Zhiliang Pan

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Education

2018-2023 Ph.D. in Mechanical Engineering
Vanderbilt University, Advisor: Prof. Deyu Li
Dissertation: Thermal Transport in Low Dimensional Polar Nanostructures

2014-2018 B.S. in Energy and Power Engineering, Xian Jiaotong University

Research Experiences

2019-2023 Research Assistant
Vanderbilt University

2017-2018 Undergraduate Research Program
Xian Jiaotong University

Teaching Experiences

2018-2019 Teaching Assistant
Vanderbilt University

Publications

1. G. Lu, **Z. Pan**, C.R. Gubbin, et al., "Launching and Manipulation of Higher-Order In-Plane Hyperbolic Phonon Polaritons in Low-Dimensional Heterostructures", Advanced Materials, 2023.
2. A.L. Coughlin[†], **Z. Pan**[†], J. Hong, et al., "Enhanced Electron Correlation and Significantly Suppressed Thermal Conductivity in Dirac Nodal-Line Metal Nanowires by Chemical Doping", Advanced Science, 2023.
3. A. Esteban-Linares, L.K. Wareham, T.S. Walmsley, J.M. Holden, M.L. Fitzgerald, **Z. Pan**, et al., Dynamic Observation of Retinal Response to Pressure Elevation in a Microfluidic Chamber. Analytical Chemistry, 2022.

03/17/2023

4. A.P.R. Charles, R. Mu, T.Z. Jin, D. Li, **Z. Pan**, et al., "Application of yellow mustard mucilage and starch in nanoencapsulation of thymol and carvacrol by emulsion electrospray", Carbohydrate Polymers, 2022.
5. **Z. Pan**, S. Lee, K. Wang, et al., "Elastic stiffening induces one-dimensional phonons in thin Ta2Se3 nanowires", Applied Physics Letters, 2022.
6. Y. Tao, **Z. Pan**, T. Ruch, et al., "Remarkable suppression of lattice thermal conductivity by electron-phonon scattering in iridium dioxide nanowires", Materials Today Physics, 2021.
7. **Z. Pan**, Y. Tao, Y. Zhao, et al., "Bidirectional Modulation of Contact Thermal Resistance between Boron Nitride Nanotubes from a Polymer Interlayer", Nano Letters, 2021.
8. L. Yang, Y. Tao, Y. Zhu, M. Akter, K. Wang, **Z. Pan**, et al., "Observation of superdiffusive phonon transport in aligned atomic chains", Nature Nanotechnology, 2021.
9. M.L. Fitzgerald, Y. Zhao, **Z. Pan**, et al., "Contact Thermal Resistance between Silver Nanowires with Poly(vinylpyrrolidone) Interlayers", Nano Letters, 2021.
10. **Z. Pan**, L. Yang, Y. Tao, et al., "Net negative contributions of free electrons to the thermal conductivity of $NbSe_3$ nanowires", Physical Chemistry Chemical Physics, 2020.
11. Y. Zhao, M.L. Fitzgerald, Y. Tao, **Z. Pan**, et al., "Electrical and Thermal Transport through Silver Nanowires and Their Contacts: Effects of Elastic Stiffening", Nano Letters, 2020.

Works in Progress

1. M. He, L. Hoogendoorn, S. Dixit, **Z. Pan**, et al., "Topological transition induced in MoO_3 via geometrical confinement", submitted, 2023.
2. **Z. Pan**, G. Lu, X. Li, et al., "Direct experimental evidence for phonon polariton mediated heat conduction", under review, 2023.

Presentations

1. **Z. Pan**, Y. Tao, M.L. Fitzgerald, and D. Li, "Contact Thermal Resistance between Boron Nitride Nanotubes with and without Polymer Interlayer", SHTC, Philadelphia, 07/13/2022.
2. **Z. Pan,** L. Yang, and D. Li, "Superdiffusive phonon transport in ultra-thin NbSe3 nanowire", Vanderbilt VINSE Summer Nanoseminar, 07/16/2021.

3. **Z. Pan**, Y. Tao, L. Yang, and D. Li. “Effects of Electron-Phonon Interactions on Thermal Transport in Quasi-1D $NbSe_3$ Nanowires”, IMECE, Salt Lake City, 07/11/2019.