In Memoriam
Harry F. Tiersten, Professor and Ph.D.
1930–2006

HARRY F. TIERSTEN, Professor of Mechanics at Rensselaer Polytechnic Institute, passed away suddenly on June 12, 2006 from a heart attack. Professor Tiersten obtained his B.S., M.S., and Ph.D. in 1952, 1956, and 1961, respectively, all from Columbia University. His Ph.D. advisor was Professor Raymond D. Mindlin. From 1952 to 1953 he worked as a stress analyst with Grumman Aircraft Engineering Corp. During 1953 to 1956 he was a structural designer with J. G. White Engineering Corp (New York City). He also worked as an Instructor in Civil Engineering at the City College of the City of New York, and was a research assistant at Columbia University (1960–1961). He Joined Bell Telephone Laboratories from 1961 to 1968, and was a visiting professor at Rensselaer and joined the faculty in 1968. He was a member and fellow of IEEE, Acoustical Society of America, American Society of Mechanical Engineers and the Society of Engineering Science. He was also a member of various engineering and physics organizations. He was the recipient of the IEEE UFFC-S Sawyer award in 1979 for contributions to the theory of piezoelectric resonators.

Professor Tiersten coauthored the IEEE Standard on Piezoelectricity and was responsible for the theoretical part. His 1969 book *Linear Piezoelectric Plate Vibrations* by Plenum has been a major reference on theoretical piezoelectricity for many years. During the study of piezoelectric resonators, in addition to linear piezoelectricity, to analyze resonator frequency stability, Professor Tiersten systematically developed the theory of nonlinear electroelasticity for large deformations and strong fields, the linear theory for infinitesimal fields superposed on finite biasing fields, and the perturbation theory for frequency shifts in piezoelectric resonators. These theories have shaped the field many researchers are working in today. His contributions also extend to theories for more general nonlinear interactions of elastic deformations with electromagnetic fields in continuous media, including thermal effects and conduction or semiconduction. He was also highly respected in the mechanics community internationally. He was considered as one of the founders of the macroscopic theories of continuum electrodynamics. His style was exemplary of Mindlin's school of applied mechanics researchers, ranging from fundamental theories to applications in technology. For one example, his work on resonator acceleration sensitivity in the 1980s is crucial to missile guidance technology today.

It is without exaggeration to say that the loss of Professor Tiersten represents the end of an era of theoretical piezoelectricity. The marks left by him in this field are permanent.

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