



## 复旦大学物理系 物质科学报告

Time: 2:00pm, Tuesday, 2019.4.23

Location: Room C108, Jiangwan Physics Building

# Complex Optical Fields: Recent Advances and Future Perspectives

Qiwen Zhan

University of Shanghai for Science and Technology

Driven by their potential applications, complex optical fields with spatially tailored amplitude, phase and polarization within the cross section have drawn significant attention recently. In this talk I will review some of the latest development of this rapidly growing field of optics and offer a general overview of the current status of this field in a few areas. Particularly a time-reversal methodology for the creation of a wide variety of exotic optical focal fields with prescribed characteristics within the focal volume will be presented. Recently developed methods for the generation of complex optical fields that utilize a vectorial optical field generator, fiber lasers, and metasurfaces are summarized. I will also present the interactions of these complex optical fields with various micro- and nano- structures and discuss their perspective applications.



Dr. Qiwen Zhan is Distinguished Professor of Nanophotonics at the University of Shanghai for Science and Technology, Professor in Electro-Optics and Photonics, and Electrical & Computer Engineering at the University of Dayton. He received BS in Physics (optoelectronic) from the University of Science and Technology of China in 1996 and Ph.D. in Electrical Engineering from the University of Minnesota in 2002. He has published 1 book, 9 book chapters, more than 150 journal and conference publications, delivered many conference presentations and invited talks/lectures/seminars, and possessed 6 US patents/patent applications. Dr. Zhan is an Associate Editor for *Optica*, an Editorial Board Member for *Scientific Reports* (Nature Publishing Group), *Journal of Nondestructive Evaluation* (Springer-Nature), and elected Fellow of the OSA and Fellow of the SPIE.

