

Wednesday, May 24

★ Session 6M

GREASE II

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3814128: Shear Properties of Various Greases in Micrometer-Order Gap

Hanul Chun, Tomoko Hirayama, Naoki Yamashita, Kyoto University, Kyoto-shi, Nishikyo-ku, Kyoto-fu, Japan

2:00 pm – 2:30 pm

3833718: Impact of Thermo-Mechanical Aging of Grease During Churning on Grease Properties and Life

Sathwik Chatra K R, SKF, Houten, Netherlands, Jude Osara, University of Twente, Enschede, Netherlands, Piet Lugt, SKF Research and Technology Development, Houten, Netherlands

2:30 pm – 3:00 pm

3815401: Effects of Shear Aging on Oil-Separation Properties of Lubricating Greases

Femke Hogenberk, Jude Osara, Dirk Van Den Ende, University of Twente, Enschede, Netherlands, Piet Lugt, SKF Research and Technology Development, Houten, Netherlands

3:00 pm – 3:30 pm – Break

3:30 pm – 4:00 pm

3823866: Bevel Gear Grease – A Sustainability Case Study

Johan Leckner, Axel Christiernsson Int. AB, Nol, Sweden

4:00 pm – 4:30 pm

3830847: Benchtop Tribological Characterization of Electric Motor Greases for Hybrid Bearings

Abhishek Kumar, Jose Vasquez-Reyes, Ashlie Martini, University of California-Merced, Merced, CA, Christina Cheung, Thomas Murray, Anoop Kumar, Chevron Corporation, Richmond, CA

4:30 pm – 5:00 pm – Open Slot

5:00 pm – 5:30 pm – Grease Business Meeting

★ Session 6N

WEAR I

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3803642: Adjusting for Running-In: Extension of the Archard Wear Equation

Michael Varenberg, John Crane, Inc., Morton Grove, IL

2:00 pm – 2:30 pm

3803822: An Advanced Numerical Model for Wear

Jamal Choudhry, Andreas Almquist, Roland Larsson, Luleå University of Technology, Luleå, Sweden

2:30 pm – 3:00 pm

3806376: Wear Behavior of Metallic Part Repaired by an Additive Manufacturing Process

Théo Zurcher, Eric Charkaluk, Laboratoire de Mécanique des Solides-Ecole Polytechnique, Palaiseau, France; Vincent Fridrici, Bruno Berthel, Laboratoire de Tribologie et Dynamique des Systèmes-Ecole Centrale de Lyon, Lyon, France, Benoit Dodin, Société Nationale des Chemins de fer Français, Saint-Denis, France

3:00 pm – 3:30 pm – Break

3:30 pm – 4:00 pm

3807117: Tribology Analysis of Additive Manufactured, Nickel-Based Super Alloys

Khosro Shirvani, SUNY Farmingdale, Farmingdale, NY

4:00 pm – 4:30 pm

3810351: Effects of Temperature and Lubricant on Reciprocating Sliding Wear Behavior of HNBR/FKM

Zhangyu Qiao, China University of Petroleum, Beijing, China

4:30 pm – 5:00 pm

3812212: Computational Modelling of the Antiwear Effect of Zinc Dialkylthiophosphate Tribofilms in Mixed Mode Lubricated Contact

Robert Anderlüh, Hrvoje Jasak, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

5:00 pm – 5:30 pm – Wear Business Meeting

Thursday, May 25, 2023

★ Session 7A

LUBRICATION FUNDAMENTALS VII: NANOPARTICLES AND COATINGS

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am

3831473: Influence of Lubricant Additive Urea-ZrP on Viscosity

Kailash Arole, Yan Chen, Adolfo Delgado, James Hubbard, Hong Liang, Texas A&M University, College Station, TX

8:30 am – 9:00 am

3805242: Macro Topography Effect on Friction in Presence of Surface Textures in Conformal Contacts

Gerda Vaitkunaite, Erik Hansen, Johannes Schneider, Bettina Frohnapfel, Peter Gumbsch, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

