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Nota di contenuto	Materials Innovations in an Emerging Hydrogen Economy; Contents; Preface; Acknowledgments; INTERNATIONAL OVERVIEWS; Research Priorities and Progress in Hydrogen Energy Research in the EU; Global Perspectives Towards the Establishment of the Hydrogen Economy; Materials Issues for Hydrogen R&D in Canada; Overview of U.S. Materials Development Activities for Hydrogen Technologies; HYDROGEN STORAGE; The Hydrogen Storage Behaviour of Pt and Pd

Loaded Transition Metal Oxides; Progress of Hydrogen Storage and Container Materials
Synthesis of Activated Carbon Fibers for High-Pressure Hydrogen Storage High Density Carbon Materials for Hydrogen Storage; A New Way for Storing Reactive Complex Hydrides on Board of Automobiles; Synergistic Effect of LiBH4 + MgH2 as a Potential Reversible High Capacity Hydrogen Storage Material; Thermodynamic Analysis of a Novel Hydrogen Storage Material: Nanoporous Silicon; Nanocrystalline Effects on the Reversible Hydrogen Storage Characteristics of Complex Hydrides; HYDROGEN PRODUCTION; Recent Results on Splitting Water with Aluminum Alloys
Materials Challenges in SYNGAS Production from Hydrocarbons Encapsulation of Palladium in Porous Wall Hollow Glass Microspheres; Alternative Materials to Pd Membranes for Hydrogen Purification; X-Ray Photoelectron Investigation of Phosphotungstic Acid as a Proton-Conducting Medium in Solid Polymer Electrolytes; HYDROGEN DELIVERY; Evaluation of the Susceptibility of Simulated Welds in HSLA-100 and HY-100 Steels to Hydrogen Induced Cracking; Friction and Wear Properties of Materials Used in Hydrogen Service
Effect of Remote Hydrogen Boundary Conditions on the Near Crack-Tip Hydrogen Concentration Profiles in a Cracked Pipeline: Fracture Toughness Assessment Non-Destructive Hydrogen Content Sensors; Temperature Programed Desorption Using an Off-the-shelf Hybrid Microwave Oven; LEAKAGE DETECTION/SAFETY; Tritium Aging Effects on the Fracture Toughness Properties of Forged Stainless Steel; Explosive Nature of Hydrogen in Partial-Pressure Vacuum; Author Index

Sommario/riassunto

This volume contains papers presented at the Materials Innovations in an Emerging Hydrogen Economy Conference in February 2008 in Cocoa Beach, Florida. It provides a useful one-stop resource for understanding the most important issues in the research and applications of materials innovations. The text features logically organized and carefully selected articles, organized into: International Overviews; Hydrogen Storage; Hydrogen Production; Hydrogen Delivery; and Leakage Detection/Safety. This comprises an essential resource for industrial and academic chemists and engineers.