

NORDTRIB 2026 Presentations

Keynote presentations

Dini, Daniele, Imperial College London, Bridging Fundamental Discoveries and Applications in Tribology through Multidisciplinary Research and Simulations

Wood, Robert, University of Southampton, Detecting and understanding early wear processes

Kubota, Masanobu, Kyushu University, Effect of Hydrogen on Wear, Friction, and Crack Initiation under Fretting Contact

Espallargas, Nuria, NTNU, Machine Learning–Driven Design of Environmentally Acceptable Lubricants

Abdel Wahab, Magd, Ghent University, From Contact to Crack: Recent Advances in Numerical Modelling of Fretting Fatigue

Badisch, Ewald, AC²T research GmbH, Lubrication Challenges in Ammonia-Fueled Engines: An Integrated Performance Assessment

<https://events.tuni.fi/nordtrib2026/speakers/>

Oral presentations

3. Nilen, Roger, Element Six, The Tribology of Polycrystalline Diamond in Rock Cutting Applications
6. Bohnert, Christof, RPTU University Kaiserslautern-Landau, Efficient System-Level Thermal Modeling for Reliable Contact Temperatures in Tribology
9. Sawaki, Subaru, Waseda University, Molecular-level Insights into the Wear Mechanism of Polymers Using Brillouin and Raman Spectroscopy
10. Davies, Jaden, University of Sheffield, Ultrasonic Measurement of Lubricant Film Thickness in Cylindrical-Raceways of Rolling Element Bearings
11. Kariminejad, Arash, Tallinn University of Technology, Implementation of tribometer's inertia for reliable testing of novel industrial materials manufactured by commercial and recycled critical raw material
12. Morita, Miho, Tokyo University of Science, Comprehensive Evaluation of Phosphorus- and Sulfur-Based Lubricant Additives Using Variable Concentration Friction Tests and Acoustic Emission Analysis
14. Saito, Hayate, Hitachi, Ltd., Enhancement of Wear Resistance of PTFE Composites by Controlling the Morphology and Surface Chemical Property of Copper Filler
15. Hoeksma, Mechteld, University of Twente, Correlating interfacial shear strength with tribologically-induced rubber damage and deformation
17. Fukuzawa, Kenji, Nagoya University, Measurement of Adsorption/Friction Characteristics of nm-thick Additive Adsorption Films by Vertical-Objective Type Ellipsometric Microscopy (VEM)
18. Orgeldinger, Christian, University of Bayreuth, Understanding Scatter in Tribometer Experiments: Contributions of Measurement Uncertainty and Experimental Variability
19. Albrecht, Joachim, Aalen University, Bio-degradable lubricants – what if degradation starts too early...
20. Mikado, Hiroko, YKK Corporation, Critical Wear Mechanisms of PVD-Coated Cemented Carbide Tools Sliding against Stainless Steels
21. Kanitani, Nozomu, YKK Corporation, Sliding Wear of WC–Co Cemented Carbide Against Four Stainless Steel Grades