9:00 am – 9:30 am

3824576: Tribological Properties of MoS₂ and Doped-MoS₂ Spray Coatings in Low Viscosity Hydrocarbons

Euan Cairns, Samir Aouadi, Diana Berman, Andrey Voevodin, University of North Texas, Denton, TX, Stephen Berkebile, US Army DEVCOM Army Research Laboratory, Aberdeen Proving Ground, MD

9:30 am – 10:00 am

3834300: Tribological Properties of h-BN, Ag and MgO Nanostructures as Lubricant Additives in Vegetable Oils

Maria Victoria Granja Oramas, C. Fred Higgs III, Rice University, Houston, TX

10:00 – 10:30 am – Break

10:30 am – 11:00 am

3811476: Performance and Lubrication Mechanism of New TiO₂ Particle-Based High-Performance Lubricant Additives

Fabrice Dassenoy, Sophie Pavan, Galipaud Jules, LTDS/ECL, Ecully, France, Istvan Jenei, Stockholm University, Stockholm, Sweden, Stephan Wieber, EVONIK, Darmstadt, Germany



★ Session 7A (continued)

11:00 am – 11:30 am

3806344: Influence of the Dispersant on the Tribological Performance of MoS₂ Nanoparticles Used as Lubricant Additives

Marina Benmansour, Fabrice Dassenoy, Jules Galipaud, Beatrice Vacher, LTDS/ECL, Ecully, France, Pavel Afanasiev, IRCE Lyon, Lyon, France, Lucile Joly-Pottuz, INSA Lyon, Lyon, France

11:30 am – 12:00 pm

3813207: Presentation TBA – Pending Government Approval

Parker LaMascus, Daniel Delghandi, Pranjali Nautiyal, Andrew Jackson, Robert Carpick, University of Pennsylvania, Philadelphia, PA, Meagan Elinski, Hope College, Holland, MI, Julia Griffin, Mount Holyoke College, South Hadley, MA, Lei Zheng, Robert Wiacek, Pixelligent, LLC, Baltimore, MD

★ Session 7C

SEALS I

Session Chair: Paul Michael, Milwaukee School of Engineering, Milwaukee, WI

Session Vice Chair: Hanping Xu, Ultool, LLC, Duluth, GA

8:00 am – 8:30 am

3812275: Modeling and Simulation of the Dynamic Sealing and Lubrication Mechanism of Rotary Shaft Seals

Jeremias Grün, Simon Felmeth, Frank Bauer, University of Stuttgart, Stuttgart, Germany

8:30 am – 9:00 am

3831169: A Secondary Self-Opening Start-Up Clearance Seal

Jing Tang, Hanping Xu, Ultool LLC, Duluth, GA, Sevki Cesmeçi, Fuad Hassan, Georgia Southern University, Statesboro, GA

9:00 am – 9:30 am

3834075: Endurance Testing of Cylinder Rod and Piston Seals

Paul Michael, Milwaukee School of Engineering, Milwaukee, WI

9:30 am – 10:00 am

3849023: Radial Lip Seal Friction Torque – A Suitable Lubricant-Elastomer Compatibility Indicator?

Christian Wilbs, Daniel Froelich, Matthias Adler, Freudenberg FST GmbH, Weinheim, Germany

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3833033: Rheological Sealing Material

Hanping Xu, Jing Tang, Aaron Harcrow, Ultool, LLC, Duluth, GA, Jacqueline Johnson, Leonard Lee, Sharon Gray, Terekhov Yuryevich, UTSI, Tullahoma, TN

11:00 am – 11:30 am

3833540: A Test Rig for Performance Evaluation of Dry Gas Seals with Choked Flow

Pascal Jolly, Noel Brunetiere, Institut Pprime – CNRS – Université de Poitiers, Chasseneuil du Poitou, France

11:30 am – 12:00 pm

3834144: Tribological Challenges of High Pressure H₂ Compression Using Reciprocating Industrial Compressors

Tanil Ozkan, Jonathan Penaranda, Dover Innovation Laboratory, Houston, TX, Burak Bekisli, Dover Precision Components, Woodlands, TX

