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Nota di contenuto	Front Cover; Hydrogen and Fuel Cells: Emerging technologies and applications; Copyright Page; Preface; Contents; Units and conversion factors; Chapter 1. Introduction; 1.1 The current relevance of fuel cells and hydrogen; Chapter 2. Hydrogen; 2.1 Production of hydrogen; 2.2 Issues related to scale of production; 2.3 Hydrogen conversion overview; 2.4 Hydrogen storage options; 2.5 Hydrogen transmission; 2.6 Problems and discussion topics; Chapter 3. Fuel cells; 3.1 Basic concepts; 3.2 Molten carbonate cells; 3.3 Solid oxide cells; 3.4 Acid and alkaline cells; 3.5 Proton exchange membrane cells 3.6 Direct methanol and other non-hydrogen cells3.7 Biofuel cells; 3.8 Problems and discussion topics; Chapter 4. Systems; 4.1 Passenger cars; 4.2 Bus, lorry; 4.3 Ships, trains and airplanes; 4.4 Power plants including stand-alone systems; 4.5 Building-integrated systems; 4.6 Portable and other small-scale systems; 4.7 Problems and discussion topics; Chapter 5. Implementation scenarios; 5.1 Infrastructure requirements; 5.2 Safety and norm issues; 5.3 Scenario based on fossil energy; 5.4 Scenario based on nuclear energy; 5.5 Scenarios based on renewable energy

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	<ul> <li>5.6 Problems and discussion topicsChapter 6. Social implications; 6.1</li> <li>Cost expectations; 6.2 Life-cycle analysis of environmental and social impacts; 6.3 Uncertainties; 6.4 Problems and discussion topics; Chapter</li> <li>7. Conclusion: a conditional outcome; 7.1 Opportunities; 7.2 Obstacles;</li> <li>7.3 The way forward; 7.4 How much time do we have?; 7.5 The end, and a beginning; References; Index</li> </ul>
Sommario/riassunto	The next several years will see a massive emergence of hydrogen fuel cells as an alterative energy option in both transportation and domestic use. The long-range expectation is that hydrogen will be used as a fuel, produced either from renewable energy, fossil, or nuclear sources, offering an environmentally acceptable and efficient source of power/energy. Hydrogen and Fuel Cells describes in detail the techniques associated with all the production and conversion steps and the set-up of systems at a level suited for both academic and professional use. The book not only describes the ""