

Jürgen O. Besenhard (1944–2006)

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Jürgen Otto Besenhard passed away on November 4, 2006 in Graz, Austria. He is survived by his three sons, Maximilian (20), Sebastian (19), Florian (15), and a daughter Hanni (11). Professor Besenhard was born in Regensburg (Bavaria, Germany) on May 15, 1944. He remained a dedicated Bavarian throughout his life. His education took place in the cities of Regensburg and Augsburg. He began his chemistry studies at the Munich University of Technology, where he received his doctorate in 1973. His work was devoted to nonaqueous electrolyte chemistry in lithium batteries. During this time and as reader and lecturer (1973–1986) in Munich, he became more and more involved in the field of primary and rechargeable lithium batteries. It is clear that he was one of the fathers of lithium and lithium ion battery chemistry as we know it today. There were numerous exploratory research findings on lithium batteries in the late 1960s to early/mid-1970s through which Jürgen Besenhard brought in the interpretation and understanding of the complex phenomenon involved. This is especially evident in his early works such as understanding of reversible alkali metal ion intercalation into graphite (anodes) [1, 2], understanding of reversible alkali metal ion insertion into oxide materials (cathodes) [3, 4], first reviews on lithium batteries [5, 6], preparation of lithium alloys with defined stoichiometry in organic electrolytes at ambient temperature [7]. Historically, these pioneering works have been very important for the progress of the lithium battery technology, which has become a dominant field in applied electrochemistry since then.

After a postdoctoral fellowship with Roger Parsons at the University of Bristol (GB) in 1977, he received a Full Professor position at the University of Muenster (Germany)

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in 1986. In Muenster, he expanded his activities to countless topics in the field of applied electrochemistry: electrodeposition, electroless plating, microelectrodes and microelectrode arrays, metallization of plastics, carbon chemistry, intercalation chemistry, composite electrodes, fuel cells, membranes, organic synthesis, electro-fluorination, supercapacitors, coating, aqueous batteries, etc., while continuing his remarkable contributions to the Li battery field. In 1992, he was the chairman of the 6th International Meeting on Lithium Batteries in Muenster, an unforgettable conference for all attendees.

In 1993 he assumed the position as head of the Institute of Chemistry and Technology at Graz University of Technology in Austria, an institute well-known for its breakthrough research in batteries and fuel cells. At Graz, his work emphasized the development of an understanding of the electrolyte additives and their effect on lithium electrode operation, nano-structured rechargeable alloy anodes, carbon surface modification, and new dip-coating processes for electrode fabrication for lithium ion batteries. There were still many more activities because of the strong connections of his work to industry. In this regard, most of the later lithium battery related research at Graz were proprietary and could not be published. In general, seeing

the application of his work in commercial products was a leading motivation during his scientific career.

In Austria, he became the leading authority in the field of electrochemistry. He was chairman of the special research program “Electroactive Materials,” chairman of the advisory board of the Applied Electrochemistry Center of Competence Kplus ECHEM, Member of the Christian Doppler Senate in Vienna, and he was the recipient of the Loschmidt-Medal of the Austrian Chemical Society in 2002. Internationally, he received high recognition and was awarded the Hawaii Battery Award for “Groundbreaking work on the negative electrode of lithium ion batteries” in 2000 and the Yeager Award of the International Battery Material Association (IBA) for “Outstanding and pioneering work on anodes for lithium batteries in 2001.” He organized the 2004 IBA meeting in Graz. He became the president of the IBA in 2006. Scientifically, his efforts were still strongly devoted on the lithium battery topic.

Prof. Besenhard had more than 800 publications, including over 50 patents. He was the editor of the well-known *Handbook of Battery Materials*. He also was a member of the editorial boards of *Journal of Solid State Electrochemistry*, *ITE Letters on Batteries*, *New Technology and Medicine*, *Ionics*, and the *International Journal of Electrochemical Science*. During his career, Prof. Besenhard was the mentor and supervisor of more than 100 diploma and doctoral students. He has been Visiting Professor at the Shanghai Institute of Microsystems and Information Technology for Energy Science (China). Prof. Besenhard was a highly respected teacher inside and outside the university. He also was an invaluable adviser to the young colleagues in the lithium battery field based on his extensive knowledge garnered during his scientific works.

Prof. Jürgen Besenhard was an exceptional and devoted scientist and he leaves behind an enduring record of achievements. His works assure him a highly prominent position in the history of battery technology. Two days before his passing away, he was attending the meeting of The Electrochemical Society in Cancun, Mexico. All who have worked with Prof. Besenhard and who had the privilege to be his colleague and friend will always remember a kind and gentle personality, a man with unique humor and charisma. The scientific community and especially the lithium battery community will miss him.

This notice was prepared by Martin Winter (on behalf of the Institute of Chemistry and Technology of Inorganic Materials at Graz University of Technology) with the help of Prof. Besenhard’s family.

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