★ Session 7D

MATERIALS TRIBOLOGY VII

Session Chair: TBD

Session Vice Chair: TBD

Presentations TBD

★ Session 7E

TRIBOCHEMISTRY IV

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am

3808686: Tribocorrosion in FLiNaK Molten Salt

Jun Qu, Xin He, Chanaka Kumara, Dino Sulejmanovic, James Keiser, Nidia Gallego, Oak Ridge National Laboratory, Oak Ridge, TN

8:30 am – 9:00 am

3833050: Ultra-High Tribocorrosion Resistance of Metals Enabled by Nano-Layering

Wenbo Wang, Oak Ridge National Laboratory, Knoxville, TN

9:00 am – 9:30 am

3836499: Novel Tribo-Corrosion Mechanisms of Laser Shock Peened Steel Manufactured by High-Pressure Deposition Additive Manufacturing Process

Alessandro Ralls, Jacob Frizell, Pradeep Menezes, University of Nevada-Reno, Reno, NV

9:30 am – 10:00 am

3849044: Mechanochemical Decomposition of Tricresyl Phosphate (TCP) Between Sliding Ferrous Surfaces

Egheosa Ogbomo, Imperial College London, London, United Kingdom

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3834074: Aircraft Turbine Oil Antiwear Additive Reactivity with Aerospace Bearing Steels

Alexander Fletcher, Mathew Kirsch, Daulton Isaac, Patrick Hellman, Air Force Research Laboratory, Wright-Patterson Force Base, OH, Daesung Chong, University of Dayton Research Institute, Dayton, OH

11:00 am – 11:30 am

3801783: In-Situ Observation of the Effect of the Tribofilm Growth on Scuffing in Rolling Sliding Contact

Mao Ueda, Shell Lubricants Japan, Kanagawa, Japan, Hugh Spikes, Amir Kadiric, Imperial College London, London, United Kingdom

★ Session 7F

BIOTRIBOLOGY I

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am

3832881: Optimizing Oral Lubrication Properties of Plant Proteins by Microgelation for Improved Functionality and Fat-Replacement

Ben Kew, Melvin Holmes, Evangelos Liasas, Anwesha Sarkar, University of Leeds, Leeds, Yorkshire, United Kingdom

8:30 am – 9:00 am

3834114: Comparing Stiffness and Lubrication Properties of Triple Network Hydrogels to PAMPS/P(NIPAAm-co-AAm) Hydrogel and Ex-Vivo Cartilage

Nabila Ali, Alison Dunn, University of Illinois at Urbana-Champaign, Urbana, IL, Connor Demott, Melissa Grunlan, Texas A&M University, College Station, TX

9:00 am – 9:30 am

3848864: Modelling the Interaction Between Skin and Products with Application to Tactile Perception

Marc Masen, Imperial College of London, London, United Kingdom

9:30 am – 10:00 am

3810768: Development of a Synthetic Skin Test Bed for the Assessment of Beauty and Personal Care Product Consumer Experience

Phoebe Bramley, University of Sheffield, Sheffield, United Kingdom

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3812383: The Effectiveness of Chalk as a Friction Modifier for Finger Pad Contact with Rocks of Varying Roughness

Katherine Tomlinson, Ben Clarke, Tom Slatter, Roger Lewis, Matt Carre, University of Sheffield, Sheffield, United Kingdom

11:00 am – 11:30 am

3829218: Microgel-Reinforced Hydrogel with Ultra-High Lubricity for Oral Therapeutic Application

Olivia Pabois, Jing Hu, Anwesha Sarkar, University of Leeds, Leeds, United Kingdom

11:30 am – 12:00 pm

3818435: Oral Frictional Properties of Plant and Eairy Proteins – Role of Saliva

Fran Brown, Alan Mackie, Anwesha Sarkar, University of Leeds, Leeds, United Kingdom, Qi He, Jochen Pfeifer, Mondelez International, Reading, United Kingdom

★ Session 7G

TRIBOTESTING III

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am

3833790: Development of a Novel Sled Tribometer

Joakim Sandberg, Kalle Kalliorinne, Gustav Hindér, Andreas Almqvist, Hans-Christer Holmberg, Roland Larsson, Luleå University of Technology, Luleå, Sweden

