[Preface]

doi: 10.3866/PKU.WHXB201803211

www.whxb.pku.edu.cn

Green Chemistry

HAN Buxing

Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, P. R. China.

Email: hanbx@iccas.ac.cn

Most manufactured products involve one or more chemical processes. Chemical industry provides us with numerous basic chemicals, materials, and energy products. It is well known that chemistry has made great contribution to the civilization of humankind, and will be more important in the future. However, many traditional chemical processes produce large amount of waste and pollute environment. Sustainable development of chemical industry is extremely important for our society and is a great challenge.

Green chemistry, which can be defined as the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances, has received extensive attention from academia, industry and government over past twenty-five years. Green chemistry involves design and utilization of non-toxic and renewable green feedstocks, high atom economy synthetic methods, green solvents, green catalysts, and green chemical processes to produce environment-friendly products, and the processes should be economically viable.

China has more than 1.3 billion population, and is shortage of resource, and environment needs to be improved. Thus, it is particularly important for China to develop green chemistry and green technology and to realize highly efficient clean production. China became very interested in green chemistry not long after the concept was proposed. Chinese academic communities, industry, and government all paid great attention

to this important field. Many leading chemists, engineers, and industrialists are working on this, and significant progress has been made.

Green chemistry is an interdisciplinary field. Many challenging problems to be solved belong or related to physical chemistry. Many researchers in China are working in the interdisciplinary area of physical chemistry and green chemistry, and are achieving continuously. This special issue includes some of the recent interesting results on this topic by Chinese researchers, which includes properties and application of green solvents, green catalysis, transformation of CO₂ conversion to value-added chemicals, *etc.* It contains 14 papers including review papers and research articles. Obviously, this collection is only a portion of recent achievement in this exciting area in China.

Green chemistry is rapidly developing field. It is the way to sustainable development of chemical industry. However, this field is still very young and we face many related challenging scientific and technological issues. I am confident that green chemistry has a very bright future, and it will make great contribution to sustainable development of our society. I hope that this special issue will be helpful to the practitioners working in this field and inspire more researches on green chemistry.

Finally, I would like to thank the authors, referees, and Editorial Office for their contribution and support for this special issue.