22. Limiti, Daniele, INSA Lyon - LaMCoS, A Tribological Investigation of Discontinuous Tightening
23. Zhang, Hedong, Nagoya University, Mechanochemical Degradation of Nanometer-Thick Liquid Lubricants between Solid Surfaces: A ReaxFF Molecular Dynamics Study
24. Candeo, Stefano, KTH, Assessment of Road-Tire Particulate Matter Emissions on a British Pendulum Tester
25. Kamiński, Mariusz, Lublin University of Technology, Effect of nitrogen ion implantation parameters on the tribological behaviour and wear mechanisms of Inconel 718
26. Tervakangas, Sanna, Oerlikon Balzers Coating Finland Oy, Industrial thin film coatings for hydrogen applications
27. Haumer, Florian, Montanuniversität Leoben, Screening of gear oil scuffing limits - Twin disc rig versus FZG gear test
28. Saito, Chinatsu, Tottori University, Contact Line Friction of Droplet on Hydrophobic Surface During Forced Wetting and Dewetting
29. Feile, Klara, Friedrich-Alexander-Universität Erlangen-Nürnberg, A Semi-Automated and Subject-Specific Elastohydrodynamic Simulation Framework for Lubrication Prediction of Total Knee Replacements
30. Tonolini, Pietro, Brembo N.V., Subscale development and tribological testing of laser-cladded brake discs
31. Mössner, Martin, University of Innsbruck, Department of Sport Science, Friction induced heating, melting, and refreezing of a snow grain in contact with a cross-country ski
32. Eryu, Shogo, ENEOS Corporation, Investigation of Amine Coordination Effects on ZDDP Performance under Hydrogen Atmosphere
34. Schulz, Wadim, Research Institute for Innovative Surfaces FINO, Wear of hard coatings: control the abrasion particles!
35. Marklund, Pär, Luleå University of Technology, Effect of Water Dilution on the Tribological Performance of Glycerol-Lubricated Components in Hydropower Applications
36. Kailer, Andreas, Fraunhofer Institute for Mechanics of Materials IWM, Bio-Based Composite Materials for Tribological Applications
37. Lander, André, RPTU Kaiserslautern-Landau, Chair of MEGT, Simulation of rolling bearing contact considering raceway surface roughness under electrical current passage
38. Podgornik, Bojan, Institute of Metals and Technology, Self-lubricating performance of Ni-5Ag-10MoS₂ laser deposited coating in high temperature forming of high-strength alloys
39. Couval, Romain, KTH, Mapping of the friction and particle emissions from a heavy-duty brake pad
40. Christou, Athanasia, KTH, Alternative stud materials for lowered wear particle emissions from studded tyres
41. Borchard, Benjamin, University of Strathclyde, Concerning in-situ application of Electrochemical Impedance Spectroscopy to impingement jet testing
42. Xu, Ben, Northumbria University, Wood Composite Hydrogel with Dopamine-Modified Barium Titanate for Energy Harvesting
43. Olofsson, Ulf, KTH, Beyond PM10 emissions – ultrafine particles, secondary particle formation, VOCs, black carbon and toxicology scoring of brake emissions
44. Hilgert, Annika, University of Bayreuth, On the limitations of TENG testing
45. Briatte, Mathis, LaMcube, Towards a better understanding of source mechanisms of brake particle emissions using mass balance
46. Niggel, Vincent, Empa, Investigation of Wear in High-Voltage Circuit Breaker Electrical Contacts
47. Kovanen, Repekka, Tampere University, Fretting induced adhesion spot formation and subsequent crack growth within the first 100 load cycles in a common edge flat-on-flat steel contact without significant bulk load

