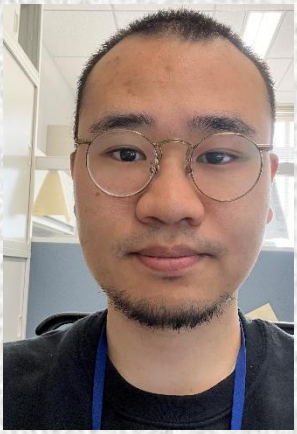
The 90th GREEN Seminar



Nanoengineered nano-space materials for conversion of stable molecules

Chair: Dr. Hideki Abe (GREEN)

Dr. Shusaku Shoji

(NIMS, Green, Hydrogen Production Catalyst Materials Group)

3D nanostructures have interesting properties such as the diffusion of molecules, high surface area, and light penetration. In particular, the 3D nano-space, as a local environment, plays a significant role in catalytic reactions. The nanomaterial fabrication method using block copolymers has various advantages, including the controllability of 1D-3D and nano to macro size asymmetric structures through a self-assembled process and the flexibility to produce oxide, nitride, carbide, and metal nanostructures based on a variety of elements. We demonstrated the use of nano-space materials for hydrogen production reactions, such as the dry reforming of methane using photons as the driving force. Ti and Ta-based 3D nano-materials exhibited quite high activity for hydrogen production and had excellent diffusion properties of molecules.

Venue: Auditorium, 1F, NanoGREEN/WPI-MANA Bldg., Namiki-site

Date: Tuesday, May 30th , 2023

Time: 10:30-11:30

Contact: ABE.Hideki@nims.go.jp