



## Seminar

### Novel Photonics Technologies for Biomedical Applications

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**Time: 4:00pm, May. 21, 2013 (Tuesday)**

**时间: 2013年5月21日 (周二) 下午4:00**

**Venue: Room 607, Science Building 5**

**地点: 理科五号楼607会议室**

#### Abstract

Biophotonics has emerged in recent years as a multidisciplinary research field that is leading to revolutionary advances in biomedical sciences and clinical applications. I will present an overview of several research projects being performed in my group. First, I will talk about the development of a novel two-photon optical fiber fluorescence (TPOFF) probe and discuss its applications for *in vivo* biosensing, such as real-time monitoring nanoparticle-based drug delivery in a live mouse model. I will then talk about ultrafast laser interactions with nanoparticle targeted cancer cells. Lastly, time permitting; I shall briefly cover several other exciting projects, including whole-spectrum fluorescence detection of biomarkers using supercontinuum excitation, photonic crystal biosensors for label-free bioassays, novel optoacoustic sensors for high frequency ultrasound detection, and the development of two-photon *in vivo* flow cytometry.

#### About the Speaker

Dr. Jing Yong Ye is an associate professor in the Department of Biomedical Engineering at University of Texas, San Antonio. The primary focus of his research is to develop cutting-edge ultrasensitive and ultrafast laser-based technologies to address critical issues at the frontiers of biomedical research and applications. He has led multiple exciting research programs including *in vivo* fiber-optic biosensing and imaging of a multifunctional nano-device for targeted cancer drug delivery, photonic crystal biomolecular assays, ultrafast laser interaction with nanoparticle-targeted cancer cells, development of a novel optoacoustic sensor for high-frequency photoacoustic imaging, *in vivo* two-photon flow cytometry, adaptive optical aberration correction in multiphoton scanning microscopy, and single-molecule fluorescence imaging and spectroscopy. He has published 78 refereed articles, over 120 conference papers, and two book chapters, and holds 11 patents. He serves as a reviewer for funding agencies including NIH, NSF, Petroleum Research Fund, United States-Israel Binational Science Foundation, the James & Esther King Biomedical Research Program and the Bankhead-Coley Cancer Research Program. He also serves as a reviewer for 17 scientific journals. He was elected as the president for the OSA Ann Arbor Chapter for 2008-2009 and is a senior member of IEEE since 2002. In addition, he is passionate about bringing lab innovation to industry. He is a co-founder of Photon Affinity LLC and has served as a professional consultant for five companies.