



High Resolution Optical Imaging Enabled by Field Engineering



Professor SHI Kebin

Institute of Modern Optics, School of Physics, Peking University

National Biomedical Imaging Center (affiliated), Peking University

Date : 27 May 2025 (Tuesday)
Time : 10:00 am
Venue : Room 1122, William M W Mong Engineering Building, CUHK

Abstract

Optical imaging plays a pivotal role in modern physics and engineering. Its unique ability to achieve high resolution in both temporal and spatial domains renders optical imaging technologies indispensable across diverse interdisciplinary research fields. Numerous advanced imaging techniques have been developed through the integration of fundamental optical physics principles and engineering innovations. In this presentation, recent advancements including three-dimensional super-resolution fluorescence microscopy and label-free optical tomographic microscopy will be discussed, along with their applications in live-cell imaging.

Biography

Dr. Kebin Shi received his Bachelor's and Master's degree from Nankai University in 1998 and 2001 respectively. He received his Ph.D degree in Electrical Engineering at the Pennsylvania State University in 2007. Dr. Shi joined faculty members in the Institute of Modern Optics at Peking University in May 2011. His research focuses on developing novel photonic systems and devices based on ultrafast/nonlinear optical principles for spectroscopy, imaging and applications. His recent research interests include super-resolution imaging, nonlinear holography and femto-second frequency comb metrology. He currently serves as a co-chair of conference committee for Ultrafast Imaging and Spectroscopy Conference at SPIE Optics + Photonics annual meeting. In 2013, Dr. Shi was awarded "National Natural Science Funds for Excellent Young Scholar" by National Natural Science Foundation of China (NNSFC). He has authored or coauthored more than 100 refereed journal papers with over 3000 citations (h-index: 30), and has delivered over 50 invited talks/seminars in international or domestic conferences/universities. His scientific achievements also include 19 granted patents.

*** ALL ARE WELCOME ***

For enquiries, please contact Ms. Joyce Chan, Department of Biomedical Engineering at 3943 8278