Record Nr. UNINA9910139405403321 Fuel cell science: theory, fundamentals, and biocatalysis / / edited by **Titolo** Andrzej Wieckowski, Jens K. Nørskov Pubbl/distr/stampa Hoboken, New Jersey:,: Wiley,, 2010 ©2010 **ISBN** 1-118-06311-2 1-283-37158-8 9786613371584 0-470-63068-X 0-470-63069-8 Descrizione fisica 1 online resource (646 p.) Collana Wiley Series on Electrocatalysis and Electrochemistry Classificazione SCI013050 Disciplina 621.31/2429 621.312429 Soggetti Fuel cells **Enzymes** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references at the end of each chapters and Nota di bibliografia index. Nota di contenuto FUEL CELL SCIENCE: THEORY, FUNDAMENTALS, AND BIOCATALYSIS; CONTENTS; FOREWORD; PREFACE; PREFACE TO THE WILEY SERIES ON ELECTROCATALYSIS AND ELECTROCHEMISTRY; CONTRIBUTORS; 1 Hydrogen Reactions on Nanostructured Surfaces: 2 Comparison of Electrocatalysis and Bioelectrocatalysis of Hydrogen and Oxygen Redox Reactions: 3 Design of Palladium-Based Alloy Electrocatalysts for Hydrogen Oxidation Reaction in Fuel Cells 4 Mechanism of an Enhanced Oxygen Reduction Reaction at Platinum-Based Electrocatalysts: Identi.cation and Quanti.cation of Oxygen Species Adsorbed on Electrodes by X-Ray Photoelectron Spectroscopy5 Biocathodes for Dioxygen Reduction in Biofuel Cells; 6 Platinum Monolayer Electrocatalysts: Improving Structure and Activity; 7 The Importance of Enzymes: Benchmarks for Electrocatalysts; 8 Approach to Microbial Fuel Cells and Their Applications; 9 Half-Cell Investigations of Cathode Catalysts for PEM Fuel Cells: From Model Systems to HighSurface-Area Catalysts

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Sommario/riassunto

A comprehensive survey of theoretical and experimental concepts in fuel cell chemistry. Fuel cell science is undergoing significant development, thanks, in part, to a spectacular evolution of the electrocatalysis concepts, and both new theoretical and experimental methods. Responding to the need for a definitive guide to the field, Fuel Cell Science provides an up-to-date, comprehensive compendium of both theoretical and experimental aspects of the field. Designed to inspire scientists to think about the future of fuel cell technology, Fuel Cell Science addresses the emerging field of