

Samuel Chao Chung TING

Nobel Laureate in Physics

Born in Ann Arbor, Michigan. Early education in China and mostly in Taiwan. Returned to the University of Michigan in 1956 as an undergraduate in mechanical engineering. Received Ph.D. in Physics in 1962. He is the Thomas D. Cabot Professor of Physics at M.I.T. He conducted his research at Brookhaven National Laboratory U.S.A., at the Deutsches Electron Synchrotron, DESY, Germany, at CERN, Switzerland, as well as on the Space Shuttle and the International Space Station.

His contributions to physics include:

1. Discovery of nuclear anti-matter (the anti-deuteron).
2. A series of experiments measuring the size of the electron family (the electron, the muon, and the tau) showing that the electron family has zero size (with a radius smaller than 10^{-17} cm).
3. Precision study of light rays and massive light rays showing that light rays and massive light rays can transform into each other at high energies and providing a critical verification of the quark model.
4. Precision measurement of the radius of the atomic nuclei.
5. Discovery of a new kind of matter (the J particle). The Nobel Prize was awarded to Ting for this discovery.
6. Discovery of the gluon (the particle responsible for transmitting the nuclear force).
7. A systematic study of the properties of gluons.
8. A precision measurement of muon charge asymmetry, demonstrating for the first time the validity of the Standard Electroweak Model.
9. Determination of the number of electron families and neutrino species in the Universe and the precision verification of the Electroweak Unification Theory.
10. Development and deployment of the first large acceptance precision magnetic spectrometer for space science.

Professor Ting is a member of the U.S. National Academy of Sciences and the American Academy of Arts and Sciences and a foreign member of the Soviet Academy of Sciences, the Russian Academy of Sciences, the Hungarian Academy of Sciences, the Royal Spanish Academy of Sciences, the Academia Sinica, the Chinese Academy of Sciences, the Pakistani Academy of Sciences, the Deutsche Akademie Naturforscher Leopoldina, Germany, and is an Honorary Fellow of the Tata Institute of Fundamental Research, India. He holds many Doctor Honoris Causa degrees from many universities including the University of Michigan, Columbia University, Moscow State University, University of Bucharest, Tsing Hua University, Taiwan,

National Jiao Tong University, Taiwan, National Central University, Taiwan, Rheinische Westfälisch Technische Hochschule (RWTH), Aachen, Germany, and so forth. In addition to receiving the Nobel Prize, his awards include the Ernest Orlando Lawrence Award from the U.S. Government, the NASA Public Service Award from NASA, the Eringen Medal of the Society of Engineering Science, USA, and the De Gaspari Award in Science, the Golden Leopard Award for Excellence, and the Gold Medal for Science, all from Italy.