

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



SMP045-02

Room:301B

Time:May 24 14:30-14:45

## Dynamic behavior of D atoms in Mg(OD)<sub>2</sub> at high temperature

Takaya Nagai<sup>1\*</sup>, Hiroyuki Kagi<sup>3</sup>, Asami Sano<sup>2</sup>, Riko Iizuka<sup>3</sup>

<sup>1</sup>Hokkaido University, <sup>2</sup>JAEA, <sup>3</sup>The University of Tokyo

We are now constructing a new beam line (PLANET) specially dedicated to neutron diffraction measurements at high pressure and high temperature in J-PARC under a Grant-in-Aid for Scientific Research on Innovative Areas from the MEXT (proposal: Earth Science Based on the High Pressure and Temperature Neutron Experiments). We hope to obtain the first data measured at PLANET in this fall. Before that, we measured neutron diffraction at high temperature and at atmospheric pressure to see the dynamic behavior of D atoms at the temperature just below the dehydration reaction. The neutron diffraction experiments from 202K to 600K were carried out at the Wide-Angle Neutron Diffractometer beamline (WAND) in the High Flux Isotope Reactor (HRIR), Oak Ridge National Laboratory, USA. In addition, we measured IR spectra on Mg(OD)<sub>2</sub> from room temperature to a dehydration temperature to obtain some complementary data to neutron diffraction data.

Keywords: brucite, hydrogen atom, high temperature, dynamic behavior, IR measurement, neutron diffraction