

2013 HYDROGENIUS Tribology Symposium
Preliminary Program

HYDROGENIUS & Kyushu University

Lecture Theatre 312, Building 4, West Zone, Ito Campus
Thursday, 31st January, 2013

Session 1 10:45-11:50

10:45-10:50 Greeting

10:50-11:20 Tribology of Polymer Sealing Materials in Hydrogen
Yoshinori Sawae^{1*}, Takehiro Morita¹, Kazuhiro Nakashima¹,
Eiichi Miyakoshi², Hideki Watanabe¹, Shunichiro Doi¹,
Yoshie Kurono¹, Joichi Sugimura^{1,2}

11:20-11:50 Invited
KITZ High Pressure Ball Valves for 70 MPa Hydrogen Fuel Stations for FCVs
Tomoya Yamasaki* (KITZ Corporation)

Session 2 12:00-13:00

Poster session at Inamori Frontier Research Center

Study on Friction Property of DLC Films in Low-Pressure-Hydrogen Condition
Kenta Oshima, Ryo Tsuboi (Tokyo University of Science), Shinya Sasaki* (Tokyo
University of Science, HYDROGENIUS), Masahiro Kawaguchi (Tokyo Metropolitan
Industrial Technology Research Institute), Joichi Sugimura^{1,2}

Experimental Study on Hydrogen Sealing Ability and Wear Characteristics of PTFE
Composites
Yoshinori Sawae^{1*}, Hayato Ideguchi¹, Takehiro Morita¹, Kazuhiro Nakashima¹, Joichi
Sugimura^{1,2}

Effects of Counterface Materials and Temperature on Friction and Wear of PTFE Composites
in Hydrogen
Takehiro Morita^{1*}, Mizuki Nabeshima¹, Yoshie Kurono¹, Yoshinori Sawae¹, Joichi
Sugimura^{1,2}

Rolling Contact Fatigue under Grease Lubrication in Hydrogen
Hiroyoshi Tanaka^{1*}, Yuki Ohara¹, Masaaki Hashimoto¹, Joichi Sugimura^{1,2}

Structural Changes in Steel under Rolling Contact in Some Gas Environments
Kakeru Enami^{1*}, Hiroyoshi Tanaka¹, Masaaki Hashimoto¹, Joichi Sugimura^{1,2}

Hydrogen Permeation into Bearing Steel under Simple Contact in Hydrogen
Hiroyoshi Tanaka¹, Takahiro Yamanaka^{1*}, Joichi Sugimura^{1,2}

Decomposition of Oil and Generation of Hydrogen under Some Environment
Suguru Ikeda^{1*}, Hiroyoshi Tanaka¹, Joichi Sugimura^{1,2}

Friction and Wear of Cobalt-Based Alloy in High Pressure Hydrogen

Takehiro Morita^{1*}, Masaaki Hashimoto¹, Yoshie Kurono¹, Eiichi Miyakoshi², Shunichiro Doi¹, Hideki Watanabe¹, Yoshinori Sawae¹, Joichi Sugimura^{1,2}

Lunch

Session 3 14:00-15:40

14:00-14:50 Keynote 1
Surface Films and Environment Related to Adhesion, Wear, and Lubrication
Kazuhisa Miyoshi * (Retiree of NASA Glenn Research Center, USA)

14:50-15:40 Keynote 2
Tribochemical Behaviors in Cryogenic High-Speed Ball Bearings of Rocket Turbopumps
Masataka Nosaka* (The University of Tokyo)

Coffee Break

Session 4 16:00-17:40

16:00-16:30 Invited
Design of New Apparatus for Friction and Wear under High Temperature Hydrogen Atmosphere
Tomoaki Iwai*, Takaya Ueda, Yutaka Shoukaku (Kanazawa University)

16:30-17:00 Invited
Influence of Additives on Hydrocarbon Decomposition and Hydrogen Generation by Contact of Greases with Nascent Clean Steel Surface
Toshiaki Wakabayashi*, Mitsuhiro Kowata, Kenji Utsumi (Kagawa University), Yasuha Tokumo, Kentaro Yamaguchi, Kiyomi Sakamoto, Yuji Shitara (JX Nippon Oil & Energy Corporation)

17:00-17:30 Are the Influences of Trace Impurities on Tribological Properties Peculiar to a Hydrogen Environment?
Kanao Fukuda* (Malaysia-Japan International Institute of Technology, Kyushu University), Masaaki Hashimoto¹, Joichi Sugimura^{1,2}

17:30-17:40 Discussion and Closure

*Presenting and corresponding author

¹ Kyushu University

² HYDROGENIUS, AIST

Banquet Social lubrication from around 7 pm at a local restaurant in downtown Fukuoka (at participants' own expense)
Place will be announced in the sessions.