

Preface

Physical organic chemistry, an essential field of organic chemistry, employs physical methods to address questions in organic chemistry. It aims at disclosing the underlying principles behind the experimental observations and consequently guiding the design and synthesis of novel compounds as well as predicting new chemical phenomena. Classical physical organic chemistry focuses mainly on elucidating the structure-property relationship of organic compounds, as well as the mechanistic aspects of organic reactions. It played an important role in the development of organic chemistry toward a science with systematic theories other than simple collections of experimental phenomenon and chemical techniques. With the rapid development of physical chemistry techniques and computational chemistry in the new century, physical organic chemistry is playing increasingly important roles in several emerging fields such as homogeneous catalysis, organic luminescent chemistry, supramolecular chemistry, biophysical organic chemistry and organic materials.

Physical organic chemistry has accomplished enduring achievements in the history of science developments in China rather than being a newly born field. Scientists of the early generation such as Professors Zhenheng Gao, Youcheng Liu, and Xikui Jiang, pioneered physical organic chemistry researches in China and cultivated several generations of new professionals in this area. With limited supports, they made many significant scientific achievements that attracted international attention in areas such as free radical chemistry and hydrophobic-lipophilic interactions (HLI) driven aggregation. Now, physical organic chemistry in China is growing more prosperously. The community is composed of a competitive league of talents who have been making great advances in many areas such as structure-activity relationship, organic photo-chemistry, biophysical organic chemistry and computational organic chemistry. By using the insightful mechanistic understandings of new reactions, chemists in China have been very successful in designing, discovering and optimizing new reactions and catalysts.

Under the above-mentioned background, “The 9th Na-

tional Symposium of Physical Organic Chemistry”, hosted by the Chinese Chemical Society, was held in Peking University Shenzhen Graduate School from Dec. 3rd to Dec. 4th, 2011. The support of the National Natural Science Foundation of China (NSFC), the participation of active chemists, and the efforts of the local organizer made the symposium a great success. This excellent symposium attracted numerous scholars from more than 40 institutions in China. The participants included three academicians, Chen-Ho Tung, Jinpei Cheng, and Yun-Dong Wu, and more than 20 awardees of Distinguished Young Scholars of the NSFC, as well as leaders in their respective fields of the physical organic chemistry in China. The symposium, chaired by Professor Yun-Dong Wu, consists of 5 plenary lectures, 17 invited lectures, 17 oral lectures (including 2 presentations by students), and 51 posters. These lectures and posters stimulated intensive discussions, leading to many new insights and ideas about how to develop physical organic chemistry further in China.

Here, we invited some of the excellent researches presented at the symposium to showcase the research frontiers and progress in physical organic chemistry, hoping to illustrate the significance and impacts of these researches to chemistry and other disciplines. Furthermore, it is our hope that these achievements we show here and the efforts of all other physical organic chemists will inspire and fuel the development of chemistry in China. With the support of readers, we believe that physical organic chemistry will remain vibrant in the future.

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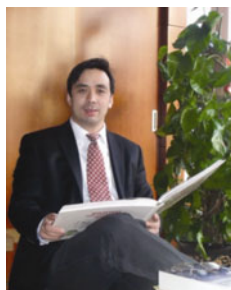
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Yun-Dong Wu was born in 1957 in Liyang, Jiangsu Province. He received his BS degree in 1982 from Lanzhou University, obtained his PhD degree in 1986 from the University of Pittsburg (USA), and completed postdoctoral training at the University of California, Los Angeles before joining the chemistry faculty at the Hong Kong University of Science and Technology (HKUST) in 1992. He was elected a member of the Chinese Academy of Sciences in 2005. In 2010, He moved to Peking University. Yun-Dong Wu's research interests cover computational chemistry, physical organic chemistry, biochemistry, advanced materials and drug design. His recent works focus on reaction mechanism, force-field development, peptides/proteins structures, protein-protein interactions, and peptides-derived drug discovery and Alzheimer's diseases.



Zhi-Xiang Yu was born in Ezhou, Hubei Province in 1969. He obtained his BS degree from Wuhan University (1991), MS degree from Peking University (1997), and PhD degree from Hong Kong University of Science & Technology (2001). After three-year postdoctoral study at the University of California, Los Angeles (2001–2004), he joined Peking University as an associate professor and was promoted to a full professor in 2008. His main research interests are to apply computational organic chemistry and synthetic organic chemistry to study reaction mechanisms, develop new reactions and catalysts, and synthesize natural and non-natural products. In 2008, he received the Thieme Synlett/Synthesis Journal Award, the Young Chemist Award from the Chinese Chemical Society & the Royal Society of Chemistry, the Asian Core Program Lectureship Award of the Asian Cutting-Edge Organic Chemistry programs. He was one of winners for the National Science Fund for Distinguished Young Scholars of China in 2008. In 2011, he won the Chinese Chemical Society-SciFinder Award for Creative Work in Synthetic Organic Chemistry, and the Chinese Chemical Society-BASF Award.



Lei Liu was born in 1977 in Chuzhou city of Anhui Province. He obtained his BS degree from University of Science and Technology of China in 1999. In 2004 he obtained his PhD degree from the Chemistry Department of Columbia University. From 2004 to 2007 he was employed as a postdoctoral researcher at Scripps Research Institute. He joined Tsinghua University in 2007. His current research focuses on protein chemical synthesis and its applications.