Hydrogen as a Future Energy Carrier

Description: The world's output of irretrievable greenhouse gases as well as hazardous waste resulting from current methods of energy generation needs to be significantly reduced in the interest of avoiding environmental, meteorological and economic disasters. One widely acknowledged strategy is the use of hydrogen as a carbon-free source of energy instead of burning fossil fuels.

This monograph fills the gap for concise but comprehensive literature on this interdisciplinary topic, involving as it does chemical, physical, biological and engineering challenges. It provides broad coverage of the most important fields of modern hydrogen technology: hydrogen properties, production, storage, conversion to power, and applications in materials science. In so doing, the book covers all the pertinent materials classes: metal hydrides, inorganic porous solids, organic materials, and nanotubes. The authors present the entire view from fundamental research to viable devices and systems, including the latest scientific results and discoveries, practical approaches to design and engineering, as well as functioning prototypes and advanced systems.

Contents:
INTRODUCTION
HISTORY OF HYDROGEN
Timeline of the History of Hydrogen
The Hindenburg and Challenger Disasters
HYDROGEN AS A FUEL
Fossil Fuels
The Carbon Cycle and Biomass Energy
The Hydrogen Cycle
PROPERTIES OF HYDROGEN
Hydrogen Gas
Interaction of Hydrogen with Solid Surfaces
Catalysis of Hydrogen Dissociation and Recombination
The Four States of Hydrogen and their Characteristics and Properties
Surface Engineering of Hydrides
HYDROGEN PRODUCTION
Hydrogen Production from Coal and Hydrocarbons
Electrolysis: Hydrogen Production from Electricity
HYDROGEN STORAGE
Hydrogen Storage in Molecular Form
Hydrogen Adsorption (Carbon, Zeolites, Nanocubes)
Metal Hydrides
Complex Transition Metal Hydrides
Tetrahydroborates as a Non-transition Metal Hydrides
Complex Hydrides
Storage in Organic Hydrides
Indirect Hydrogen Storage via Metals and Complexes Using Exhaust Water

HYDROGEN FUNCTIONALIZED MATERIALS
Magnetic Heterostructures: A Playground for Hydrogen
Optical Properties of Metal–Hydrides: Switchable Mirrors

APPLICATIONS
Fuel Cells using Hydrogen
Borohydride Fuel Cells
Internal Combustion Engine
Space Applications with Hydrogen

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