Energy storage and hydrogenation

Liquid hydrogen carriers (LHC), such as cyclohexane, methylcyclohexane, N-heterocycles, methanol, and ammonia, have emerged as promising solutions in hydrogen energy conversion systems. The storage and release of hydrogen ...

The presented overview of LOHC-BT technology underlines its potential as a storage and transport vector for large-scale H 2-to-H 2 value chains that will be indispensable in future clean energy systems. However, the ...

Hydrogen energy plays a crucial role in driving energy transformation within the framework of the dual-carbon target. Nevertheless, the production cost of hydrogen through electrolysis of water ...

Hydrogen is one of the key components in renewable energy systems. Its storage and transport, however, are challenging. The Liquid Organic Hydrogen Carrier (LOHC) technology is a possible solution for this issue. With ...

Although the theoretical hydrogen storage capacity (4.4 wt %) is lower than the target set by the U.S. Department of Energy for 2020 (5.5 wt %), the dehydrogenation process to produce CO 2 is thermodynamically favorable ...

Hydrogenation is a simple, efficient, and cost-effective way for tailoring the electronic and morphological properties of the nanostructured materials. ... and energy storage ...

Reducing CO2 emissions is an urgent global priority. The enforcement of a CO2 tax, stringent regulations, and investment in renewables are some of the mitigation strategies ...

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