

Stanford



Leland Nordin

Postdoctoral Scholar, Materials Science and Engineering

 Curriculum Vitae available Online

Bio

BIO

Leland is a Postdoctoral Research Fellow in Professor Kunal Mukherjee's group and the Geballe Lab for Advanced Materials. His research involves investigating the potential for utilizing IV-VI alloys as plasmonic materials in the mid-infrared, and subsequently demonstrating plasmonic IV-VI optoelectronic structures and devices for light emission, detection, and modulation. Prior to his Stanford appointment, Leland was a graduate student in Professor Dan Wasserman's group at The University of Texas at Austin. In Professor Wasserman's group Leland worked on the design, growth, fabrication, and characterization of state-of-the-art III-V ultra-thin plasmonic infrared detectors and emitters.

HONORS AND AWARDS

- Postdoctoral Fellowship, Geballe Laboratory for Advanced Materials, Stanford University (2021-2023)
- Margarida Jacome Dissertation Prize, The University of Texas at Austin (2021-2022)
- The Ben Streetman prize for "Outstanding Research in Electronic and Photonic Materials and Devices", The University of Texas at Austin (2022)
- Graduate School University Continuing Graduate Fellowship, The University of Texas at Austin (2020-2021)
- Thrust 2000 - Jeff Heller Endowed Graduate Fellowship in Engineering, The University of Texas at Austin (2020-2021)
- Dr. Brooks Carlton Fowler Endowed Presidential Graduate Fellowship in ECE, The University of Texas at Austin (2017-2020)
- National Science Foundation Graduate Research Fellowship Honorable Mention, National Science Foundation (2017)
- H. George Apostle Prize in Physics, Grinnell College (2016)
- Noyce Intel Grant, Grinnell College (Summer 2015)

PROFESSIONAL EDUCATION

- PhD, The University of Texas at Austin, Electrical and Computer Engineering (2021)
- MSE, The University of Texas at Austin, Electrical and Computer Engineering (2019)
- BA, Grinnell College, Physics (Honors) (2016)

STANFORD ADVISORS

- Kunal Mukherjee, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Room-Temperature Mid-Wave Infrared Guided-Mode Resonance Detectors** *IEEE PHOTONICS TECHNOLOGY LETTERS*
Kamboj, A., Nordin, L., Muhowski, A. J., Woolf, D., Wasserman, D.

2022; 34 (11): 615-618

- **Epitaxial mid-IR nanophotonic optoelectronics** *APPLIED PHYSICS LETTERS*
Nordin, L., Wasserman, D.
2022; 120 (22)
- **High operating temperature plasmonic infrared detectors** *APPLIED PHYSICS LETTERS*
Nordin, L., Muhowski, A. J., Wasserman, D.
2022; 120 (10)
- **Cascaded InGaSb quantum dot mid-infrared LEDs** *JOURNAL OF APPLIED PHYSICS*
Muhowski, A. J., Kamboj, A., Briggs, A. F., Nordin, L., Bank, S. R., Wasserman, D.
2022; 131 (4)
- **Ultra-thin plasmonic detectors** *OPTICA*
Nordin, L., Petluru, P., Kamboj, A., Muhowski, A. J., Wasserman, D.
2021; 8 (12): 1545-1551
- **Bright mid-infrared photoluminescence from high dislocation density epitaxial PbSe films on GaAs** *APL MATERIALS*
Meyer, J., Muhowski, A. J., Nordin, L., Hughes, E., Haidet, B., Wasserman, D., Mukherjee, K.
2021; 9 (11)
- **All-epitaxial guided-mode resonance mid-wave infrared detectors** *APPLIED PHYSICS LETTERS*
Kamboj, A., Nordin, L., Petluru, P., Muhowski, A. J., Woolf, D. N., Wasserman, D.
2021; 118 (20)
- **All-epitaxial long-range surface plasmon polariton structures with integrated active materials** *JOURNAL OF APPLIED PHYSICS*
Nordin, L., Petluru, P., Muhowski, A. J., Shaner, E. A., Wasserman, D.
2021; 129 (11)
- **Interface structure and luminescence properties of epitaxial PbSe films on InAs(111)A** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
Haidet, B. B., Nordin, L., Muhowski, A. J., Vallejo, K. D., Hughes, E. T., Meyer, J., Simmonds, P. J., Wasserman, D., Mukherjee, K.
2021; 39 (2)
- **Reflecting metagrating-enhanced thin-film organic light emitting devices** *APPLIED PHYSICS LETTERS*
Xu, X., Kwon, H., Finch, S., Lee, J., Nordin, L., Wasserman, D., Alu, A., Dodabalapur, A.
2021; 118 (5)
- **InSb pixel loaded microwave resonator for high-speed mid-wave infrared detection** *INFRARED PHYSICS & TECHNOLOGY*
Wang, Y., Dev, S., Yang, F., Nordin, L., Wang, Y., Briggs, A., Allen, M., Allen, J., Tutuc, E., Wasserman, D.
2020; 109
- **All-Epitaxial Integration of Long-Wavelength Infrared Plasmonic Materials and Detectors for Enhanced Responsivity** *ACS PHOTONICS*
Nordin, L., Kamboj, A., Petluru, P., Shaner, E., Wasserman, D.
2020; 7 (8): 1950-1956
- **Mid-infrared electroluminescence from type-II In(Ga)Sb quantum dots** *APPLIED PHYSICS LETTERS*
Briggs, A. F., Nordin, L. J., Muhowski, A. J., Petluru, P., Silva, D., Wasserman, D., Bank, S. R.
2020; 116 (6)
- **Enhanced emission from ultra-thin long wavelength infrared superlattices on epitaxial plasmonic materials** *APPLIED PHYSICS LETTERS*
Nordin, L., Li, K., Briggs, A., Simmons, E., Bank, S. R., Podolskiy, V. A., Wasserman, D.
2020; 116 (2)
- **Electrical modulation of degenerate semiconductor plasmonic interfaces** *JOURNAL OF APPLIED PHYSICS*
Dong, Z., Vinnakota, R. K., Briggs, A. F., Nordin, L., Bank, S. R., Genov, D. A., Wasserman, D.
2019; 126 (4)
- **Probing polaritons in the mid- to far-infrared** *JOURNAL OF APPLIED PHYSICS*
Folland, T. G., Nordin, L., Wasserman, D., Caldwell, J. D.

2019; 125 (19)

- **Monochromatic Multimode Antennas on Epsilon-Near-Zero Materials** *ADVANCED OPTICAL MATERIALS*

Dominguez, O., Nordin, L., Lu, J., Feng, K., Wasserman, D., Hoffman, A. J.

2019; 7 (10)

- **Mid-infrared epsilon-near-zero modes in ultra-thin phononic films** *APPLIED PHYSICS LETTERS*

Nordin, L., Dominguez, O., Roberts, C. M., Streyer, W., Feng, K., Fang, Z., Podolskiy, V. A., Hoffman, A. J., Wasserman, D.

2017; 111 (9)