

## MICROWAVE CHEMISTRY IN CHINA

Kama Huang

College of Electronics and Information Engineering  
Sichuan University, Sichuan, China

Before 1990, only a few technical literatures were published in the area of microwave chemistry. The researchers in China were focusing their research on microwave heating and microwave processing of materials. In 1991, one interesting application of microwave energy was reported to enhance the production of alcohol drink. At that time, almost all of microwave-assisted organic synthesis and inorganic synthesis initially started in the labs of university. The researches included microwave-assisted organic synthesis, microwave-assisted inorganic synthesis, microwave plasma, microwave-assisted extraction, and microwave digestion

In 1996, based on the request from the Microwave Society of the Chinese Institute of Electronics, the first professional Committee of Microwave Chemistry was created in China. The first symposium hosted by the professional Committee was held in Jilin province, China. One year later, the first book entitled Microwave Chemistry in chinese was published in 1999. Up to now, six national symposiums on microwave chemistry had been successfully held in China.

At the beginning, most of participators are from microwave engineering, such as microwave heating and microwave desiccation. With the development of microwave chemistry, more and more chemists employ microwave energy to accelerate the reactions, then the Committee on Microwave Chemistry of Chinese Chemical Society was established in 2005. Both of the committees identified their objectives that must be accomplished through multi-disciplinary cooperation. These objectives are the followings: (1) to facilitate the wide applications of microwave energy in chemistry; (2) to study the interaction between microwave and reactants for understanding the special effects of microwave on chemical reaction; (3) to design more efficient and controllable microwave reactors for industry applications and the research of specific effects.

Currently, more than ten chinese companies manufacture microwave chemistry devices for the labs of university and industry. These devices include microwave vacuum dryer, microwave-assisted synthesis reactor, microwave digestion equipment, microwave plasma generator, microwave-assisted therapeutic device, and so on. It should be mentioned that microwave-assisted extraction equipments have been successfully used in decoction of herbal medicine in the chinese traditional medicine.