

# Longji Cui

Assistant Professor

Department of Mechanical Engineering

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## PROFESSIONAL EXPERIENCE

**Assistant Professor**, University of Colorado Boulder, 2020.01 –

Department of Mechanical Engineering

Materials Science and Engineering Program

**Visiting Assistant Professor**, University of Colorado Boulder, 2018 – 2020

Department of Mechanical Engineering

**J. Evans Attwell Welch Postdoctoral Fellow**, Rice University, 2018 – 2020

Smalley-Curl Institute

Department of Physics and Astronomy

**Graduate Research Assistant**, University of Michigan Ann Arbor, 2013 – 2018

Department of Mechanical Engineering

**Graduate Research Assistant**, Beijing University of Aeronautics and Astronautics, Beijing, 2010 – 2013

School of Aeronautic Science and Engineering

## EDUCATION

**Ph.D. Mechanical Engineering**, University of Michigan, Ann Arbor, 2018

Thesis: *Probing Heat Transport and Energy Conversion at the Atomic and Single Molecule Scale*

Committee: Prof. Pramod Reddy (Co-Chair), Prof. Edgar Meyhofer (Co-Chair)

Prof. Vikram Gavini, Prof. Ctirad Uher, Prof. Arun Majumdar

**M.S. Power Engineering & Thermophysics**, Beijing University of Aeronautics and Astronautics, 2013

Thesis: *Active tuning of near field radiative heat transfer using metamaterials*

Advisor: Prof. Yong Huang

**B.S. Aerospace Engineering (Aircraft Environment & Life Security)**, Beijing University of Aeronautics and Astronautics, 2010

## AWARDS

Chinese Government Award for Outstanding Student Abroad	2019
J. Evans Attwell-Welch Fellow, Rice University	2018-2020
Rackham Predoctoral Fellowship, U-Michigan	2018
Graduate Student Award ( <i>Gold</i> ), Material Research Society (MRS)	2017
Richard and Eleanor Towner Award for Outstanding Ph.D. Research, U-Michigan	2017
Robert M. Caddell Memorial Award for Research, U-Michigan	2016
Alexander Azarkhin Fellowship, U-Michigan	2016
Mechanical Engineering Departmental Fellowship, U-Michigan	2013 - 2014

## JOURNAL PUBLICATIONS

1. **L. Cui**, S. Hur, Z. A. Akbar, J. C. Klöckner, W. Jeong, F. Pauly, S.-Y. Jang, P. Reddy, E. Meyhofer, “Thermal conductance of single-molecule junctions”, *Nature* (2019). DOI: 10.1038/s41586-019-1420-z
2. H. Wu, Y. Huang, **L. Cui**, K. Zhu, “Active magneto-optical control of near-field radiative heat transfer between graphene sheets”, *Physical Review Applied* 11(05), 054020 (2019).
3. **L. Cui**, R. Miao, K. Wang, D. Thompson, L. A. Zotti, J. C. Cuevas, E. Meyhofer, P. Reddy, “Peltier cooling in molecular junctions”, *Nature Nanotechnology* 13, 122-127 (2018). (**Cover Article**)
4. R. Miao, H. Xu, M. Skripnik, **L. Cui**, K. Wang, K. G. L. Pedersen, M. Leijnse, F. Pauly, K. Wärnmark, E. Meyhofer, P. Reddy, H. Linke, “Influence of quantum interference on the thermoelectric properties of molecular junctions”, *Nano Letters*, 18 (9), 5666-5672 (2018).
5. **L. Cui\***, W. Jeong\*, S. Hur, M. Matt, J. C. Klöckner, F. Pauly, P. Nielaba, J. C. Cuevas, E. Meyhofer, P. Reddy, “Quantized thermal transport in single atom junctions”, *Science*, 355, 1192 (2017).
6. **L. Cui**, E. Meyhofer, P. Reddy, “Thermal transport: Harmony with superatoms”, *Nature Materials (News and Views)*, 16, 10 (2017).
7. **L. Cui**, W. Jeong, V. Fernández-Hurtado, J. Feist, F. J. García-Vidal, J. C. Cuevas, E. Meyhofer, P. Reddy, “Study of radiative heat transfer at Ångström and nanometer scale gaps”, *Nature Communications*, 8, 14479 (2017).
8. **L. Cui**, R. Miao, C. Jiang, E. Meyhofer, P. Reddy, “Thermal and thermoelectric transport in molecular junctions”, *Journal of Chemical Physics*, 146, 092201 (2017).
9. K. Kim, B. Song, V. Fernández, W. Lee, W. Jeong, **L. Cui**, D. Thompson, J. Feist, M. T. Homer Reid, F. J. García-Vidal, J. C. Cuevas, E. Meyhofer, P. Reddy, “Radiative heat transfer in the extreme near field”, *Nature*, 528, 387–391 (2015).
10. **L. Cui**, Y. Huang, J. Wang, K.-Y. Zhu, “Ultrafast modulation of near-field heat transfer with tunable metamaterials”, *Applied Physical Letters*, 102, 053106 (2013).

11. L. Cui, Y. Huang, J. Wang, “Near-field radiative heat transfer between chiral metamaterials”, *Journal of Applied Physics*, 112, 084309 (2012).

## TEACHING EXPERIENCE

<i>Instrumentation and Experimental Techniques</i> (ME 599, U-Mich) Lab Instructor and Teaching Assistant	Winter 2017
<i>Thermodynamics III</i> (ME 535, U-Mich) Teaching Assistant	Winter 2016
<i>Laboratory II</i> (ME 495, U-Mich) Lab Instructor and Teaching Assistant	Fall 2014