

Konrad Schubert (1915-1992)

Professor Dr.-Ing. Konrad Schubert departed this life on March 19, 1992. The deceased was an excellent and well-known crystallographer.

Konrad Schubert was born on July 4, 1915 in Mannheim, a town in North Baden which is in southern Germany. His ancestors were scientists. He grew up in Essen in the Ruhr region. He attended school in Essen and finished school with the "Abitur." He studied physics in Danzig (Gdansk) and Stuttgart. After work service (Arbeitsdienst), military service and injury, he began his scientific career with a doctoral thesis at the T.H. (Technical University) Stuttgart with investigations on the crystal structure of alloys under the auspices of the executive director of the Kaiser-Wilhelm-Institut (KWI) für Metallforschung and professor of physical metallurgy at the T.H. Stuttgart, Dr. Werner Köster. This research was supervised by the noted crystallographer and subsequent university professor in Vienna, Austria, Dr. Hans Nowotny. Within one year, Konrad Schubert finished his thesis and in 1944 became scientific collaborator of the Kaiser-Wilhelm-/Max-Planck-Institut für Metallforschung. He continued this kind of research with his genuine passion and his known persistence. In 1956 he habilitated at the T.H. Stuttgart and received the "venia legendi." In the same year he became group leader at the Max-Planck-Institut. In 1957 he was a visiting professor at the University of Philadelphia. In 1962 he was appointed "apl. Professor."



Professor Dr. Schubert was a pioneer in research on crystal structure of intermetallic compounds, and in 1964 his basic description *Kristallstruktur zweikomponentiger Phasen (Crystal Structure of Two-Component Phases)* was published as a textbook. After nearly 30 years it still serves as a good and useful compendium. He gave lectures in India, Japan, the USA, and the former USSR. After retirement in 1980 he continued his research until the end of his life. In 1990 he published a new book that presented a summarizing overview entitled *Bonding Types of Two-Component Phases*, and subtitled *Part I. Solid Elements and Phases with a Light Component (Li, Be, B, C, N, O, F)*. He had planned a second more extended part; it was not possible for him to finish this.

Konrad Schubert had numerous students who came from all over the world to learn structural analysis by X-rays. Many of them have made significant contributions to materials science during the recent decades with important positions in industry, at research institutes, and as university professors. He liked to point out the advantages of his "green file," in which the experiences and optimum parameters of experiments and procedures were collected as recipes and prescriptions for the next generation of students.

Konrad Schubert's list of publications contains approximately 300 papers. Together with his coworkers he determined numerous crystal structures. A special aim was to explain the chemical binding of crystals and their energetic relations. Most of the titles of his publications in the last decade begin "On the binding..." Very early, he stressed the importance of the "electronic lattice" for the formation of crystal structures. After four publications "On the application of the band model of the theory of electrons to the crystal chemistry of alloys" (in German, 1947 to 1952), he became skeptical of this model. Instead of this, he pointed out the importance of the "spatial correlation of electrons." He added other principles, which were summarized in 17 rules in his last book.

The move of the Kaiser-Wilhelm-Institut during the last years of the Second World War to the Swabian Alps took him away from Stuttgart; while there he met his subsequent spouse. His family was central to his life, and he took an active interest in the professional development of his children.

Konrad Schubert was an exceptional physicist, who personified the scientist par excellence. Though he had a deep dedication to crystallography, his interests were not one-sided. He was well read and kept abreast of developments across the spectrum of natural science. Further, he was an avid reader of historical and social literature. Due to the injury to his right arm, it was impossible for him to follow his musical interests; piano compositions for the left hand that were written after the First World War did not satisfy him. Konrad Schubert was a gardening connoisseur with an admirable zest. The arm impediment from his war injury was overcome without complaint; his first draft of every manuscript was written with his left hand. The drafts of his doctoral thesis give evidence of this difficult action.

His co-workers at the Max-Planck-Institut feel the absence of their colleague, who traveled by foot every morning from Stuttgart's suburb of Feuerbach uphill to the Kräherwald, then downhill to the Institut, taking the reverse path every evening. Scientists all over the world feel the absence of their partner in discussions, one who was never too tired to fight for a better understanding of science. His friends feel the absence of the intelligent, sympathizing partner of conversation.

Professor Schubert's devotion to crystallography has served that science well.

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