Record Nr. UNINA9910139568703321 Catalysis in electrochemistry [[electronic resource]]: from fundamental **Titolo** aspects to strategies for fuel cell development / / edited by Elizabeth Santos, Wolfgang Schmickler Hoboken, N.J., : Wiley, 2011 Pubbl/distr/stampa **ISBN** 0-470-93473-5 1-283-30608-5 9786613306081 0-470-92942-1 0-470-92941-3 Descrizione fisica 1 online resource (532 p.) Collana Wiley series on electrocatalysis and electrochemistry;; 3 Classificazione SCI013050 Altri autori (Persone) SantosElizabeth SchmicklerWolfgang Disciplina 541/.37 Soggetti Electrocatalysis Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Includes bibliographical references and index. Nota di bibliografia CATALYSIS IN ELECTROCHEMISTRY: From Fundamentals to Strategies Nota di contenuto for Fuel Cell Development; CONTENTS; Preface; Preface to the Wiley Series on Electrocatalysis and Electrochemistry; Contributors; 1. Volcano Curves in Electrochemistry; 2. Electrocatalysis: A Survey of Fundamental Concepts; 3. Dynamics and Stability of Surface Structures; 4. Electrocatalytic Properties of Stepped Surfaces; 5. Computational Chemistry Applied to Reactions in Electrocatalysis; 6. Catalysis of Electron Transfer at Metal Electrodes 7. Combining Vibrational Spectroscopy and Density Functional Theory for Probing Electrosorption and Electrocatalytic Reactions8. Electrochemical Catalysts: From Electrocatalysis to Bioelectrocatalysis; 9. Electrocatalysis at Bimetallic Surfaces Obtained by Surface Decoration; 10. CO Adsorption on Platinum Electrodes; 11. Exploring Metal Oxides: A Theoretical Approach; 12. Electrocatalysis at Liquid-Liquid Interfaces; 13. Platinum-Based Supported Nanocatalysts for Oxidation of Methanol and Ethanol; 14. Impact of Electrochemical Science on Energy Problems; Index

## Sommario/riassunto

"Catalysis in Electrochemistry: From Fundamental Aspects to Strategies for Fuel Cell Development is a modern, comprehensive reference work on catalysis in electrochemistry, including principles, methods, strategies, and applications. It points out differences between catalysis at gas/surfaces and electrochemical interfaces, along with the future possibilities and impact of electrochemical science on energy problems. This book contributes both to fundamental science; experience in the design, preparation, and characterization of electrocatalytic materials; and the industrial application of electrocatalytic materials for electrochemical reactions. This is an essential resource for scientists globally in academia, industry, and government institutions."--