

## “Challenges in Sliding Bearing Technologies for Clean and Low Carbon Energy Applications”

### Preliminary Program : Thursday October 10, 2019

7h30-8h15	<i>Registration</i>
8h15-8h30	<i>General introduction by University of Poitiers and EDF – Presentation of the program</i>
8h30-9h15	<p style="color: #FF8C00; margin: 0;"><b>Keynote session</b></p> <p style="margin: 0;"><b>A) <u>“Eliminating Environmental Risk with Seawater-Lubricated Axial &amp; Radial Bearings for Marine Renewable Energy Applications - Case Studies &amp; Design Principles”</u></b></p> <p style="margin: 0; text-align: center;">Auger Greg and Goujon (Gary) Ren, Thordon Bearings Inc., Burlington, Ontario Canada.</p>
9h15-9h30	<p><i>Questions</i></p> <p style="text-align: right; color: #FF0000;"><b>Chairman: M. Fillon</b></p>
9h30-10h30	<i>Coffee Break - Discussions - POSTER Session</i>
10h30-11h00	<p style="color: #FF8C00; margin: 0;"><b>Technical session 1: Water-lubricated bearings</b></p> <p style="margin: 0;"><b>B) <u>“Water lubricated bearings with lignum vitae: an environmentally sound choice”</u></b></p> <p style="margin: 0; text-align: center;">Branagan, L.A., Shortridge, R., Griffin, DJ., Branagan, MK., Pioneer Motor Bearing Company, Kings Mountain, North Carolina, USA, Lignum-Vitae North America Inc., Powhatan, Virginia, USA.</p>
11h00-11h30	<p style="margin: 0;"><b>C) <u>“Water-lubricated slide bearings – tribological evaluation of novel ceramic materials for bearings and face seals”</u></b></p> <p style="margin: 0; text-align: center;">Kailer A., Schröder C., Schlüter B., Fraunhofer Institute for Mechanics of Materials IWM, Freiburg, Germany.</p>
11h30-12h00	<p style="margin: 0;"><b>D) <u>“Failure of tilting pad thrust bearings in subsea machinery, analysis and solution”</u></b></p> <p style="margin: 0; text-align: center;">Radcliffe C., Sulzer Pumps UK Ltd. Manor Mill Lane, Leeds LS11 8BR UK.</p>
12h00-12h30	<p style="margin: 0;"><b>E) <u>“Investigation of the thermal effects in water-lubricated journal bearings with axial grooves”</u></b></p> <p style="margin: 0; text-align: center;">Wodtke M., Litwin W., Gdansk University of Technology, Poland.</p> <p style="text-align: right; color: #FF0000; margin-top: 10px;"><b>Chairman: TBD</b></p>
12h30-14h00	<i>Lunch</i>
14h15-14h45	<p style="color: #FF8C00; margin: 0;"><b>Technical session 2: Dynamics</b></p> <p style="margin: 0;"><b>F) <u>“Stability and dynamic characteristics of a gas foil journal bearing with multiple sliding beams”</u></b></p> <p style="margin: 0; text-align: center;">Li C., Du J., Harbin Institute of Technology, Shenzhen Key Lab of Mechanisms and Control in Aerospace, Shenzhen, China.</p>
14h45-15h15	<p style="margin: 0;"><b>G) <u>“Approximation of non-linear rotor dynamic resonance behaviour of vertically aligned 1 hydro-units considering different design parameters”</u></b></p> <p style="margin: 0; text-align: center;">Vetter D., Hagemann T., Schubert A., Schwarze H., Institute of Tribology and Energy Conversion Machinery, Clausthal University of Technology, Clausthal-8 Zellerfeld, Germany.</p>
15h15-15h45	<p style="margin: 0;"><b>H) <u>“Computational evaluation of dynamic coefficients of thrust bearings; effect of artificial surface texturing on dynamic bearing performance”</u></b></p> <p style="margin: 0; text-align: center;">Koutsoumpas G., Charitopoulos A., Papadopoulos C., Fillon M., National Technical University of Athens, Zografou, Greece., Institut Pprime, Futuroscope Chasseneuil, France.</p> <p style="text-align: right; color: #FF0000; margin-top: 10px;"><b>Chairman: TBD</b></p>
15h45-16h30	<i>Coffee Break - Discussions - POSTER Session</i>
16h30-17h00	<p style="color: #FF8C00; margin: 0;"><b>Technical session 3: Smart bearings</b></p> <p style="margin: 0;"><b>I) <u>“Unbalance Control of a Smart Electro-Magnetic Actuator Journal Integral Bearing (SEMAJIB)”</u></b></p> <p style="margin: 0; text-align: center;">El-Shafei A. RITEC, Cairo, Egypt.</p>
17h00-17h30	<p style="margin: 0;"><b>J) <u>“Rheological textures in bearing systems with parallel surfaces”</u></b></p> <p style="margin: 0; text-align: center;">De Graaf M., Van Ostayen R., Lampaert S., Delft University of Technology, CD Delft, the Netherlands.</p>
17h30-18h00	<p style="margin: 0;"><b>K) <u>“Static &amp; Dynamic Properties of Controllable TPJB Considering Thermal Effects – Application to High Speed Compressors”</u></b></p> <p style="margin: 0; text-align: center;">Gani M., Santos IF., Department of Mechanical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark.</p> <p style="text-align: right; color: #FF0000; margin-top: 10px;"><b>Chairman: TBD</b></p>
18h30	<i>Departure for the Gala dinner (mandatory registration)</i>

