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OBITUARY

Professor J. V. R. Heberlein, 1939–2014

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Our friend and colleague Professor Joachim Heberlein passed away peacefully at his home in Minneapolis on February 17, 2014, after a long, heroic struggle with ALS. We join the Heberlein family in their grieving: his wife Yuko, his daughter Andrea, and his son Markus. Throughout his illness, his wife took loving care of him. In spite of his devastating disease, he kept coming to his office at the university in a wheelchair to work on the book "Thermal Spray Fundamentals", which he wrote together with Professors Boulos and Fauchais. He was delighted to see the electronic version of the book by the end of January. Unfortunately, the printed version arrived 2 days after he passed away.

Professor Heberlein was born in Berlin, Germany in 1939. He received his diploma degree in physics in 1966 from the University of Stuttgart in Germany. He came as Research Associate to the University of Minnesota, working in the High Temperature and Plasma Laboratory on problems related to plasma propulsion. After enrolling as a graduate student, he received his Ph.D. in 1975. After graduation he worked for 14 years at the Westinghouse R&D Center in Pittsburgh, PA. He served there as a manager of Applied Plasma Research, Lamp Research and Nuclear and Radiation Technology. In 1989 he was hired by the Department of Mechanical Engineering at the University of Minnesota as

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Associate Professor to work in the High Temperature and Plasma Laboratory. In 1994 he was promoted to Full Professor and in 2000 he was appointed to the prestigious Ernst Eckert Professorship of Mechanical Engineering. For many years he served as Director of the High Temperature and Plasma Laboratory and he played a leading role in the Center for Plasma-Aided Manufacturing, and Engineering Research Center for Plasma-Aided Manufacturing funded by the National Science Foundation.

Professor Heberlein was known for his cooperation with colleagues from national and international universities. At his retirement party in 2013, more than 50 plasma scientists attended from all over the world, which is a clear indication of the deep esteem and affection the international plasma community held for him.

Jockel Heberlein visiting ancient Egyptian monuments in Egypt (2007)

Jockel Heberlein with Rudi Henne on a desert safari in Egypt (2009)

Professor Heberlein at the banquet of the 3rd International Round Table conference in South Africa (2011)

Jockel Heberlein with friends and colleagues on a safari in South Africa (2011)

Although his research was rather fundamental in nature, it was always related to some important applications. For example, his experimental and modeling studies of plasma torches, including plasma–electrode interactions, provided the basis for applications such as plasma spraying, plasma synthesis of fine powders, plasma synthesis of diamond, plasma cutting of metals, etc. His work has been documented by more than 330 publications with 140 journal papers, seven book chapters, 14 patents and the recent book "Thermal Spray Fundamentals". He was well known for his pioneering work on arc–electrode interactions. His industrial experience led to frequent interactions with industry, including Hypertherm in the field of arc plasma cutting of metals, Eaton Corp. on electrical circuit breakers, and Nitto Denko Technical Corp. on nano-material synthesis.

Professor Heberlein advised or co-advised 30 Ph.D. students and the same number of M.S. students; in addition, he advised seven students through completion of their diploma thesis at several European universities.

Professor Heberlein was a very active member of the Thermal Spray Society (TSS) and Plasma Chemistry Subcommittee of the International Union of Pure and Applied Chemistry (IUPAC). For example he was:

- The Chair of Journal of Thermal Spray Technology Editorial Committee from 1996 to 2006,
- The Chair of the Awards Committee from 2004 to 2011,
- The TSS Academic Advisory Council 2011–2012,
- The Treasurer of the IUPAC Subcommittee on Plasma Chemistry and its successor, the International Plasma Chemistry Society (IPCS), which oversees the organization of the biennial International Symposium on Plasma Chemistry (ISPC),
- The lead writer of the statutes of foundation and bylaws of the IPCS in 1999–2000.

He has received many awards and distinctions, for example:

- The TSS Hall of Fame in 2004,
- The IUPAC Plasma Chemistry Award in 2009,
- The ASM Allan Ray Putnam Service Award in 2009,
- Fellow of the ASM in 2011.

But also Joachim was really a good friend, loving good life and good food. He always found, during congresses, the best place for dinner and he knew very well which wines were the most appropriate to the meal.

We will miss Joachim, not only as colleague and scientist, but also as a dear friend.