

# OFFICIAL PROGRAM - NOVEMBER, 3<sup>rd</sup> - MONDAY

TIME		ROOM 1 CÉSAR LATTES AUDITORIUM	ROOM 2 FLORESTAN FERNANDES I ROOM
8:30am	9:00am	Opening session	
9:00am	10:00am	<b>PLENARY LECTURE</b> - Dr. Ali Erdemir - Argonne National Laboratory, USA <b>Design, Development and Implementation of Smart Nanocomposite Coatings for Improved Energy Efficiency and Durability in Engines</b>	
<b>10:00am</b>	<b>10:30am</b>	<b>Coffee break</b>	
10:00am	10:30am	Author's coffee	Author's coffee
10:30am	11:10am	<b>INVITED SPEAKER</b> <b>Tribology of carbon-based coatings and their application in advanced bearings</b> - Prof. Esteban Broitman - Linköping University, Sweden	<b>INVITED SPEAKER</b> <b>Influence of polymer shear thinning on friction in hydrodynamic contacts</b> - Prof. Hugh Spikes - Imperial College, UK
11:10am	11:30am	<b>Comparisons of tribological properties of Ti(C,N)/SiC in water and seawater</b> - Lei Liu, Qingwen Dai, Wei Huang, Xiaolei Wang (Nanjing University of Aeronautics & Astronautics)	<b>Effects of ethanol on film thickness and friction of group one engine oils</b> - Henara Lillian Costa (Universidade Federal de Uberlândia), Hugh Spikes (Imperial College London)
11:30am	11:50am	<b>Load carrying capacity of a heterogeneous surface bearing</b> - Evan Thomas, Romeo P. Glovnea (University of Sussex), Mircea D. Pascovici ("Politehnica" University)	<b>Assessment of automotive lubricant oil evolution through technology prospecting</b> - Eduardo Dominguez Trindade, Renata Cristina Teixeira (Petrobras)
<b>11:50am</b>	<b>2:00pm</b>	<b>Lunch</b>	
1:30pm	2:00pm	Author's coffee	Author's coffee
2:00pm	3:00pm	<b>PLENARY LECTURE</b> - Prof. Alfons Fisher - Universität Duisburg-Essen, Germany <b>Dissipative Mechanisms under Boundary Lubricated Ultra-Mild Sliding Wear of Metals</b>	
3:00pm	3:20pm	<b>Cavitation erosion resistance of active screen-low temperature plasma nitrided AISI 410 martensitic stainless steel</b> - André Paulo Tschiptschin, Luis Armando Espitia (USP), Hanshan Dong, Xiao-Ying Li (University of Birmingham), Carlos Eduardo Pinedo (Heat Tech)	<b>Ultra-low friction coefficient in the sliding of Si3N4-Al2O3 in water: AB INITIO study of running-in</b> - Cherlio Scandian, Nathan Fantecelle Strey, Roberto Balarini Junior (UFES)
3:20pm	3:40pm	<b>Cavitation erosion damage of metallic materials in rotating disk testing</b> - José Divo Bressan, Marcos Antunes Klemz, Gil Bazanini (Udesc)	<b>Effect of silica concentration on wear and friction of silicon nitride sliding against alumina in water</b> - Amilton Sinatora, Eliel dos Santos, Roberto Pereira de Oliveira (USP)
3:40pm	4:00pm	<b>Analysis of critical load of multilayered/gradient CrAlSiN PVD coatings measured using scratch tests</b> - Silviu Victor, Carlos Augusto Silva de Oliveira (UFSC), Washington Martins da Silva Júnior, Vinicius Carvalho Teles, José Daniel Biasoli de Mello (UFU)	<b>Effect of temperature and atmosphere on the tribological behaviour of high tribological performance PEEK (Polyether Ether Ketone) composite</b> - Renan Muller Schroeder (R&D solutions), Aloisio Nelmo Klein, Cristiano Binder, Diego Vinicius Dalevedo Barboza, Felipe Darabas Rzatki, Guilherme Mariz de Oliveira Barra, José Daniel Biasoli de Mello (UFSC)
<b>4:00pm</b>	<b>4:30pm</b>	<b>Coffee break</b>	
4:00pm	4:30pm	Author's coffee	Author's coffee
4:30pm	5:30pm	<b>PLENARY LECTURE</b> - Prof. Jacob Klein - Weizmann Institute of Science, Israel <b>Molecular Mechanisms of Biological Lubrication</b>	
5:30pm	5:50pm	<b>Numerical modeling of adhesion and adhesive failure during the unidirectional contact between metallic surfaces</b> - Cristiano Fernandes Lagatta, Eleir Mundim Bortoleto, Erika Fernanda Prados, Izabel Fernanda Machado, Luiz Gustavo Del Bianchi da Silva Lima, Newton Kiyoshi Fukumasu, Roberto Martins Souza, Vanessa Seriacopi (USP)	<b>The future of lubricants is in "closing the cycle" and eco-toxicity; cutting oil emulsions as an example</b> - K. R. Sathwik Chatra, Satish V. Kailas (Indian Institute of Science)
5:50pm	6:10pm	<b>Effect of size nodule graphite on the wear resistance of ADI: a finite element study</b> - Wilson Luiz Guesser (UDESC), Carlos Henrique da Silva, Fábio Koda, Jairo Alberto Blanco Martinez, Luiz Henrique Accorsi Gans (UTFPR)	<b>Friction behaviour and the stribeck curve in reciprocating cycles</b> - Eduardo Dominguez Trindade (Petrobras), Amilton Sinatora (USP)
<b>7:00pm</b>	<b>9:00pm</b>	<b>Cocktail</b>	

