

TANYA LIU

tanyaliu@stanford.edu // 515.441.0084

EDUCATION

- STANFORD UNIVERSITY, JUNE 2019 (EXPECTED)** STANFORD, CA
MS/PhD in Mechanical Engineering, GPA (3.9/4.0)
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, JUNE 2014** CAMBRIDGE, MA
BS in Mechanical Engineering, GPA (4.9/5.0)

EXPERIENCE

- STANFORD NANOHEAT LABORATORY, AUGUST 2014-PRESENT** STANFORD, CA
Graduate Researcher
Currently working on the numerical modeling and experimental characterization of two-phase flow in porous media for various high heat flux applications. Previous work included using ANSYS Fluent to perform CFD simulations for the optimization of a novel microchannel heat sink integrated with a high power density GaN-SiC chip.
- GOOGLE INC, JUNE 2015-AUGUST 2015** MOUNTAIN VIEW, CA
Mechanical Engineering Intern
Performed detailed modeling of the thermal performance of various chip package designs. Developed an analytical model programmed in MATLAB to predict the junction temperature dependence of different packages on various system parameters, cooling technologies, and power distributions.
- MIT APPLIED MATHEMATICS LABORATORY, FEBRUARY 2013-MAY 2014** CAMBRIDGE, MA
Undergraduate Researcher
Tested and developed a prototype of a piezoelectric droplet-on-demand generator. Designed a height adjustment mechanism to allow greater control of droplet size and characterized the droplet behavior through high speed imaging analysis. Presented results at the APS DFD 2014 conference and published in *Experiments in Fluids*, 2015.
- FORD MOTOR COMPANY, JUNE 2013-AUGUST 2013** DEARBORN, MI
Product Development Intern
Worked on a variety of systems engineering projects to aid the development of a modular hybrid transmission for a rear wheel drive truck. Designed a filter for the vehicle controller to achieve a smoother transmission input torque using a Simulink engine pull-up model and created a road map for fuel economy improvement through reduction of 12 volt loads.

PROJECTS

- EE292X, STANFORD'S LITTLE BOX CHALLENGE, JANUARY 2015-JUNE** STANFORD, CA
Member of the thermal design team for Stanford's submission to the Google Little Box challenge. Constructed a validated CFD model to determine the optimal cooling method for high power density components with results that were used as design guidelines for other teams.
- 2.009 PRODUCT ENGINEERING PROCESSES, SEPTEMBER 2013-DECEMBER 2013** CAMBRIDGE, MA
Led the lighting team in the development of an interactive yoga mat with instructional lighting and pressure feedback for MIT's senior capstone mechanical engineering design class. Pitched the final product during the final presentations to an audience of over one thousand people.

PUBLICATIONS

- Liu, T., Iyengar, M., Malone, C., & Goodson, K. E. Analytical modeling for prediction of chip package-level thermal performance. IEEE IITHERM, 2016.
- Liu, T., Lingamneni, S., Palko, J., Asheghi, M., & Goodson, K. E. Optimization of hybrid wick structures for extreme spreading in high performance vapor chambers. IEEE IITHERM, 2016.
- Liu, T., Houshmand, F., Gorle, C., Scholl, S., Lee, H., Won, Y., & Vanhille, K. Full scale simulation of an integrated monolithic heat sink for thermal management of a high power density GaN-SiC chip. ASME InterPACK, 2015.
- Harris, D. M., Liu, T., & Bush, J. W. A low-cost, precise piezoelectric droplet-on-demand generator. *Experiments in Fluids*, 56(4), 1-7, 2015.

AWARDS

- 2016 NSF Graduate Research Fellowship recipient
2016 Best overall poster at the IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (IITHERM)