

School of Materials Science and Engineering



**Seminar Topic:
Responsive Organic Nanoparticles for Selective Bioimaging and Therapy**

Professor Zhao Yanli

Abstract

Responsive systems have recently gained enormous attention in the areas of bioimaging and drug delivery due to their ability to release biologically active molecules with spatial and temporal control through regulated stimuli. We have developed several responsive multifunctional nanoparticles for targeted bioimaging and controlled drug delivery in disease therapy. The responsive nanoparticle-based systems can generally perform several important roles: (1) nanocarriers for drug delivery, (2) phototriggers for drug release, (3) fluorescent chromophores for cell imaging, and (4) photo-switchable fluorophores for real-time monitoring of drug release. These responsive therapeutic nanosystems can simultaneously target diseased cells, enable the location to be imaged by optical methods and release therapeutic drugs to the diseased cells by command. The responsive bioimaging and drug delivery strategy developed by us can be applied to existing drugs or experimental compounds which will benefit from longer circulation time or better targeting, which paves the way for developing next-generation therapeutics.

Biography

Dr Zhao Yanli is currently a Professor at the School of Physical and Mathematical Sciences (SPMS) and School of Materials Science and Engineering (MSE) at Nanyang Technological University, Singapore. He is currently the Assistant Chair (Faculty) in SPMS. Dr Zhao received his BSc and PhD degrees in Chemistry from Nankai University, conducted his postdoctoral research with Professor Sir Fraser Stoddart at the University of California, Los Angeles and subsequently at Northwestern University. He joined NTU as a Nanyang Assistant Professor in 2010.

His research focuses on the development of integrated systems for diagnostics and therapeutics, as well as porous materials for energy storage and catalysis. He has received several awards, including the Singapore National Research Foundation Investigatorship, ACS Applied Materials & Interfaces Young Investigator Award, Asian and Oceanian Photochemistry Association Prize for Young Scientists, TR35@Singapore Award and the Singapore National Research Foundation Fellowship. In addition, he is an Associate Editor of ACS Applied Nano Materials. He also serves as an Editorial Board Member of Communications Chemistry, Scientific Reports and ChemNanoMat.

**Wednesday, 26 September 2018 || Time: 2:00 pm – 3:00 pm
Venue: MSE Meeting Room (N4.1-01-28)
Hosted by: Nanyang Assistant Professor Matteo Seita**