – Feb. 2009
B.S., Materials Science and Engineering

EMPLOYMENT

Seoul National University, Korea Sep 2020 – present
Assistant Professor in Department of Materials Science and Engineering

University of California, Berkeley, USA July 2019 – July 2020
Postdoctoral Scholar in Electrical Engineering and Computer Sciences
Research Project: Ultrafast Dynamics in Magnetic Materials and Devices
PI: Prof. Jeffrey Bokor

Entrue Consulting, LG CNS Co. Ltd., Korea July 2011 – May 2014
Associate Consultant in High-Tech Division
Consulting Projects: Process Innovation, Information Strategy Planning, Data Management, etc.

AWARDS AND HONORS

- Excellent Lecture Award, College of Engineering, Seoul National University (Sep. 2022)
- POSCO Science Fellowship, POSCO TJ Park Foundation, Korea (2022-2023)
- The Rising Stars, Women in Engineering Workshop in Asian Deans' Forum 2019, Korea (Oct. 2019)

- The Racheff-Intel Award for Outstanding Graduate Research in Materials Science and Engineering, University of Illinois, Urbana-Champaign, USA (May 2018)
- The Ovshinsky Student Travel Award, APS March Meeting, USA (Mar. 2018)
- Best Poster Award, Spring Conference of the Korean Institute of Metals and Materials, Korea (Apr. 2010)
- Best Poster Award for Materials Experiment, Materials Science and Engineering, Seoul National University, Korea (June 2008)

PUBLICATIONS

1. Yoonseong Jung*, Wonsik Lee*, Seungbin Han, Beom-Soo Kim, Seung-Jun Yoo, and **Hyejin Jang**, *Thermal Transport Properties of Phonons in Halide Perovskites*, Adv. Mater., (in press)
2. D. Polley, J. Chatterjee, **H. Jang**, and J. Bokor, *Analysis of ultrafast magnetization switching dynamics in exchange-coupled ferromagnet-ferrimagnet heterostructures*, J. Magn. Magn. Mater. 574, 170680 (2023)
3. W. Jin, K. Park, J. Y. Cho, S. H. Bae, M. Siyar, **H. Jang**, and C. Park, *Thermochromic properties of ZnO/VO_2/ZnO films on soda lime silicate glass deposited by RF magnetron sputtering*, Ceram. Int. 49, 10437 (2023)
4. W. Jin, Y. Kim, C. Park, and **H. Jang**, *The Effect of Mg/W Addition on the Metal-insulator Transition of VO2 Using Spark Plasma Sintering*, J. Microelectron. Electron. Packag. 29(2), 63 (2022)
5. Kyeon-Beom Kim, Seunghwan Lee, and **Hyejin Jang**, *Thermoreflectance Microscopy for Thermal Analysis of Electronics*, J. Microelectron. Electron. Packag. 29(4), 19 (2022)
6. J. Chatterjee, D. Polley, A. Pattabi, **H. Jang**, S. Salahuddin, and J. Bokor, *RKKY Exchange Bias Mediated Ultrafast All-Optical Switching of a Ferromagnet*, Adv. Funct. Mater., 2107490 (2021)
7. J. Kang, **H. Jang**, J. Ma, Q. Yang, K. Hattar, Z. Diao, R. Yuan, J. Zuo, S. Sinha, D. G. Cahill, and P. V. Braun, *Ultralow Thermal Conductivity in Nanoporous Crystalline Fe_3O_4*, J. Phys. Chem. C, **125**, 6897 (2021)
8. **H. Jang**, J. Kimling, and D. G. Cahill, *Nonequilibrium Heat Transport in Pt and Ru Probed by an Ultrathin Co Thermometer*, Phys. Rev. B, **101**, 064304 (2020)
9. **H. Jang**, L. Marnitz, T. Huebner, J. Kimling, T. Kuschel, and D. G. Cahill, *Thermal Conductivity of Oxide Tunnel Barriers in Magnetic Tunnel Junctions Measured by Ultrafast Thermoreflectance and Magneto-optic Kerr Effect Thermometry*, Phys. Rev. Appl. **13**, 024007 (2020)
10. E. C. Hadland, **H. Jang**, M. Falmbigl, R. Fischer, D. L. Medlin, D. G. Cahill, and D. Johnson, *Synthesis, Characterization and Ultralow Thermal Conductivity of a Lattice-Mismatched $(SnSe_2)_1(MoSe_2)_{1.32}$ Heterostructure*, Chem. Mater, **31**, 5699 (2019)
11. E. C. Hadland, **H. Jang**, N. Wolff, R. Fischer, A. C. Lygo, G. Mitchson, D. Li, L. Kienle, D. G. Cahill, and D. Johnson, *Ultralow Thermal Conductivity of Turbostratically Disordered $MoSe_2$ Ultra-Thin Films and Implications for Heterostructures*, Nanotechnology, **30**, 285401 (2019)

12. **H. Jang***, C. R. Ryder*, J. D. Wood, M. C. Hersam, and D. G. Cahill, *3D Anisotropic Thermal Conductivity of Exfoliated Rhenium Disulfide*, Adv. Mater., **29**, 1700650 (2017)
13. J. D. Forster, J. J. Lynch, N. E. Coates, J. Liu, **H. Jang**, E. Zaia, M. P. Gordon, M. Szybowski, A. Sahu, D. G. Cahill and J. J. Urban, *Solution-Processed Cu_2Se Nanocrystal Films with Bulk-Like Thermoelectric Performance*, Sci. Rep., 7, 2765 (2017)
14. Y. Zhou, **H. Jang**, J. M. Woods, Y. Xie, P. Kumaravadivel, G. A. Pan, J. Liu, Y. Liu, D. G. Cahill, and J. J. Cha, *Direct Synthesis of Large-Scale WTe_2 Thin Films with Low Thermal Conductivity*, Adv. Funct. Mater., **27**, 1605928 (2017)
15. **H. Jang***, J. D. Wood*, C. R. Ryder, M. C. Hersam, and D. G. Cahill, *Anisotropic Thermal Conductivity of Exfoliated Black Phosphorus*, Adv. Mater., **27**, 8017 (2015)
16. **H. Jang**, J. Brendt, L. Patro, M. Martin and H.-I. Yoo, *Unexpected Thermoelectric Behavior and Immiscibility of Allegedly Complete Solid Solution, $Sr(Ru_{1-x}Ti_x)O_3$*. Phys. Rev. B, **89**, 144107 (2014)
17. Y.-Y. Yeoh, **H. Jang** and H.-I. Yoo, *Defect Structure and Fermi-level Pinning of $BaTiO_3$ Co-doped with a Variable-Valence Acceptor (Mn) and a Fixed-Valence Donor (Y)*, Phys. Chem. Chem. Phys., **14**, 1642-1648 (2012)