# OFFICIAL PROGRAM - NOVEMBER, 4<sup>th</sup> - TUESDAY

TIME		ROOM 1 CÉSAR LATTES AUDITORIUM	ROOM 2 FLORESTAN FERNANDES I ROOM
8:00am	8:30am	Author's coffee	Author's coffee
8:30am	9:30am	<b>PLENARY LECTURE</b> - Prof. WilfriedJ. Bartz - Technische Akademie Esslingen e. V., Germany <b>Energy Sources for the Future - Tribological Aspects of Water and Wind Energy Plants</b>	
9:30am	9:50am	<b>Modelling the dynamic behaviour of large hydro generating units guide bearings</b> - Geraldo Carvalho Brito Junior (Itaipu Binacional), Anselmo Chaves Neto, Roberto Dalledone Machado (UFPR)	<b>Tribological study of self-lubricating composites with hexagonal boron nitride and graphite as solid lubricants</b> - Kelen Juliane Mucelin, Priscila da Costa Gonçalves, Gisele Hammes (UFSC), Roberto Binder (Whirlpool- Embraco Unit), Rolf Janssen (Technische Universität Hamburg-Harburg), Aloisio Nelmo Klein (UFSC), José Daniel Biasoli de Mello (UFU)
9:50am	10:10am	<b>Effect of the presence of the lifting pocket on the THD performance of a large tilting-pad thrust bearing</b> - Michel Fillon (Institut Pprime), Michał Wodtke, Michał Wasilczuk (Gdansk University of Technology)	<b>Tribological properties of TiO<sub>2</sub>/Au nanocomposites aimed toward decorative thin films applications</b> - A. Cavaleiro (University of Coimbra), E. Alves, N.P. Barradas (Instituto Tecnológico e Nuclear), C.S. Abreu, F. Vaz, J. Matos, J.R. Gomes, M. Torrell (Universidade do Minho)
10:10am	10:30am	<b>Itaipu Binacional hydro power plant thrust bearing design optimization for higher efficiency</b> - Andreas Schubert, Michel Spiridon, Piotr Pajaczkowski (Alstom Renewable), Geraldo Carvalho Brito Júnior, João Maria Marra (Itaipu Binacional)	<b>Surface microhardness of AISI 4140 steel nitrided during electric discharge machining</b> - Rogério Felício dos Santos, Ernane Rodrigues da Silva (CEFET-MG), André Rezende Figueiredo Oliveira, Henara Lillian Costa, Alberto Arnaldo Raslan (UFU)
<b>10:30am</b>	<b>12:10pm</b>	<b>Coffee break / Poster session*</b>	
<b>12:10pm</b>	<b>2:10pm</b>	<b>Lunch</b>	
2:10pm	2:50pm	<b>INVITED SPEAKER</b> <b>Global impact of friction on energy use in transportation and Industry</b> - Prof. Kenneth Holmberg - VTT Technical Research Centre of Finland, Finland	<b>INVITED SPEAKER</b> <b>Frictional Behavior of Micro-rolling Elements</b> - Prof. Dae-Eun Kim - Yonsei University-Korea
2:50pm	3:10pm	<b>Tribological properties of Carbon Nanotubes as lubricant additive in oil and water for a wheel-rail system</b> - Javier Lara Romero, Jesús A. Carlos Cornelio (Universidad Michoacana de San Nicolás de Hidalgo), Alejandro Toro, Paula A. Cuervo Velásquez (National University of Colombia), Lina M. Hoyos Palacio (Universidad Pontificia Bolivariana)	<b>The phenomenon of thermo-capillary migration effected by surface micro-grooves</b> - Qingwen Dai, Wei Huang, Xiaolei Wang (Nanjing University of Aeronautics & Astronautics)
3:10pm	3:30pm	<b>Dry and lubricated wear of rail steel under rolling contact fatigue</b> - Alejandro Toro, Juan Felipe Santa, Santiago Maya-Johnson - National University of Colombia	<b>Effect of liner texture on ring/liner tribological performance</b> - Gustavo C. Buscaglia, Hugo M. Checo (USP), Mohammed Jai (Institut Nationale des Sciences Appliquées de Lyon)
4:00pm	6:00pm	<b>Visit to Itaipu Binacional - the second biggest hydroelectric power plant in the world</b>	
<b>8:00pm</b>	<b>11:00pm</b>	<b>Dinner</b>	

