

48th Leeds-Lyon Symposium on Tribology
Tribology for a Sustainable and Resilient Future
Tuesday 5 – Thursday 7 September 2023
University of Leeds, UK

PROGRAMME
(subject to change)

TUESDAY 5 SEPTEMBER 2023	
08:30 – 09:45	Registration and coffee in Michael Sadler Building Room LG10
09:45 – 10:00	INTRODUCTION AND WELCOME Chaired by Ardian Morina Rupert Becket Lecture Theatre, Michael Sadler Building
10:00 – 10:45	SESSION 1 Chaired by Ardian Morina Rupert Becket Lecture Theatre, Michael Sadler Building
Paper 1.1	KEYNOTE Using neutrons to unlock the tribology of commercial oil additives Professor Peter Dowding Infineum, UK
10:45 – 11:15	Refreshments, posters and exhibition in Parkinson Court
Tuesday 11:15 – 12:45	PARALLEL SESSIONS 2 TO 5
	SESSION 2 – WEAR 1 Chaired by Markus Varga Rupert Becket Lecture Theatre, Michael Sadler Building
Paper 2.1	From third body flow regime to surface degradation: a numerical perspective Olivier Bouillanne, Guilhem Mollon, Aurélien Saulot, Sylvie Descartes, Nathalie Serres, Guillaume Chassaing and Karim Demmou INSA Lyon, France
Paper 2.2	In situ morphology characterization and dynamic surface reconstruction Liao Haoran, Liu Ying, Li Hongju and Zhao Xiang Tsinghua University, China
Paper 2.3	Analysis of wear mechanisms and microstructure modifications of thrust ball bearing under fretting contact and grease lubrication Roderick Jacques, Yan-Ming Chen, Salima Bouvier and Abdeljalil Jourani Université Technologie de Compiègne, France
Paper 2.4	Initiation and evolution of butterflies in roller bearings due to rolling contact fatigue Mostafa El Laithy, Ling Wang, Terry Harvey, Alexander Schwedt, Wolfram Kruhoeffer and Joachim Mayer University of Southampton, UK; RWTH Aachen University, Germany; Schaeffler Technologies AG & Co. KG, Germany
Tuesday 11:15 – 12:45	SESSION 3 – POLYMER / SEALS 1 Chaired by Ton Lubrecht Room LG10, Michael Sadler Building
Paper 3.1	Vat photopolymerization 3D printing of self-lubricating materials and architectures Yuxiong Guo, Rui Guo and Xiaolong Wang Chinese Academy of Sciences, China
Paper 3.2	Microscale electrostatic discharges linked to sliding friction in triboelectric contacts Josh Armitage and Ali Ghanbarzadeh University of Leeds, UK
Paper 3.3	Study on working mechanism and performance of deep groove seal under high temperature and high speed Zhurong Liang, Ying Liu and Yuxiang Hui Tsinghua University, China
Paper 3.4	A FEM-MCM approach to predict sealing performance of Luer-Lock Connector involving polymer-glass interfaces Julien Singer, Nestor Rodriguez, Bo Persson, Lucile Gontard and Yetirajendra Daroji BD-Medical Pharmaceutical Systems, France; IFZ, US; Peter Grubber Institut, Germany; BD-Development Center, India
Tuesday 11:15 – 12:45	SESSION 4 – LUBRICATION 1 Chaired by Roland Larsson Room LG15, Michael Sadler Building
Paper 4.1	Development and application of a novel coupled TEHL-CFD model James Layton, Stephen Ambrose, Benjamin Rothwell, Neville Rebelo, Carol Eastwick and Humberto Medina University of Nottingham, UK
Paper 4.2	Film height control in hydrodynamic lubrication using inverse lubrication theory Jelle Snieder and Ron A. J. van Ostayen Delft University of Technology, Netherlands
Paper 4.3	Modelling Elastohydrodynamic Lubrication with Varying Microscale Geometry Using the Heterogeneous Multiscale Methods Joshua Montgomery, Mark Wilson, Michael Bryant and Gregory de Boer University of Leeds, UK
Paper 4.4	Impact of boundary slip on thermal EHL in finite line contact under simple sliding condition Mingyu Zhang, Jing Wang, Xianghua Meng and Gyoko Nagayama Donghua University, China; Dezhou University, China; Kyushu Institute of Technology, Japan

Tuesday 11:15 – 12:45	SESSION 5 – MACHINE ELEMENTS 1 Chaired by Salete Alves Room LG19, Michael Sadler Building	
	Paper 5.1	Tribology of hydrogen fuelled wankel engines Matthew Simpson, Mathis Berland, Hamza Mughal, Nader Dolatabadi, Ramin Rahmani, Joshua Fuller, Ian Lovett and Nick Morris <i>Loughborough University, UK; Gibson Technology, UK</i>
	Paper 5.2	Study on the tribological properties of the cylinder liner-piston ring in the ammonia-fueled engine Xing Xu, Xiqun Lu and Xuan Ma <i>Harbin Engineering University, China</i>
	Paper 5.3	Effect of roller sliding and lubricant composition on engine valve train friction Muhammad Khurram, Riaz Ahmad Mufti, Muhammad Usman Bhutta, Naqash Afzal, Muhammad Usman Abdullah, Tayyab Ul Islam, Ali Raza, Rehan Zahid and Irfan Gondal <i>National University of Sciences and Technology, Pakistan; Canterbury Christ Church University, UK</i>
	Paper 5.4	Roller chain drive efficiency. Roller motions influence. Gabriel Lanaspèze, Martin Best, Berengere Guilbert, Lionel Manin and Fabrice Ville <i>INSA Lyon, France</i>
12:45 – 14:00	Lunch in the Refectory	
Tuesday 14:00 – 14:45	SESSION 6 Chaired by Michael Bryant Rupert Becket Lecture Theatre, Michael Sadler Building	
	Paper 6.1	KEYNOTE Improving wheel/rail contact performance: case studies in going from the lab to the field Professor Roger Lewis <i>University of Sheffield, UK</i>
14:45 – 15:30	Refreshments, posters and exhibition in Parkinson Court	
Tuesday 15:30 – 17:00	PARALLEL SESSIONS 7 TO 10	
	SESSION 7 – LUBRICANTS 1 Chaired by Ava Eva Jimenez Ballesta Rupert Becket Lecture Theatre, Michael Sadler Building	
	Paper 7.1	Tribology of liquid-metal Jun Cheng, Jie Guo, Jun Yang and Weimin Liu <i>Chinese Academy of Sciences, China</i>
	Paper 7.2	Magnetorheological fluids in full film lubrication Gerben van der Meer and Ron van Ostayen <i>TU Delft, Netherlands</i>
	Paper 7.3	Programmable friction: development of stimuli-responsive tribosystems based on ionic liquid mixtures Felix Gatti, Tobias Amann, Andreas Kailer, Norman Baltes, Peter Rabenecker, Marian Noack, Jürgen Rùhe and Peter Gumbsch <i>University of Freiburg, Germany</i>
	Paper 7.4	Impact of fullerene as an additive under starved lubrication conditions Kengo Iwao and Kazuyuki Yagi <i>Kyushu University, Japan</i>
Tuesday 15:30 – 17:00	SESSION 8 – AI / MACHINE LEARNING 1 Chaired by Greg de Boer Room LG10, Michael Sadler Building	
	Paper 8.1	Analysis of lubricant additives structure for improving the frictional properties of polymers using novel AI simulator Rui Ogata, Yuta Tanaka, Akihiro Nagoya and Tasuku Onodera <i>ENEOS Corporation, Japan</i>
	Paper 8.2	AI techniques for evaluating misaligned journal bearing performance: an approach beyond the Sommerfeld number Georgios N. Rossopoulos and Christos I. Papadopoulos <i>National Technical University of Athens, Greece</i>
	Paper 8.3	Inferring friction from third body morphology using Machine Learning Alizée Bouchot, Amandine Ferieux-Paquet, Guilhem Mollon, Sylvie Descartes and Johan Debayle <i>INSA Lyon – LaMCoS, France</i>
	Paper 8.4	A study on assessing the effectiveness of friction coefficient prediction using convolutional neural networks based on laser speckle Wataru Matsuda, Yuji Yuhara, Kaisei Sato and Shinya Sasaki <i>Tokyo University of Science, Japan</i>
Tuesday 15:30 – 17:00	SESSION 9 – TEXTURE / SURFACES 1 Chaired by Benyebka Bou-Said Room LG15, Michael Sadler Building	
	Paper 9.1	The role of puckering in adhesion and friction of graphene adsorbed over copper and copper oxide Pavel Antonov, Paolo Restuccia, Maria Clelia Righi and Joost Frenken <i>University of Groningen, Netherlands; Università di Bologna, Italy</i>
	Paper 9.2	An analytical approach to determine the effects of time-varying lubricant and surface properties on the dynamic response of EV gear systems Hamza Mughal, Nader Dolatabadi and Ramin Rahmani <i>Loughborough University, UK</i>
	Paper 9.3	Influence of lubrication on load-independent power losses in deep groove ball bearings Florian de Cadier de Veauce, Christophe Chagnenet, Fabrice Ville, Yann Marchesse, Thomas Touret, Luc Amar and Charlotte Fossier <i>INSA Lyon, France; Cetim, France; NTN in Europe, France</i>
	Paper 9.4	Exploring the potential of graphene as a lubricant additive: topography evolution and performance under boundary lubrication conditions Davi Franzosi, João C. F. de Queiroz, Eduardo Tomanik, Francisco J. Profito and Roberto Martins Souza <i>Polytechnic School of the University of São Paulo, Brazil</i>

