

Energy Conversion

R&D Project Title : Energy Saving Hydrogen Production/Storage by Silicon-Based Hydrogen Carrier

Project Leader : Yusuke Sunada
Professor, Institute of Industrial Science, The University of Tokyo



Purpose of this research :

• Silicon-based hydrogen carriers that can store large amounts of hydrogen, as well as precious metal free catalysts will be developed. Based on these technologies, novel systems that can produce/storage of H_2 under energy-saving reaction conditions will be developed.

Research Outline :

• Development of low-cost hydrogen carriers that can generate and store hydrogen in an energy-efficient manner

A series of silicon-based hydrogen carriers that can store a large amount of hydrogen will be developed.

In addition, we will develop novel technology that enables efficient generation and storage of hydrogen under significantly mild reaction.

• Development of precious metal-free catalysts that exhibit high catalytic performance and durability

Precious metal-free catalysts such as iron and nickel-based catalysts will be developed.

Summary :

Fundamental technologies that enable the effective use of hydrogen energy compared to conventional ones will be developed.

