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Endowed Research Section – Water Chemistry Energy (AGC) –

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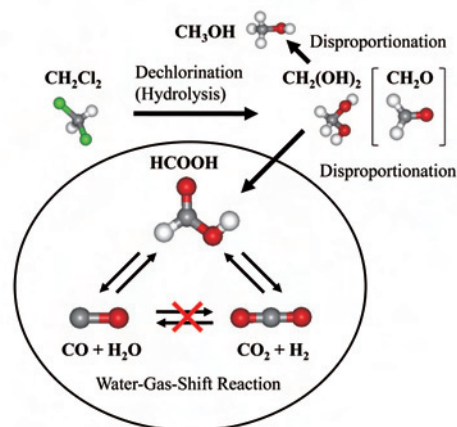
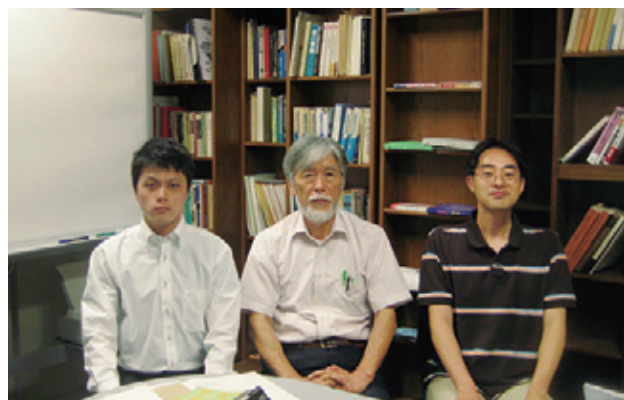
ISOBE, Akira

Scope of Research

Application of fundamental studies on decomposition and formation of formic acid to the hydrogen energy technology is under investigation using NMR, Raman, and IR spectroscopy. This hydrogen-water energy cycle does make a contribution to the CO₂ reduction and to a progress in energy-saving society. We are taking advantage of the solvation effect on the equilibrium of formic acid formation or decomposition from formic acid to capture and deposit CO₂ on a large scale. Fundamental aspects of pyrolysis of ethers (unimolecular reaction of ethers) are also investigated by NMR.

KEYWORDS

Formic Acid
Hydrogen
Carbon Dioxide
Water-Gas Shift Reaction
Carbon Neutral



Selected Publications

Yasaka Y, Wakai C, Matubayasi N, Nakahara M: Controlling the Equilibrium of Formic Acid with Hydrogen and Carbon Dioxide Using Ionic Liquid, *J. Phys. Chem. A*, **114**, 3510-3515 (2010).

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