Tuesday 15:30 – 17:00	SESSION 10 – IN-SITU 1 Chaired by Hongyuan Zhao Room LG19, Michael Sadler Building	
	Paper 10.1	In-situ measurement of lubricant viscosity under realistic tribological loading using ultrasound <u>Gladys Peretti</u> , Nathalie Bouscharain, Fabrice Ville, Fabio Tatzgern, Markus Varga and Rob Dwyer-Joyce <i>University of Sheffield, UK; INSA Lyon, France; AC2T Research GmbH-Wiener Neustadt, Austria</i>
	Paper 10.2	Friction induced mechanochemistry: self-adaptive lubrication through in-situ tribo-click system Rui Dong, Xin-Gang Wang, Meirong Cai and <u>Feng Zhou</u> <i>Chinese Academy of Sciences, China</i>
	Paper 10.3	Growth rates of ZDDP tribofilms with primary/secondary alkyl under single asperities contacts <u>Kaisei Sato</u> and Shinya Sasaki <i>Tokyo University of Science, Japan</i>
	Paper 10.4	Dynamic effects in tribo-testing: how to measure, visualise and avoid them <u>Markus Varga</u> , Mario Anton Puhwein, Jürgen Frieß, Josef Probst, Georg Vorlaufer and Martin Jech <i>AC2T Research GmbH, Austria</i>
17:00 – 18:00	POSTER SESSION AND DRINKS RECEPTION Parkinson Court	
19:00 – 22:30	EVENING RECEPTION AND SYMPOSIUM DINNER University Refectory	

WEDNESDAY 6 SEPTEMBER 2023	
08:30 – 09:15	<p>SESSION 11 Chaired by Michael Bryant Rupert Becket Lecture Theatre, Michael Sadler Building</p> <p>Paper 11.1 KEYNOTE Where did that charge come from? Professor Laurence Marks <i>Northwestern University, USA</i></p>
Wednesday 09:15 – 10:45	<p>PARALLEL SESSIONS 12 TO 15</p> <p>SESSION 12 – LUBRICANTS 2 Chaired by Yuechang Wang Rupert Becket Lecture Theatre, Michael Sadler Building</p> <p>Paper 12.1 Effect of a graphene-based ICE lubricant additive on the boundary, mixed and elastohydrodynamic friction <u>Eduardo Tomanik</u>, João Queiroz, Davi Franzosi, Wania Christinelli, Francisco Profito and Roberto Souza <i>University of São Paulo, Gerdau Graphene, Brazil</i></p> <p>Paper 12.2 Lubricant performance in wind turbines: a study of the degradation processes and particle contamination of actual lubricant samples Hector Julián Martín Barajas, <u>Ana Eva Jimenez Ballesta</u>, Maria Dolores Aviles González and Francisco-José Carrión Vilches <i>Universidad Politécnica de Cartagena, Spain</i></p> <p>Paper 12.3 Evaluations of grease flow behaviours in the contact area using particle image velocimetry <u>Keigo Nishizawa</u>, Reo Miwa, Haruka Iki, Kazumi Sakai and Norifumi Miyanaga <i>Kanto Gakuin University, ENEOS Corporation, Japan</i></p> <p>Paper 12.4 Transient breath of grease lubricated contact area under steady-state ZEV motion Jing Wang, Weidong Xie and Hengrui Du <i>Donghua University, China</i></p>
Wednesday 09:15 – 10:45	<p>SESSION 13 – MACHINE ELEMENTS 2 Chaired by Martin Priest Room LG10, Michael Sadler Building</p> <p>Paper 13.1 How road mineral particles are captured by tyres surfaces Kévin Daigne, Guilhem Mollon, <u>Sylvie Descartes</u>, Nicolas Fillot, Romain Jeanneret-Dit-Grosjean, Frédéric Biesse and Antoine Perriot <i>INSA Lyon - LaMCoS, Manufacture Française des Pneumatiques Michelin</i></p> <p>Paper 13.2 Aging effect on tribological performance of lubricating oil and the degradation of friction modifiers <u>Jiaqi Chen</u>, Hong Liu, Aaron Thornley, Chun Wang and Ardian Morina <i>Sinopec Lubricant Company, China; University of Leeds, UK</i></p> <p>Paper 13.3 Use of machine learning techniques for predicting the performance of two-dimensional journal bearing models <u>Samuel Cartwright</u>, Benjamin Rothwell, Graziela Figueredo, Carol Eastwick, James Layton, Stephen Ambrose and Humberto Medina <i>University of Nottingham, UK</i></p> <p>Paper 13.4 An angularly misaligned spline coupling test rig <u>Allan Gichuki</u>, Chris Bennett, James Rouse, Philip Shipway and Yuen-Ling Kong <i>University of Nottingham, UK</i></p>
Wednesday 09:15 – 10:45	<p>SESSION 14 – BIOTRIBOLOGY AND BIOINSPIRATION 1 Chaired by Stefano Mischler Room LG15, Michael Sadler Building</p> <p>Paper 14.1 Human skin-inspired controlled self-assembly of responsive microgels with on-demand adhesion and friction control <u>Bin Li</u> <i>Chinese Academy of Sciences, China</i></p> <p>Paper 14.2 Load-dependent micro-asperity tribocorrosion of CoCrMo <u>Edona Hyla</u>, Richard M. Hall, Gregory de Boer, Andrew R. Beadling and Michael Bryant <i>University of Leeds, UK</i></p> <p>Paper 14.3 Mimicking the synovial joint to develop sustainable sliding bearings by combining a water-based lubricant with an adapted hydrogel <u>Tobias Amann</u>, Felix Gatti, Andreas Kailer, Renato Maraula, Thomas Brandstetter, Susanne Beyer-Faiß and Jürgen Rühle <i>University of Freiburg, Dr. Tillwich GmbH Werner Stehr, Germany</i></p> <p>Paper 14.4 Friction regulation of chiton radulae through synergy of flexible membrane and rigid teeth <u>Dan Yang</u>, Wentao Liu, Jing Zheng and Zhongrong Zhou <i>Southwest Jiaotong University, China</i></p>
Wednesday 09:15 – 10:45	<p>SESSION 15 – GREEN TRIBOS 1 (1st Green Tribology Conference) Chaired by Marko Polajnar Room LG19, Michael Sadler Building</p> <p>Paper 15.1 Dry sliding and water lubricated tribological performance of 3D printed PEEK/CF-PEEK <u>Nayan Dhakal</u>, Cayetano Espejo, Ardian Morina and Nazanin Emami <i>Lulea University of Technology, Sweden; University of Leeds, UK</i></p> <p>Paper 15.2 Wear analysis of DLC coatings against cfrp-ti stacks tested in cross-cylinder configuration <u>Sharjeel Ahmed Khan</u>, João Oliveira, Fabio Ferreira, Nazanin Emami and Amilcar Ramalho <i>University of Coimbra, Portugal; Lulea University of Technology, Sweden</i></p> <p>Paper 15.3 Effect of Ti3C2Tx Mxene as lubricant additive on friction reduction performance <u>Afrina Khan Piya</u>, Liuquan Yang, Nazanin Emami and Ardian Morina <i>University of Leeds, UK; Lulea University of Technology, Sweden</i></p> <p>Paper 15.4 Adsorption of organic lubricant additives on high-performance polymers <u>Pedro Martins Ferreira</u>, Bruno Trindade and Mitjan Kalin <i>University of Ljubljana, Slovenia; University of Coimbra, Portugal</i></p>
10:45 – 11:15	Refreshments, posters and exhibition in Parkinson Court

