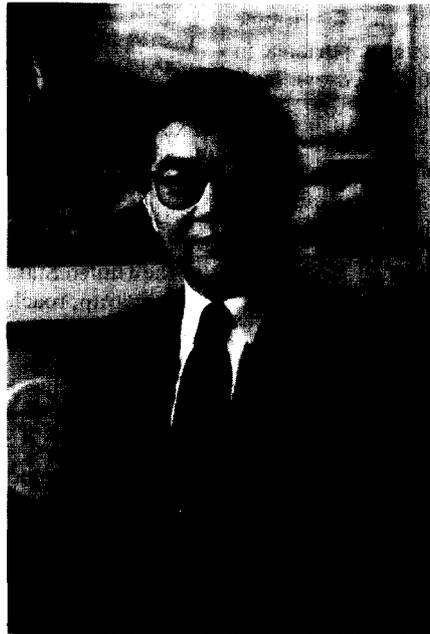


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## Chancellor Chang-Lin Tien on his 60th birthday



It is a pleasure to honor the achievements of Chancellor Chang-Lin Tien as he celebrates his 60th birthday. On this occasion, it is fitting for his colleagues to applaud his significant contributions in the field of heat transfer.

Chancellor Tien was born in Wuhan, China, on 24 July 1935. Before and after World War II his family fled twice to Shanghai and Taiwan, where he completed his undergraduate education at the National Taiwan University. He came to the U.S. in 1956 as a teaching fellow at the University of Louisville. After earning his master's degree in 1957, he moved to Princeton University where he was a Howard Crathorne Phillips Fellow and earned a second master's and a Ph.D. degree in 1959. Chancellor Tien then joined the faculty at University of California–Berkeley in 1959 as an Acting Assistant Professor of Mechanical Engineering, where he initiated his research program which was to become distinguished by its breadth, originality, comprehensiveness and impact.

Chancellor Tien has published his research results in more than 280 journal articles and more than 30 books, monographs and invited articles. His immense contribution to the basic knowledge of thermal sciences over the past 30 years are characterized by its fundamental quantification of phenomena that are significant to complex engineering applications. Throughout his career, he has pioneered new research areas by questioning established assumptions,

uncovering dominant processes, mapping domains of applicability, and formulating methods to quantify phenomena outside established limits.

His keen insight is demonstrated through his scholarship on thermal radiation. Among the first heat transfer investigators to focus on thermal radiation in gases, he provided a basis for quantifying gaseous radiation properties and developed computational methods to quantify transport in such systems. This work provided a foundation for current engineering approaches. Continually seeking to discover the next frontier, his early work on thermal radiation transport in small domains is now the basis for the field. Professor Tien also contributed to the properties of solids in the form of particulates and surfaces. The first to provide a sound theoretical footing for the characterization of dependent scattering, he provided experimental findings to delineate the regions of applicability. His pioneering research still continues in the area of thin film structures.

The exceptional contributions of Chancellor Tien's research in the area of thermal radiation are matched by his work on thermal insulations. As in most of his research endeavors, he initiated this field with basic formulation and analyses. He addressed all transport modes for multilayer, cryogenic and microsphere insulations. The work on porous insulation led to general analyses and experiments involving thermal transport in porous media. Clarity in thought, innovation in

approach, and an intimate connection with application are overriding characteristics of this research.

Most recently Chancellor Tien has focused on micro-scale thermal phenomena, providing yet another cornerstone to the field of heat transfer. His original efforts in thermal stability have now been utilized in the area of high temperature superconductor films. He initiated and developed the fundamental work in thermal transport in micro-length and femto-time scales. These efforts are of paramount importance in characterizing the thermal behavior of sensors, laser sources, superconductors and quantum well structures, to name a few. Always seeking the most significant finding in his research, Chancellor Tien combines technical insight, theoretical analysis and focusing experiments to discover the dominating processes, provide basic properties and validate models.

The breadth of Professor Tien's contributions is exhibited by this incomplete listing of additional areas of research: boundary layer flows, turbulent transport, forced convection, gas-solid flows, pool boiling, hypersonic flows, rotating flows, cell transport, heat pipes, fire phenomena, solar energy, reactor safety, condensation, cryogenics, interfacial transport and thermosiphons. His efforts in these areas include experimental, analytical and numerical methodologies. In each area that he has undertaken, he has expanded and enhanced the basic understanding of the fundamental phenomena, which has had an impact on researchers worldwide.

Professor Tien's inquisitive approach and tireless energy inspired and guided more than 60 students in their doctoral studies. He continually implored his students to 'think deep,' to explore 'new ideas' and to investigate 'the limits.' He is a true mentor and scholar, and imparted to his students in universities, laboratories, and industry around the world the need for excellence, quality and high standards in all endeavors.

Chancellor Tien is a national and international champion of his discipline. He has served or is serving in an editorial capacity to 14 thermal-oriented publications, including being a current editor of the *International Journal of Heat and Mass Transfer*, *Experimental Heat Transfer*, and *International Communications in Heat and Mass Transfer*. His service is continually sought on advisory bodies, with participation at NBS (now NIST), NSF, ASEE National Advisory Council, and the CRC Press. He has chaired numerous professional society activities including the International Center for Heat and Mass Transfer, the AIAA Thermophysics Committee, the ASME Heat Transfer Division Executive Committee, past ASME National Heat Transfer Conferences and AIAA Thermophysics Conferences, and the U.S. Scientific Committee for the 8th International Heat Transfer Conference. His technical advice is sought

and valued throughout the international research community.

In concert with his stature as a researcher, Chancellor Tien is an acknowledged leader with global influence in higher education. Rising through the academic ranks, he became a full professor in 1968, served as Chair of the Department of Mechanical Engineering from 1974 to 1981, and was Berkeley's Vice Chancellor—Research from 1983 to 1985. In 1987, he was appointed the A. Martin Berlin Chair Professor of Mechanical Engineering, a title he still holds today. He left Berkeley in 1988 and served for 2 years as Executive Vice Chancellor and UCI Distinguished Professor at University of California—Irvine. Chang-Lin Tien took the position of Chancellor of the University of California—Berkeley in July 1990, as the first Asian-American to head a major research university in the United States. Chancellor Tien is noted for his energetic approach and has earned wide praise for his openness, sensitivity and accessibility.

Chancellor Tien's distinguished record as a scientist and educator has been widely acknowledged. He has received many honors, including a Guggenheim Fellowship, the Max Jakob Memorial Award, and Honorary Member of ASME—ASME's most distinguished honor. Among several teaching awards, Chancellor Tien in 1962 became the youngest professor at age 26 ever to win University of California—Berkeley's prestigious Distinguished Teaching Award. A recipient of honorary doctoral degrees from several universities, he currently serves on the Board of Trustees at Princeton University and the Asia Foundation. He has been a member of the National Academy of Engineering since 1976 and was elected in 1991 as a Fellow of the American Academy of Arts and Sciences. These honors are richly deserved. Chancellor Tien's contributions to the heat transfer discipline, to the engineering profession, and to higher education exhibit his deep and vigorous commitment to developing and maintaining excellence, and to preserving and enhancing diversity at all levels.

On the occasion of his 60th birthday, it is a great pleasure and honor for his students, colleagues and friends all around the world to recognize his distinguished and pioneering accomplishments. We wish both Chang-Lin and his wife Di-Hwa good health and continued professional success in the many years to come.

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