In 1967 he introduced the atom-probe field-ion microscope—a combination of a field-ion microscope with a time-of-flight mass spectrometer—which opened a new dimension in field-ion microscopy. Now not only could an atom be seen, but also its chemical identity could be ascertained. This atom-probe microscope is the most sensitive analytical tool in existence, being capable of analyzing a single atom.

Mueller's beautiful field-ion micrographs have aroused the interest of many people and hundreds of elementary textbooks published around the world use his micrographs for both scientific illustrations and esthetic attraction.

Mueller's numerous scientific contributions have been described in his two books, four book chapters and more than 200 papers. Although he is best known for his inventions, the scope and impact of his work extend to many areas of surface science. He was one of the few early scientists to contribute extensively to our present knowledge of solid surfaces.

His scientific achievements were recognized by the science community with numerous awards, such as the Davisson–Germer Prize of The American Physical Society, the first Medard W. Welch Gold Medal of the American Vacuum Society and the Gauss Medal of Germany. He was also an elected and honorary member of many scientific societies.

A scientist with undiminishing energy, Mueller often participated in the construction of elaborate instruments. His knowledge of practical experimental techniques was enormous. A student could not only benefit from discussing scientific problems with him, but also learn from him practical techniques unavailable in books.

His sudden death is a shock to his friends and a great loss to the scientific community, but his fame will endure through time as will his scientific achievements.

T. T. TSONG
The Pennsylvania State University

Crispin Calvo

Crispin Calvo, professor of chemistry at McMaster University in Hamilton, Ontario, died 19 February at the age of 47.

Calvo earned his doctorate at Rutgers University in 1954 and the following year joined the research staff at RCA's David Sarnoff Laboratories (Princeton, N.J.) as an engineer in the chemistry department. In 1960 he became a faculty member at McMaster University where he became professor in 1968.

His research specialities included x-ray crystallography and structure determination. Among his investigations, Calvo studied the relationship of crystal structure and luminescence in phosphate, arsenate and vanadate systems. □