Wednesday 11:15 – 12:45	PARALLEL SESSIONS 16 TO 19	
	SESSION 16 – WEAR 2 Chaired by Gerhard Poll Rupert Becket Lecture Theatre, Michael Sadler Building	
	Paper 16.1	Using mechanophores to characterize sub-surface damage during wear of elastomers <u>Ombeline Taisne</u> , Come Thillaye-du-Boullay, Costantino Creton and Jean Comtet <i>ESPCI Paris, France</i>
	Paper 16.2	Experimental and material point method simulations for determining the behaviour of Ti6Al4V during scratch test at high strain rates <u>Alejandra Marcela Ventura Cervellón</u> , Stefan J. Eder, Markus Varga and Manel Rodríguez Ripoll <i>AC2T Research GmbH & TU Wien, Austria</i>
	Paper 16.3	The role of thermal properties in metco 601 wear mechanisms <u>Aaron Baillieu</u> , Eldar Rahimov and Matthew Marshall <i>University of Sheffield, UK</i>
Paper 16.4	Relationship between sliding conditions and surface temperatures in a two cylinder sliding test <u>Mikihisa Nakano</u> , Yoshihiro Mizutani, Kentaro Yamada, Yukio Tamura and Hiroshi Yamamoto <i>Tokyo Institute of Technology, Komatsu Ltd, Japan</i>	
Wednesday 11:15 – 12:45	SESSION 17 – AI / MACHINE LEARNING 2 Chaired by Mark Wilson and Aurelien Saulot Room LG10, Michael Sadler Building	
	Paper 17.1	Machine learning based prediction of surface topography changes in rolling-sliding AISI 52100 steel contacts due to running-in under mixed lubrication regime <u>Maruti Sai Dhiraj Sakhamuri</u> , T.J. Harvey, B. Viorneusel and R.J.K. Wood, <u>Zaihao Tian</u> <i>University of Southampton, UK; Schaeffler Technologies AG, Germany</i>
	Paper 17.2	Mechanochemical kinetic model of boundary lubrication using quantum chemical molecular dynamics and machine learning <u>Chao Zhang</u> <i>Shanghai University, China</i>
	Paper 17.3	Machine learning approach for estimating the features involved in the friction coefficients of steel with lubricating oils formulated with combination of phosphorus-, sulfur-, and calcium-based additives <u>Hiroshi Noma</u> , Saiko Aoki and Kenji Kobayashi <i>Tokyo Institute of Technology, Idemitsu Kosan Company Ltd, Japan</i>
Paper 17.4	A long short-term memory neural network for automatic EHL film measurement <u>Yang Zhao</u> , Zhijun Deng and Zhengkun Cheng <i>Shenzhen Polytechnic, China</i>	
Wednesday 11:15 – 12:45	SESSION 18 – BEARINGS Chaired by Tom Slatter Room LG15, Michael Sadler Building	
	Paper 18.1	Fluid-filled closed cell compliant hydrostatic bearing supports <u>Dave Sonneveld</u> and Ron van Ostayen <i>Delft University of Technology, Netherlands</i>
	Paper 18.2	Journal bearings with stochastic roughness on the stator and the rotor: calculation of operational parameters variation <u>Dimitrios Skaltsas</u> and Christos Papadopoulos <i>National Technical University of Athens, Greece</i>
	Paper 18.3	Load independent power losses of an oil-jet lubricated ball bearing <u>Lionel Darul</u> , Thomas Touret, Christophe Changenet and Fabrice Ville <i>INSA Lyon, France</i>
Paper 18.4	Transient analysis of journal-thrust coupled bearing under time-varying loads by considering thermal-pressure coupled effect <u>Jiahao Shi</u> , Bin Zhao and Xiqun Lu <i>Harbin Engineering University, China</i>	
Wednesday 11:15 – 12:45	SESSION 19 – GREEN TRIBOS 2 (1st Green Tribology Conference) Chaired by Nazanin Emami Room LG19, Michael Sadler Building	
	Paper 19.1	Investigating synergism potential of graphite and boron nitride fillers for enhanced tribo-performance under aqueous condition (video presentation) <u>Prashant Gangwani</u> , Nazanin Emami and Mitjan Kalin <i>Lulea University of Technology, Sweden; University of Ljubljana, Slovenia</i>
	Paper 19.2	Mechanical and tribological characterisation of PI-based composites at room and cryogenic temperatures <u>Maksim Nikonovich</u> , Amilcar Ramalho and Nazanin Emami <i>University of Coimbra, Portugal; Lulea University of Technology, Sweden</i>
	Paper 19.3	Life cycle analysis of pure DLC coatings deposited by PVD and PECVD techniques for green tribology <u>Larissa Mitie Ihara</u> , Albano Cavaleiro, Ardian Morina and Liuquan Yang <i>University of Leeds, UK; University of Coimbra, Portugal</i>
Paper 19.4	Excellent tribological performance of blue luminescent citric acid derived graphene quantum dots as an additive in aqueous lubricant <u>Irfan Nadeem</u> , Albano Cavaleiro and Mitjan Kalin <i>University of Ljubljana, Slovenia; University of Coimbra, Portugal</i>	
12:45 – 14:00	Lunch in the Refectory	
Wednesday 14:00 – 15:30	PARALLEL SESSIONS 20 TO 23	
	SESSION 20 – POLYMERS / SEALS 2 Chaired by Alastair Clarke Rupert Becket Lecture Theatre, Michael Sadler Building	
	Paper 20.1	Towards superlubricity of polymer-steel interfaces with ionic liquids and carbon nanotubes <u>Lukasz Wojciechowski</u> , Krzysztof J. Kubiak, Slawomir Boncel, Adam A. Marek, Bartosz Gapiński, Rafał Jędrysiak, Szymon Ruczka, Paulina Błaszkiwicz and Thomas G. Mathia <i>Poznan University of Technology, Poland; University of Leeds, UK; Silesian University of Technology, France</i>
	Paper 20.2	Elasto-hydrodynamic (EHD) seals and multi-EHD seals <u>Jing Shen Tang</u> and Hanping Xu <i>Ultool LLC, USA</i>
	Paper 20.3	Tribological and physical differences between traditional cast and additive manufactured nylon-6 <u>Martin Priest</u> and Malcolm Fox <i>University of Bradford, UK</i>
Paper 20.4	Study on groove design for monitoring the state of dry gas seals <u>Fengming Hu</u> , Qiang He, Weifeng Huang, Yuan Yin, Ying Liu, Xiangfeng Liu and Yuming Wang <i>Tsinghua University, China</i>	

