In Memoriam

Joachim Walter Schultze
1937-2005

Joachim Walter Schultze was born in 1937 and grew up in Jena, Germany. He started his studies in chemistry at the University of Jena; he continued those studies in 1956 at the Freie Universitaet Berlin. He did his Diploma work in 1962 at the Fritz-Haber-Institut in Berlin and joined the group of K. J. Vetter at the Freie-Universität-Berlin. There he earned his PhD in 1966, with a study of the electrochemical kinetics of the formation of oxide layers on platinum.

Walter Schultze stayed on with Vetter after receiving his PhD, continuing his studies on classical electrode kinetics. At this time he published his important and basic research on electrosorption, the formation of anodic oxide layers and the kinetics of charge transfer processes. He introduced the separation of a geometric factor and a charge transfer part of the electrosorption valency and investigated the underpotential deposition of metals on gold single crystal electrodes, a topic which has had a renaissance during the last 15 years with the availability of synchrotron methods and scanning tunnelling microscopy as structure sensitive methods. His collaboration with groups in the field of the theory of the double layer led to a deeper understanding of electrosorption and electrode kinetics as well as the tunnel processes at oxide-covered electrodes. With this work, he received his habilitation in physical chemistry in 1972. He became a professor of physical chemistry at the Freie-Universität Berlin and was a director of the Institut fuer Physikalische Chemie from 1976 to 1978. In 1979 he took over the chair of physical chemistry and electrochemistry at the Heinrich-Heine-Universität Duesseldorf.

At Duesseldorf, Schultze added spectroscopic methods, like XPS and Auger-spectroscopy, to the investigation of electrode surfaces. His work included the modification of surfaces and surface layers by ion implantation and laser treatment. Photoelectrochemistry and classical methods like capacity measurements were used to learn details about electronic properties of anodic layers on electrodes. The basis of his work was, however, electrode kinetics. In this field he applied fast transient measurements to the formation of anodic films ranging from microseconds to hours. In his last years, he was active in the field of microelectrochemistry and organized several related meetings. The strength of his scientific work was dominated by general outlines in the various fields and the convincing simplicity of his straightforward models he used to explain his results and the effects he studied. Many people will remember his talks on the passive film on Ti and its variation with the orientation of crystallites, during which he would inevitably use his laser pointer to scan the image of oxide grains switching from the power point presentation to the image specially printed on his tie.

In addition to his basic electrochemical investigations, Walter Schultze always had a strong interest in applied research such as corrosion and passivity of metals, electrodeposition of metals, electrocatalysis, the Purex process for the recycling of nuclear fuel and nuclear waste, hard coating materials like nitrides, and polymer layers on metals. This work led to intense collaboration with industry and provided excellent opportunities for his numerous coworkers to develop their future professional careers. His scientific work is documented in more than 300 scientific papers.

Walter Schultze was an outstanding organizer of science and scientific programs. He was very active in various scientific societies like the Gesellschaft Deutscher Chemiker, the Fachgruppe Angewandte Elektrochemie, the Deutsche Bunsen Gesellschaft für Physikalische Chemie, the Deutsche Gesellschaft für Oberflächen und Galvanotechnik, and several commissions of the DECHEMA. In the year 1995/96 he served as a president of the ISE. He was the main founder of the Arbeitsgemeinschaft Elektrochemischer Forschungsinstitutionen (AGEF), which has almost 100 members now and which is promoting the collaboration of various groups in industry and at universities nationwide.

His activities were honored with several awards like the Fellowship of the Japan Society for Promotion of Science in 1989, the Heyrovsky Medal in 1990, and Fellow of The Electrochemical Society in 1997.

Walter Schultze was also an outstanding leader of his research group. He had more than 80 PhD students who are following successfully their careers in research institutes and many different branches of industry. He was always thought-provoking and a guide for many young students. In this sense he influenced the scientific career of many young colleagues and developed their interest in electrochemistry. He had a strong personal character and he liked clear decisions. When he made a decision one could rely on him even in almost hopeless situations. He was deeply convinced of competition in the various fields of research. Strong arguments were required to change his mind. However, he was always fair and was driven by a strong interest in research and successful work.

Walter Schultze also was always very active in sports; he liked running, cycling, swimming, and tennis. He was also very competitive in sports; he could not resist turning a leisurely swim or a friendly stroll up a mountain with friends into a heated competition. He had an accomplished family life with his wife Elke, his three grown children, and several grandchildren, whom he adored. We will never forget his humorous sketches and songs, nor at moments in critical situations of boring sessions when his sudden presentations could shift all problems to a less important level where they belonged.

We all will miss Walter Schultze's activity, fruitful scientific discussions, his drive and talent in organizing scientific activities, and his remarkable humour. ■

This notice was contributed by Hans Henning Strehblow.