



Yuan Tseh Lee is a chemist who became the first Taiwanese to win the Nobel Prize when he, along with the Hungarian-Canadian John C. Polanyi and American Dudley R. Herschbach won the Nobel Prize in Chemistry in 1986 for their groundbreaking work in chemical elementary processes. Lee had specifically worked on the use of advanced chemical kinetics techniques to investigate the behaviour of chemical reactions. Bright and intelligent from a

young age, he performed brilliantly in academics as a student. He was also an athletic youngster and played several sports including tennis and baseball. Due to his glowing academic records in high school he was easily accepted into the prestigious National Taiwan University even without having to take the entrance examination. After completing his graduation, he earned an M.S. from the National Tsing Hua University and moved on to the University of California, Berkeley for his doctoral research. He started working with fellow chemist Dudley Herschbach at Harvard University and the two men worked with molecular beams, performing so-called "crossed molecular beam" experiments, among other things. Lee experimented with and further developed Herschbach's technique and introduced mass spectroscopy to identify the products resulting from the reactions of oxygen and fluorine atoms with complex organic compounds. He has also been honored with several other international awards in addition to the Nobel Prize for his invaluable contributions to the field of chemistry

Childhood & Early Life

Yuan T. Lee was born on 19 November 1936 in Shinchiku City, Shinchiku Prefecture, Japanese Taiwan to Lee Tze-fan, an accomplished Shinchiku-born artist, and Ts'ai P'ei, an elementary school teacher from Goseikō Town.

When he was a young boy, Taiwan was still under Japanese occupation. His elementary education was disrupted during the World War II during which the inhabitants of his city were relocated to the mountains.

He could resume his education only after the war ended and things returned to normalcy. He was a good student and performed well in his studies at the Hsinchu Elementary School. He was also athletic and participated in a variety of sporting events. He was on the school's baseball team and also played tennis and ping-pong.

He developed into a well-rounded personality during his time at high school. Besides excelling in academics and sports, he also proved himself to be a skilled musician and played trombone in the marching band. He had a keen interest in reading as well and read voraciously on a number of topics. He was deeply impacted after reading the biography of Madame Curie and decided to be a scientist.

He graduated from Hsinchu Senior High School with an excellent academic record and was promptly admitted to the National Taiwan University without having to take the entrance examination, in 1955. He earned a B.Sc. in 1959.

He then went to the National Tsing Hua University from where he received his M.S. in 1961.

He entered the University of California at Berkeley as a graduate student in 1962 and worked under the Professor Bruce Mahan for his doctoral thesis. Over the course of his research he developed an interest in ion-molecule reactions and the dynamics of molecular scattering. He received his Ph.D. degree in 1965.

Career

Yuan T. Lee remained in Mahan's group even after completing his Ph.D. and began his work on ion molecule reactive scattering experiments along with Ron Gentry. After experimenting for months he came upon the technique of designing and constructing a very powerful scattering apparatus for conducting specialized experiments.

In 1967, he joined Professor Dudley Herschbach at Harvard University as a post-doctoral fellow, where he worked on reactions between hydrogen atoms and diatomic alkali molecules. During this time he also worked on the construction of a universal crossed molecular beams apparatus with Doug McDonald and Pierre LeBreton.

In 1968 he was offered the position of an assistant professor in the Department of Chemistry and the James Franck Institute of the University of Chicago which he

accepted, embarking on an illustrious academic career. He was promoted to associate professor in 1971 and professor in 1973.

In 1974, he returned to Berkeley as professor of chemistry and principal investigator at the Lawrence Berkeley National Laboratory. He became a U.S. citizen in the same year. His research primarily focused on understanding the dependence of chemical reactivity on molecular orientation, decay dynamics, and identifying complex reaction mechanisms. Over the years, the scope of his scientific research expanded greatly.

He also has an active interest in politics and has worked to promote the establishment of new research institutes in order to advance scientific research within Taiwan.

Major Works

He further developed Herschbach's invention of the crossed molecular beam technique and extended the technique to introduce mass spectroscopy to identify the products resulting from the reactions of oxygen and fluorine atoms with complex organic compounds.

Awards & Achievements

In 1986, Yuan T. Lee, Dudley R. Herschbach and John C. Polanyi were jointly awarded the Nobel Prize in Chemistry "for their contributions concerning the dynamics of chemical elementary processes".

In 1986, he was also awarded the National Medal of Science and Peter Debye Award.

Personal Life & Legacy

He is married to Bernice Wu Chin-li, whom he first met in elementary school. The couple has three children.