Wednesday 14:00 – 15:30	SESSION 21 – FRICTION 1 Chaired by Farnaz Motamen Salehi Room LG10, Michael Sadler Building	
	Paper 21.1	Quantitative understanding of macroscopic friction due to chemical bonding <u>Liang Peng</u> , Chao-Chun Hsu, Chen Xiao, Daniel Bonn and Bart Weber <i>University of Amsterdam, Advanced Research Center for Nanolithography (ARCNL), Netherlands</i>
	Paper 21.2	The effect of tribological conditions on friction reduction and tribofilm structure of organic friction modifiers <u>Marjan Homayoonfard</u> , Ardian Morina, Ali Ghanbarzadeh, Chun Wang, Sven Schroeder and Peter Dowding <i>University of Leeds, UK; Infineum UK Ltd, UK</i>
	Paper 21.3	On the interest of a semi-empirical model for the tooth friction coefficient in gear transmissions Yasser Diab, Jérôme Cavoret, Thomas Touret, <u>Fabrice Ville</u> and Christophe Changenet <i>INSA Lyon, France; ECAM Lyon, France</i>
	Paper 21.4	Behaviour of a single fault asperity during seismic slip <u>Adriane Clerc</u> , Guilhem Mollon, Amandine Ferrieux, Lionel Lafarge and Aurélien Saulot <i>INSA Lyon, France</i>
Wednesday 14:00 – 15:30	SESSION 22 – ADHESION Chaired by Rob Dwyer-Joyce Room LG15, Michael Sadler Building	
	Paper 22.1	High throughput first-principle prediction of interfacial adhesion energies in metal-on-metal contacts <u>Paolo Restuccia</u> , Gabriele Losi, Omar Chehaimi, Margherita Marsili and M. Clelia Righi <i>Università di Bologna, Italy</i>
	Paper 22.2	Capillary adhesion governs the friction behavior of electrochemically corroded polycrystalline diamond Chen Xiao, Liang Peng, Bart Weber and <u>Steve Franklin</u> <i>University of Amsterdam, Netherlands</i>
	Paper 22.3	Influence of deposition parameters for ionic liquid films on adhesion and friction on the silicon substrate <u>Salete Martins Alves</u> , Felipe Fernandes Neto and Rodrigo Prioli de Menezes <i>Federal University of Rio Grande do Norte, Physic Institute of Pontificie Catholic University of Rio de Janeiro/Brazil, Brazil</i>
	Paper 22.4	The performance of top-of-rail products under water contamination <u>Simon Skurka</u> , Radovan Galas, Milan Omasta, Bingnan Wu, Haohao Ding, Wen-Jian Wang, Ivan Krupka and Martin Hartl <i>Brno University of Technology Czechia, Southwest Jiaotong University, China</i>
Wednesday 14:00 – 15:30	SESSION 23 – GREEN TRIBOS 3 (1 st Green Tribology Conference) Chaired by Bruno Trindade Room LG19, Michael Sadler Building	
	Paper 23.1	POM/regenerated cellulose fiber composites as sustainable engineering materials <u>Lucas Kneissl</u> , Mitjan Kalin and Nazanin Emami <i>Lulea University of Technology, Sweden; University of Ljubljana, Slovenia</i>
	Paper 23.2	Development of layered ti-dlc/dlc coatings with improved properties and evaluation of their tribological properties in green lubricating oils <u>Mobeen Haneef</u> , Manuel Evaristo, Liuquan Yang, Ardian Morina and Bruno Trindade <i>University of Coimbra, Portugal; University of Leeds, UK</i>
	Paper 23.3	Development and properties of ac:h:si:o coatings <u>Abqaat Naseer</u> , Manuel Evaristo, Mitjan Kalin and Albano Cavaleiro <i>University of Coimbra Portugal, University of Ljubljana, Slovenia</i>
	Paper 23.4	Advanced tribological performance of fatty acid, acid/amine additive mixture and ionic liquid <u>Ju Shu</u> , Cayetano Espejo, Mitjan Kalin and Ardian Morina <i>University of Leeds, UK; University of Ljubljana, Slovenia</i>
15:30 – 16:00	<i>Symposium Photograph (Parkinson Building steps)</i>	
Wednesday 16:00 – 17:00	POSTER SESSION AND REFRESHMENTS Parkinson Court	
Wednesday 16:30 – 17:30	GREEN TRIBOLOGY KEYNOTE AND PANEL DISCUSSION (1 st Green Tribology Conference) Chaired by Dr Tomaž Požar, University of Ljubljana Rupert Becket Lecture Theatre, Michael Sadler Building	
	16:30 – 17:00	KEYNOTE Losses in the electrical powertrain - from wind turbine to electric vehicle Professor Rob Dwyer-Joyce <i>University of Sheffield, UK</i>
	17:00 – 17:30	PANEL DISCUSSION <i>Panel: Professor Rob Dwyer-Joyce and Professors from GreenTRIBOS Consortium</i>
	<i>Free time for delegates to explore the City of Leeds at their leisure (delegates to make their own arrangements)</i>	
19:00 – 21:00	<i>Buffet Reception at the Leeds City Museum, Millennium Square (delegates to make their own way there)</i>	

