

“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="text-align: center;">Keynote session</p> <p style="text-align: center;">A) <u>“Eliminating Environmental Risk with Seawater-Lubricated Axial & Radial Bearings for Marine Renewable Energy Applications - Case Studies & Design Principles”</u> Auger Greg and Goujon (Gary) Ren, <i>Thordon Bearings Inc., Burlington, Ontario Canada.</i></p> <p><i>Questions</i></p> <p style="text-align: right;"><i>Chairman: J.Bouyer</i></p> |
| 9h15-9h30 | |
| 9h30-10h30 | <i>Coffee Break - Discussions - POSTER Session</i> |
| 10h30-11h00 | <p style="text-align: center;">Technical session 1: Water-lubricated bearings</p> <p>B) <u>“Water lubricated bearings with lignum vitae: an environmentally sound choice”</u> Branagan, LA., Shortridge, R., Griffin, DJ., Branagan, MK., <i>Pioneer Motor Bearing Company, Kings Mountain, North Carolina, USA., Lignum-Vitae North America Inc., Powhatan, Virginia, USA.</i></p> <p>C) <u>“Water-lubricated slide bearings – tribological evaluation of novel ceramic materials for bearings and face seals”</u> Kailer A., Schröder C., Schlüter B., <i>Fraunhofer Institute for Mechanics of Materials IWM, Freiburg, Germany.</i></p> <p>D) <u>“Failure of tilting pad thrust bearings in subsea machinery, analysis and solution”</u> Radcliffe C., <i>Sulzer Pumps UK Ltd. Manor Mill Lane, Leeds LS11 8BR UK.</i></p> <p>E) <u>“Investigation of the thermal effects in water-lubricated journal bearings with axial grooves”</u> Wodtke M., Litwin W., <i>Gdansk University of Technology, Poland.</i></p> <p style="text-align: right;"><i>Chairman: A. Hassini</i></p> |
| 11h00-11h30 | |
| 11h30-12h00 | |
| 12h00-12h30 | |
| 12h30-14h00 | <i>Lunch</i> |
| 14h15-14h45 | <p style="text-align: center;">Technical session 2: Numerical analyses</p> <p>F) <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> <p>G) <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;"><i>Chairman: A. Fatu</i></p> |
| 14h45-15h15 | |
| 15h15-16h15 | <i>Coffee Break - Discussions - POSTER Session</i> |
| 16h15-16h45 | <p style="text-align: center;">Technical session 3: Dynamics I</p> <p>H) <u>“Stability and dynamic characteristics of a gas foil journal bearing with multiple sliding beams”</u> Li C., Du J., <i>Harbin Institute of Technology, Shenzhen Key Lab of Mechanisms and Control in Aerospace, Shenzhen, China.</i></p> <p>I) <u>“Approximation of non-linear rotor dynamic resonance behaviour of vertically aligned 1 hydro-units considering different design parameters”</u> Vetter D., Hagemann T., Schubert A., Schwarze H., <i>Institute of Tribology and Energy Conversion Machinery, Clausthal University of Technology, Clausthal-8 Zellerfeld, Germany.</i></p> <p>J) <u>“Computational evaluation of dynamic coefficients of thrust bearings; effect of artificial surface texturing on dynamic bearing performance”</u> Koutsoumpas G., Charitopoulos A., Papadopoulos C., Fillon M., <i>National Technical University of Athens, Zografou, Greece., Institut Pprime, Futuroscope Chasseneuil, France.</i></p> <p style="text-align: right;"><i>Chairman: M. Arghir</i></p> |
| 16h45-17h15 | |
| 17h15-17h45 | |
| 18h30 | <i>Departure for the Gala dinner (mandatory registration)</i> |

