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Sommario/riassunto	<p>Water Splitting is essential for anyone looking to stay at the cutting edge of hydrogen production and renewable energy, as it provides a thorough exploration of the latest advancements and interdisciplinary approaches to addressing global energy challenges. Water splitting for the production of hydrogen is a rapidly evolving field at the forefront of interdisciplinary research and industrial development. It encompasses the integration of multiple scientific disciplines, including chemistry, physics, materials science, engineering, and environmental science, to address the global energy challenge and transition towards a sustainable future. The integration of water splitting with other renewable energy sources, such as solar and wind, presents opportunities for the development of integrated systems and the establishment of a hydrogen economy. The ability to store and utilize hydrogen as a versatile energy carrier has the potential to revolutionize transportation, power generation, and industrial applications, enabling a transition away from fossil fuels and reducing carbon emissions. Water Splitting provides a comprehensive exploration of water splitting, starting with the foundational principles of thermodynamics and kinetics, crucial for understanding hydrogen production. It covers</p>

diverse methods and catalysts, emphasizing material selection and reaction optimization, and explores recent innovations in materials and catalysts tailored for water splitting, highlighting synthesis techniques, functional materials, and nanotechnology integration. A significant portion of the book is dedicated to water photoelectrochemistry, analyzing semiconductor materials, photoelectrode design, and solar-to-hydrogen conversion strategies. The book delves into integrated systems, advanced reactors, and the role of artificial intelligence, machine learning, and big data in enhancing water splitting technologies. Water Splitting addresses gaps in current resources, focusing on cutting-edge advancements and ensuring researchers stay informed and prepared to contribute to the field's progress.

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