49. Drnovšek, Aljaž, Jozef Stefan Institute, Tribology of AlTiN hard coatings deposited at different rotation modes
50. Szala, Mirosław, Lublin University of Technology, Poland, Influence of Microstructure on the Cavitation Erosion Resistance of Nickel-Based Hardfacings
51. Trevisiol, Céline, CETIM, Tribological Interest of Thermal Spray Coatings for Sustainable Development
52. Larsson, Roland, Luleå University of Technology, Are meltwater films responsible for low ski friction?
53. Shipway, Philip, University of Nottingham, Design of fretting wear tests in light of an understanding of fretting wear as a transport controlled process
54. Cetintav, Isik, Trakya University, Physics-Informed Digital Twin for Ultrasonic Nanocrystal Surface Modification (UNSM) Process: A Holistic Optimization of Fatigue, Tribology, and Energy Efficiency in Inconel 718
55. Jellesen, Morten S., DTU - Denmark Technical University, Ball-on-disc tribocorrosion investigations of surface hardened titanium
56. Zabihi, Amirhossein, Tampere University, Effect of hydrogen gas environment on the fretting fatigue behavior of quenched-and-tempered steel
57. Cieślak, Grzegorz, Łukasiewicz Research Network — Warsaw Institute of Technology, Effect of graphene reinforcement on the mechanical and tribological properties of nickel-based composite coatings
59. Arinbjarnar, Úlfar, LEGO System A/S, A tribometer to measure representative friction in the context of the LEGO building system
60. Beake, Ben, Micro Materials Ltd., Micro-scale impact tests to develop multilayer coating systems with enhanced wear resistance under cyclic high-stress contact
61. Bergseth, Ellen, KTH Royal Inst of Tech, Thrust washer tribology
62. Zhao, Hanhan, Aarhus University, Manufacture and property characterization of metal components by welding-based additive remanufacturing
64. Aghababaei, Ramin, Aarhus University, Correlating Microscratch Properties with Wear Resistance in Hard Coatings
65. Gürsoy, Özen, Metso Research Center, Low angle impact erosion resistance of elastomers in different erosive conditions
67. Matsuoka, Hiroshige, Tottori University, Analytical study on frequency shift characteristics of QCM: A simple mechanical model for sphere-plane contact
68. Sawae, Yoshinori, Kyushu University, Effect of Counterpart material on Friction and Wear of PEEK Composites during Long Distance Sliding in Hydrogen Environment
69. Raami, Lassi, Tampere University, Quenching and Partitioning: Enhancing the cavitation erosion resistance of AISI 420 steels with novel heat treatments
70. Nilsson, Mikael, Uddeholms AB, The influence of PM tool steel carbide size on abrasive wear resistance
71. Arnald, Erik, Mips AB, Towards a Test Methodology for Dynamic Friction Coefficients - With Special Focus on Helmets During Impact
72. Mattauch, Philipp, Measurement and Control Systems, University of Bayreuth, Evaluating the Reproducibility of Triboelectric Outputs from Polymer Foils Under Lateral Sliding Motion
73. Lavrys, Serhii, Vytautas Magnus university, Wear and fretting resistance of gas nitrided Ti6Al4V alloy in simulated body fluid
74. Koblar, Ana, Jožef Stefan International Postgraduate School, Corrosion properties of Additive Manufactured AlSi10Mg on bare and treated surface
77. Larsson, Roland, Luleå University of Technology, Water-based lubricants – environment and performance

78. Larsson, Roland, Luleå University of Technology, The new film parameter Λ^* - a better estimate of the transition between mixed and full film lubrication
80. Khoshroo, Seyedmorteza, Tampere University, Comprehensive acoustic emission feature analysis within individual fretting loops in a flat-on-flat contact configuration
81. Grutza, Olaf, RPTU University Kaiserslautern-Landau, Contact analysis-based evaluation of layered porous structures
82. Söderfjäll, Markus, Luleå University of Technology, On the Repeatability and Operator Influence in SRV Seizure Testing
83. Marjamaa, Vuokko, VTT Technical Research Center of Finland, Cavitation Erosion Resistance of Specimens Fabricated from Recycled WC-Co Hardmetal Bits
84. Kempe, Philippe, Rtec-Instruments, New developments in Tribological Testing Methods for Lubricants and Currents Approaches with Electrified Tribometries
85. Kempe, Philippe, Rtec-Instruments, Mechanical Characterization of Wood and Laminate Materials for Wear and Scratch Resistance
86. Ogasawara, Koichiro, Tottori University, Fundamental study on seal performance improvement using surface energy difference (Theoretical analysis considering three-dimensional roughness)
87. Anjum, Muhammad Ammar, University of Turku, Fabrication & Tribological Performance evaluation of structurally embedded self-lubricating material through Hybrid Manufacturing
89. Ekholm, Felix, Uppsala University, Mimicking initial rake face wear of CVD (Al, Ti)N and Al₂O₃ coatings in turning using tribological sliding tests
90. Sharma, Anutsek, Kongsberg Maritime Sweden AB and Karlstad University (KAU), Influence of lubricant type on wear of materials used in Propeller hubs
91. Michalec, Michal, Brno University of Technology, In Situ Fluorescence Probing of Electric-Field-Induced Modulation of Ionic Liquid Lubrication Films
92. Tervo, Jyrki, VTT, A Framework for Efficiency Prediction in Helical Gears
93. Nutakor, Charles, LUT University, Damage Mechanisms in Touch down Bearings Triggered by Active Magnetic Bearing-Supported Rotor Drop Events
94. Nutakor, Charles, LUT University, Tribo mechanical behaviour of steel and hybrid bearing contacts under traction loading relevant to electric vehicle applications
95. Zhang, Nanyuan, inspire AG, Investigation of laser ablated rake face texturing for wear reduction in Alloy 718 machining
96. Martínez de Castilla Delgado, Claudia, Tekniker, Tribological Performance of Low-Viscosity lubricants for Electric Vehicle Applications under Electrified Rolling-Sliding conditions
97. Frangieh, Joseph, Centrale Lille, From Thermomechanical Analysis to Explainable Machine Learning for Braking Particle Emissions
98. Leviandhika, Vidhiaza, Uppsala University, Abrasive Wear Study of In-situ Nitrided Additively Manufactured Ti6Al4V
99. Zohrevand, Milad, Tampere University, Influence of ultrasonic nanocrystal surface modification on tribological properties of iron component produced by powder metallurgy
102. Zemlik, Martyna, Vytautas Magnus University and Wroclaw University of Science and Technology, Influence of martensitic and bainitic microstructures on the abrasive wear resistance of high-strength steels
103. Marinkovic, Aleksandar, University of Belgrade, Mechanical Engineering Faculty, Analysis of selective laser sintered sliding bearings
109. Ratia-Hanby, Vilma, VTT Technical Research Centre of Finland Ltd, Characterisation of microbially influenced tribocorrosion
111. Wojtowicz, Maria, Uppsala University, Abrasive wear testing of structured, microscopically tuned AM high speed steel