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7h30-8h30	<i>Registration – Coffee</i>
8h00-8h30	<b>Technical session 4: New bearing materials and applications</b>
8h30-9h00	<p><b>L)</b> <u>“Like for like performance comparison of PEEK and PTFE thrust bearings for use in vertical pump and motor applications”</u> Bruce P., Butler J., Dixon S., <i>Michell Bearings Ltd, South Shields NE34 9PZ – U.K.</i></p>
9h00-9h30	<p><b>M)</b> <u>“Toxic elements in plain bearing alloys and possibilities of their substitution”</u> Gust E., Gzovsky K., <i>ZOLLERN BHW, 38124 Braunschweig - Germany.</i></p>
9h30-10h00	<p><b>N)</b> <u>“Mechanical properties of polymeric self-lubricated bearings: Creeping contribution to “apparent” wear measurements”</u> Tremblay M-L., Perrier M., Savoie S., Delsame M., <i>Institut de Recherche d'Hydro-Québec, Varennes, QC J3X 1S1 - Canada.</i></p>
9h30-10h00	<p><b>O)</b> <u>“Interlocking metal-polymer bond by 3D-printed grid structure for hydrodynamic thrust bearings with PEEK-lined pads”</u> Hentschke C., <i>RENK AG, Hannover - Germany.</i></p> <p style="text-align: right;"><b>Chairman: TBD</b></p>
10h00-10h45	<i>Coffee Break - Discussions - POSTER Session</i>
10h45-11h15	<b>Technical session 5: Dynamics</b>
11h15-11h45	<p><b>P)</b> <u>“Dynamic Characteristics of Journal Bearings Considering Mass-Conservation”</u> Hiroo T. <i>Nagaoka University of Technology, Kamitomioka - Japan.</i></p>
11h45-12h15	<p><b>Q)</b> <u>“On the static and dynamic performance of compliant, water-lubricated sliding bearings; perturbed Reynolds equation vs. CFD-FSI based analysis methods”</u> Snyder T., Braun M., <i>The University of Akron, USA.</i></p>
11h45-12h15	<p><b>R)</b> <u>“Influence of Thermal Wedge Effect on Friction and Vibration in Fluid-film Bearings”</u> Kornaev A., Kornaeva E., Savin L., <i>Orel State University, Orel, Russia.</i></p> <p style="text-align: right;"><b>Chairman: TBD</b></p>
12h15-13h45	<i>Lunch</i>
14h00-14h30	<b>Technical session 6: Numerical analyses</b>
14h30-15h00	<p><b>S)</b> <u>“Wear prediction in sliding bearings subjected to start-stop-operation”</u> Koenig F., Jacobs G., Sous C., <i>Institute for Machine Elements and Systems Engineering, RWTH Aachen University (MSE), Aachen - Germany.</i></p>
15h00-15h30	<p><b>T)</b> <u>“Numerical and Experimental Analysis of Starvation for a Tilting Pad Journal Bearing”</u> Watson-Kassa C., Decamillo S., Wood H., He M., Fittro R., <i>University of Virginia, Charlottesville, USA, Kingsbury Inc, Philadelphia, USA.</i></p>
15h30-16h00	<p><b>U)</b> <u>“Features of the choice of bearings for the rotor low power mobile wind generator”</u> Polyakov R., Rygenko P., Rodichev A., <i>Orel State University, Russia.</i></p>
15h30-16h00	<p><b>V)</b> <u>“Numerical Analysis of Long, Cylindrical Bore Bearing Including Shaft Bending”</u> Branagan M., Griffon D., Branagan L., <i>Pioneer Motor Bearing Company, NC, USA.</i></p> <p style="text-align: right;"><b>Chairman: TBD</b></p>
16h00-16h15	<i>Closure</i>
16h15-18h00	

