

Prof. Dr. Dr. h.c. Stan Vepek

Stan Vepek was born on May 27, 1939 in Pisek, Czech Republic. He is citizen of Czech Republic and Switzerland, and married to Dr. Maritza G. J. Vepek-Heijman (citizen of The Netherlands and Switzerland). Stan has 4 children: Miroslav (30 y), Ratko Goran (29 y), Nynke Anna (16 y) and Libuse Hannah (14 y).

After his initial research work in plasma diagnostics and spectroscopy, Stan Vepek began his work on the deposition of thin films by means of plasma CVD 40 years ago at the Institute of Physics of the Czech Academy of Science where he started his scientific career after an education as a high school teacher (in Ceske Budejovice) followed by the study of physics at the Charles University in Prague (graduated 1962). His first major result was the deposition of nanocrystalline silicon, nc-Si, by means of chemical transport in plasma (published in 1968; nowadays, nc-Si is an important material for large-scale microelectronics, flat panel displays and thin films solar cells). In 1968 he followed an invitation of Prof. H. Schäfer to the University Münster (Germany), where he continued his work in plasma chemistry and published various papers on the effects of low pressure glow discharge plasmas on the chemistry of heterogeneous systems. In 1971 he moved to the University of Zürich, Switzerland, where he received his PhD in Chemistry (1972) and habilitation in inorganic chemistry (1977). He became involved in the research of the plasma-wall interactions in nuclear fusion devices. In 1976 he proposed the protective coating of the inner wall with boron carbide, and in the following years developed "boronization" by means of plasma CVD, which found successful application in several large fusion devices around the world. His continuing interest in nc-Si resulted in, among others, classical papers on Raman scattering. Together with the Swiss national museum he developed a new plasma-chemical method for the restoration and conservation of archeological metallic artifacts. In 1988 he was appointed full Professor and head of the Institute for Chemistry of Inorganic Materials at the Technical University of Munich, where he continued his research on a- and nc-Si, organometallic CVD, heteroepitaxy of 3C-SiC and others. Here, also the design principle for superhard materials was born in 1995. In this field he continued his collaboration with Li Shizhi (Qingdao, China) and begun a collaboration with a Czech company SHM, which pioneered the industrialization of superhard nanocomposites coatings based on his design concept. His latest work focuses on the understanding of the formation of the superhard nanocomposites by spinodal phase segregation and of their mechanical properties by means of combined ab initio DFT and thermodynamics studies (collaboration with Dr. R. F. Zhang (A. v. Humboldt scholar at TUM) Prof. A.S. Argon, Massachusetts Inst. of Technol. and other colleagues).

After his retirement from teaching at the TUM in 2004, he is still active in research projects at TUM (presently he participates in 3 EU project with international consortia) and as visiting principal scientist at Singapore Institute of Manufacturing Technology. He is also teaching courses at the TUM and at the National University of Singapore. Only since January 2005 he was invited to give 33 invited and plenary lectures and two Keynote Lectures at international conferences.

Stan has published 360 papers and several book-chapters. The most recent book co-authored with Prof. C. Koch, I. Ovidko and S. Seal "Structural Nanocrystalline Materials" (Cambridge University Press 2007) just came out. He is co-editor of Plasma Chemistry and Plasma Processing, and has co-organized various conferences and sessions at ISPC, MRS, ICMCTF and others, and served on several IUPAC and Int. Union of Vacuum Societies committees.

He has been teaching Professor and visiting scientist at several Universities and Research Institutions in China, Czech Republic, USA, Great Britain, Singapore and Japan.

He received the Silver Medal of the Societe d'Encouragement Pour la Recherche et l'Invention, Paris (1979), Silver Medal of the Masaryk University Brno (1991), Honorary Doctorate (Dr. h.c.) from the Masaryk University Brno, Czech Republic (1999), the Blaise Pascal Medal of the European Academy of Sciences (2004) and the AVS John Thornton Memorial Award of the American Vacuum Society (2005). In 2003 he was appointed foreign member of the Commission I of Low-Temperature Plasma Chemistry, Polish Academy of Sciences, Branch Lublin.