Department of Biomedical Sciences

presents a seminar

"Advanced Near-Infrared In Vivo Imaging: Seeing is Believing"

Dr. Qiangbin Wang
Suzhou Institute of Nano-Tech and Nano-Bionics,
Chinese Academy of Sciences

Date : 4 August 2017
Time: 11:00am to 12:30pm
Venue: Meeting Room 2-130, 1/F, Block 2, To Yuen Building

Abstract

Fluorescent imaging in the second near-infrared window (NIR-II, 1.0~1.4 μm) is appealing due to minimal autofluorescence and negligible tissue scattering in this region, affording maximal penetration depth for deep tissue imaging with high feature fidelity. Herein, for the first time, we reported a new type of NIR-II QDs-Ag2S QDs and executed a series of in vivo imaging studies by using Ag2S QDs. The results show that, by using Ag2S QDs, the tissue penetration length can reach 1.5 cm, and the spatial and temproal resolution of the in vivo imaging can down to 25 μm and 50 ms, respectively, which are improved several to dozens of times in comparison with those using conventional fluorescence nanoprobes in the visiable and the first near-infrared window (650-900 nm). With the advanced NIR-II fluorescence of Ag2S QDs, high signal to noise ratio imaging of tumor growth and angiogenesis, imaging-guided targeting drug-delivery and therapeutics, imaging-guided precision surgery of glioma, as well as stem cell tracking and regeneration in vivo, etc, have been achieved.

About the Speaker

Qiangbin Wang received his B.S. and Master degree in Chemistry from Petroleum University of China in 1996 and 1999, respectively. He got his Ph.D. in Material Sciences from East China University of Science and Technology in 2002, and then joined Shanghai Jiaotong University as a Research Associate. From 2004 to 2008, he worked as a Postdoctoral Associate and an Assistant Research Professor at Arizona State University. In July of 2008, he joined the faculty in Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences. He is currently Professor in the Division of Nanobiomedicine at SINANO. He is Distinguished Professor at Shanghai Tech University, and Guest Professor at University of Chinese Academy of Sciences.
He is the director of the Key Laboratory of Nano-Bio Interface, Chinese Academy of Sciences, and the recipient of National Science Fund for Distinguished Young Scholars of China, Japanese Chemical Society for Distinguished Lectureship Award. His main research interest is in the area of novel optical properties and their applications in biomedicine.

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All are welcome!