THURSDAY 7 SEPTEMBER 2023

08:30 – 09:15	<p>SESSION 24 Chaired by Ardian Morina Rupert Becket Lecture Theatre, Michael Sadler Building</p> <p>Paper 24.1 KEYNOTE Fundamental studies on hydrogen tribology for future energy systems Professor Joichi Sugimura <i>Kyushu University, Japan</i></p>
Thursday 09:15 – 10:45	<p>PARALLEL SESSIONS 25 TO 28</p> <p>SESSION 25 – POLYMERS / SEALS 3 Chaired by Waleed Al Sallami Rupert Becket Lecture Theatre, Michael Sadler Building</p> <p>Paper 25.1 Rational design strategy for triboelectric nanogenerators: the case for polytetrafluoroethylene Giulio Fatti, Alessandra Ciniero, Hyunseok Ko, Chang Kyu Jeong, Kwi-II Park, Sung Beom Cho and Daniele Dini <i>Korea Institute of Ceramic Engineering and Technology, Sia Partners, Jeonbuk National University, Kyungpook National University, Ajou University, South Korea; Imperial College London, UK</i></p> <p>Paper 25.2 Water-lubricated triboelectric behaviors and their potential application in monitoring the variation of film thickness Huang Anqi and Liu Ying <i>Tsinghua University, China</i></p> <p>Paper 25.3 Investigation of the tribological factors affecting the moisture sealing performance of slowly reciprocating O-ring seals. Simon Hutt, Alastair Clarke and Mark Eaton <i>Cardiff University, UK</i></p> <p>Paper 25.4 Study on the applicability of multi-factors coupling model of mechanical seal Yao Ran, Qiang He, Weifeng Huang, Ying Liu and Yuming Wang <i>Tsinghua University, China</i></p>
Thursday 09:15 – 10:45	<p>SESSION 26 – TEXTURE / SURFACES 2 Chaired by Saiko Aoki Room LG10, Michael Sadler Building</p> <p>Paper 26.1 Wedge-shaped lyophilic pattern on superlyophobic surface for unidirectional liquid guidance and lubrication enhancement Yang Liu, Hui Zhang and Guangneng Dong <i>Xi'an Jiaotong University, China</i></p> <p>Paper 26.2 The tribological performance of surface textured cylinder liner segments modified by direct laser writing and direct laser interference patterning processes Paul Butler-Smith, Niall Burt and Tianlong See <i>The Manufacturing Technology Centre, UK</i></p> <p>Paper 26.3 Enhancement of lubricant replenishment for starved lubrication by laser-induced wettability gradient surface Patrick Wong, Chenglong Liu and Feng Guo <i>City University of Hong Kong, Hong Kong; Qingdao University of Technology, China</i></p> <p>Paper 26.4 An experimental investigation of surface behaviour of ground steel gear surfaces in mixed lubrication conditions Alastair Clarke, William Britton, Simon Hutt and Pwt Evans <i>Cardiff University, UK</i></p>
Thursday 09:15 – 10:45	<p>SESSION 27 – COATINGS 1 Chaired by Shinya Sasaki Room LG15, Michael Sadler Building</p> <p>Paper 27.1 Wear of gold coated wavy surfaces Valentine Magnin and Stefano Mischler <i>EPFL, Switzerland</i></p> <p>Paper 27.2 To enhance the adhesion of thick tetrahedral amorphous carbon coating using the different structures of Ti buffer layer Young-Jun Jang and Jongkuk Kim <i>Korea Institute of Materials Science, South Korea</i></p> <p>Paper 27.3 Study on the passivation film behaviour and tribo-corrosion properties of (TiAlCrNbVMo)_xN_{1-x} coatings Xudong Sui, Dewen Niu, Liuqing Yang, Junying Hao and Weimin Liu <i>China University of Petroleum (East China), China</i></p> <p>Paper 27.4 Effect of surface topography and hardness of substrate on the tribological performance of lubricant coating Chen Wang, Wenli Wang, Kai Le, Shusheng Xu and Weimin Liu <i>Lanzhou Institute of Chemical Physics, China; Chinese Academy of Sciences, China</i></p>
Thursday 09:15 – 10:45	<p>SESSION 28 – MIXED LUBRICATION Chaired by Harry van Leeuwen Room LG19, Michael Sadler Building</p> <p>Paper 28.1 Transient mixed lubrication and wear model of artificial knee joints with surface topography Sallar Ali Qazi, Robert Hewson, Connor Myant and Gregory de Boer <i>Imperial College London, UK; University of Leeds, UK</i></p> <p>Paper 28.2 Modeling and analysis of 3D mixed lubrication in marine cam-tappet pair Deliang Hua, Xiujiang Shi, Wen Sun and Xiqun Lu <i>Harbin Engineering University, China</i></p> <p>Paper 28.3 Friction and wear simulation of oil lubricated rolling contacts under consideration of asperities Armand Tamouafo Fome, Florian Pape and Gerhard Poll <i>Leibniz University Hanover, Germany</i></p> <p>Paper 28.4 Accelerated performance evolution experiments of conformal contacts in the mixed lubrication regime Yuechang Wang and Ying Liu <i>Harbin Institute of Technology, China; Tsinghua University, China</i></p>
10:45 – 11:15	Refreshments, posters and exhibition in Parkinson Court

Thursday 11:15 – 12:45	PARALLEL SESSIONS 29 TO 32	
	SESSION 29 – LUBRICANTS 3 Chaired by Eduardo Tomanik Rupert Becket Lecture Theatre, Michael Sadler Building	
	Paper 29.1	Impact of zinc dialkyldithiophosphate substituent chemistry on tribofilm properties and anti-wear performance <u>Adam Bruce</u> , Waleed Al-Sallami, William B. Anderson and Nathaniel Cain <i>University of York, UK; Afton Chemical Ltd, US</i>
	Paper 29.2	Impact of oil regeneration on performance of industrial lubricants <u>Myrna Carolina Cortés Morales</u> , Aldara Naveira Suarez, Pär Marklund and Roland Larsson <i>SKF RecondOil, Sweden; Luleå University of Technology, Sweden</i>
	Paper 29.3	Effect of chemical changes in MoDTC and ZnDTP with oxidative degradation on the tribofilm composition and the friction and wear reducing performances <u>Saiko Aoki</u> , Kosuke Mochiduki and Sachiko Okuda <i>Tokyo Institute of Technology, Japan; Nissan Motor Corporation, Japan</i>
Paper 29.4	Performance of perfluoroalkyl carboxylic acids in EHD contacts <u>Tomaž Požar</u> , Marko Polajnar and Mitjan Kalin <i>University of Ljubljana, Slovenia</i>	
Thursday 11:15 – 12:45	SESSION 30 – FRICTION 2 Chaired by Xuan Ma Room LG10, Michael Sadler Building	
	Paper 30.1	Analytical traction modelling of PAO lubricated point contacts at high temperatures <u>Matthew Simpson</u> , Nader Dolatabadi, Nick Morris and Ramin Rahmani <i>Loughborough University, UK</i>
	Paper 30.2	Water lubrication assisted by a secondary lubricating medium – a conceptual study <u>Feng Guo</u> , Tao Yu, Xiaohan Zhang and Pat Lam Wong <i>Qingdao University of Technology, China; City University Hong Kong, Hong Kong</i>
	Paper 30.3	Threaded fastener friction: accounting for washers and repeat assembly in the torque-tension relationship <u>Christopher J Dyson</u> , <u>Martin Priest</u> and Malcolm F Fox <i>University of Bradford, UK</i>
	Paper 30.4	Development of a tribometer and an alternative testing method for line contacts operating under tractive rolling and rolling-sliding conditions (video presentation) <u>Pedro Amoroso</u> , Aleks VrČek and Matthijn De Rooij <i>Delft University of Technology, University of Twente, Netherlands</i>
Thursday 11:15 – 12:45	SESSION 31 – TRIBOLOGY IN MANUFACTURING Chaired by Cayetano Espejo Room LG15, Michael Sadler Building	
	Paper 31.1	Tribological study of quaternary crusher coatings applied in an iron ore processing plant <u>Wivyan Lage</u> , Gustavo Tressia, Jimmy Penagos and Renato Chaves <i>Instituto Tecnológico Vale - ITV, Brazil</i>
	Paper 31.2	Investigation on the influence of residual stresses due to cold forming on stainless steel bearings <u>Alexander Bedewig</u> , Florian Pape and Gerhard Poll <i>Leibniz Universität Hannover, Germany</i>
	Paper 31.3	Mechanisms of slip generation in cold rolling of advanced high strength steel <u>Masahiro Shimura</u> , Daisuke Kasai and Takayuki Otsuka <i>Nippon Steel Corporation, Japan</i>
	Paper 31.4	New paradigm in surface morphology transition vs machining and wear process <u>Wieslaw Grabon</u> , Karol Grochalski, Adilson R Da Costac, Gabriella Epasto, Gilmar Batalha and Thomas Mathia <i>Rzeszow University of Technology, Poznan University of Technology, Poland; Universidade Federal de Ouro Preto, Brazil</i>
Thursday 11:15 – 12:45	SESSION 32 – BIOTRIBOLOGY AND BIOINSPIRATION 2 Chaired by Tomasz Liskiewicz Room LG19, Michael Sadler Building	
	Paper 32.1	Understanding interactions with human intestinal tissue for capsule endoscopy <u>Xuan Wang</u> , Ben Clarke, Roger Lewis and Matt Carré <i>University of Sheffield, UK</i>
	Paper 32.2	Polyelectrolyte functionalised PEEK surfaces promote tribological rehydration of articular cartilage <u>Robert Elkington</u> , Richard Hall, Hemant Pandit, Andrew Beadling and Michael Bryant <i>University of Leeds, UK</i>
	Paper 32.3	Assessment of synthetic dental enamel comprised of fluoridated hydroxyapatite subjected to reciprocating abrasive wear <u>María de Montserrat García Rivera</u> , Scarlet Jacqueline Meza Gómez, Josue Oswaldo Arreola Lopez and Cesar Sedano de la Rosa <i>Universidad de Guadalajara, Mexico</i>
	Paper 32.4	Development of a finger model to assess human and robotic grasping interactions <u>Aniebiat Macaulay</u> , Ben Clarke, Roger Lewis and Matt Carre <i>University of Sheffield, UK</i>
12:45 – 14:00	Lunch in the Refectory	