8:30 am – 9:00 am

3833407: Synergistic Influence of Epoxidation and Solid Lubricant Additives Incorporation on the Lubrication Performance of Inedible Mustard Oil

Soumya Sikdar, Md Hafizur Rahman, Pradeep Menezes, University of Nevada-Reno, Reno, NV

9:00 am – 9:30 am

3834203: In-Situ Deposition of Protective Films via Metastable Additive Molecules Carried into Sliding Interfaces by Lubricant Flow

Harry Wise, Tobias Martin, Jane Wang, Yip-Wah Chung, Northwestern University, Evanston, IL, Jack Loken, University of Wisconsin-Madison, Madison, WI

9:30 am – 10:00 am

3834073: Ball-on-Disk Tribological Testing in the Presence of an Electric Field

Steven Thrush, Allen Comfort, James Dusenbury, US Army DEVCOM GVSC, Warren, MI

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3834311: Tribological Properties of Nanocrystalline Al-Mg Material Manufactured Using Cold Spray

Amanendra Kushwaha, Manoranjan Misra, Pradeep Menezes, University of Nevada-Reno, Reno, NV

11:00 am – 11:30 am

3834315: Tribological Performance of Aluminum Sheet Forming Lubricants

Daniel Sanchez Garrido, Novelis, Kennesaw, GA

11:30 am – 12:00 pm

3834190: Comparison of Tribometer Reciprocating Performance Under Identical Conditions

Cole Frazier, Southwest Research Institute, San Antonio, TX

★ Session 7I

ELECTRIC VEHICLES VII

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am

3833903: High-Speed Elastohydrodynamic Traction and Film Thickness in Electric Vehicle Transmissions

Alexander MacLaren, Hugh Spikes, Amir Kadiric, Imperial College London, London, United Kingdom

8:30 – 9:00 am

3834025: Optimizing Electric Vehicle Transmission Efficiency Using a Thermally Coupled Gearbox Lubrication Model

Joseph Shore, Amir Kadiric, Imperial College London, London, United Kingdom

9:00 am – 9:30 am

3825698: Study on the Discharge Behavior of EV Motor Bearings

Liang Guo, Thijs Nijdam, Henk Mol, Lieuwe de Vries, SKF BV, Houten, Netherlands



Technical Sessions

★ Session 7I (continued)

9:30 am – 10:00 am

3807461: Numerical Investigation of the Influence of Pitting Size on Electrical Properties of Roller Bearings

Anatoly Zaiat, Karim Khaled Ibrahim, Marcel Neu, Eckhard Kirchner, Institute of Product Development and Machine Elements, Darmstadt, Germany, Florian Michael Becker-Dombrowsky, Technical University of Darmstadt, Darmstadt, Hesse, Germany

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3835060: Electric Vehicle Drive System Specialty Fluids

Anant Kolekar, Valvoline LLC, Lexington, KY

11:00 am – 11:30 am

3848522: Vehicle Electrification Trends and Traction Inverter

Ayush Lal, Aptiv, Pickering, Ontario, Canada

★ Session 7J

METALWORKING FLUIDS V

Session Chair: TBD

Session Vice Chair: TBD

Session Starts at 8:30 am

8:30 am – 9:00 am

3811283: Application of High-Speed Tribology to Evaluate the Performance of Cutting Fluids on Ti-6Al-4V Under Machining Conditions

Jack Secker, Chris Taylor, University of Sheffield, Sheffield, United Kingdom, Edward Jones, Hangsterfer's Labs Inc., Mantua, NJ

9:00 am – 9:30 am

3833702: Enhancing Lubricity for Increased CGI Machining Speeds

Amelia Hadler, Johnnie Thomlison, The Lubrizol Corporation, Wickliffe, OH, George Georgiou, GE02 SQUARED Consulting, Windsor, Ontario, Canada, Britt Minch, The Lubrizol Corporation, Wickliffe, OH

