



With reference to many examples as well as to new technologies, this book provides insight into a crucial technology for our common future.

Abstract:

Solar Hydrogen

Renewable hydrogen produced using solar energy to split water is the energy fuel of the future. Accelerated innovation in both major domains of solar energy (photovoltaics and concentrated solar power) has resulted in the rapid fall of the solar electricity price, opening the route to a number of practical applications using solar H₂. New thermochemical water splitting using concentrated solar power (CSP) as well as CSP coupled to electrolysis has the potential to convert and store solar energy into clean hydrogen using a tiny fraction of the world's desert area to meet our present and future global energy needs. Photovoltaics, in turn, has the versatility required for supporting the creation of a distributed energy generation infrastructure in developing countries especially now that the price of PV solar electricity has fallen to unprecedented low levels. In all these cases, solar H₂ will be used to store energy and release it on demand either for fuel cells (to power homes and boats)

or internal combustion engines and turbines (for powering cars, trucks and in thermoelectric power units).

This book on solar hydrogen is unique in its field and is a timely treatment of a hot topic in industry, academic, political and environmental circles. With reference to many examples as well as to new technologies, this accessible book provides insight into a crucial technology for our common future and numerous colour pictures contribute to the book's readability. Written by experts in the field who are engaged at the forefront of research, the book supplies readers with last minute insight from the frontiers of research. The book will be of interest to Politicians, solar PV companies, hydrogen and sustainability researchers, environmentalists, managers in the automotive and nautical industries, undergraduate and graduate students in physics, chemistry, energy and materials science.

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