Thursday 14:00 – 15:30	PARALLEL SESSIONS 33 TO 36	
	SESSION 33 – WEAR 3 Chaired by Rob Beadling Rupert Becket Lecture Theatre, Michael Sadler Building	
	Paper 33.1	Effects of experimental temperature on the wear behaviour of selective laser melted NiTi shape memory alloys Xianghui Huang, Nan Kang and Mohamed El Mansori <i>École nationale supérieure d'arts et métiers, France</i>
	Paper 33.2	Understanding role of slip mechanism and environment on particulate debris generation in CoCrMo-Ti6Al4V material couples used in total hip replacements Charlotte Merrell, Saurabh Lal, Imran Khan, Andrew Beadling, Richard Hall and Michael Bryant <i>University of Leeds, UK; Zimmer Biomet, UK</i>
	Paper 33.3	Influence of hydrogen charging on the third body of carbon steel under tribocorrosion conditions Régis Sanglard, Julien Perret, Anna Igual Munoz and Stefano Mischler <i>EPFL, Switzerland</i>
Paper 33.4	Shear mechanical properties measurements in thin coatings and tribolayers Fadlallah Abouhadid, Sergio Sao-Joao, Guillaume Kermouche, Bénédicte Adougou, Guilhem Mollon, Siegfried Fouvry and Gaylord Guillonneau <i>Arts et Métiers Institute of Technology, France; Université, Mines Saint-Etienne, France; INSA Lyon, France; Ecole Centrale de Lyon, France</i>	
Thursday 14:00 – 15:30	SESSION 34 – LUBRICATION 2 Chaired by Nick Morris Room LG10, Michael Sadler Building	
	Paper 34.1	The determination of the pressure viscosity coefficient of a lubricant through an accurate film thickness formula and accurate film thickness measurements (III) – towards a comprehensive approximation formula for circular contacts Harry van Leeuwen <i>Eindhoven University of Technology, Netherlands</i>
	Paper 34.2	Investigations of lubrication characteristics of seal-type dimpled thrust bearings with considering cavitation pressure Reo Miwa, Ryota Ishii, Norifumi Miyanaga, Atsushi Tsujimori and Jun Tomioka <i>Kanto Gakuin University, Japan; Waseda University, Japan</i>
	Paper 34.3	Study on coupling transient mixed lubrication and time-varying wear of main bearing in actual operation of low-speed diesel engine Rui Chen, Bin Zhao, Xiqun Lu and Dequan Zou <i>Harbin Engineering University, China; Washington University in St. Louis, USA</i>
Paper 34.4	Pressure evaluation in highly porous medium hydrodynamic bearings Duc Hieu Nguyen, Romeo Glovnea and Nicolas Herzig <i>University of Sussex, UK</i>	
Thursday 14:00 – 15:30	SESSION 35 – FATIGUE Chaired by Fabrice Ville Room LG15, Michael Sadler Building	
	Paper 35.1	Effects of lubricant viscosity on fatigue wear under rolling contacts Ryotaro Ohashi, Atsuta Harada, Kasiei Sato and Shinya Sasaki <i>Tokyo University of Science, Japan</i>
	Paper 35.2	Modelling crack initiation under rolling contact fatigue at grain scale Lucas Fourel, Jean-Philippe Noyel, Xavier Kleber, Philippe Sainsot and Fabrice Ville <i>INSA Lyon, France; ECAM Lyon, France</i>
	Paper 35.3	Condition monitoring of micropitting growth using multiple sensing Zaihao Tian, Shunca Wang, Daniel Merk and Robert Wood <i>University of Southampton, UK</i>
Paper 35.4	Computationally efficient simulation of fretting wear and fatigue life analysis for three-dimensional contacts Sinéad Uí Mhurchadha <i>South East Technological University, Ireland</i>	
Thursday 14:00 – 15:30	SESSION 36 – COATINGS 2 Chaired by Steve Franklin Room LG19, Michael Sadler Building	
	Paper 36.1	Tribological properties of multi-layer diamond-like carbon - graphene nanoplatelet composites Rob Brittain and Liuquan Yang <i>University of Leeds, UK</i>
	Paper 36.2	The wear behaviour of high velocity oxy-fuel thermally (HVOF) sprayed 1 mm thick stellite 6 coatings for application in thermal power plant boilers Irim Fiaz, Tanvir Hussain, Federico Venturi and Halar Memon <i>University of Nottingham, UK</i>
	Paper 36.3	Properties of laser clad multi-layer steel-ni/wc coatings Qingyi Sai, Ruipeng Zhang, Shuwen Wang, Yuhong Liao and David Barton <i>University of Shanghai for Science and Technology, China; University of Leeds, UK</i>
Paper 36.4	Tribological behaviour of Ti-Ag thin coatings in the perspective of biosensors design Aslihan Sayilan, Joel Borges, Claudia Lopes, Filip Vaz, Nicolas Mary, Sylvie Descartes and Philippe Steyer <i>INSA Lyon, France; University do Minho, Portugal</i>	
15:30 – 15:45	Dowson Prize Award, Poster Prize Award and Symposium Close Chaired by Ardian Morina and Farnaz Motamen Salehi Rupert Becket Lecture Theatre, Michael Sadler Building	
15:45 – 16:15	Refreshments in Parkinson Court and Close	

