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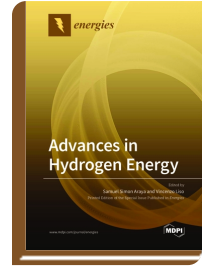


Special Issue Reprint

Advances in Hydrogen Energy

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This book, which is a reprint of articles published in the Special Issue " *Advances in Hydrogen Energy*" in *Energies*, seeks to contribute to disseminating the most recent advancements in the field of hydrogen energy. It does so by presenting scientific works from around the world covering both modeling and experimental analysis. The focus is placed on research covering all aspects of the hydrogen energy, from production to storage and final use, including the development of other easy to transport and versatile hydrogen-based energy carriers via the power-to-x (PtX) route, such as ammonia and methanol.

Hydrogen energy research and development has attracted growing attention as one of the key solutions for clean future energy systems. In order to reduce greenhouse gas emissions, governments across the world are developing ambitious policies to support hydrogen technology, and an increasing level of funding has been allocated for projects of research, development, and demonstration of these technologies. At the same time, the private sector is capitalizing on the opportunity with larger investments in hydrogen technology solutions. While intense research activities have been dedicated to this field, several issues require further research prior to achieving full commercialization of hydrogen technology solutions. This book addresses some of these issues by presenting detailed models to optimize design strategies and operating conditions for the entire hydrogen value chain, covering production via electrolysis, storage and use in different types of fuel cells and in different forms of energy carriers.



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