Preface

As a kind of molecular materials that have infinite metal-ligand backbones connected by coordination bonds, owing to the diversity of organic bridging ligands and flexibility of metal ions and organic bridging ligands in coordination bonding and geometry, coordination polymers can be expected to have versatile structures and properties. Though the term “coordination polymer” first appeared in the 1960s, the investigation in this field was not active until two decades ago. Since 1990, chemists gradually discovered many interesting coordination polymers with novel structures, especially porous coordination polymers (PCPs) and their structure-based properties. Coordination polymers have then been emerging as a topical research field in crystal engineering, solid-state chemistry, and materials science. With the structural diversity of polymeric arrays from one to three dimensions, this new kind of molecular materials have now been found to have excellent potentials in adsorptive, molecular separation/exchange, catalytic, electronic, magnetic, and optical applications. Consequently, the research is developing at an extraordinary pace, with an exponential growth in the number of research papers and reviews appearing in the literature (Figure 1). It is noteworthy that the term metal-organic frameworks (MOFs) are very popularly used to describe both porous and nonporous coordination polymers.

Figure 1 Number of publications in the Web of Science Database from 1990 through 2010 with “coordination polymer” and “metal-organic frameworks” as topic. Color code: Blue bar for publications from worldwide while red bar for publications from China

According to our search through Web of Science by using the keywords of coordination polymer and metal-organic framework, publications from Chinese researchers had appeared soon after 1990, and the number becomes top one in the world after 2001! Many Chinese research groups have focused on the hot topics in coordination polymer chemistry, ranging from the fundamental issue of rational assembly to all aspects of potential applications mentioned above. Along with the increased number of publications, the quality of publications from China have also been enhanced in the last decade, as more and more papers were published in the top journals including *Nature Chemistry*, *Journal of American Chemical Society*, *Angewandte Chemie*, *Accounts of Chemical Research*, *Chemical Society Reviews*, and *Chemical Reviews*, etc. Also, more Chinese speakers had been invited to give invited, keynote, and plenary reports at well-known international conferences. In our opinion, China has become a very influential country in this particular research field. This fact might be attributed mainly to the financial support firstly from the National Natural Science Foundation, then the Ministry of Science and Technology of the People’s Republic of China, as well as other resources, and the most important, the very hardworking of Chinese scientists.

This special topic of *Science China Chemistry* illustrates the recent progress in the exciting and rapidly growing field of coordination polymer chemistry. We are pleased to invite a number of Chinese scientists specializing in these topics to contribute review papers or research articles. Obviously, owing to the limited space, this issue cannot cover all subject areas of coordination polymers, and we are unable to invite all of the most active Chinese chemists, but we do hope this issue could exhibit the rapidly ongoing progress of coordination polymer chemistry in China.

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