POSTERS	
POSTER SESSIONS TUESDAY 5 th (17:00 – 18:00) AND WEDNESDAY 6 th (16:00 – 17:00) SEPTEMBER 2023 Parkinson Court	
1.	Understanding the governing factors of tribofilm growth on coating surface based on Raman-based profilometry Nan Xu and Ardian Morina University of Leeds, UK
2.	Multi-scratch test: comparison of subsurface hardened layer evolution across different materials Michiel Corryn and Haithem Ben Hamouda ArcelorMittal Global R&D Gent, Belgium
3.	Research on power trend prediction of steam turbine in power plant based on continuous prediction of deep learning and oil online monitoring data Dayang Li, Huimin Gao, Kun Yang, Fanhao Zhou and Yutong Gao Wuhan University of Technology, China
4.	Experimental study of lubrication conditions in roller follower valve train Muhammad Khurram, Riaz Ahmad Mufti, Muhammad Usman Bhutta, Muhammad Usman Abdullah, Naqash Afzal, Ali Raza, Tayyab UI Islam, Irfan Gondal, Rehan Zahid and Sami Ur Rehman National University of Sciences and Technology, Pakistan; Canterbury Christ Church University, UK
5.	An acid number prediction model for lubricating oils based on partial least square regression methods Fanhao Zhou, Kun Yang and Dayang Li Wuhan University of Technology, China
6.	Study of friction and wear in carbon fiber composite materials by reciprocating ball-plane contact Fernando Israi Oropeza Pérez, Edgar Ernesto Vera Cárdenas, Armando Irvin Martínez Pérez, , Carlos Rubio González and Carlos Roberto Ibáñez Juárez Tecnológico Nacional de México / IT de Pachuca, Mexico; Tecnológico de Monterrey, Mexico
7.	Degradation impact of gear transmission oils on physico-chemical properties and tribological performance – preliminary results Busra Duran, Fabrice Ville, Jérôme Cavoret, David Philippon, Arnaud Ruellan and Frank Berens INSA Lyon, France; SKF Houten, Netherlands; SKF France, France
8.	Evaluating stern tube oil pollution in the global bulk carrier fleet Georgios Charvalos and Christos I. Papadopoulos National Technical University of Athens, Greece
9.	Effect of WPC surface treatment on the performance of an engine valve train Muhammad Usman Bhutta, Shahbaz Ahmad, Samiur Rahman Shah, Muhammad Khurram, Riaz Ahmad Mufti, Muhammad Usman Abdullah, Kiyo Ogawa, Rehan Zahid, Jawad Aslam, Mian Ashfaq Ali and Tayyab UI Islam National University of Technology, Pakistan; National University of Sciences and Technology, Pakistan; Fuji Manufacturing Co. Ltd, Japan; Canterbury Christ Church University, UK
10.	Experimental study of erosion behavior under fluctuating tensile loads Siwei Dai and Jianchun Fan China University of Petroleum-Beijing, China
12.	Complex tribology of bolted assembly Wieslaw Grabon, Karol Grochalski, Adilson Costa, Gabriella Epasto, Jerzy Bakunowicz, Mirosław Osetek, Gilmar Batalha and Thomas Mathia Rzeszow University of Technology, Poland; Poznan University of Technology, Poland; Universidade Federal de Ouro Preto, Brazil; University of Messina, Brazil; Koelner Rawiplug IP Company - Łańcucka Fabryka Śrub, Poland; Polytechnic School of the University of São Paulo, Brazil; École Centrale de Lyon, France
13.	Investigation of articular cartilage structure in osteoarthritis: a comparative study using various characterization techniques Manoj Mahadeshwara, Richard M Hall, Hemant Pandit, Michael Bryant and Reem El-Gendy University of Leeds, UK
14.	Tribological properties of PBO/PTFE composites for liner of plain bearing Mingming Yang, Zhaozhu Zhang and Yanling Wang Chinese Academy of Sciences, China
15.	The mechanical and tribological properties of PI/PTFE fabric composites Zhaozhu Zhang and Meng Liu Chinese Academy of Sciences, China
16.	Mechanism effect on wear in RCCA – CRGA tribological system Matteo Delli Colli, Sylvie Descartes, Benyebka Bou-Saïd, Francesco Massi, Carole Falcand and Nabil Marouf INSA Lyon, France; FRAMATOME Centre Technique LE CREUSOT, France; Sapienza Università di Roma DIMA, France
19.	Graphene as a conductivity modifier in ZDDP tribofilms for use in 3D tribo-nanoprinting Simon Duston, Rachel A Oliver, Krzysztof Kubiak, Yuechang Wang, Chun Wang and Ardian Morina University of Leeds, UK; University of Cambridge, UK; Harbin Institute of Technology, China
20.	In situ sensing of wear and corrosion of biomedical CoCrMo alloys M M Raihan, Gregory Pryce, Robert Beadling, Greg de Boer, Richard M Hall and Michael Bryant University of Leeds, UK
21.	Role of tangential stiffness of a tribometer? Case of Zr-based metallic glass-steel contact Zhijian Zhou, Aurelien Saulot, Lionel Lafarge, Rémi Daudin, Estelle Homeyer, Anne Tanguy and Sylvie Descartes INSA Lyon, France
22.	Laser textured surfaces for self-aligning pin-on-disk sliding: an in-situ study on pin inclination and frictional behaviour Hongzhi Yue, Gerda Vaitkunaite, Erik Hansen, Johannes Schneider, Bettina Frohnappfel and Peter Gumbach Karlsruhe Institute of Technology, Germany
24.	A novel methodology for the analysis of tribofilm distribution via polarised light microscopy Johann Watson, Farnaz Motamen Salehi, Shahriar Kosarieh, Gareth Moody, David Gillespie and Ardian Morina University of Leeds, UK; Cargill, UK
25.	Preparation and tribological properties of high entropy carbide ceramics Hengzhong Fan, Jicheng Li, Yunfeng Su, Junjie Song, Yanchun Zhou and Yongsheng Zhang Chinese Academy of Sciences, China
26.	An investigation of tribochemical reaction from the perspective of friction catalysis Dan Qiao, Hongxiang Yu and Dapeng Feng Chinese Academy of Sciences, China
27.	Fabrication and performance control of alumina-based self-lubricating structural ceramics Junjie Song, Yunfeng Su, Hengzhong Fan, Litian Hu and Yongsheng Zhang Chinese Academy of Sciences, China