# OFFICIAL PROGRAM - NOVEMBER, 4<sup>th</sup> - TUESDAY

## \*POSTER SESSION - 10:30am to 12:10pm

### **Abrasion resistance of nickel aluminide coatings deposited by HVOF and PTA processes**

Marjorie Benegra, Giuseppe Pintaude, Ossimar Maranhão, Ana Luiza Beltrão Santana (UTFPR)

### **Analysis of lubricant action of biodiesel using response surface methodology**

Valdicleide Silva Mello, Salete Martins Alves (UFRN)

### **Analysis of the amplitude influence on the ultrasonic cavitation test of the ABNT304 stainless steel using optical profilometer**

Anderson Geraldo Marenha Pukasiewicz, Wellington Uczak de Goes (UTFPR)

### **Application of acoustic emission for monitoring erosive wear tests of low carbon steel by solid particles**

Gustavo Borges Tiboni (Aker Solutions do Brasil), Carlos Henrique da Silva (UFTPR)

### **Comparative study of the wear of specimens lubricated with mineral oil or biofluids**

Dyego Monteiro de Souza, Antonio Paulino de Araujo Neto, João Telésforo Nobrega de Medeiros (UFRN), Lauralice de Campos Franceschine Canale (USP)

### **High performance lubricant from modified vegetable oil**

Salete Martins Alves, Marinalva FerreiraTrajano, Erinéia da Silva Santos (UFRN)

### **High temperature/velocity erosion of thermal barrier coatings: field diagnosis and laboratory testing approach**

Alejandro Toro, Augusto César Barrios Tamayo, Luis Emilio Tobón Botero (National University of Colombia), Pablo Andrés Gómez Florez (EPM)

### **Kinetic friction modeling and standard uncertainty measurement determination for sliding bearing on shaft apparatus**

Carlos Henrique da Silva, João Luiz do Vale (UTFPR)

### **Mechanical strength in two ferrous alloys**

Diogo Tenório dos Santos (Centro Universitário da FEI), Júlio César Dutra (University of Guarulhos), Nivaldo Lemos Coppini (Unicamp)

### **Micro-abrasive wear behaviour of an iron aluminide alloy under conditions of room and elevated temperatures**

Cláudio Geraldo Schön, Ronaldo Câmara Cozza (USP), Lucas Cremonese Rodrigues (Centro Universitário da FEI)

### **Micro-abrasive wear test of low-temperature plasma nitrided AISI 420 steel: effects of previous heat treatment on wear behaviour**

Renan Akio Fraga, Rodrigo Perito Cardoso, Silvio Francisco Brunatto (UFPR), Cristiano José Scheuer (UFSM)

### **Microstructure and properties of CoCrMoSi alloy coatings by plasma transferred arc (PTA) weld surfacing**

Adriano Scheid, Rafael Guetter Bohatch (UFPR)

### **Study of the surface morphology of a carbon steel after testings corrosive-cavitative-erosive wear in aqueous medium with salt (NaCl), CO<sub>2</sub> and solid particulates (SiO<sub>2</sub>) fractions**

