

Lili Feng

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Education	<ul style="list-style-type: none">➤ University of Illinois at Urbana-Champaign Urbana, Illinois, USA PhD Candidate in Mechanical Engineering (expected graduation: 2017) Advisor: Professor Predrag S. Hrnjak➤ University of Science and Technology of China (USTC) Hefei, Anhui, China B.S. in Thermal Science and Energy Engineering, July 2012
Research Experience	<ul style="list-style-type: none">➤ Heat Pump for Electric Vehicles Feb 2013-Present Climate control for electric vehicles consumes a lot of electric energy stored in the battery, this energy consumption can be even larger than that of the drive train. This project studies the general idea of using a heat pump air conditioning system for electric vehicle climate control, and experimentally investigate performance characteristics of a bench-top system designed based upon a currently commercially available EV heat pump. Also, comparison of direct and indirect systems will be experimentally studied by cooperating with another student.➤ Charge Balancing and Minimization in Reversible Systems Nov 2014-Present In the heat pump for EV project, it is found that different refrigerant charge amount is needed for cooling and heating operations. This project aims to study in detail where is the charge staying in different working modes and different operating conditions, what is the dominant reason for charge imbalance, and how to reduce charge imbalance while maintaining good performance.➤ Microchannel fabrication and microflow experiments Sep 2011-May 2012 Design microchannels and fabricate them via soft lithography using SU-8, SU-8 Developer, and silicone elastomer; conduct micro flow experiments with pure fluid and suspension; study mass transfer and flow phenomena in micro scale.➤ Numerical simulation of a high-heat-flux sensor calibrating system Aug 2011 Build a steady state heat transfer model for the core part of the system, a duel-cavity blackbody, and obtain numerical solutions of the axial temperature and radiation heat flux profiles. Analyze the consequence of the uncertainty of thermal conductivity of graphite.➤ Thermodynamic and transport properties calculating Jul 2011 Write a Fortran program to calculate thermodynamic and transport properties of pure gases and their mixtures on given temperature and composition. The model and database come from the manual of NASA's Chemical Equilibrium with Applications (CEA).
Skills	<ul style="list-style-type: none">➤ EES, Fortran, Mathematica, Matlab, C and C++➤ Office, AutoCAD, Solidworks, Origin, and Fluent➤ Soft lithography of PDMS microchannels➤ Metalworking, woodcrafts
Honors & Awards	<ul style="list-style-type: none">➤ MechSE Department Fellowship Sep 2012➤ Outstanding Award for Undergraduate Research Project Oct 2011➤ National Second Prize in China Undergraduate Mathematical Contest in Modeling Oct 2011➤ Prize of Advanced Individual of Summer Social Practice at USTC Sep 2009
Social Activities	<ul style="list-style-type: none">➤ Students Recruiting Volunteer of USTC Jun 2011➤ Volunteer in Chinese Academy of Sciences Public Science Day May 2011➤ General Secretary of Association of Scientific Exploration of USTC 2010➤ Field survey on science popularization in rural China Feb 2010➤ Field survey on the consequences of Sichuan Great Earthquake on Panda habitat Aug 2008
