



Preface to the Guo-Zhong He Festschrift

This special issue is dedicated to Professor Guozhong He, Dalian Institute of Chemical Physics, CAS, China, on the occasion of his 80th birthday.

Prof. Guozhong He was born in Nanhai, Guangdong Province, on May 5, 1933, one of the seven children of Jingbin He, an ordinary businessman. His childhood was spent on the fleeing violence of the World War II. Until the ending of the war, he had the chance to continue his education in Guangzhou Pui Ching Middle School. In 1951, he enrolled in the Department of Chemical Engineering, Beijing Tsinghua University in 1951, and graduated in 1955 from Beijing Institute of Petroleum, which was established in 1953, based on the Department of Chemical Engineering, Beijing Tsinghua University. In the same year, he joined the faculty at the Institute of Petroleum (IOP), CAS, which renamed the Dalian Institute of Chemical Physics (DICP), CAS in 1961, where he has remained during his entire academic career.

The academic career of Prof. He can be divided into four periods, and the fields in each period were quite different, which were mostly according to the requirements of the nation

rather than the interesting of a scientist. He studied basic properties of solid particles fluidization and fluidized coking of heavy oil in his early career (1956-1959).

In the 1960s, he investigated the combustion theory, conducted experiments of solid and hybrid rocket propellants and developed some new models about the theory of solid propellants combustion rate and was conferred a third class prize of the National Natural Science Award in 1982.

Since 1972, he has been involved in the study of high energy chemical laser and succeeded in obtaining kilowatts continuous wave combustion driven chemical laser of hydrogen (deuterium) fluoride and was conferred a second class prize of National Defense Scientific Committee Award.

Since 1978, Prof. Guozhong He has concentrated on the study of the chemical reaction dynamics research experimentally and theoretically, and got the first batch molecular beam experimental results in China. Using quantum mechanics and quantum chemistry, he studied systematically the bi-molecular reaction dynamics, photolysis dynamics, state to state reaction dynamics, quantum wave packet dynamics, stereochemical dynamics, and femtochemistry etc. He was conferred a second class prize of the National Natural Science Award in 1987 and two first class prize of the Science and Technology Progress Award of Chinese Academy of Sciences in 1986 and 1994 respectively, and also two first class prize of the Natural Science Award of the Chinese Academy of Sciences in 1999 and of the Liaoning Province in 2005 respectively.

In the period from 1979 to 2004, as a visiting scientist, he spent totally about 6 years to join several groups in different universities, such as Prof. Y.T. Lee's group in University of California at Berkeley, USA(1979.9-1981.12; 1992.11-1993.1); Prof. K. Bergmann's group in University of Kaiserslautern, Germany(1989.11-1990.11; 1997.9-1997.11); Prof. C. Y. Ng's group at Iowa State University, Ames, USA (1990.12-1991.2; 2001.5-2001.7) and at Lawrence Berkeley Laboratory (2001.8-2001.11); Prof. R.J. Gordon's group at the University of Illinois at Chicago(1997.5-1997.7); Three groups(Prof.C.M.Che, Prof.D.L.Phillips, Prof.G. H.Chen), in Department of Chemistry, the University of Hong Kong, Hong Kong (1994.10-1994.12; 1995.10-1995.12; 1996.11-1996.12; 1998.10-1998.12; 2000.10-2001.1; 2001.11-2002.1; 2004.2-2004.4); Prof. Y.J. Yan's group at Department of Chemistry, Hong Kong University of Science and Technology, Hong Kong (1996.12; 1998.10-1998.11).

Since 1981 he has published about 225 papers relating to molecular reaction dynamics in scientific journals. 44 PhD/Master students had graduated and 6 students are still studying. In 1988, he was granted the title of National Outstanding Middle-aged Scientist.