DESCRIPTION

Written and edited by top fuel cell catalyst scientists and engineers from both industry and academia, this is the first book to provide a complete overview of this hot topic. It covers the synthesis, characterization, activity validation and modeling of different non-noble metal electrocatalysts, as well as their integration into fuel cells and their performance validation, while also discussing those factors that will drive fuel cell commercialization.

With its well-structured approach, this is a must-have for researchers working on the topic, and an equally valuable companion for newcomers to the field.

ABOUT THE AUTHOR

Zhongwei Chen is an Associate Professor in the Department of Chemical Engineering at University of Waterloo. His current research interests are in the development of advanced electrode materials for metal-air batteries, lithium-ion batteries and fuel cells. He received his Ph.D. in Chemical and Environmental Engineering from the University of California-Riverside. Prior to joining the faculty at Waterloo in 2008, he was focusing on the advanced catalysts research in the Los Alamos National Laboratory (LANL) at New Mexico, USA. He has published 4 book chapters and more than 70 peer reviewed journal articles. These publications have earned him to date more than 3000 citations with H-index 28. He is also listed as inventor on 3 US patents and 8 provisional US patents.
Jean-Pol Dodelet is Professor of Physical Chemistry at L'Institut National de la Recherche Scientifique (INRS, Canada). After receiving his Ph.D. in Physical Chemistry in 1969 from L'Université Catholique de Louvain (Belgium) he became a Postdoctoral Fellow and then Research Associate in Radiation Chemistry at the University of Alberta (Canada). In 1976, he became Professor of Physical Chemistry at L'Université du Québec à Trois Rivières (Canada), where he worked until 1981 on the photoconducting properties of molecular photoconductors, before he took his current position. At INRS, he first continued his work on molecular photoconductors before becoming interested, in 1990, in non-noble metal electrocatalysts, the research area where he is still active today. In the last several years, Dr. Dodelet collaborated with General Motors in the frame of an Industrial Research Chair in electrocatalysis, sponsored by General Motors of Canada and the Natural Sciences and Engineering Research Council of Canada.

Jiujun Zhang is Principal Research Officer and Catalysis Core Competency Leader at the National Research Council of Canada's Energy, Mining & Environment Portfolio (NRC-EME). After having received B.Sc and M.Sc in physical chemistry at Peking University he received his Ph.D. in Electrochemistry from Wuhan University in 1988. He then took a position as an associate professor at the Huazhong Normal University for two years, followed by postdoctoral research at the California Institute of Technology, York University, and the University of British Columbia. Dr. Zhang has over twenty-eight years of R&D experience in theoretical and applied electrochemistry and three years of electrochemical sensor experience. He holds several adjunct professorships, including one at the University of Waterloo, one at the University of British Columbia, and one at Peking University.

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