Yishu Zhou

Contact Information

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Education

Bachelor of Engineering, Optoelectronic Information Science and Engineering
Huazhong University of Science and Technology, Wuhan, PRC Sept 2013 to present
Overall GPA: 92.00/100 (Rank: 3/345)

Research Experience

Research Intern Jul 2016 to present
Department of Physics, McGill University, Canada Advisor: Prof. Jack Sankey
Project 1: ***Optically defined localization*** *(independent)*
- Analytically calculated and simulated the phononic crystal band structure to find the localization modes.
- Simulated the phononic crystal behaviors under the optical trap.
- Automated the mode imaging system for ultra high vacuum fiber interferometer.
- Data collection for mode imaging.

Project 2: ***Near-field thermal radiation for optomechanics between parallel structures***
- Automated the data collection for near-field thermal radiation based on MEMS and ultra high vacuum fiber interferometer.
- Measured the bolometric damping and antidamping.
- Simulated the mode behaviors of parallel structures.

Research Assistant Dec 2014 to Jun 2016
Wuhan National Laboratory for Optoelectronics, PRC Advisor: Prof. Jun Zhou
Major project: ***Liquid droplet as self-powered temperature and force sensor***
- Found the way to make ITO glass hydrophobic.
- Designed and performed the experiments to test the droplet sensor performance and found the ways to separate temperature and force stimuli sensing by fitting the data.
- Constructed an integral system based on an isolate droplet sensor, an amplifier, a microcontroller unit, and LEDs for application demonstration.

Research Assistant Apr 2015 to Dec 2015
National Engineering Research Center of Laser Processing, PRC Advisor: Prof. Guangzhi Zhu
Project: ***Graphene as saturable absorber for mode-locking lasers***
- Used the split-step Fourier transform to obtain the numerical solution of the Haus Master Equation, which describes the passive mode-locking pulse process.
- Compared graphene and SESAM when they are used as a saturable absorber.

Publications & Manuscripts

1. Liu, K.†, **Zhou, Y.†**, Yuan, F., Mo, X., Yang, P., Chen, Q., Li, J., Ding, T.,and Zhou, J. "Self-powered Multimodal Temperature and Force Sensor Based on a Liquid Droplet" 2016. Accepted by *Angew. Chem.* [**Co-first authors†**, IF = 11.709]
2. Yang, P., Liu, K., Chen, Q., Mo, X., **Zhou, Y.**, Li, S., Feng, G., and Zhou, J. "Wearable Thermocells Based on Gel Electrolytes for the Utilization of Body Heat." *Angew. Chem. Int. Ed.*, 2016, 55, 12050–12053.
3. Liu, K., Ding, T., Mo, X., Chen, Q., Yang, P., Li, J., Xie, W., **Zhou, Y.**, and Zhou, J. "Flexible Microfluidics Generator for Self-powered Systems." 2016. Submitted to *Nano Energy.*

Awards

- National Scholarship *(Three times)* 2014, 2015, 2016
  Top 1% among all undergraduates, awarded by the Ministry of Education of PRC
- Outstanding Student of Huazhong Univ. of Sci. & Tech. 2014-2016
  Top 1% among all 2nd & 3rd year students, one of the top honors for undergraduate
- "Optical System Design" Summer Camp Scholarship Sept 2015
  Awarded by ITMO University, Russia
- Honorable Mention in Mathematical Contest in Modeling Feb 2016

Skills

Programming:	C, Python, Objective C, Matlab, Mathematica (tyro).
Simulation:	COMSOL.
Design:	Altium Designer (Electronics), Zemax (Optics).
Other:	Latex, microcontrollers.