

HYDROGENIUS Tribology Division
& I²CNER Hydrogen Materials Compatibility Division
<2018 HYDROGENIUS & I²CNER TRIBOLOGY SYMPOSIUM>

<Date> 10:00-18:00, Friday, 2nd February 2018
 <Venue> Lecture Room 3F, Shiiki Hall, Ito Campus, Kyushu University
 <Language> English
 <Theme> Various Aspects of Hydrogen-related Processes at Tribo-interface

<Program and Speaker>

Time	Program and Speaker
10:00-10:05	Opening remarks Joichi Sugimura, Kyushu University
10:05-11:55	Session 1 Chairperson: Yoshinori Sawae, Kyushu University
10:05-10:45	Keynote Lecture 1 Tribology of Polymers Materials in Cryogenic Hydrogen and Methane Géraldine Theiler, BAM, Germany
10:45-11:10	Invited Talk Technological trends of high pressure hydrogen compressor - Approach of KOBELCO Group - Naofumi Kanei, Kobe Steel, Ltd.
11:10-11:35	Invited Talk Influences of sulfur-containing additives on grease decomposition and hydrogen generation by nascent metal surface Go Tatsumi ¹ , Yuji Shitara ¹ , Peng Yao ² , Toshiaki Wakabayashi ² ¹ JXTG Nippon Oil & Energy Corporation, ² Kagawa University
11:35-11:55	Invited Talk Inhibiting hydrogen permeation in bearing steel by controlling tribofilm growth in the contact Vlad B. Niste, Hiroyoshi Tanaka, Joichi Sugimura, Kyushu University
11:55-12:50	Lunch
12:50-14:45	Session 2 Chairperson: Kanao Fukuda, Universiti Teknologi Malaysia
12:50-13:30	Keynote Lecture 2 The role of hydrogen in carbon tribology: A mechanistic overview Ali Erdemir, Argonne National Laboratory, USA
13:30-13:55	Invited Talk Super-low friction mechanism of diamond-like carbon lubricated with an environmentally friendly ester based oil Shinya Sasaki, Hiharu Okubo, Tokyo University of Science, Japan
13:55-14:20	Invited Talk Tribochemical wear of silicon-based materials mediated by proton transfer: Molecular dynamics sliding simulation analysis Yusuke Ootani, Tohoku University, Japan

Kyushu University Energy Week 2018

14:20-14:45	Invited Talk Visualization of real contact area of rubber materials sliding on hard substrates Satoru Maegawa, Tottori University, Japan
14:45-15:00	Break
15:00-16:25	Joint Symposium of Hydrogen Tribology Team and Hydrogen Polymers Team Chairperson: Dr. Neha RUSTAGI, Fuel Cell Technologies Office, DOE, USA
15:00-15:40	Invited Talk Hydrogen Compatible Polymeric Materials Dr. Kevin Simmons, Pacific Northwest National Laboratory, USA
15:40-16:20	Tribology of rubbers in hydrogen Joichi Sugimura, Kyushu University, Japan
16:20-16:25	Closing Remarks of Oral Session Prof. Shin Nishimura, Kyushu University
16:25-16:30	Break
16:30-18:00	Poster Session

Poster Session

- PT01 Frequency modulation atomic force microscopy (FM-AFM) observation of adsorbed films on diamond-like carbon (DLC) surfaces
Hikaru Okubo, Shinya Sasaki, Tokyo University of Science, Japan
- PT02 Tribology of polyethylenimine / molybdenum disulphide (PEI/MoS₂)₁₅ films in dry atmospheres
Prabakaran Saravanan, Roman Selyanchyn, Hiroyoshi Tanaka, Joichi Sugimura, Kyushu University, Japan
- PT03 Effect of environmental gas on friction and wear of various ceramics
Kohei Shirahama¹, Hiroyoshi Tanaka¹, Takeshi Maeda², Joichi Sugimura¹
¹ Kyushu University, ² Kyocera Corporation, Japan
- PT04 Effects of oxygen and water on friction and wear of DLC slid against pure metals
Keisuke Manabe, Hiroyoshi Tanaka, Joichi Sugimura, Kyushu University, Japan
- PT05 Friction and wear of polymer composites in hydrogen environment at low temperature
Naotoshi Shimizu¹, Yoshinori Sawae², Takehiro Morita², Shugo Onitsuka², Joichi Sugimura²
¹ IHI Corporation, ² Kyushu University, Japan
- PT06 Effect of trace moisture content on low friction mechanism of carbon fiber filled PTFE in high purity hydrogen
Reona Umei, Keiji Sakaki, Takehiro Morita, Yoshinori Sawae, Joichi Sugimura, Kyushu University, Japan
- PT07 Friction and wear of polymer composites in high pressure hydrogen
Yoshinori Sawae, Eiichi Miyakoshi, Shunichiro Doi, Takehiro Morita, Joichi Sugimura, Kyushu University, Japan
- PT08 Effects of environmental gases on friction and wear of stainless steels
Shotaro Koizumi¹, Hiroyoshi Tanaka¹, Yuuya Hayashi², Naruhiko Inayoshi², Joichi Sugimura¹
¹ Kyushu University, ² DENSO Corporation, Japan
- PT09 Hydrogen generation from cyclic compounds in rolling contact of steel
Daisuke Takekawa¹, Yoji Sunagawa¹, Hiroyoshi Tanaka², Joichi Sugimura²
¹ Idemitsu Kosan Co., Ltd., ² Kyushu University, Japan
- PT10 Evaluation of new type bearing retainer for liquid rocket engine turbopump
Hiromitsu Kakudo, Satoshi Takada, Makoto Yoshida, Japan Aerospace Exploration Agency, Japan