112. Jiang, Yu, VTT Technical Research Centre of Finland Ltd, Tribological performance of DLC coatings in different atmospheres
113. Jiang, Yu, VTT Technical Research Centre of Finland Ltd, Gas-dependent Tribological Performance of ta-C Coated PEEK–316L Tribo-pair
114. Šimara, Vít, Brno University of Technology, Electrotunability of ionic liquids lubricating properties at macro-scale - practical implications and limitations
115. Kozak, Andrii, Institute of Electrical Engineering SAS, Effect of oxide sublayers on the tribological properties of PtSe₂ coating in different environment conditions
116. Coga, Lucija, University of Ljubljana, Faculty of Mechanical Engineering, Laboratory for Tribology and Interface Nanotechnology, Tribological performance of fibre-reinforced thermoset composites under water lubrication
118. Vinay, Gidla, University of Turku, Addressing Coating Adhesion Challenges on As-Built WAAM Surfaces for Tribological Applications
119. Malakizadi, Amir, inspire AG, A hybrid approach for predicting tool wear in machining complex alloys
120. Li, Jialin, Schmalkalden University of Applied Sciences, Tribomechanical Behaviour of Fullerene Coating on Screwed Dental Implants
121. Khalid, Saad, Uppsala universitet, Studying wear mechanisms with different abrasives in micro abrasion - as a means to allow for wear resistance tuning of AM steels
122. Virtanen, Erkka, Tampere University, Evaluation of micropitting calculation methods and their validity on large-size bevel gears
124. Davison, Sam, University of Sheffield, A biofidelic platform for the tribological evaluation of foodstuffs
125. Dorner-Reisel, Annett, University of Applied Sciences Schmalkalden, FEM and nano-indentation tests on DLC and BN thin films
127. Concustell, Amadeu, EURECAT, Arc-Sprayed Zn–Al Coatings for Marine Service: Tribocorrosion Under Elevated Contact Pressures
128. Vidales, Eduard, EURECAT, Surface Engineering of Additively Manufactured Injection Moulds for Enhanced Tribological Performance
129. GUPTA, VIKASH KUMAR, IIT (BHU) Varanasi, Uttar Pradesh, India, Optimization of Process Parameters for Tribological Performance using Synergistic Effect of PAO-Based Nanolubricants incorporating chemically functionalized nanoadditives and ionic liquid
130. Rahman, Md Mahabubur, Tampere University, Optimization of dimple dimensions and shapes for journal bearing by CFD simulation
131. Lone, Aaqib Jeelani, Tampere University, Influence of groove parameters on the frictional performance of journal bearings in green fuel environment: A combined CFD and experimental study
132. Al-Jumaili, Omar, Tampere University, Synergistic Effects of Surface and Heat Treatment on the Mechanical and Tribological Behavior of WAAM Multimaterial Stainless Steel
135. Sadab, Md Sadman, Tampere University, Evaluation of the Reliability and Energy Efficiency of Tribological Systems in Electric Vehicle Applications through a Mini Traction Machine
138. Zak, Felix, Optimol Instruments Prüftechnik GmbH, Tribological Investigations under Varying Pressure Atmosphere
139. Morrone, Davide, NANOVEA, Transformative Bioactive Wear Resistant Ti₃Au:N and Ti₃Au:O Coatings for Medical Implants and Devices
140. Juoksukangas, Janne, Tampere University, Unveiling fretting-induced damage: The importance of systematic material characterization and analysis across practically relevant test rigs
141. Bergseth, Ellen, KTH, Transfer mechanisms of top-of-rail products at the wheel-rail interface

