



Session information

Technical Session

Technical sessions » Advanced Tribology Material

Polymer 4

Sat. Sep 30, 2023 1:30 PM - 3:30 PM Room I (Room 413)

Hitonobu Koike (University of Miyazaki, Japan)

Hironori Shinmori (Kyushu University, Japan)

1:30 PM - 1:50 PM

[30-I-05] Surface Mechanical Properties and Friction of Slide-ring Polymer Hydrogels Studied by Resonance Shear Measurements

Gen Masao¹, *Masashi Mizukami¹, Kazuhito Kato², Kohzo Ito², Kazue Kurihara¹

(1. Tohoku University, Japan, 2. The University of Tokyo, Japan)

Keywords: Resonance shear measurement, slide ring gel, Contact interface, Mechanical property, Friction

1:50 PM - 2:10 PM

[30-I-06] Near Ultralow Wear of Neat PTFE: How Resilient Is the Tribofilm under Changing Humidity?

*Kian Kun Yap¹, Kanao Fukuda², Janet Wong¹, Marc Masen¹

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Keywords: PTFE, Humidity, Transfer films, In-situ tribometry

2:10 PM - 2:30 PM

[30-I-07] Fretting Wear of Thermoplastic Polyurethane (TPU): The Role of Environmental Conditions

*Martin Tockner¹, Paul Staudinger², Michael Fasching³, Thomas Schwarz³, Florian Summer⁴, Florian Gruen⁴, Andreas Hausberger¹

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Keywords:thermoplastic polyurethane, fretting wear, environmental conditions, sealing material, polymers

2:30 PM - 2:50 PM

[30-I-08] Structural Design and Friction Transfer Mechanism of PTFE-based Core-shell Lubricating Materials

*Jinqing Wang^{1,2}, Yawen Yang^{1,2}, Na Wang^{1,2}, Zhangpeng Li^{1,2}, Honggang Wang^{1,2}, Shengrong Yang^{1,2}

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Keywords:PTFE lubricating materials, Core-shell, Wear resistance, Friction transfer mechanism

2:50 PM - 3:10 PM

[30-I-09] Frictional Properties for Super Engineering Plastics under Hydrogen Environment

*Naofumi Kanei¹, Hirotaka Ito², Hiroaki Nii²

(1. New Business Development Division, Machinery Business, KOBE STEEL, Ltd., Japan, 2. Applied Physics Research Laboratory, KOBE STEEL, Ltd., Japan)

Keywords:super-engineering plastics, wear, hydrogen, piston ring, reciprocating compressor

3:10 PM - 3:30 PM

[30-I-10] The Application of Microcapsules in Polymer Based Lubricating Materials

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(1. Tsinghua University, China, 2. Beijing University of Chemical Technology, China)

Keywords:microcapsules, lubricating materials, self-healing, self-lubricating
