International Symposium of Hydrogen Polymers Team, HYDROGENIUS

Tentative Program
Date: **Thursday, 31st January 2013**
Venue: **Inamori Hall, Inamori Center Building, Kyushu University**
Language: English
Chair: Prof Shin Nishimura

10:30-11:00 Opening Remarks & 1-min presentations for posters (12~15 talks)
Prof Shin NISHIMURA, Kyushu University (Japan)

11:00-13:20 Poster Presentation and Lunch (obligation time 11:00-11:50)

13:20-14:00 Analysis of Dissolved Hydrogen Molecules in Rubber Materials by NMR
Prof Hirotada FUJIWARA, Kyushu University (Japan)

14:00-14:40 Mechanical Properties and Crosslinking Structure of Crosslinked Natural Rubber
Prof Seiichi KAWAHARA, Nagaoka University of Technology (Japan)

14:40-15:30 Design Principles for Seals and Sealing Systems Exposed to Gas Decompression and High Temperature Gradients
Prof Zoltan MAJOR, Johannes Kepler University Linz (Austria)

15:30-15:50 Coffee Break

15:50-16:30 Nanocavitation in Nanocomposites Probed by Real Time Small Angle X-ray Scattering (SAXS)
Prof Costantino CRETON, ESPCI ParisTech (France)

16:30-17:10 Durability Performance of Rubber O-ring for High-pressure Hydrogen Seal
Mr Atsushi KOGA, NOK Corporation (Japan)

17:10-17:15 Closing Remarks
Prof Shin NISHIMURA, Kyushu University (Japan)

17:30-19:30 Banquet (Big Orange Restaurant)

Poster Presentations (Obligation time 10:50-11:50)

P1 Evaluation of Molecular Mobility of Rubber Materials for High-pressure Hydrogen Seal by Pulsed ^{1}H-NMR
Hiroaki ONO, Hirotada FUJIWARA and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P2 Analysis of Thermal Decomposition Behavior of Acrylonitrile Butadiene Rubber
Takuya GOUSHI, Hirotada FUJIWARA and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P3 Thermal Expansion Behavior of Rubber Materials for High-Pressure Hydrogen Gas Seal
Hiroshi YAMADA, Kouhei UEYAMA, Hirotada FUJIWARA and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P4 SAXS Analysis of Inhomogeneous Structure in Acrylonitrile-Butadiene Rubber Swelled with Hydrogen
Keiko OHYAMA, Hirotada FUJIWARA and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P5 In-situ Observation of Acrylonitrile-Butadiene Rubber Swelled by High-Pressure Hydrogen
Shin NISHIMURA, Hiroaki ONO, Hirotada FUJIWARA,
Kyushu University, HYDROGENIUS, AIST (Japan),
Julien JARAVEL, Sylvie CASTAGNET and Jean-Claude GRANDIDIER,
Institute P', ENSMA, Poitiers (France)

P6 Compound Design for O-ring of Breakaway Devices on Hydrogen Station
Ryo TAKAHASHI, Takeshi FUJII, Takaishi Industries Corporation (Japan),
Shigeru SAKURAI, Tokico Technology Ltd. (Japan),
Yoshinori IZUMI and Shin NISHIMURA, Kyushu University (Japan)

P7 Lifetime Assessment of Diaphragm Pump for Fuel Hydrogen Gas Circulation
Shin NISHIMURA, Kyushu University, HYDROGENIUS, AIST (Japan),
Tsuyoshi TAKAMICHI, Hideki ISHII, Mayumi MATSUBAI and Hiroshi OHNISHI,
Techno Takatsuki Co., Ltd. (Japan)

P8 The Research and Development of Applicable Material That is Resistant to Hydrogen Gas
Mitsuo SHIBUTANI, Taiji KANDA and Akinobu INAKUMA,
The Nippon Synthetic Chemical Industry Co., Ltd. (Japan)

P9 Study on the Effect of High Pressure Hydrogen on the Higher Order Structure of Rubber Materials by FT-IR Spectroscopy
Yuzo ITOH, Masaya YAMAGISHI, Tadatomo KAWAI,
Kogakuin University (Japan),
Hirotada FUJIWARA and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P10 Influence of Repeating High-pressure Hydrogen Exposure on Rubber Materials
Hirotada FUJIWARA, Hiroaki ONO, Yoshinori IZUMI and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P11 Study of Swelling Behavioral in Acrylonitrile Butadiene Rubber Exposed to Hydrogen using NMR
Hirotada FUJIWARA and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P12 Chemical Analysis of Silicone Rubber O-ring after Hydrogen Pressure Cycle Test
Hirotada FUJIWARA, Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan),
Atsushi KOGA, Tadahisa YAMABE and Kenichi UCHIDA,
NOK Corporation (Japan)

P13 Durability Performance of Rubber O-ring for High-pressure Hydrogen Seal
Atsushi KOGA, Tadahisa YAMABE, NOK Corporation (Japan),
Junichiro YAMABE and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)

P14 Optimization No Fracture Groove Design of Rubber O-ring under High-pressure Hydrogen Use
Tadahisa YAMABE, Atsushi KOGA, NOK Corporation (Japan),
Junichiro YAMABE and Shin NISHIMURA,
Kyushu University, HYDROGENIUS, AIST (Japan)