

## Au-Chin Tang 1915-2008



Au-Chin Tang, an outstanding quantum chemist and educator, passed away on the 15<sup>th</sup> of July, 2008, in Beijing. We lose a great scientist, a very original personality, and a distinguished leader in the field. Au-Chin Tang was born on the 18<sup>th</sup> of November, 1915, in Yixing, Jiangsu Province in China, a place many Chinese great scholars and famous artists were born. In the summer of 1936, Au-Chin Tang entered the department of chemistry, Peking University as a student. During the War period, Peking University, Tsinghua University and Nankai University moved from the occupation lands to the far west Kunming City, to form an interim Southwest Union University, where he continued his study and graduated in 1940 and stayed in the department to work as an assistant. In 1946, after the war, he went to the US along with fellow student TD Lee, Nobel Laureate of physics in 1957, and several other prominent scholars as a delegation to study the nuclear energy. When they reached US, the relationship between China and US became worse since the civil war back home broke out. Then, Au-Chin Tang was recommended to pursue his PhD in the department of chemistry of Columbia University, and he got his PhD in 1949 and was back to China in early 1950, to become a professor in Peking University. In 1952, he moved to the newly founded Northwest People's University in Changchun, which later renamed as Jilin University. And since 1956, he became the vice president and then president, and then honorary president of Jilin University till his last day. He served as the founding President of the National Science Foundation of China in 1986 and remained as its honorary President after 1990.

In the fifties, Au-Chin Tang proposed a method to compute the potential function of molecular internal rotation. In the sixties, he introduced the coupling coefficients from the three-dimensional rotation group to the point group and developed the irreducible tensor method from the continuous groups to the point groups in the ligand field theory. In the seventies, he established three foundational graph theorems in Hückel approximation on the characteristic polynomials and their symmetrical reduction, intrinsic vectors, energy level of the conjugated molecules. Au-Chin Tang not only made important contributions in quantum chemistry, but also in cultivating many talented people, and to form his own school of quantum chemistry. Au-Chin Tang organized a series of summer schools in "Structures of Matter", in 1953, 1954, 1958, 1960, 1963, and 1965. He gave extensive lectures in electronic structures, group theory, and polymer physical chemistry. After the "cultural revolution" (1966-1976), he started again the workshops and seminars in quantum chemistry, most influentially in 1978, for chemistry graduate students from all over the country. Most of the active chemists in China have benefitted his various lectures: in fact, before Au-Chin Tang, there were hardly any education in physical chemistry and theoretical chemistry. His students now led the major theoretical groups in China:

in Xiamen University, Nanjing University, Peking University, Beijing Normal University, Peking University, Shandong University, Yunnan University, etc. He is popularly known as “The Father of Quantum Chemistry in China”. And last, certainly not the least at all, he created the basic working principles of the National Science Foundation of China (NSFC), namely, “experts peer review, merit-based support, democracy in evaluation, and fare assessment”, which is still the guidance for NSFC, and made it well distinguished from other government agencies in China. We will miss Au-Chin Tang but we will never forget his wonderful personality!

Zhigang Shuai, June 21, 2009, Helsinki