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1. [Experimental analysis of transient thermal effects in a flexible rotor supported by a tilting pad bearing](#)  
Arghir M., Plantegenet T., Jolly P., Pprime Institute, Futuroscope, France.
2. [Influence of pad housing design on the performance of parallel thrust bearings](#)  
Charitopoulos A., Papadopoulos C., Fillon M., National Technical University of Athens, Greece, Pprime Institute, Futuroscope, France.
3. [Effect of partial wall slip on the THD behaviour of high-loaded plain journal bearings](#)  
Shuhui Cui. Institut Pprime, France, Harbin Institute of Technology, China.
4. [Behavior of spring supported thrust bearings: a CFD and experimental investigation](#)  
Cupillard S., Gauvin P., Hydro-Québec Research Institute, Canada.
5. [One Equation Turbulence Modeling for Sliding Bearings](#)  
Xin D., Watson-Cassa C., Rockwell R., He M., Fittro R., Wood H., University of Virginia, Charlottesville, VA 22904, USA.
6. [Stable Turbocharger Bearings](#)  
Elshafei A., RITEC, Cairo, Egypt.
7. [Speed-dependent lubrication conditions of a tilting-pad journal bearing](#)  
Hagemann T., Zemella P., Pfau B., SchwarzeH., Institute of Tribology and Energy Conversion Machinery, Clausthal University of Technology.
8. [Load capacity in mixed and boundary lubrication regimes of bismuth bronze bimetal bearing](#)  
Leger A., Dewobroto N., Kugler Bimetal SA.
9. [Study of Load Carrying Mechanism of a Novel Three-pad Gas Foil Bearing with Multiple Sliding Beams](#)  
Li C., Harbin Institute of Technology, Shenzhen, China.
10. [Optical Fluorescent Measurement Method for the Film Height Determination of Compliant Slider Bearings](#)  
Nijssen J., Van Ostayen R., Nederstigt W., De Groot M., Sahetapy A., Lingmont R., Delft University of Technology, CD Delft, the Netherlands.
11. [Design of Controllable Lubrication Considering Coupled Rotor-Bearing-Foundation Dynamics](#)  
Jensen K., Santos IF., Technical University of Denmark (DTU), Denmark.
12. [Prototype of Wireless Monitoring for Hydrodynamic Tilting Pad Bearing](#)  
Ming Ma, Wen Wang. Shanghai University, Shanghai, China.
13. [Thermohydrodynamic study of tilting pad thrust bearing with oil film cooling](#)  
Zahorulko A., Kayota D., Sumy State University, Sumy, Ukraine.
14. [Fluid film bearing control systems based on machine learning](#)  
Kornaev A., Zaretsky R., Fetisov A., Babin A., Savin L., Kornaeva E., Orel State University, Russia.