

Cyril Stanley Smith (1903–1992)



Cyril Stanley Smith was born on October 4, 1903, in Birmingham, England. He received the B.Sc. degree in metallurgy from the University of Birmingham in 1924 and came to the United States that same year. He earned the Sc.D. degree from Massachusetts Institute of Technology (MIT) in 1926. During 1926–1927 he was a research associate at MIT. “From 1927 until 1942 he was a research metallurgist at the American Brass Company, where he received some 20 U.S. patents and contributed numerous papers to technical publications. His early research was focused on electrical and thermal conductivity, and mechanical and magnetic properties of copper alloys.”

“After brief service with the War Metallurgy Committee in Washington in 1943, Smith joined the Manhattan Project in Los Alamos where he directed the preparation of the fissionable metal for the atomic bomb and other materials for nuclear experiments

(1943–1946). In 1946, he received the Presidential Medal for Merit for this work.”

“He joined the University of Chicago in 1946 where he became the founder and first director of the Institute for the Study of Metals, the first interdisciplinary research organization dealing with materials in the United States. It was, he said, ‘a natural outgrowth of the close association of metallurgists with chemists and physicists on the Manhattan Project.’ Smith was appointed by President Truman as one of the original nine members of the general advisory committee to the Atomic Energy Commission. He also served on the Committee on Science and Public Policy of the National Academy of Sciences, the President's Science Advisory Committee and the Smithsonian Council.” Smith left Chicago in 1961 to become Institute Professor at MIT.

“At MIT, Smith designed his joint appointment in the Departments of Metallurgy and Humanities to ‘encourage the understanding of human history and human activity through the scientific investigation of the material record of the past.’ He used the methods of the materials engineer to explore the technologies behind the production of artistic and archaeological artifacts. The Laboratory for Research on Archaeological Materials which Smith established in 1967 led to the founding ten years later of the Center for Materials Research in Archaeology and Ethnology, a consortium of eight Boston-area universities and museums devoted to research and graduate education in this new field.”

Smith retired from MIT in 1969, as professor emeritus of the History of Science and Technology, professor emeritus of Metallurgy and Humanities and Institute Professor Emeritus (“a title reserved for only a few whose work transcends the boundaries of traditional departments and disciplines”). His three emeritus titles “reflected the facets of his rich and varied career in science, technology, history and the arts.” He was “recognized as an authority on the historical relationships between people from the beginning of human history and the materials they came to understand and use. Smith was a pioneer in the application of materials science and engineering to the study of archaeological artifacts. As professor emeritus of metallurgy, he was renowned for his research in physical metallurgy, particularly in areas such as the role of interface energy and topology in the structure of polycrystalline materials and the application of metallography to the study of artifacts. Smith's important contributions to the nature of structure in inorganic matter

began with the application of simple topology to the shapes of metal grains and then, by extension, to all levels of the structural hierarchy. Eventually his work included exploration of the structures, on different scales, underlying patterns in both art and science.”

“Smith was the first chairman of the board of governors of *Acta Metallurgica*, a leading international journal, and a member of the editorial board of the *Bulletin of the Atomic Scientists*.” He was co-editor of a number of translations of classic works, author or co-author of twelve books, and the author of some 200 scholarly papers. His books include *A History of Metallurgy: The Development of Ideas on the Structure of Metals before 1890* (1960); *Sources for the History of the Science of Steel* (1968, 1980); *From Art to Science* (1980); and *A Search for Structure: Selected Essays on Science, Art and History* (1981). .

“Smith received the Francis J. Clamer Medal of the Franklin Institute (1952), the Pfizer Medal of the History of Science Society and the Gold Medal of the American Society of Metals both in 1961. In 1963 he received the Douglas Medal from the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), the third time that society had chosen him for an award. He received the Leonardo da Vinci Medal from the Society for the History of Technology in 1966, and the Platinum Medal of the Institute of Metals in 1970.” In 1981 Smith received the Dexter Award for his extensive work on all aspects of the history of metallurgy, and for his use of metallurgical knowledge in the interpretation of archeological sites where metal-working took place. In 1991, Smith received the Gemant Award from the American Institute of Physics for "pioneering the use of solid state physics in the study of ancient art and artifacts to reconstruct their cultural, historical and technological significance."

Smith died of cancer August 25, 1992 at his home in Cambridge, Massachusetts at the age of 88.

Sources

Quoted text is taken from Anon., “Cyril Stanley Smith Dies at 88,” *MIT Tech Talk* (September 2, 1992), <http://web.mit.edu/newsoffice/1992/cyril-0902.html>.

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