Journal Publications

1. **Shuyan Zhang**, Chi Lok Wong, Shuwen Zeng, Renzhe Bi, Kolvyn Tai, Kishan Dholakia, Malini Olivo, "Metasurfaces for Biomedical Applications: Imaging and Sensing from a Nanophotonics Perspective", *Nanophotonics (Special Issue: Frontiers in Optics & Photonics)*, 10, 259-293 (2020).
2. Xia Yu, **Shuyan Zhang**, Malini Olivo, Nanxi Li, "Micro- and Nano-Fiber Probes for Optical Sensing, Imaging, and Stimulation in Biomedical Applications", *Photonics Research*, 8, 1703 (2020).
3. Joon-Suh. Park, **Shuyan Zhang**, Alan She, Wei Ting Chen, Peng Lin, Kerolos M. A. Yousef, Ji-Xin Cheng, and Federico Capasso, "All-Glass, Large Metalens at Visible Wavelength Using Deep-Ultraviolet Projection Lithography," *Nano Letters*, 19, 8673–8682 (2019).
4. **Shuyan Zhang**, Alexander Soibel, Sam A. Keo, Daniel Wilson, Sir. B. Rafol, David Z. Ting, Alan She, Sarath D. Gunapala, and Federico Capasso, "Solid immersion metalenses for infrared focal plane arrays", *Applied Physics Letters*, 113, 111104 (2018) (Editor's Pick).
5. Alan She, **Shuyan Zhang**, Samuel Shian, David R. Clarke, and Federico Capasso, "Adaptive metalenses with simultaneous electrical control of focal length, astigmatism, and shift", *Science Advances*, 4, eaap9957 (2018).
6. Tapashree Roy*, **Shuyan Zhang***, Il Woong Jung, Mariano Troccoli, Federico Capasso, and Daniel Lopez, "Dynamic metasurface lens based on MEMS Technology", *APL Photonics*, 3, 021302 (2018).
7. Alan She, **Shuyan Zhang**, Samuel Shian, David R. Clarke, and Federico Capasso, "Large area metalenses: design, characterization, and mass manufacturing", *Optics Express*, 26, 2 (2018) (Top Downloads).
8. **Shuyan Zhang***, Myoung-Hwan Kim*, Francesco Aieta, Alan She, Tobias Mansuripur, Ilan Gabay, Mohammadreza Khorasaninejad, David Rousso, Xiaojun Wang, Mariano Troccoli, Nanfang Yu, and Federico Capasso, "High efficiency near diffraction-limited mid-infrared flat lenses based on metasurface reflectarrays", *Optics Express*, 24, 16 (2016).
9. Jura Rensberg*, **Shuyan Zhang***, You Zhou, Alexander S. McLeod, Christian Schwarz, Michael Goldflam, Mengkun Liu, Jochen Kerbusch, Ronny Nawrodt, Shriram Ramanathan, D. N. Basov, Federico Capasso, Carsten Ronning, and Mikhail A. Kats, "Active optical metasurfaces based on defect-engineered phase-transition materials", *Nano Letters*, 16, 1050 (2016).
10. **Shuyan Zhang**, Mikhail A. Kats, Yanjie Cui, You Zhou, Yu Yao, Shriram Ramanathan, and Federico Capasso, "Current-modulated optical properties of vanadium dioxide thin films in the phase transition region", Applied Physics Letters, 22, 211104 (2014).
11. Mikhail A. Kats, Romain Blanchard, **Shuyan Zhang**, Patrice Genevet, Changhyun Ko, Shriram Ramanathan, and Federico Capasso, "Vanadium dioxide as a natural disordered metamaterial: perfect thermal emission and large broadband negative differential thermal emittance", Physical Review X, 3, 41004 (2013).
12. **Shuyan Zhang**, Xia Yu, Ying Zhang, Ping Shum, Yating Zhang, Li Xia, Deming Liu, "Theoretical study of dual-core photonic crystal fibers with metal wire", IEEE Photonics Journal, 4, 4 (2012).
13. Xia Yu, **Shuyan Zhang**, Ying Zhang, Ho-Pui Ho, Ping Shum, Hairong Liu, Deming Liu, "An efficient approach for investigating surface plasmon resonance in asymmetric optical fibers based on birefringence analysis", Optics Express, 18, 17 (2010).

*joint first authors

Conference Publications

1. Joon-Suh Park, **Shuyan Zhang**, et al., "Large-area, single material metalens in the visible: An approach for mass-production using conventional semiconductor manufacturing techniques," oral presentation, *CLEO Conference* (2019).
2. Alexander Soibel, **Shuyan Zhang**, et al. “Flat optical concentrators for mid-wavelength infrared spectral range”, oral presentation, *SPIE Photonics West* (2018).
3. Alan She, **Shuyan Zhang**, et al., “Large area electrically tunable metasurface lenses”, oral presentation, *CLEO Conference* (2017).
4. **Shuyan Zhang***, Myoung-Hwan Kim*, et al., “High efficiency near diffraction-limited mid-infrared flat lenses based on metasurface reflectarrays”, oral presentation, *CLEO Conference* (2016).
5. Tapashree Roy, **Shuyan Zhang**, et al., “Electromechanical control of flat optical devices”, oral presentation, *APS Meeting* (2016).
6. **Shuyan Zhang***, Jura Rensberg*, et al., “Tunable metasurfaces based on selective modification of phase change materials”, oral presentation, *MRS Fall Meeting & Exhibit* (2015).
7. **Shuyan Zhang**, et al. “Dynamic tuning of refractive index profile over phase change regions of vanadium dioxide thin films”, oral presentation, *SPIE Photonics West* (2015).

Patents

1. **Shuyan Zhang**, Renzhe Bi, and Malini Olivo, “Biomaterial-based tunable and non-tunable metasurface devices”, A*STAR, National Phase Entry of International Application No. PCT/SG2019/050407, US Patent Application No. 17/269,179 (2019).
2. Alan She, **Shuyan Zhang**, and Federico Capasso, “Optical devices including rotary variable optical elements”, Harvard University, International Application No. PCT/US18/14539 (2018).
3. Alan She, **Shuyan Zhang**, and Federico Capasso, “Highly efficient data representation of dense polygonal structures”, Harvard University, U.S. Application No. 16/040,363 (2018).
4. Alan She, **Shuyan Zhang**, and Federico Capasso, “Substrate-formed metasurface devices”, Harvard University, U.S. Application No. 16/040,488 (2018).
5. Alan She, **Shuyan Zhang**, Samuel Shian, David R. Clarke, and Federico Capasso, “Electrically-stretchable planar optical elements using dielectric elastomer actuators”, Harvard University, International Application No. PCT/US17/368970 (2017).