CBC SEMINAR ANNOUNCEMENT

Professor Pengju Pan
Zhejiang University, China
Stereocomplex Crystallization of Polymers: From Crystallization Mechanism to High-performance Materials

Stereocomplex crystallization of enantiopure polymers is a special cocrystallization manner of macromolecules. Due to the unique crystalline structure, the stereocomplexed materials have many merits such as the high melting point, thermal resistance, crystallizability, better mechanical properties and hydrolytic resistance compared to the homocrystalline materials. However, stereocomplex crystallization usually competes with the homocrystallization in the crystallization process; this impacts the preparation of stereocomplexed materials with high performance. Furthermore, it is still challenge to use the stereocomplex crystallization to construct the functional polymer materials. In this talk, we select poly(lactic acid) as a representative stereocomplexed polymer and introduce the crystallization mechanism, structural evolution and phase transition in the stereocomplex crystallization. Furthermore, the use of stereocomplex crystallization to control the microstructure and physical property of polymer micelles, hydrogels, and elastomers will be also presented.

References:
2) Xie, Q.; Bao, J. N.; Shan, G. R.; Bao, Y. Z.; Pan, P. J. Macromolecules 2019, 52, 4655-4665.
3) Zhou, J.; Cao, H. Q.; Chang, R. X.; Shan, G. R.; Bao, Y. Z.; Pan, P. J. ACS Macro Lett. 2018, 7, 233-238.

Biography
Pengju Pan is a professor in College of Chemical and Biological Engineering, Zhejiang University. He received his Ph.D. from Tokyo Institute of Technology in 2009 and then worked as a postdoctoral researcher at the Bioengineering Laboratory of RIKEN, Japan. In 2011, he started a faculty position in the College of Chemical and Biological Engineering, Zhejiang University. He has received the National Science Fund for Excellent Young Scholars, China. His research interests include the crystallization and condensed matter structure of polymers, with a focus on the polymorphic, stereocomplex crystallizations of polymers, hierarchically assembled structures and properties of crystallizable polymers.