



The Chinese University of Hong Kong
Department of Chemistry
Research Seminar Series

- Speaker:** Professor Peng Yang
 School of Chemistry and Chemical Engineering
 Shaanxi Normal University
- Title:** Amyloid-Inspired Protein Assembly and Interfacial Materials
- Date:** January 22, 2019 (Tuesday)
- Time:** 3:00 p.m.
- Venue:** L3, Science Centre

< Abstract >

The development of versatile materials and engineering devices requires multifunctional conformal coatings that gains increasing interests. However, few methods can achieve a stable, large-area and colorless coating on substrates with different structure, composition and shapes. We report the one-step aqueous coating of virtually arbitrary material surfaces using self-assembled macroscopic bionanofilm made by pure lysozyme. The unfolding and subsequent phase transition of commercially available lysozyme initiates the spontaneous formation of amyloid-like nanofilm at a vapor/liquid or liquid/solid interface with a macro-scale size (e.g. 20 inches) and shape in a few minutes. The attachment of the nanofilm onto various surfaces could be accordingly achieved by the amyloid-mediated adhesion. In this talk, our newest understanding on the assembly and adhesion mechanism for such a new biomaterial would be addressed including the first example on macromolecular mesocrystals and novel amyloid-like biomaterials with excellent biocompatibility and multi-functions towards biointerface, micro/nano-fabrication and so on [1-5].

References:

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4. F. Tao, Q. Han, K. Liu, P. Yang*, *Angew. Chem. Int. Ed.* **2017**, 56, 13440.
5. C. Yue, H. Sun, W.-J. Liu, B. Guan, X. Deng, X. Zhang, P. Yang*, *Angew. Chem. Int. Ed.* **2017**, 56, 9331-9335.
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Prof. Peng Yang obtained his Ph.D degree at Beijing University of Chemical Technology (BUCT) in 2006 under the supervision of Prof. Wantai Yang. After that, he finished his postdoctoral study in Max-Planck-Institute of Colloids and Interfaces, Duke University, and University of Tokyo. In 2012, he joined School of Chemistry and Chemical Engineering at Shaanxi Normal University as a Professor of Physical Chemistry and Polymer. His research interests include functional surfaces and interfaces, protein assembly, interfacial materials and green techniques for metal recovery from ore and waste. Prof. Yang is currently an Editorial Board member for *Advanced Composites and Hybrid Materials* (Springer) and Guest Editor for *Colloids and Interface Science Communications* (Elsevier).