

IN MEMORIAM

ROMAN SMOLUCHOWSKI

Roman Smoluchowski, Emeritus Professor of Physics and Astronomy, died in Austin on January 12, 1996. He is survived by Louise, his wife of 44 years, two children and two grandchildren. Roman, or Ro as he was affectionately called by his many friends, was born in Zakopane, Poland (then Austria-Hungary) on August 31, 1910. He received his master's degree in physics from the University of Warsaw in 1933 and his Ph.D. in physics and mathematics from the University of Groningen in The Netherlands in 1935. He then worked for a year at the Institute of Advanced Studies in Princeton where, with fellow European postdoctoral fellow Louis Bouckaert and future Nobel Laureate Eugene Wigner, he wrote the seminal paper applying group theory to solid state physics.

Roman returned to Poland in 1936 as head of the department of physics of metals at the University of Warsaw. During the early days of the German occupation he escaped from Poland. An invitation from Princeton University to become an instructor in physics enabled him to come to the U.S., where he became a citizen in 1944. From 1941 to 1945 Roman was a research physicist at the General Electric Laboratory in Schenectady, New York. From 1946 to 1950 he was an associate professor of physics and metallurgy and from 1950 to 1960 professor of physics at the Carnegie Institute of Technology in Pittsburgh. Then from 1960 to 1978 he was professor of solid state sciences in the mechanical engineering department, and until 1976 head of the solid state and materials interdepartmental program at Princeton University. He retired from Princeton as emeritus professor in 1978 and became professor of physics and astronomy at The University of

Texas at Austin, where he continued his active program of research and teaching at both the graduate and undergraduate level.

During his scholarly career, Roman made important contributions to a number of areas: the role played by structural defects in the properties of solids, magnetism and order-disorder transformations in metals and alloys, the mechanisms of radiation damage, the formation mechanisms and stability of point defects in the alkali halides, the application of solid-state physics to the properties of biological hard tissue and materials problems in astrophysics. He applied his knowledge of radiation damage phenomena to the structural nature of the lunar surface prior to the lunar landings during the Apollo missions. He also turned his attention to problems in solid-state astrophysics, including the gravitational collapse and the resulting interior structure and magnetic field of Jupiter and the outer planets. This work is now being tested with data from the Galileo spacecraft and its atmospheric probe. He made important contributions to our understanding of the rings around Jupiter, Saturn, and Neptune. In 1991 the International Astronomical Society in honor of Roman's 80th birthday named asteroid number 4530 after him.

Roman published nearly 300 refereed papers, two advanced books, and wrote numerous contributions to popular science books, magazines, and encyclopedias. His popular book, *The Solar System: The Sun, Planets, and Life*, written for the Scientific American Library in 1983, has been published in at least five languages. Roman served on or chaired many panels, committees, or boards for the ONR, NRC, and NAS. In April 1944 Roman wrote a letter to the secretary of the American Physical Society requesting the formation within the society of a "Division of Metal Physics." Opposition immediately surfaced from two camps: those who wanted the Division to include all solids, to whom Roman wisely, if somewhat reluctantly, acceded and those who opposed the fragmentation

of physics and who found the inclusion of a large number of industrial physicists in the Society distasteful. It took three years, but at last in June 1947 the Division of Solid State Physics (now Condensed Matter Physics) was recognized by the APS with Ro as its first chairman. Without Ro's efforts condensed matter physics might well have fragmented into many sub-fields, some of which would have been lost to physics, becoming part of engineering or chemistry.

Roman was always willing to give of his time and share his insights with students and colleagues. In the early 1960s, when several Brazilian universities were establishing modern research activities in materials science, Roman invited several physicists from Brazil to join his research activities in the U.S. and also visited their home universities. His kindness to friends and strangers alike will not be forgotten. After a talk given by a young scientist, Roman, even if he had no questions or scientific comments to make, would introduce himself and say how much he enjoyed the talk. Roman's warm and generous personality, his scientific contributions, and his infectious booming laugh will long be remembered by those who knew him.

Larry R. Faulkner, President
The University of Texas at Austin

John R. Durbin, Secretary
The General Faculty

This Memorial Resolution was prepared by a special committee consisting of Professors Leonard Kleinman (Chair), Frits de Wette, and William D. Cochran.