

Cheng Group Progress in 2019

Peer-reviewed Papers:

In 2019, we have **16** peer-reviewed articles published or accepted, including **two** in Science Advances, **two** in Nature Communications, **one** in Light S&A, **one** in Advanced Science.

Fellowships and Awards:

Ji-Xin Cheng: **Ellis R. Lippincott Award**, by OSA, Society for Applied Spectroscopy, Coblentz Society

Jie Hui: **SPIE-Franz Hillenkamp Postdoctoral Fellowship** (2019~2020)

Tiffany Yang-Tran: **UROP** award

Ketan Gupta: **UROP** award

Kostas Mavrikis: **Fulbright Scholar (2019 to 2020)**

Ji-Xin Cheng: **Associate Editor of Science Advances** (from Jan 2020)

New Grants Received:

NSF SBIR, phase 2, Acoustar, subcontract from Vibronix Inc

NIH STTR, phase 2, Photothermal IR, subcontract from Photothermal Spec Corp.

Boston University Ignition Award

Industrial Grant from Daylight Solutions

Career Advancement:

1. Dr Delong Zhang: Faculty at Zhejiang University, starting summer 2019
2. Dr Hyeon Jeong Lee: Faculty at Zhejiang University, starting Sept 2019
3. Dr Max Deng: Joined liquidinstruments, May 2019
4. Dr Junjie Li: Joined Pfizer, Aug 2019
5. Dr Brittani Bungart: graduated as MD PhD, Feb 2019
6. Dr Yeran Bai: graduated as PhD May 2019
7. Dr Lan Lu: graduated as PhD Aug 2019
8. Dr Pu-Ting Dong, graduated as PhD, Dec 2019
9. Dr. Kai-Chih Huang, graduated as PhD, Dec 2019
10. Ms. Yuewei Zhan, graduated as Master of Science, Dec 2019
11. Ms. Xiaojie Li, accomplished visiting scholar, Nov 2019
12. Ms. Minghua Zhege, accomplished visiting scholar, Dec 2019

New Members joined in 2019:

1. Mr. Jiaze Yin (Y1 ECE PhD student)
2. Ms. Hongli Ni (Y1 ECE PhD student)
3. Ms. Xiaowei Ge (Y1 ECE PhD student)
4. Mr. Dashan Dong (visiting PhD student, 2019)
5. Mr. Kostas Mavrikis (University of Crete, Greece)
6. Dr Ziheng Ji (visiting scholar, Sept 2019)
7. Dr Qianjin Guo (visiting scholar, Nov 2019)
8. Dr. Jian Zhao (postdoc, Oct 2019)
9. Ms. Jiabao Xu (visiting PhD student, Oxford University)
10. Mr. Yurun Xie (visiting PhD student Dalian)

Rotation students: Zhongyue Guo (BME), Mengrui Wang (MMCB), Yilin Zhu (MSE)

Full list of publications in 2019

246. Yifan Zhu, Ji-Xin Cheng*, "Transient absorption microscopy: Technological Innovations and Applications in Materials Science and Life Science", J Chem. Phys., Perspective, **accepted**
245. Ying Jiang, Hyeon Jeong Lee, Lu Lan, Hua-an Tseng, Chen Yang, Heng-Ye Man, Xue Han and Ji-Xin Cheng*. "Optoacoustic brain stimulation at sub-millimeter spatial precision", Nature Communications, **accepted**.

