



## Prof. Nanfeng Zheng

iChEM, PCOSS, Department of Chemistry  
Xiamen University, Xiamen, China

### Surface Coordination Chemistry of Nanomaterials

May 3 | Bldg. 101  
Thu 10:00 | Seminar Room on the 1<sup>st</sup> floor

**Abstract:** The surface and interface structures of nanomaterials play crucial roles in determining their chemical properties. However, it remains challenging to characterize and precisely control the surface and interfacial structures of nanomaterials. In this presentation, I will discuss how the surface coordination chemistry controls the properties of metal nanomaterials at the molecular. The mechanism on how small ligands help to control the surface structure and thus catalysis of metal nanocrystals will be discussed. Some examples will also be given toward understanding the significant steric and electronic effects of surface ligands on promoting the catalysis of metal nanomaterials, particularly their catalytic selectivity. Finally, synthetic strategies to create model catalysts for understanding the support effects will be presented.

#### Reference:

- [1] P. Liu, R. Qin, *et al.*, *J. Am. Chem. Soc.* 139, 2122 (2017).
- [2] X. Huang, S. Tang, *et al.*, *Nat. Nanotech.* 6, 28 (2011).
- [3] G. Chen, C. Xu, *et al.*, *Nat. Mater.* 15, 564 (2016).
- [4] X. Zhao, L. Zhou, *et al.*, *Chem*, 4, doi: 10.1016/j.chempr.2018.02.011 (2018).
- [4] P. Liu, Y. Zhao, *et al.*, *Science* 352, 797 (2016).
- [5] G. Chen, Y. Zhao, *et al.*, *Science*, 344, 495 (2014).

Prof. Nanfeng Zheng received his B.S. from Xiamen Univ. in 1998. In 2005, he obtained his Ph.D. degree from Univ. of California-Riverside. During 2005-2007, he did his postdoc training at Univ. of California-Santa Barbara. In 2007, he moved to Xiamen Univ. as a full professor. He is currently a Changjiang Chair Professor at Xiamen Univ. His research interests focus on the development of advanced functional materials for both fundamental research and practical applications, particularly in the fields of catalysis, energy, environmental science and biology. He is co-author of >140 papers, including 3 in *Science*, 8 in *Nature* and *Nature* series journals, 50 in *JACS* / *Angew. Chem.* / *Adv. Mater.*, with >12000 citations. He has received a number of awards including Distinguished Young Investigator Award from NSF-China, Chinese National Young Scientist Award. He is currently editorial board member of journals including *ACS Cent. Sci.*, *Nano Res.*, *ACS Sustainable Chem. & Eng.*, *Adv. Mater. Interfaces*, *Sci. China-Chem.*

**You are cordially invited to attend!**

Special Guest Seminar