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formic acid, formaldehyde and methanol -- 3. CO₂-based hydrogen storage - formic acid dehydrogenation -- 4. CO₂-based hydrogen storage - Hydrogen generation from formaldehyde/water -- 5. CO₂-based hydrogen storage - hydrogen liberation from methanol/water mixtures and from anhydrous methanol -- 6. Hydrogenation of carbonyl compounds of relevance to hydrogen storage in alcohols -- 7. Dehydrogenation of alcohols and polyols from a hydrogen production perspective -- 8. Hydrogenation of nitriles and imines for hydrogen storage -- 9. Transition metal-catalyzed dehydrogenation of amines -- 10. Homogeneously catalyzed hydrogenation and dehydrogenation reactions - From a mechanistic point of view -- Index

Sommario/riassunto

Hydrogen is believed to be the energy source of the future, enabling zero-emission and efficient production of power. This comprehensive publication presents a broad spectrum of various chemical aspects of hydrogen storage. The authors also address global climate change issues, carbon dioxide sequestration problems and CO₂-based hydrogen storage.