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

Preliminary Program : Friday October 11, 2019

| | |
|-------------|---|
| 7h30-8h00 | <i>Registration – Coffee</i> |
| | Technical session 4: New bearing materials and applications |
| 8h00-8h30 | K) <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> |
| 8h30-9h00 | L) <u>“Toxic elements in plain bearing alloys and possibilities of their substitution”</u> Gust E., Gzovsky K., <i>ZOLLERN BHW, 38124 Braunschweig - Germany.</i> |
| 9h00-9h30 | M) <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> |
| 9h30-10h00 | N) <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> |
| 10h-10h30 | O) <u>“Load capacity in mixed and boundary lubrication regimes of bismuth bronze bimetal bearing”</u> Leger A., Dewobroto N., <i>Kugler Bimetal SA.</i> |
| | <i>Chairman: A. Hassini</i> |
| 10h30-11h00 | <i>Coffee Break - Discussions - POSTER Session</i> |
| | Technical session 5: Dynamics II |
| 11h00-11h30 | P) <u>“Dynamic Characteristics of Journal Bearings Considering Mass-Conservation”</u> Hiroo T. <i>Nagaoka University of Technology, Kamitomioka - Japan.</i> |
| 11h30-12h00 | Q) <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> |
| 12h00-12h30 | R) <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> |
| | <i>Chairman: A. Fatu</i> |
| 12h30-14h00 | <i>Lunch</i> |
| | Technical session 6: Smart bearings |
| 14h15-14h45 | S) <u>“Unbalance Control of a Smart Electro-Magnetic Actuator Journal Integral Bearing (SEMAJIB)”</u> El-Shafei A. <i>RITEC, Cairo, Egypt.</i> |
| 14h45-15h15 | T) <u>“A new concept in bearing technology: Magnetorheological texturing”</u> De Graaf M., Van Ostayen R., Lampaert S., <i>Delft University of Technology, CD Delft, the Netherlands.</i> |
| 15h15-15h45 | U) <u>“Static & Dynamic Properties of Controllable TPJB Considering Thermal Effects – Application to High Speed Compressors”</u> Gani M., Santos IF., <i>Department of Mechanical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark.</i> |
| | <i>Chairman: M. Fillon</i> |
| 16h00-16h15 | <i>Closure</i> |
| 16h15-18h00 | <i>Visit of experimental facilities (mandatory registration)</i> |

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

Preliminary Program : POSTER SESSIONS - October 10 & 11, 2019

1. [Experimental analysis of transient thermal effects in a flexible rotor supported by a tilting pad bearing](#)
Plantegenet T., Arghir M., 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](#)
Cui. S., Gu L., Fillon M., Zhang C., 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. [Stable Turbocharger Bearings](#)
El-shafei A., RITEC, Cairo, Egypt.
6. [Speed-dependent lubrication conditions of a tilting-pad journal bearing](#)
Hagemann T., Zemella P., Pfau B., Schwarze H., Institute of Tribology and Energy Conversion Machinery, Clausthal University of Technology.
7. [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.
8. [Design of Controllable Lubrication Considering Coupled Rotor-Bearing-Foundation Dynamics](#)
Jensen K., Santos IF., Technical University of Denmark (DTU), Denmark.
9. [Prototype of Wireless Monitoring for Hydrodynamic Tilting Pad Bearing](#)
Ming Ma, Wen Wang, Shanghai University, Shanghai, China.
10. [Thermohydrodynamic study of tilting pad thrust bearing with oil film cooling](#)
Zahorulko A., Kayota D., Sumy State University, Sumy, Ukraine.
11. [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.
12. [Lubricant Film Thickness and Viscosity Measurements of Environmentally Acceptable Lubricants \(EALs\) Using a Journal Bearing Test Platform](#)
H. Brunskill^{a,b}, S. Beamish^a, A. Hunter^{a,b}, Øystein Åsheim Alnes^c, Knut Erik Knutsen^c, R. Dwyer-Joyce^a.
^aLeonardo Centre for Tribology, Dept Mechanical Engineering, University of Sheffield, U.K - ^bPeak to Peak Measurement Solutions, Kroto Innovation Centre, Sheffield, U.K - ^cDNV GL, Fakturamottak 2047, Pb. 4900 Vika, 8608 Mo i Rana, Norway.
13. [Features of the choice of bearings for the rotor low power mobile wind generator](#)
Polyakov R., Rygenko P., Rodichev A., Orel State University, Russia.