Fernando Nunes da Silva, Plínio Melo de Oliveira, Eugênio Teixeira de Carvalho Filho, Djalma Ribeiro da Silva, João Telésforo Nóbrega de Medeiros (UFRN), Jardel Dantas da Cunha (UFERSA)

### **Test apparatus for evaluation of the friction force and wear abrasive applied to unloading tripper trucks**

Elvys Isaias Mercado Curi, João da Silva Júnior, Richard de Medeiros Castro (Faculdade SATC)

### **Tribological behaviour of dental enamel under reciprocating sliding**

Priscilla Pessin Coppo, Rafael Yagüe Ballester (USP), Mateus Aguiar Martins, Cherlio Scandian (UFES), Flavio José da Silva (UFPE)

# OFFICIAL PROGRAM - NOVEMBER, 5<sup>th</sup> - WEDNESDAY

TIME		ROOM 1 CÉSAR LATTES AUDITORIUM	ROOM 2 FLORESTAN FERNANDES I ROOM
8:00am	8:30am	Author's coffee	Author's coffee
8:30am	9:30am	<b>PLENARY LECTURE</b> - Prof. Jianbin Luo - Tsinghua University, China - <b>Advancements in Liquid Superlubricity</b>	
9:30am	9:50am	<b>The Dislocation Structure and Stick-Slip Phenomenon</b> - A. Laikhtman, V. Perflyev, A. Moshkovich, I. Lapsker, L. Rapoport (Holon Institute of Technology)	<b>The influence of the normal load and grit size on the abrasive wear of polymeric materials used in mining industry</b> - Lionel Loïc Limol, Davi Andrade Fagundes, Vinicius Varnier Schmitberger, Marcelo Camargo Severo de Macêdo, Cherlio Scandian (UFES)
9:50am	10:10am	<b>The influence of topography on the specific dissipated friction power in ultra-mild sliding wear: experiment and simulation</b> - Alfons Fischer, Daniel Stickel (University of Duisburg-Essen)	<b>Processing methods and predictive model for wavy-tilt-dam mechanical seal</b> - Yuechang Wang, Ying Liu, Zhi Gao, Weifeng Huang, Yuming Wang (Tsinghua University)
10:10am	10:30am	<b>Dry sliding wear of CA-6NM stainless steel with relatively low surface roughness</b> - Giuseppe Pintaude (UTFPR), Gismar Schilive de Souza, Rogério Breganon, Silvio Francisco Brunatto (UFPR)	<b>Experimental evaluation of the method air scouring used in flushing systems for cleaning pipes</b> - Vitor Orlando Ferreira, Richard de Medeiros Castro, Elvys Isaias Mercado Curyi, João da Silva Júnior (Faculty SATC)
<b>10:30am</b>	<b>11:00am</b>	<b>Coffee break</b>	
10:30am	11:00am	Author's coffee	Author's coffee
11:00am	11:40am	<b>INVITED SPEAKER</b> <b>Tribology of Artificial Hip Joints</b> - Prof. Zhongmin Jin - University of Leeds, UK	<b>INVITED SPEAKER</b> <b>Plasma diagnostics and materials characterization of oxide and oxynitride thin films deposited by reactive HiPIMS</b> - Prof. Pierre-Yves Jouan - Institut des Matériaux Jean-Rouxel, France
11:40am	12:00pm	<b>Tribocurrent and Friction Force at a Metal-Insulator Interfaces: A Common Origin</b> - Ali Erdemir, Thiago A. L. Burgo (Argonne National Laboratory)	<b>Investigation of Frictional Behavior of O-ring Roller</b> - Dae-Eun Kim, Do-Hyeong Kim (Yonsei University)
12:00pm	12:20pm	<b>Evaluation of Triboelectricity in Diamond-like Coatings containing Silver Nanoparticles using AFM and KPFM</b> - Lucia Vieira, Homero Santiago Maciel, Rodrigo Savio Pessoa (ITA), Thaisa Baesso Santos (UNIVAP)	<b>Control strategies for friction dampers: numerical assessment and experiental investigations</b> - Francisco Paulo Lépoire Neto, Humberto Tronconi Coelho, Marcelo Braga dos Santos (UFU)
