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EDITORIAL

Special issue of IJACT honoring Prof. Ralf Riedel

The present Special Issue honors the career achievements of Prof. Ralf Riedel (TU Darmstadt, Germany), a world-wide renowned scholar in the field of ceramics research.

Prof. Riedel completed his doctoral studies in 1986 with the late Prof. Ekkehard Fluck at the University of Stuttgart in the field of phosphorus-organic chemistry. From 1986 to 1992, he was a post doc at the famous Max Plack Institute for Metals Research (Stuttgart, Germany) and at the University of Stuttgart, where he started his journey related to the development of ceramics from molecular precursors. He completed his habilitation with a work related to "Non-Oxidic Ceramics from Inorganic Precursors" in 1992 having Prof. Gerd Becker and Prof. Fritz Aldinger as supervisors. His very productive and seminal post doc time led 1993 to an early appointment as a Full Professor at the Department for Materials Science of TU Darmstadt, where he spent his academic career until his retirement in 2022.

During his more than 35 years long academic career, Prof. Riedel was dedicated to using fundamental chemical tools for the development of novel, revolutionary ceramic materials. His early works and publications related to the preparative access to ceramics with tailored chemical and phase compositions, microstructures, and morphologies had a significant impact and received increased attention in the ceramic community. Together with few other researchers around the world, Prof. Riedel was in the early 1990s one of the pioneers of the development of the so-called polymer-derived ceramics (PDCs) and still has been pushing and leading this field three decades later. Among his numerous seminal works and publications, we may mention here his contributions to the development of SiBCN-based ceramic materials for applications at ultrahigh-temperatures and in harsh environments, various studies related to manufacturing complex-shaped PDC-based parts or the development of PDCs for functional applications such as force and pressure sensing, energy storage, chemiresistive gas sensing and so on.

Additionally, Prof. Riedel made significant contributions in the field of synthesis of inorganics under high-pressure and high-temperature conditions. Few of his seminal works here were, for instance, the discovery of γ-Si_3N_4, a high-pressure polymorph of silicon nitride, studies related to preparative access to high-pressure structures of transition metal nitrides, for example, thorium-phosphide-type Zr_3N_4 and Hf_3N_4, and oxynitrides, for example, $B_6N_6O_3$.

During the three decades spent at TU Darmstadt, Prof. Riedel supervised more than 60 doctoral theses and numerous post docs and visiting scholars. He was strongly involved in the teaching activities at the Institute for Materials Science and served as a Dean of the Department for Materials and Earth Sciences for 8 years, from 2010 to 2018. Moreover, he was a Guest Professor at various academic institutions around the world, for instance, University of Colorado at Boulder (USA), University of Rennes (France), Technical University of Gdansk (Poland), and Jiangsu University (Zhenjiang, China).

Prof. Riedel received numerous awards and recognitions for his career achievements. He has been an honorary doctor of the Slovak Academy of Sciences as well as Honorary Professor of Tianjin University and Xiamen University, China. He was awarded 1999 with the Dionyz Stur Gold Medal of the Slovak Academy of Sciences, 2012 with the Tammann Gedenkmünze of the German Society of Materials Engineering (DGM), 2019 with the JSPS Fellowship Award for Research (Japan) and the 1000 Talents Innovation Award of the Shaanxi province (China), 2021 with the International Ceramics Prize for Basic Science of the World Academy of Ceramics and 2022 with the JECS Trust Award of the European Ceramic Society.

Prof. Riedel has been a Fellow of the American Ceramic Society (2000) and the European Ceramic Society (2013), as well as Elected Member of the World Academy of Ceramics (2004). He has been Editor-in-Chief of the *Journal of the American Ceramic Society* as well as of *Ceramics International*.

Prof. Riedel activities made a strong impact on the ceramic community. This Special Issue in IJACT is thought

to acknowledge and honor his academic achievements. Despite he retired recently, he has still been active, continuing to perform cutting-edge research and to supervise students and post docs. We are happy that the ceramic community will still benefit from his impulses and valuable contributions.

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