**DESCRIPTION**

A timely addition to the highly acclaimed four-volume handbook set; volumes 5 and 6 highlight recent developments, particularly in the fields of new materials, molecular modeling and durability.

Since the publication of the first four volumes of the Handbook of Fuel Cells in 2003, the focus of fuel cell research and development has shifted from optimizing fuel cell performance with well-known materials to developing new materials concepts, and to understanding the origins of materials and fuel cell degradation. This new two-volume set provides an authoritative and timely guide to these recent developments in fuel cell research.

**ABOUT THE AUTHOR**

**Wolf Vielstich** started research work on Fuel Fells and Fischer-Tropsch Synthesis at Ruhrchemie / Oberhausen. Working in the field of Fundamental and Applied Electrochemistry at the Institute of Physical Chemistry of Bonn University, he completed his Habilitation in Physical Chemistry in 1962. From 1965 he was a professor and director at the Bonn Institute. His special interest was new experimental methods like Rotating Ring Electrodes, online MS, Insitu IR and UHV-analysis of electrode surfaces, as well as to Batteries and Fuel Cells. His work in Electrochemistry has resulted in more than 250 publications, over 10 patents, books on Fuel Cells and Electrochemical Kinetics, and textbooks on Electrochemistry. From 1986 to 1993, Professor Vielstich was co-ordinator of the first European project on the DMFC and in 1998 he received the Faraday Medal of the Royal Chemical Society, UK.
Hubert A. Gasteiger received his Ph.D. in Chemical Engineering from the University of California at Berkeley in 1993, studying the electrocatalysis of methanol oxidation. After 9 years of academic research on fundamental electrocatalysis and heterogeneous gas-phase catalysis, he worked for 10 years in industrial R&D groups. From 1998 to 2007, Dr. Gasteiger was involved in the stack component design for GM/Opel’s H 2-powered fuel cell vehicles, leading an R&D group in MEA development and diagnostics at GM/Opel’s Fuel Cell Activities program in Honeoye Falls, New York, where he was promoted to Technical Fellow in 2004. In 2007 he joined Acta S.p.A., Italy, as Director of Catalyst Technology, developing catalysts and electrodes for alkaline (membrane) fuel cells. In January 2009 he took an assignment as Visiting Professor at the Electrochemical Energy Lab in the Dept. of Mechanical Engineering at MIT.

He served as Co#Editor-In-Chief for Wiley’s Handbook of Fuel Cells – Fundamentals, Technology, and Applications (2003), and published 60 papers in refereed journals and 12 book chapters. In 2004, he received the Klaus-Jürgen Vetter Award for Electrochemical Kinetics from the International Society of Electrochemi

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1978–1980 - Research Associated in James Franck Institute, University of Chicago
1982 - Senior researcher, National Chemical Laboratory for Industry
1993 - National Institute of Materials and Chemical Research, AIST, MITI
2001 - National Institute of Advanced Industrial Science and Technology

Awards

1989 - Award by Japan Information Center for Science and Technology on "Construction of Thermodynamic database and its advanced utilization"
2001 - Award by Minister of Science and Technology Agency on "Construction of Thermodynamic database and its applications to energy related materials."
2002 - Outstanding Achievement Awards from the High Temperature Materials Division, The Electrochemical Society, Inc., "In recognition of his contributions to the practical applications of thermochemistry to high temperature materials research and technology, especially in the area of solid oxide fuel cells."

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