

Supramolecular Chemistry Based on Anionic Species: Anion Recognition and Sensing

Editorial

Supramolecular chemistry---the branch of chemistry involved with the control of intermolecular interactions to produce valuable new devices and molecular assemblies--- has been a major research theme for the past four decades. Especially, anionic species based supramolecular chemistry, including recognition and sensing of anions, has emerged rapid growth recently. Arising from the important roles the anionic species play in biological and environmental fields, there is great current interest in developing molecular receptors to selectively recognize and sense them.

In this special issue, the recent progress referring to anion recognition and sensing has been summarized by different experts in the field. It is well-known that development of novel and efficient artificial receptors is the central task for anion recognition and sensing. Compared with other hydrogen-bond donor groups, indole NH was relatively less studied as recognition unit of anion receptors. Thus, the first review by Dr. Bao summarizes the progress on synthetic anion receptors containing indole group from 2008 to date. Furthermore, the second review by Prof. Lin introduces their recent results about colorimetric sensing of biologically important acetate ion based on indole derivation. On the other hand, the development of fluororeceptors capable of selective sensing of anionic species has aroused great interest in supramolecular chemistry. Fluororeceptors are attractive due to the simplicity and high detection limit of fluorescence. In this case, the third review by Prof. Ghosh presents their excellent recent work on selective sensing of fumarate over maleate by benzimidazolium – based fluororeceptors. Prof. Goswami reports in the fourth review article that metal coordinated urea based fluorescent receptors for anion recognition. In the final review article, also Prof. Lin presents their recent work on selective sensing of F⁻ based on 2,4-dinitrophenylhydrazine and 1,10-phenanthroline conjugated colorimetric receptor. In summary, I hope this special issue will provide a good impact on readers with an overview of supramolecular chemistry based on anionic species, especially of anion recognition and sensing.

Finally, as a guest editor for this special issue, I am very grateful for the valuable and excellent contributions from my colleagues and I am also highly appreciative of all the referees for their expert comments on the papers, despite their tight schedules and for their precious time. My sincere thanks are attributed to the editors of MROC for giving me the chance to organize this special issue on this exciting topic. I hope that the readers will enjoy reading the complete issue.

Dr. Wei-tao Gong

State Key Laboratory of Fine Chemicals
School of Chemical Engineering
Dalian University of Technology
P.O. Box 43, 158 Zhongshan Road,
Dalian, 116012, P.R.China
Tel/Fax: +86-411-39893609
E-mail: wtgong@dlut.edu.cn