9:30 am – 10:00 am

3830552: Advances in Bio-Based Metalworking Fluids – Addressing Formulation Challenges by Balancing the Use of Additives

Kathleen Havelka, ANGUS Chemical Company, Buffalo Grove, IL

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3808552: Next-Generation Anti-Wear for Metalworking Fluids

Lucas Luz, Solvay, Paulínia, São Paulo, Brazil

★ Session 7K

SURFACE ENGINEERING III

Session Chair: TBD

Session Vice Chair: TBD

Session Starts at 9:00 am

9:00 am – 9:30 am

3804786: Making Surface Texture Meaningful: Case Studies in Surface Analysis for Tribological Applications

Mark Malburg, Digital Metrology Solutions, Columbus, IN

9:30 am – 10:00 am

3812254: How Can We Avoid PET Bottle Pile-ups During Conveying by Better Understanding Friction and Adhesion Phenomena?

Emmanouil Georgiou, Hellenic Air-Force Academy, Athens, Greece, Dirk Drees, Falex Tribology, Rotselaar, Vlaams Brabant, Belgium, Lais Lopes, Christian Gerlach, Procter & Gamble Services Company S.A., Grimbergen, Belgium

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3832761: Tribology – Adhesion, Friction, and Socioeconomy

Pankaj Tomar, IGDTUW/GGSIPU, New Delhi, Delhi, India

11:00 am – 11:30 am

3833336: Stick-Slip Friction: Mechanics, Mechanism, and Electro-Adhesion

Pankaj Tomar, IGDTUW/GGSIPU, New Delhi, Delhi, India

★ Session 7L

GREASE III

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am – Open Slot

8:30 – 9:00 am

3835074: Grease Patterns After Rolling Contact

Hao Qi, L.B. Foster, Burnaby, British Columbia, Canada

9:00 am – 9:30 am

3810505: Dissipative Particle Dynamics Simulations of Thickeners Fiber Formation Process and Behavior Under Shear Flow

Honami Yanagisawa, Takashi Noda, NSK Ltd., Fujisawashi, Kanagawa, Japan, Tomoya Hasegawa, Hitoshi Washizu, University of Hyogo, Kobe-shi, Hyogo, Japan

9:30 am – 10:00 am

3811289: Visualization of Grease Fluidity in a Ball Bearing Using Neutron Imaging Technology

Kazumi Sakai, Rui Ogata, Shuhei Yamada, Nobuharu Kimura, ENEOS Corporation, Yokohama, Japan, Yoshihiro Matsumoto, Comprehensive Research Organization for Science and Society, Tokai, Japan, Keisuke Kurita, Japan Atomic Energy Agency, Tokai, Japan

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3811764: Analyzing Wear and Additive Elements in Greases – XRF, RDE-OES or ICP-OES?

Christoph Rohbogner, Thomas Fischer, OELCHECK GmbH, Brannenburg, N/A, Germany

11:00 am – 11:30 am

3813040: Effect of Oxidation on the Lubricating Performance of Greases

George S. Dodos, ELDON'S S.A., Athens, Greece

11:30 am – 12:00 pm

3831450: Film Thickness in Grease Lubricated Bearings: Effects of Grease Filling, Bearing Size and Grease Properties

Pramod Shetty, Robert Meijer, Jude Osara, University of Twente, Enschede, Netherlands, Rihard Pasaribu, Shell Project and Technology, Amsterdam, Netherlands, Piet Lugt, SKF Research and Technology Development, Houten, Netherlands

★ Session 7M

WEAR II

Session Chair: TBD

Session Vice Chair: TBD

8:00 am – 8:30 am

3814171: New Amine Phosphate Esters as Multifunctional Antiwear Additives

Ezio Amerio, John Dixon, Alina Filin, Rudy Venderbosch, Nouryon, Deventer, Netherlands

8:30 am – 9:00 am

3814203: RNT Wear Testing with Ultra-Low Viscosity Engine Oil on Full Bench Engine

Matthias Eggenstein, Shell Global Solutions, Hamburg, Germany, Peter Berlet, IAVF Antriebstechnik, Karlsruhe, Germany