244. Joon-Suh Park, Shuyan Zhang, Alan She, Wei Ting Chen, Peng Lin, Kerolos M. A. Yousef, Ji-Xin Cheng, Federico Capasso, "All-glass, large metalens at visible wavelength using deep-ultraviolet projection lithography", Nano Letters, 2019, DOI:10.1021/acs.nanolett.9b03333
243. Leon G. Leanse, Pu-Ting Dong, Xueping S. Goh, Min Lu, Ji-Xin Cheng, David C. Hooper, and Tianhong Dai, "Quinine enhances photo-inactivation of gram-negative bacteria", Journal of Infectious Diseases, online, 2019, September.
242. Delong Zhang, Lu Lan, Yeran Bai, Hassaan Majeed, Mikhail E. Kandel, Gabriel Popescu, Ji-Xin Cheng, "Bond-selective transient phase microscopy via sensing the infrared photothermal effect", Light Sci & Appl, 2019, 8:116.
241. Andy J. Chen, Kai-Chih Huang, Selina Bopp, Robert Summers, Pu-ting Dong, Yimin Huang, Cheng Zong, Dyann Wirth, Ji-Xin Cheng, "Quantitative imaging of intraerythrocytic hemozoin by transient absorption microscopy", Journal of Biomedical Photonics, 2019, 25, 014507. doi: 10.1117/1.JBO.25.1.014507
240. Cheng Zong, Ranjith Premasiri, Haonan Lin, Yimin Huang, Chi Zhang, Chen Yang, Bin Ren, Larry Ziegler, and Ji-Xin Cheng*, "Plasmon-enhanced stimulated Raman scattering microscopy with single molecule sensitivity", Nature Communications, 2019, 10:5318.
239. Hyeon Jeong Lee, Ying Jiang, Ji-Xin Cheng, "Label-free Optical Imaging of Membrane Potential", Current Opinion in Biomedical Engineering, Dec 2019, <https://doi.org/10.1016/j.cobme.2019.11.001>.
238. Xiaojie Li, Delong Zhang, Yeran Bai, Weibiao Wang, Jingqiu Liang, Ji-Xin Cheng, Fingerprinting a Living Cell by Raman Integrated Mid-Infrared Photothermal Microscopy, Analytical Chemistry, 2019, 91, 10750-6.
237. Junjie Li, Peng Lin, Yuying Tan, Ji-Xin Cheng, Volumetric Stimulated Raman Scattering Imaging of Cleared Tissues towards Three-dimensional Chemical Histopathology, Biomedical Optics Express, 2019, 10, 4329-4339.
236. Hyeon Jeong Lee, Kai-Chih Huang, Gaoxiang Mei, Cheng Zong, Natalia Mamaeva, Willem J. DeGrip, Kenneth J. Rothschild, Ji-Xin Cheng*. "Electronic pre-resonance stimulated Raman scattering imaging of microbial rhodopsin towards quantitation of membrane potential", Journal of Physical Chemistry Letters, 2019, 10, 4347-4381.
235. Yi Zhang, Yingchun Cao, Ji-Xin Cheng, A high-resolution photoacoustic endoscope through beam self-cleaning in a graded index fiber, Optics Letters, 2019, 44, 3841-44.
234. Yeran Bai, Delong Zhang, Yimin Huang, Lu Lan, Kerry Maize, Ali Shakouri*, Ji-Xin Cheng*, Ultrafast Chemical Imaging by Widefield Photothermal Sensing of Infrared Absorption, Science Advances, 2019, 5, eaav7127
233. Pu-Ting Dong, Haonan Lin, Kai-Chih Huang, Ji-Xin Cheng*, "Label-free Quantitation of Glycated Hemoglobin in Single Red Blood Cells by Transient Absorption Microscopy and Phasor Analysis", Science Advances, 2019, 5, eaav0561.
232. Pu-Ting Dong, Haroon Mohammad, Jie Hui, Leon G. Leanse, Junjie Li, Lijia Liang, Tianhong Dai, Mohamed N. Seleem*, Ji-Xin Cheng*, "Photolysis of Staphyloxanthin sensitizes methicillin-resistant *Staphylococcus aureus* to reactive oxygen species", Advanced Science, 2019, 1900030.
231. Brittani Bungart, Yingchun Cao, Tiffany Yang-Tran, Shawn Gorsky... Ji-Xin Cheng*, "Cylindrical Illumination with Angular Coupling for Whole-Prostate Photoacoustic Tomography", Biomedical Optics Express, 2019, 10, 1405-1409.