

Multi-channel and Crosstalk-Free Holographic Projection by a Spin and Angle Co-multiplexed Metahologram

Huazhong University of Science and Technology, China

Cheng Zhang

Email: cheng.zhang@hust.edu.cn

Metaholograms exhibit unique advantages in imaging quality, information capacity, field of view, and operational efficiency over conventional holograms, and therefore, are considered as a promising technology for the next-generation display. In this talk, I will present a new type of waveguide-based six-channel metaholograms multiplexed by the spin and azimuthal angle of an incident guided light. Six target images are encoded in the evanescent region of the metahologram's k -space, and they can be respectively displayed utilizing k -space translation strategy under guided light illumination with selected spin and azimuthal angle. Leveraging this strategy, we further demonstrate three-channel polarization-independent metaholograms and two-channel full-color metaholograms.



Short Bio:

Cheng Zhang obtained his B.S. degree in Electrical Science and Technology from Shandong University in 2010, and Ph.D. degree in Electrical Engineering from the University of Michigan-Ann Arbor in 2016. He is currently a professor at Huazhong University of Science and Technology, where he leads a research team working on cutting-edge projects aimed at the exploitation of nanophotonic materials, devices and fabrication techniques for novel imaging, displaying, and sensing applications.