12:20pm	12:40pm	<b>Tribo-electric behaviors of materials under high speed and large current</b> - Yong-Zhen Zhang, Xian-Juan Pang, Bao Shangguan (Henan University of Science and Technology), Zheng-Hai Yang (Wuhan Research Institute of Materials Protections)	<b>Assessment of multifunctional coating adhesion: comparison between indentation and scratch tests</b> - Renan Oss Giacomelli, José Mário de Mattos, Pedro Besen Soprano, Diego Salvaro, Cristiano Binder, Aloísio Nelmo Klein, José Daniel Biasoli de Mello (UFSC)
<b>12:40pm</b>	<b>2:00pm</b>	<b>Lunch</b>	
1:30pm	2:00pm	Author's coffee	Author's coffee
2:00pm	2:40pm	<b>PLENARY LECTURE</b> - Prof. Amilton Sinatora - Sao Paulo State University, Brazil <b>Tribology of FLEX - FUEL engines an on going consortium</b>	
2:40pm	3:00pm	<b>Wear analyses of mill components in an iron ore pelletizing plant</b> - Andre de Almeida Grilo, Fabio Arielo Guastala, José Guilherme Pelição Pancieri (Vale), Marcelo Tadeu Milan (Materials Institute of Brazil)	<b>Assessment of velocity accommodation mechanisms activated in pin-on-disc contact at high temperature</b> - Christine Boher, Farhad Rezaï-Aria, Karin Faria Pinho (Institut Clément Ader), Yves Berthier (INSA-Lyon), Cherlio Scandian (UFES)
3:00pm	3:20pm	<b>A discussion on the application of bi-dimensional shape factors of particles causing severe wear of metals</b> - Giuseppe Pintaude, Mario Coseglio (UTFPR)	<b>Genesis and stability of tribolayers in solid lubrication: case of pair DLC-stainless steel</b> - Márcio Silvério, Roberto Binder, Renan Schoreder (Embraco), Diego Berti Salvaro, Cristiano Binder, Deise Rebelo Consoni, Aloísio Nelmo Klein, José Daniel Biasoli de Mello (UFSC)
3:20pm	3:40pm	<b>Influence of normal load and counterface roughness on micro-abrasion/corrosion of AISI 304 in 1N H2SO4 environment</b> - Wilian da Silva Labiapari (Aperam South America), Miguel Angel Narvaez Ardila, Marcelo Braga dos Santos, José Daniel Biasoli de Mello (UFU)	<b>Tribological behavior of thread compound for applications in oil and gas industry</b> - Nicolás Ariel Zabala, Walter Roberto Tuckart (UNS-CONICET), Pablo Adrián Castro (TenarisSiderca R&D Center)
<b>3:40pm</b>	<b>4:10pm</b>	<b>Coffee break</b>	
3:40pm	4:10pm	Author's coffee	Author's coffee
4:10pm	4:30pm	<b>Niobium carbide (NbC) as wear resistant hardmetal in opened and closed tribosystems</b> - Mathias Woydt (BAM Federal Institute for Materials Research and Testing), Hardy Mohrbacher (Niobelcon BVBA)	<b>Grease lubrication of gears</b> - Johann-Paul Stemplinger, Karsten Stahl (Technische Universitaet Muenchen)
4:30pm	4:50pm	<b>Preliminary effectiveness of ultrasonic nanocrystalline surface modification on the tribological properties of sintered alumina</b> - Amanov Auezhan, Pyun Young-Sik (Sun Moon University)	<b>Evaluation of bearing, gears and gearboxes performance with different wind turbine gear oils</b> - Carlos M.C.G. Fernandes, Jorge H. O. Seabra, Ramiro Carneiro Martins (Universidade do Porto)
4:50pm	5:10pm	<b>Tribological properties of polyvinyl alcohol hydrogels for use as artificial articular cartilage</b> - José R. Gomes, V. Rego, V.M. Sardinha (Universidade do Minho), L.L. Lima, C.A.C. Zavaglia, W.D. Belangero, V.P. Bavaresco (Unicamp)	<b>Master plan of lubrication: how to implement an efficient lubrication plan in the mining sector</b> - Angelo dos Reis Magalhães, Adilson Leite Araujo, Baltazar Agenor Bailona, Pedro Henrique Cardoso Furtado, Hugo Leonardo Freitas, Marcos Alexandro Reis (Anglo American)
<b>5:10pm</b>	<b>5:30pm</b>	<b>Closure ceremony</b>	