9:00 am – 9:30 am

3819630: Wear of Aerospace Bearing Steels in Lubricated Reciprocating Tribotesting

Mathew Kirsch, Air Force Research Laboratory, Wright Patterson Air Force Base, OH

9:30 am – 10:00 am

3832512: The Use of the MTM Rig for Wear Testing

Matthew Smeeth, Clive Hamer, PCS Instruments, London, United Kingdom

10:00 am – 10:30 am – Break

10:30 am – 11:00 am

3832581: Effects of Trace Moisture Content on Tribo-Film Formation, Friction and Wear of CF-Filled PTFE in High-Purity Hydrogen

Qian Chen, Kyushu University, Fukuoka, Fukuoka, Japan

11:00 am – 11:30 am

3812387: Enhanced Metal Corrosion of Long-Life Antifreeze Coolants

Hong Gao, Shell Global Solutions (US) Inc., Houston, TX

11:30 am – 12:00 pm

3813013: Local Contact Pressure Governs Mild Wear Mechanisms at Multi-Asperity Interfaces

Cyrian Leriche, ARCNL, Dlemen, Noord-Holland, Netherlands

★ Session 8A

LUBRICATION FUNDAMENTALS VIII: MODELING

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3804989: Scaling of Friction Behavior in the Mixed Lubrication Regime through a Modified Hersey Number

Erik Hansen, Gerda Vaitkunaite, Johannes Schneider, Peter Gumbsch, Bettina Frohnepfel, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

2:00 pm – 2:30 pm

3833624: Off-Lattice Hybrid Kinetic Monte Carlo (kMC) Modeling of Film Growth at Solid-liquid Interfaces

Stavros Ntioudis, James Ewen, Daniele Dini, Imperial College London, London, United Kingdom, C. Turner, University of Alabama, Tuscaloosa, AL

2:30 pm – 3:00 pm

3833503: Influence of Polar Lubricant Additives on Wall Slip and Bulk Shear

Seyedmajid Mehrnia, Peter Pelz, Technische Universität Darmstadt, Darmstadt, Germany

3:00 am – 3:30 pm – Break

★ Session 8C

SEALS II

Session Chair: Lassad Amami, CETIM, Nantes, France

Session Vice Chair: Maximilian Engelfried, University of Stuttgart, Stuttgart, Germany

1:30 pm – 2:00 pm

3812371: Modelling of the Pumping Rate Behavior of Shaft Sealing Counterfaces

Maximilian Engelfried, Matthias Baumann, Frank Bauer, University of Stuttgart, Stuttgart, Germany

2:00 pm – 2:30 pm

3833697: Experimental Study of a Reverse Pumping Spiral Groove Face Seal

Abdel-Salem Medjahed, Noel Brunetiere, Antoinette Blouin, Institut Pprime, Futuroscope Chasseneuil Cedex, France; Bálint PAP, Safran, Colombes, France

2:30 pm – 3:00 pm

3829259: Tolerance Analyses on the Geometrical Parameters of Surface Textured Seals

Markus Brase, Matthias Wangenheim, Leibniz University of Hannover, Garbsen, Germany

3:00 pm – 3:30 pm – Break

3:30 pm – 4:00 pm

3806295: Experimental Determination of the Benefits of Textured Mechanical Seals on the Service Life of Systems

Lassad Amami, CETIM, Nantes, France

4:00 pm – 4:30 pm

3846279: Measurement of Leakage and Visualization of Seal Surface of Dry Gas Seals with a Simple Inner Ring Groove

Masayuki Ochiai, Tokai University, Hiratsuka, Kanagawa, Japan

4:30 pm – 5:00 pm

3850067: Radial Shaft Sealing System Failure Mode – Shaft Lead

Adrian Heint, Christian Wilbs, Daniel Froelich, Matthias Adler, Freudenberg FST GmbH, Weinheim, Baden-Württemberg, Germany



★ Session 8E

TRIBOCHEMISTRY V

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3811471: Understanding the Effect of Forces on Tribochemical Reaction Rates

Wilfred Tysoe, University of Wisconsin-Milwaukee, Milwaukee, WI

2:00 pm – 2:30 pm

3833820: How are Chemical Reactions Activated in Tribological Interfaces?

