

## International Symposium of Hydrogen Polymers Team, HYDROGENIUS

### Program

Date: **Friday, 31st January 2014**

Venue: **Inamori Hall, Inamori Center Building, Kyushu University**

Chair: Prof Shin Nishimura

- 13:30-13:40    Opening Remarks  
**Prof Shin Nishimura, Kyushu University (Japan)**
- 13:40-14:20    Imidazole-based Anhydrous Polymer Membrane for PEMFC:  
Understanding of Proton Conductivity related to a Balance of Hydrogen Bond and  
Molecular Mobility  
**Prof. Suwabun Chirachanchai, Chulalongkorn University (Thailand)**
- 14:20-15:00    Evaluation of Rubber Material for High-pressure Hydrogen Seal after Cyclic Exposure  
**Prof. Hirotada Fujiwara, HYDROGENIUS, Kyushu University (Japan)**
- 15:00-16:00    Coffee Break and Poster Presentation for Activities of Hydrogen Polymer Team
- 16:00-16:40    High Thermal Conductive Epoxy Materials and their High Thermal Conductivity  
Mechanism  
**Prof. Yuzo Itoh, Kogakuin University (Japan)**
- 16:40-17:20    Reinforcing Rubbers using Various Fillers  
**Prof. Changwoon Nah, Chonbuk National University (Korea)**
- 17:20-17:30    Closing Remarks  
**Prof Shin Nishimura, Kyushu University (Japan)**
- 18:00-20:00    Banquet (Big Orange Restaurant)

### Poster Presentations (Obligation time 15:00-16:00)

- P1            Detection of internal fracture in rubber sealing material for high-pressure hydrogen vessels  
by acoustic emission method  
**Shin NISHIMURA**, Faculty of Engineering Kyushu University (Japan)  
and Hirotada FUJIWARA, HYDROGENIUS Kyushu University (Japan)
- P2            Effect of Fillers on High-Pressure Hydrogen Seal Performance of Cold Resistant Ethylene  
Propylene Rubber O-ring  
**Shin NISHIMURA**, Faculty of Engineering Kyushu University (Japan)  
and Hirotada FUJIWARA, HYDROGENIUS Kyushu University (Japan)
- P3            In-situ Volume Measurement of Acrylonitrile Butadiene Rubber in High-pressure Hydrogen  
**Shin NISHIMURA**, Hiroaki ONO, Kyushu University (Japan)  
Hirotada FUJIWARA, HYDROGENIUS Kyushu University (Japan)  
Julien JARAVEL, S CASTAGNET, Jean-Claude GRANDIDIER, Institute P', ENSMA (France)
- P4            Molecular mobility change of acrylonitrile butadiene rubber via high-pressure hydrogen  
exposure  
**Hiroaki ONO**, Shin NISHIMURA, Kyushu University (Japan)  
Hirotada FUJIWARA, HYDROGENIUS Kyushu University (Japan)

- P5 Synthesis of Biphenyl Benzoate Twin-mesogen Epoxy Polymer and its Thermal Conductivity  
**Shuji KAWAMOTO**, Shin NISHIMURA Kyushu University (Japan)  
Hikaru NATORI, Tadatomo KAWAI, Yuzo ITOH Kogakuin University (Japan)  
Hirotda FUJIWARA, HYDROGENIUS Kyushu University (Japan)
- P6 Influence of high-pressure hydrogen exposure on the inhomogeneous structure of peroxide crosslinked acrylonitrile butadiene rubber  
**Keiko OHYAMA**, Shin NISHIMURA, Kyushu University (Japan)  
and Hirotda FUJIWARA, HYDROGENIUS Kyushu University (Japan)
- P7 Influence of Repeating High-pressure Hydrogen Exposure on Rubber Materials  
**Hirotda FUJIWARA**, Yoshinori IZUMI, Fumihiro TANAKA, HYDROGENIUS Kyushu University (Japan), Hiroaki ONO, and Shin NISHIMURA, Faculty of Engineering Kyushu University (Japan)
- P8 Study of Swelling Behavioral in Acrylonitrile Butadiene Rubber Exposed to Hydrogen by using Solid state  $^1\text{H}$  NMR  
**Hirotda FUJIWARA**, HYDROGENIUS Kyushu University (Japan)  
Hiroaki ONO and Shin NISHIMURA, Faculty of Engineering Kyushu University (Japan)