POSTER SESSIONS TUESDAY 5th (17:00 – 18:00) AND WEDNESDAY 6th (16:00 – 17:00) SEPTEMBER 2023 Parkinson Court	
28.	Fibrous monolithic ceramics: tribological properties and fracture behavior of the alumina system <u>Yunfeng Su</u> , Shuna Chen, Hengzhong Fan, Junjie Song and Yongsheng Zhang <i>Chinese Academy of Sciences, China</i>
29.	Investigation of tribological behaviour of W-based coatings <u>Yuzhen Liu</u> and Shusheng Xu <i>Chinese Academy of Sciences, China</i>
30.	Design and performance research of biomimetic antifouling and slippery coating <u>Hao Yang</u> , Liguang Qin and Guangneng Dong <i>Xi'an Jiao Tong University, China</i>
31.	Influence of amorphous carbon encapsulated core shell nanolubricant additives on friction and wear behaviour in commercial engine oil <u>Shubhang Srivastava</u> , Nisha Ranjan, Muthusamy Kamaraj and Sundara Ramaprabhu <i>Indian Institute of Technology Madras, India</i>
32.	Effects of sliding and lubricant properties on film thickness in point contact EHL <u>Yuma Okawa</u> , Takashi Uesugi, Natsuki Tomita and Hiroshi Nishikawa <i>Kyushu Institute of Technology, Japan</i>
33.	Effect of surface roughness orientation on mixed EHD lubrication characteristic in rolling/sliding contact <u>Takashi Uesugi</u> , Yuki Murata, Yuma Okawa and Hiroshi Nishikawa <i>Kyushu Institute of Technology, Japan</i>
34.	Investigating the effect of temperature differences between the roller and raceway on TEHL in rolling element bearings: a 2D CFD-FSI modelling approach <u>Mohammadreza Banakermani</u> and Dieter Fauconnier <i>Ghent University, Belgium</i>
35.	Effects of calcium detergents on micro-pitting behaviour of gear metals <u>Akira Tada</u> , Dirk Spaltmann, Kazuo Tagawa and Valentin Popov <i>Technical University of Berlin, Germany; ENEOS Corporation, Japan</i>
36.	Tribological properties of electrochemically exfoliated 2D materials as lubricant additives <u>María J. G. Guimarey</u> , Amor M. Abdelkader and Mark Hadfield <i>University of Santiago de Compostela, Spain; Bournemouth University, UK</i>
37.	Effect of demineralizing liquids on dental wear through linearly reciprocating sliding wear tests <u>Sara Ivette Topete Velasco</u> , César Sedano de la Rosa and Francisco José Aranda García <i>Universidad de Guadalajara, Mexico</i>
38.	Experimental study of erosive wear on austenitic stainless steel under impact of jet flows at subzero temperatures <u>Ulises Alberto García-Ramírez</u> and César Sedano de la Rosa <i>Universidad de Guadalajara, Mexico</i>
39.	Surface-initiated rolling contact fatigue on an indent: experimental and numerical study to describe failure mechanism <u>Aurore Goigoux</u> , Sophie Cazottes, Nans Biboulet, Fabrice Ville, Thierry Douillard and Christine Sidoroff <i>NTN Europe, France; LaMCoS, France; MatéIS, France</i>
40.	Investigation of interparticle bonding of pure Cu powder under unidirectional friction experiment by using acoustic emission sensor <u>Sho Takeda</u> , Hiroyuki Miki and Tetsuya Uchimoto <i>Tohoku University, Japan; Ishinomaki Senshu University, Japan</i>
41.	Assessment of friction and wear on dental enamel using bovine milk, toothpaste, and mouthwash as remineralizing agents <u>María Elizabeth Sedano Hernández</u> and César Sedano de la Rosa <i>Universidad de Guadalajara, Mexico</i>
42.	Effect of high temperature on hardness and abrasive resistance on AISI 304 austenitic stainless steel <u>Josue Oswaldo Arreola Vargas</u> , Cesar Sedano-de la Rosa and Karlos Espinoza <i>Universidad de Guadalajara, Mexico</i>
43.	Experimental and numerical investigation of electric erosion in automotive motor bearings <u>Adrien Bleger</u> , <u>Nicholas Morris</u> and Michael Leighton <i>Loughborough University, UK; AVL, UK</i>
44.	Effect of niobium addition on the wear and impact properties of Hadfield steel <u>Bianka Nani Venturelli</u> , Gustavo Tressia, Wivyan Castro Lage and Eduardo Albertin <i>Instituto de Pesquisas Tecnológicas, Brazil; Instituto Tecnológico Vale, Brazil; Vale S.A, Brazil</i>
45.	Novel wood-based functional material with vibration and noise reduction <u>Conglin Dong</u> , Chengqing Yuan and Xiuqin Bai <i>Wuhan University of Technology, China</i>
46.	Enhancing friction and vibration reduction properties of a polymer using h-BN particles <u>Xiuqin Bai</u> , Conglin Dong, Yuhang Wu and Chenqing Yuan <i>Wuhan University of Technology, China</i>
47.	The impact of architectural design on the performance of actively oil-lubricated multi-bearing systems <u>Yves Perremans</u> , Bart Peremans, Branimir Mrak, Stephan Schlimpert and <u>Zhenmin Tao</u> <i>Flanders Make, Belgium</i>
48.	PDMS infusion lignum vitae wood-derived composites for high lubricating performance <u>Chengqing Yuan</u> , Zumin Wu, <u>Zhiwei Guo</u> and Hongyuan Zhao <i>Wuhan University of Technology, China; University of Leeds, UK</i>
49.	Measurements of fluid film pressures in thrust bearing with cylindrical and spherical dimples <u>Ryota Ishij</u> , Reo Miwa, Norifumi Miyanaga, Atsushi Tsujimori and Jun Tomioka <i>Gakuin University, Japan</i>
50.	Designing hydrogen-free diamond like multilayer carbon coatings for superior mechanical and tribological performance <u>Muhammad Usman</u> , Zhifeng Zhou, Abdul Wasy Zia and Kwok Yan Li <i>City University of Hong Kong, Hong Kong; Heriot-Watt University, UK</i>
51.	Organic friction modifiers fundamentals studied by synchrotron x-ray scattering techniques <u>Inga Kicior</u> , Veijo Honkimäki, Ardian Morina, Elizabeth Willneff, Peter J. Dowding and Sven L. M. Schroeder <i>European Synchrotron Radiation Facility, France; University of Leeds, UK; Infineum UK Ltd, UK</i>
52.	Electrical set-up for in-situ lubricant investigation in an electrochemical cell-like tribological contact <u>Grigore Cernalevschi</u> , Monica Ratoi, Brian Mellor, David Holt, Tabassumul Haque and Yuxue Cai <i>University of Southampton, UK; ExxonMobil, USA; ESSO Deutschland GmbH, Germany</i>

POSTER SESSIONS
TUESDAY 5th (17:00 – 18:00) AND WEDNESDAY 6th (16:00 – 17:00) SEPTEMBER 2023
 Parkinson Court

53.	Thermal study of rolling element bearings and gears under normal and marginal lubrication conditions <u>Matthieu Cordier</u> and Christophe Chagnenet <i>INSA Lyon, France; ECAM LaSalle, France</i>
54.	In-situ ultrasonic viscosity measurement: calibration and impact of temperature <u>Gladys Peretti</u> , Nathalie Bouscharain, Fabio Tatzgern, Nicole Dörr, Fabrice Ville and Rob Dwyer-Joyce <i>University of Sheffield, UK; University of Lyon, France; AC2T Research GmbH, Austria</i>
55.	Tribological properties of Al-GNP composites at elevated temperature <u>Sunil Poudel</u> , Rizwan Bajwa, Zakir Khan, Yongde Xia, Yi Zhang and Yanqiu Zhu <i>University of Exeter, UK; Daido Metal Co. Ltd, UK</i>
56.	A methodology for assessing the performance of top-of-rail products on the rail <u>Martin Valena</u> , Radovan Galas, Milan Omasta, Ivan Krupka and Martin Hartl <i>Brno University of Technology, Czechia</i>
57.	A Study on the effect of factors of piston motion on the piston ring rotation of an engine <u>Kaito Kanemoto</u> and Akemi Ito <i>Tokyo City University, Japan</i>
58.	Tribology as enabling technology for MEMS/NEMS tribo-printing <u>Khurshid Ahmad</u> and Ardian Morina <i>University of Leeds, UK</i>
59.	Influence of surface topography modification on surface, mechanical and tribological properties of Ni-Co pulse electrodeposition nanocomposite coating <u>Aashish John</u> , Zulfiqar Khan and Adil Saeed <i>Bournemouth University, UK</i>
60.	Advanced tribological testing of grease lubricated ball bearings including electrical parameters <u>Paul Staudinger</u> , Kartik Pondicherry and Julius Heinrich <i>Anton Paar GmbH, Austria; Anton Paar Germany GmbH, Germany</i>
61.	Deep crack propagation under rolling contact fatigue conditions: experimental investigations <u>Aude Lecouffe</u> , Jérôme Cavoret, Fabrice Ville, Xavier Kleber, Laurent Zamponi, Eve Goujon and Alexandre Mondelin <i>Université de Lyon, France; Airbus Helicopters, France; SKF Aerospace, France</i>