Seong Kim, Pennsylvania State University, University Park, PA, Ashlie Martini, University of California-Merced, Merced, CA

2:30 pm – 3:00 pm

3808686: Tribocorrosion in FLiNaK Molten Salt

Jun Qu, Xin He, Chanaka Kumara, Dino Sulejmanovic, James Keiser, Nidia Gallego, Oak Ridge National Laboratory, Oak Ridge, TN

3:00 pm – 3:30 pm – Break

3:30 pm – 4:00 pm

3805937: The Analytical Study of Friction Reduction in Instrumented Single-Cylinder Block

Yue Guan, Jules Galipaud, Frédéric Dubreuil, Maria-Isabel De Barros Bouchet, Ecole Centrale de Lyon, Écully, France, Johnny Dufils, Etienne Macron, IREIS/HEF GOURPE, Andrézieux-Bouthéon, France, Fabrice Dassenoy, LTDS/ECL, Ecully, France

4:00 pm – 4:30 pm

3833100: Molecular Mechanisms of Tribochemical Reactions: Reactive Molecular Dynamics Simulations of Cyclic Organic Molecules

Fakhrul Hasan Bhuiyan, Ashlie Martini, University of California-Merced, Merced, CA, Yu-Sheng Li, Seong Kim, The Pennsylvania State University, State College, PA

4:30 pm – 5:00 pm

3836499: Novel Tribo-Corrosion Mechanisms of Laser Shock Peened Steel Manufactured by High-Pressure Deposition Additive Manufacturing Process

Alessandro Ralls, Jacob Frizell, Pradeep Menezes, University of Nevada-Reno, Reno, NV

★ Session 8F

BIOTRIBOLOGY II

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3809745: Haptic Tribometer Characterizing the Dynamic Contact Between the Human Finger and the Automotive Touchscreen

Rexhina Shyti, Roberto Vargiolu, Hassan Zahouani, Laboratoire de Tribologie et Dynamique des Systèmes, Ecully, France, Pascale Nays, Renault Group, Paris, France

2:00 pm – 2:30 pm

3811662: Molecular Modeling of Low-Friction Hair Care Formulations

Erik Weiand, James Ewen, Stefano Angioletti-Uberti, Daniele Dini, Imperial College London, London, United Kingdom, Peter König, Steven Page, Francisco Rodriguez-Ropero, Yuri Roiter, Procter & Gamble, Mason, OH

2:30 pm – 3:00 pm

3809804: Biotribological Characterization of the Physical Mechanisms at the Astringency Sensation Origin

Ianis Ammam, Roberto Vargiolu, Cyril Pailler-Mattei, Hassan Zahouani, Laboratoire de Tribologie et Dynamique des Systèmes – Ecole Centrale de Lyon, Lyon, France, Clément Nivet, INRAE, Dijon, France, Francis Canon, INRAE, Dijon, France

3:00 pm – 3:30 pm – Break

3:30 pm – 4:00 pm

3810348: Biotribological Behavior of MXene-UHMWPE Composites

Max Marian, Pontificia Universidad Católica de Chile, Macul, Región Metropolitana, Chile, Klara Feile, Benedict Rothammer, Bartz Marcel, Wartzack Sandro, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), Erlangen, Germany, Andreas Rosenkranz, Universidad de Chile, Santiago, Chile

4:00 pm – 4:30 pm

3830758: Investigating the Tribological and Corrosion Behavior of Co-Cr Alloy as an Implant Material for Orthodontic Applications

Sudip Saha, Kommineni Uday Venkat Kiran, Sougata Roy, University of North Dakota, Grand Forks, ND

4:30 pm – 5:00 pm

3830887: Photo-Responsive Hydrogel Lubricity

Allison Chau, Sophia Bailey, Kseniia Karnaukh, Javier Read de Alaniz, Angela Pitenis, University of California-Santa Barbara, Santa Barbara, CA

