

SLOVENIAN SOCIETY FOR TRIBOLOGY

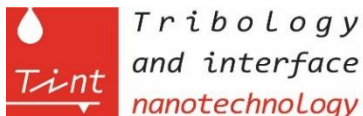
3rd International Conference on
POLYMER TRIBOLOGY



FINAL PROGRAMME

24th – 25th September 2018

Grand Hotel Bernardin, Portorož, Slovenia



DAY 1, 24th September 2018

08:00–09:40 REGISTRATION

09:40–12:00 SESSION I

Chair: K. Friedrich

09:40–09:50 CONFERENCE OPENING

09:50–10:40 V. L. Popov; Technical University of Berlin, Germany –
Keynote lecture*Elastomer friction beyond Amonton's law: generalized law of friction accounting for velocity, temperature and normal force*

10:40–11:00 R. Polednik, P. Sperka, I. Krupka, M. Hartl; Brno University of Technology, Czech Republic

Film formation in elliptical point contacts between PMMA and steel

11:00–11:20 B. C. Jim, A. Gebhard, B. Wetzel; The Institute for Composite Materials (IVW), Technical University of Kaiserslautern, Germany

*In-situ measurement of transfer films by a novel optical method using the example of polymer-metal sliding contacts*11:20–11:40 D. Savio¹, M. Moseler^{1,2}; ¹Fraunhofer IWM, MicroTribology Center μ TC, Germany, ²Albert-Ludwigs University of Freiburg, Germany*Atomistic insights on polymer-polymer tribointerfaces*11:40–12:00 G. Hlebanja¹, S. Kulovec²; ¹University of Novo mesto, Slovenia, ²Podkrižnik d.o.o., Slovenia*Thermal behaviour of plastic S-shaped gears in comparison with involute gears*

12:00–13:30 CONFERENCE LUNCH

DAY 1, 24th September 2018**13:30–15:30 SESSION II: WORKSHOP ON POLYMER GEARS Chair: B. Wetzel**

- 13:30–14:10 **U. Kissling, A. Pogačnik; KISSsoft, Switzerland –**
Keynote lecture
Tooth form modifications for the optimization of plastic gears
- 14:10–14:30 **A. Bormuth, J. Zuleeg, C. Schmitz, M. Pfadt, H. Meven; Klüber**
Lubrication München SE & Co. KG, Germany
Lubrication of plastic worm gears
- 14:30–14:50 **P. Kilian, F. Lorenz, K. Kuhmann; Evonik Resource Efficiency**
GmbH, Germany
High Performance Polymers for challenging gear and bearing applications
- 14:50–15:10 **P. Jan¹, N. Oya², Y. Munesawa², M. Kalin¹; ¹University of**
Ljubljana, Slovenia, ²Kuraray Co., Japan
The effect of temperature on polymer gear wear behaviour
- 15:10–15:30 **J. Tavčar¹, J. Škofic², J. Jerina²; ¹University of Ljubljana,**
Slovenia, ²Iskra Mehanizmi, Slovenia
Life testing of reinforced and unreinforced polymer gears

15:30–16:00 COFFEE BREAK

DAY 1, 24th September 2018**16:00–17:40 SESSION III****Chair: M. Kalin**

- 16:00–16:40 **R. Larsson, Y. Shi, M. Grahm; Luleå University of Technology, Sweden – Keynote lecture**
A novel, fossil free, water miscible lubricant
- 16:40–17:00 **S. Abdel-Wahed, C. Koplin, R. Jaeger, M. Scherge; Fraunhofer IWM MikroTribologie Centrum, Germany**
A macroscopic oscillatory tribometry study on static and dynamic friction of lubricated thermoplasts - steel contacts ranging from spreading to adhesive behaviour
- 17:00–17:20 **B. Wetzel, E. Padenko; The Institute for Composite Materials (IVW), Technical University of Kaiserslautern, Germany**
Polybenzimidazole coatings for tribological applications
- 17:20–17:40 **¹C. Wang, ¹T. Stiller, ¹A. Hausberger, ²F. Grün, ³G. Pinter, ⁴T. Schwarz; ¹Polymer Competence Center Leoben GmbH, Austria, ²Chair of Mechanical Engineering, Montanuniversität Leoben, Austria, ³Chair of Materials Science and Testing of Polymers, Montanuniversität Leoben, Austria, ⁴SKF Sealing Solutions Austria GmbH, Austria**
Relationship between fatigue and tribological performance of Thermoplastic polyurethane (TPU)