144. Schnell, Georg, Rostock University, Ultra-Short Pulse Laser Texturing for Improved Journal Bearing Performance
153. Khan, Zulfiqar, New Uzbekistan University, Nanocomposite Coatings under Reciprocating Wear: Experimental and Modelling Approach
157. Dupressoire, Charlotte, Airbus Operations SAS, Wear protection for aircraft Wing to Pylon engine attachment

Posters

63. Saketi, Sara, Ovako AB, Evaluation of Abrasive Wear Resistance of Ovako Steel Grades for Peeling Knife Applications Using Scratch Testing
75. Lavrys, Serhii, Karpenko Physico-Mechanical Institute of the NAS of Ukraine, Microstructural evolution, mechanical and tribological performance of TiN and TiNO surface layers formed on 3D-printed titanium alloy
76. Lavrys, Serhii, Vytautas Magnus university, Wear resistance and mechanical properties of supersonic arc coatings from various types of cored wires
104. Hoivala, Jussi, Tampere University, Size-resolved Elemental Analysis of Brake Emissions from Popular Brake Linings
108. Bordbar-Khiabani, Aydin, VTT Technical Research Centre of Finland Ltd., Electrochemical signatures of microbially influenced tribocorrosion
123. Pancielejko, Mięczysław, Koszalin University of Technology, Tribological properties of ZrC coatings deposited by the RMS method on Ni-Ti alloy and stainless steel substrates
126. Nishikawa, Hiroshi, Kyushu Institute of Technology, Study on the flow-out behaviour of entrapped oil through micro-grooves
134. Lindström, Tuure, Tampere University, Experimental investigation of the friction behavior of partially micro-textured journal bearings
137. Rangana, Pasan, Tampere University, Investigation on tribological characteristics of AISI 4140 steel by nitriding and AlCrN coating
148. Yanagisawa, Kenji, Otemon Gakuin University, Correlation between sliding velocity and dynamic interfacial friction of water droplets on silicone surfaces
150. Kalácska, Ádám, Ghent University, PTFE-free polymers for industrial sliding applications: A systematic framework for material selection and tribological characterization
151. Maier, Johannes, Ernst-Abbe-Hochschule Jena, Are High Carbon Metastable Austenitic Steels suitable for Impact Wear Applications?
152. Candeo, Stefano, KTH, Multi-Scale Testing Investigations into Tire-Road Tribology and Particulate Matter Emissions
154. Trevisiol, Céline, CETIM, Improved understanding of galling and monitoring approaches using ASTM G196 testing
156. Garrote Junco, María del Carmen, Tampere University/Universidad Politécnica de Madrid, Comparative study of powder and wire feedstock DED-printed Inconel 625 and 718 superalloys: Surface metrology and Tribology