5:00 pm – 5:30 pm

3832875: A Study on the Role of Synovial Fluid Constituents in Boundary Lubrication Mechanism at Articular Cartilage Surface

Wenxiao Li, Takehiro Morita, Yoshinori Sawae, Kyushu University, Fukuoka, Japan

★ Session 8G

TRIBOTESTING IV

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3834410: Grinding Method Process Under Lab Conditions to Evaluate Railway Microstructural Response

Luis Wilches Peña, Valentina Castano, Miguel Vélez, Universidad EIA, Medellín, Antioquia, Colombia; Jaime Carvalho, Juan Sánchez, Hugo Santana, John Valencia, SENA, Centro de Tecnología de la Manufactura Avanzada, Medellín, Antioquia, Colombia

2:00 pm – 2:30 pm

3834337: Cast Iron Chef – The Final Season

Alexander McGhee, University of Wisconsin-Madison, Madison, WI, Kylie Van Meter, Brandon Krick, Florida State University, Tallahassee, FL

2:30 pm – 3:00 pm

3835228: Effect of Gas Environment and Test Speed on Reciprocating Wear Testing for Compressor Packing Seal Materials

Jonathan Penaranda, Burak Bekisli, Tanil Ozkan, Dover Precision Components, Houston, TX

3:00 pm – 3:30 pm – Break

★ Session 8I

ENGINE AND DRIVETRAIN I

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3847574: Ring-Liner Testing in a Hydrogen Environment

Peter Lee, Southwest Research Institute, San Antonio, TX

2:00 pm – 2:30 pm

3832947: How to Improve Engine Lifetime by Use of Premium Fuel

Marcella Frauscher, Adam Agocs, Thomas Wopelka, Andjelka Ristic, AC2T research GmbH, Wiener Neustadt, Austria, Austria

★ Session 8L

GREASE IV

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3832174: Quantum-Leap Grease Formulation Through Preform Chemistry

Noura Smaili Iderkou, Novitas Chem Solutions, Tomball, TX

2:00 pm – 2:30 pm

3834150: Best Practices for Making Urea Grease from a Powdered Thickener

Lauren Huffman, Dow Chemical, Midland, MI

2:30 pm – 3:00 pm

3811237: Influence of Grease Thickener Types on the Film Formation

Tomoki Kamihata, Kazumi Sakai, ENEOS Corporation, Yokohama, Japan

3:00 pm – 3:30 pm – Break

3:30 pm – 4:00 pm

3813022: DIN 51830-2 – Evolution of an Advanced Method for Characterization of Thermo-oxidative Grease Failure

Markus Matzke, Robert Bosch GmbH, Renningen, Germany, Olav Höger, Shell Global Solutions Germany GmbH, Hamburg, Germany, Thomas Litters, FUCHS Lubricants Germany GmbH, Mannheim, Germany, Jürgen Fischer, DIN Technical Committee on Mineral Oil and Fuel Standardization, Hamburg, Germany

4:00 pm – 4:30 pm

3829730: Oxidation and Grease Life in Rolling Bearings

Piet Lugt, SKF Research and Technology Development, Houten, Netherlands, Mikael Holgerson, Fredrik Reinholdsson, SKF, Gothenburg, Sweden

★ Session 8M

WEAR III

Session Chair: TBD

Session Vice Chair: TBD

1:30 pm – 2:00 pm

3833731: An Investigation into the Tribological Performance of Wear-Resistant PVD Coatings Atop Various Tool Steels Used in Injection Moulding Applications

Roshan Lal, University of Birmingham, Wolverhampton, United Kingdom

2:00 pm – 2:30 pm

3833738: Friction & Wear Characteristics of Pitch & Polyacrylonitrile-Based Carbon-Carbon Composites in Air and Nitrogen Environment Under Aircraft Taxi Conditions

Akshat Sharma, Farshid Sadeghi, Purdue University, West Lafayette, IN

2:30 pm – 3:00 pm

3833918: Wear Characteristics of ZDDP-Tribofilm

Armand Tamouafo Fome, Leibniz University Hannover, Hannover, Germany

3:00 pm – 3:30 pm – Break