



香港城市大學
City University of Hong Kong

25 years since university inauguration

City University Distinguished Lecture Series

Speaker

Professor Dongyuan Zhao

*Professor (Cheung Kong and Hao-Qing Professorship)
Department of Chemistry, Fudan University*



Oriented Assembly of Functional Mesoporous Materials with Multi-Level Architectures

on
Thursday, 2 May 2019 at 4:30 pm

at
C Y Sun Lecture Theatre (Lecture Theatre 3)
4/F Yeung Kin Man Academic Building
City University of Hong Kong
Tat Chee Avenue, Kowloon

Abstract

Functional mesoporous materials with multi-level architectures possess both unique properties of high surface area, large pore channels and volume based on mesostructures, and abundant optical, electrical, magnetic properties based on inorganic nanomaterials, showing great potential applications on catalysis, adsorption, separation, biomedicines and so on. Here we present the development and progress for the synthesis of the spherical functional mesoporous nanoparticles from novel “oriented assembly” strategy by interfacial control. A series of new synthesis approaches have been developed based on the oriented assembly strategy in my group, including the confined micro-emulsion self-assembly, liquid-liquid bi-phase synthesis, evaporation-driven oriented/aggregation assembly, anisotropic growth of mesoporous, and interface driven orientation arrangement, etc. Novel mesoporous nanospheres with one-level and multi-level architectures can be well synthesized, such as core-shell, yolk-shell, multi-shell, film structures for silica, TiO₂, carbon spheres, 3D mesoporous bouquet-posy-like TiO₂ multi-level superstructures and asymmetric Janus, single-hole hollow, nano-thermometer, hemispheres structures etc. The obtained functional mesoporous nanospheres with regularly multi-level architectures possess uniform and controllable mesopore channels, high surface area, large pore volume and open frameworks, showing great potential applications on catalysis, adsorption & separation, biomedicines and energy conversion and storage.

Biography

Professor Dongyuan Zhao was born in Northeastern of China. He received B.S. (1984), M.S. (1987) and PhD (1990) from Jilin University. He was a post-doctoral fellow in University of Houston (1995–96), University of California at Santa Barbara (1996–98). He is currently the Professor (Cheung Kong and Hao-Qing Professorship) in the Department of Chemistry at Fudan University. He was a member of Chinese Academy of Sciences and The World Academy of Science (TWAS), Council Member of IZA, President of International Mesoporous Materials Association (IMMA). He has received many awards such as Khwarizmi International Award (KIA) (2019); JCIS Darsh Wasan Award (2018); Chemistry Contribution Award, China Chemical Society (2018); TWAS Lenovo Science Prize (2016); CNR Rao Award from India Chemical Research Society (2013); Muetterties Memory Award (2012); The Ho Leung Ho Lee Award (2009), TWAS Prize (2008); IMMS Award (2008); DuPont Award (2005). Currently, he is appointed as senior Editor of *ACS Central Science*; he is the Editor-in-Chief of *Journal of Materials Chemistry*, and co-editor of *Journal of Colloid and Interface Science*. He published more than 600 peer-review papers, 40 patents and is listed as one of highly cited researchers ISI in both Chemistry and Materials Science fields (Total citation ~ 96,000, h index 150). His research interests mainly include designed synthesis, assembly, structure and application of ordered mesoporous materials.

Online registration:
<https://www.cityu.edu.hk/vprt/dls-registration>

Enquiries:
Office of the Vice-President
(Research and Technology)
Tel: 3442 9049
Fax: 3442 0322
Email: vprrtdl@cityu.edu.hk