20:00–23:00 CONFERENCE DINNER



DAY 2, 25th September 2018**08:30-10:20 SESSION IV****Chair: R. Larsson**

- 08:30–09:20 **Y. Sawae; Kyushu University, Japan – Keynote lecture**
Polymer biotribology
- 09:20–09:40 **K. Friedrich, E. I. Akpan, B. Wetzel; Institute for Composite Materials, Technical University of Kaiserslautern, Germany**
Friction and wear of short wood fiber reinforced, water soluble acrylic resin composites
- 09:40–10:00 **C. Kappl¹, C. Schmied¹, T. Stiller², A. Hausberger², G. Pinter³;**
¹Tribotecc GmbH, Austria, ²Polymer Competence Center Leoben GmbH, Austria, ³Chair of Material testing and science of Polymers, Montanuniversitaet Leoben, Austria
Tribological investigation of new synthetic metal sulfides in PEEK, PPS and PPS-compounds
- 10:00–10:20 **H. Ronkainen, J. Pelto, M. Karttunen, J. Metsäjoki, V. Heino; VTT Technical Research Centre of Finland, Finland**
Friction and wear performance of high density polyethylene (HDPE) composites

10:20–10:50 COFFEE BREAK

DAY 2, 25th September 2018

10:50–12:50

**SESSION V: INTERNATIONAL
WORKSHOP ON POLYMER TRIBOLOGY**

Chair: N. Emami

10:50–11:20

K. Yokoyama; NSK Ltd, Japan

NSK's plastic products and future issues

11:20–11:50

T. Yamaguchi; Kyushu University, Japan

Shape design and friction of polymer gels

11:50–12:20

N. Emami; Luleå University of Technology, Sweden

Tribological characterisation of newly developed PPS composites

12:20–12:50

A. Vidergar, M. Kalin, A. Kupec, L. Čoga; University of Ljubljana, Slovenia

The influence of the structural morphology of POM on its tribological properties

12:50–14:20

CONFERENCE LUNCH



DAY 2, 25th September 2018

14:20–16:00 SESSION VI

Chair: H. Ronkainen

- 14:20–14:40 **B. Jakab¹, M. Jakab², N. Gamsjäger³; ¹AC2T research GmbH, Austria, ²University of Pannonia, Institute of Materials Engineering, Hungary, ³Aerospace & Advanced Composites GmbH, Austria**
Tribological Modelling And Surface Characterisation Of Composite Calender Rolls
- 14:40–15:00 **V. Heino¹, H. Ronkainen¹, M. Karttunen², J. Pelto²; ¹VTT Technical Research Centre of Finland, Materials Performance, Finland, ²VTT Technical Research Centre of Finland, Materials processing and circular solutions, Finland**
The load bearing capacity of HDPE polymers
- 15:00–15:20 **S. Kim, K. Sugiyama; Ebara Corporation, Materials Technology Section, Japan**
Effect of groove on polymer based composite sliding bearings
- 15:20–15:40 **M. Bek¹, J. Gonzalez-Gutierrez², C. Kukla², L. Slemenik Perše¹; ¹University of Ljubljana, Slovenia, ²Industrial Liaison Department, Montanuniversitaet Leoben, Austria**
Flow characteristics of highly filled polymers for powder injection modelling
- 15:40–16:00 **E. S. Gur, M. Bagci; University of Selcuk, Faculty of Engineering, Turkey**
Slurry erosion wear of B2O3 filled GF/EP composites
- 16:00–16:10 **CONFERENCE CLOSURE**

DAY I 18:00–19:00**DAY II 13:30–14:20****POSTER SESSION***

I **J. Lind, Å. Kassman Rudolphi; Uppsala University, Department of Engineering Sciences, Sweden**

Fretting behavior of lubricated and unlubricated PPS composites

II **D. Vdovin¹, Y. Levenkov¹, D. Krasnov², I. Kirichenko²; ¹Bauman Moscow state technical university, Russia, ²LCC STC Drive technique, Russia**

Composite plastic gear research program overview

* Poster authors should be present by the posters during the official poster session hours. The posters will be displayed from 10:00 a.m. on, on 24th of September 2018.



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This image shows a full page of blank primary-ruled paper. It features multiple sets of horizontal lines designed for handwriting practice. Each set consists of three lines: a solid top line, a dashed middle line, and a solid bottom line. These sets are repeated vertically down the entire page, providing ample space for practicing letter formation and alignment. The paper is otherwise completely blank, with no margins, text, or other markings.

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