

# A Biographical Sketch of Dr. Ta-You Wu

Compiled by Ting-Kuo Lee

- 1907 Sep. 29** Ta-You was born in Guangzhou, Guangdong (Canton), the only son of Jia-Erl Guan and Guo-Ji Wu.
- 1911** Ta-You's father passed away.
- 1921** Moved to Tianjin with uncle Yuan-Ji Wu and entered Nankai middle and high school.
- 1925** In the second year of Nankai High School, Ta-You passed the entrance exam and accepted as an undergraduate student in the Mining Department of Nankai University in Tianjin.
- 1926** Transferred to the Physics Department after the Mining Department was closed.
- 1928** Met Miss Kuan Shih Yuan for the first time. She was a freshman in the Physics Department.
- 1929** Graduated from Nankai University and stayed as a lecturer. Not only he taught modern physics and advanced mechanics but also studied quantum mechanics by self learning.
- 1931** Received a scholarship from a foundation in China to attend University of Michigan. In early September, Ta-You and Kuan Shih went to United States together by sea. Miss Yuan had a scholarship for Elmira College in New York.
- 1932** Earned a Master degree in June from University of Michigan.
- 1933** Earned his Doctorate and stayed to continue research. This year Ta-You published a paper, *Low States of the Heaviest Elements*, in Physical Review with his advisor S. A. Goudsmit. In this paper a generalized WKB method for a double well potential was developed. With this method he concluded that  $5f$  state is lower in energy than  $6d$  state in Uranium and pointed out the possible beginning of a  $5f$  series of elements. A similar work and conclusion was reached later by Marie Goepfert-Mayer in a 1941 Physical Review paper. These works have helped Glenn T. Seaborg, 1951 Chemistry Nobel Laureate, to understand transuranium elements.
- 1934** Returned to Peking University as a faculty.
- 1936** Got married with Kuan Shih.
- 1937** After the Second Sino-Japan War broke out, the family moved to the south western part of China.
- 1938** Joined the Southwest Associated University in Kunming with many faculties from Peking, Tsing-Hua and Nankai universities. To celebrate the 40th anniversary of Peking University, he began to write the book *Vibrational Spectra and Structure of Polyatomic Molecules* and finished it in 1939.
- 1941** Taught classical mechanics to a group of senior students including Chen Ning Yang and Kun Huang.
- 1942** Yang expressed his gratitude to Ta-You for "having initiated him into the field of symmetry laws and group theory in the Spring of 1942" in his letter to Ta-You on the day he was notified by the Nobel Committee in 1957.
- 1945** In spring, Tsung-Dao Lee joined the class as a sophomore. Lee's performance was so outstanding that he was recommended by Ta-You as one of the two physics students to be sent to United States with government scholarship in 1946. The war ended in August.
- 1946** Represented the Academy to attend the Royal Society's celebration of Newton's three-hundred-year birthday in Britain. Afterwards Ta-You returned to University of Michigan as a Visiting Professor and worked on the theory of nuclear scattering with Uhlenbeck.
- 1947** Moved to Columbia University in the summer. Taught at both Columbia University and New York University.
- 1948** Elected as a Member of Academic Sinica among the first 81 Academicians.
- 1949 ~ 1963** Director of Theoretical Physics Group, National Research Council of Canada.
- 1956** Received the Education Award from Ministry of Education, Republic of China.
- 1957** Attended the first Convocation of Academicians in Taiwan and proposed the government to draft a plan for academic development. Elected as a Member of Canadian Royal Society. Ta-You received the letters from C. N. Yang and T. D. Lee to thank for his teaching

- after they were announced as the winners of the Nobel Prize in Physics.
- 1961** Dr. T. Ohmura visited NRC and began to write a book together. *Quantum Theory of Scattering* was published in 1962 by Prentice-Hall.
- 1962** Declined the offer as the President of Academia Sinica from President Kai-Shek Chiang.
- 1963** Professor, Brooklyn Polytechnic Institute in New York.
- 1963 ~ 1976** Helped to re-establish the Institute of Physics in Academia Sinica. As a Director, Ta-You started the Institute by collaborating and sharing resources with the National Tsing Hua University and National Taiwan University.
- 1965 ~ 1978** Professor, State University of New York at Buffalo, USA.
- 1966 ~ 1969** Chair, Department of Physics.
- 1967** Appointed as the Chairman of Committee for Science Development, National Security Council, until 1991. Proposed the government establish the National Science Council to promote science research in Taiwan. Six hundred millions NT was allocated in December for the Science Foundation and thus the beginning of Taiwan's scientific development.
- 1967 ~ 1973** Minister, National Science Council.
- 1968** Received the Outstanding Contribution Award from Chia Hsin Culture Foundation. Presented to the government a twelve-year national plan for the science development.
- 1969** Helped to set up institutes in several universities across Taiwan for electronics research.
- 1970** Celebrated with the family for Mrs. Wu earning her Doctorate in Biophysics from University of Michigan at the age of sixty-two.
- 1977** Published three physics text books in Chinese: *Classical Mechanics*, *Quantum Mechanics and Atomic Structures*, and *Electromagnetism*. These are the first three books of the series of theoretical physics. The remaining books published a few years later include the topics of thermodynamics, kinetic theory of gases, statistical mechanics and quantum mechanics.
- 1978** The Physics Department of SUNY Buffalo held a Retirement Symposium for Ta-You with many distinguished scientists attended.
- 1979 ~ 1983** Chair, Scientific Education Advisory Committee, Ministry of Education.
- 1980** Mrs. Kuan Shih Yuan Wu passed away in California at the age of seventy-two.
- 1981** Received the Outstanding Contribution Award from Sun Yet-Sen Education Foundation.
- 1983 ~ 1994** President, Academia Sinica.
- 1984** Magsaysay Award from the Philippines.
- 1985** Completed the "five-year development plan" for the Academy. The English edition of the book *Quantum Mechanics* was published by World Scientific.
- 1990** The reorganization plan of Academia Sinica was approved by the legislature. This new organizational structure has laid down the foundation for the progress of Academia Sinica.
- 1991** Received the Honorary Degree of Science from University of Michigan. President George Bush was also one of the recipients.
- 1992** Published the book, *Relativistic Quantum Mechanics and Quantum Fields*, coauthored with Professor W.-Y. Pauchy Hwang. Received the first "Outstanding Contribution Award" from the Physical Society. After being away for forty-six years, returned to mainland China in May. The whole trip in China was accompanied by Professor T. D. Lee and several friends. The Honorary Degree of Science was awarded by Peking University and then by Nankai University. During the visit, Ta-You met with many old friends and top government officials.
- 1993** Received an Honorary Degree of Science from National Chiao Tung University, Hsinchu, Taiwan and later from The Hong Kong Polytechnic University.
- 1994** In January retired from the Presidency of Academia Sinica and awarded the National Medal for outstanding contribution to Taiwan's science development.
- 1995** Honorary Degree of Science, National Cheng Kung University, Tainan, Taiwan.
- 1997** Honorary Degree of Science, National Tsing Hua University, Hsinchu, Taiwan.
- 1998** Received Henry Fok Life Achievement Award.
- 2000 Mar. 4** Passed away in Taipei, Taiwan.

## REFERENCES

- [1] Shu-Ming Lai, *True Words — A Biography of Ta-You Wu* (Mu-Mien Publisher Comp., Taipei, 1999) (in Chinese).
- [2] *Perfect Roll Model* (The Physical Society of the Republic of China, Taipei, 2001) (in Chinese).