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>> The World of Bearings – key topics: Innovative concepts ++
White Etching Cracks (WEC) ++ Reliability and functional safety ++
Tribology and energy ++ Damage diagnosis and avoidance ++ other issues

Prof. Gerhard Poll,
Leibniz University
Hannover, Germany,
Bearing World Program
Committee Speaker

“Come to Bearing World, the
international expert forum
dedicated to bearings. Rolling
bearings are still the main focus,
but this year we will also include
an interesting look at plain
bearings. The conference
provides a comprehensive
overview of the current state
of technology, research, and
development as well as an
opportunity to engage in dialog
with leading national and
international experts.”
6 March, 2018: 9:30 – 18:00, Evening Event at 19:30 / 7 March, 2018: 8:30 – 16:15

**Program**

**Opening**
Prof. Gerhard Poll, Leibniz Universität Hannover, Institute of Machine Design and Tribology (IMKT), Germany
Prof. Bernd Sauer, University of Kaiserslautern, Institute of Machine Elements, Gears and Transmissions (MEGT), Germany
Christian Kunze, Forschungsvereinigung Antriebstechnik e. V. (FVA), Germany

**Keynotes**
Dr. Victoria van Camp, SKF Group, Sweden
Prof. Dr. Tim Hosenfeldt, Schaeffler Technologies AG & Co. KG, Germany

**Bearing damage**
WEC failure at the inner ring of roller bearings under dynamic conditions
Prof. Hubert Schwarze, Clausthal University of Technology, Institute of Tribology and Energy Conversion Machinery, Germany
Co-author: Dr.-Ing. Jörg Loos, Schaeffler Technologies AG & Co. KG, Germany

Investigation of rolling bearing condition monitoring techniques: A study based on long term run-to-failure vibration data
Reza Golafshan
Co-author: Prof. Georg Jacobs
RWTH Aachen University, Institute for Machine Elements and Machine Design (IME), Germany

Differences between brinelling marks, false brinelling and standstill marks
Markus Grebe, Competence Center for Tribology at the Mannheim University of Applied Sciences, Germany

Formation of White Etching Cracks under rolling loading and the detection of preliminary stages
Dr. Ralf Martin Dinter, Flender GmbH, Germany
Co-author: Francisco Gutierrez Guzman, RWTH Aachen University, Institute for Machine Elements and Machine Design (IME), Germany

Hydrogen evolution in rolling contact
Dr. Dominik Kürten
Co-author: Dr. Andreas Kailer
Fraunhofer Institute for Mechanics of Materials (IWM), Germany

Solutions to reduce wear in wind turbine blade bearings
Fabian Schwack, Leibniz Universität Hannover, Institute of Machine Design and Tribology (IMKT), Germany
Co-author: Matthias Stammeler, Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Germany

Relationship of smearing criteria and transient lubrication analysis
Wen Wang
Co-author: Liang Guo
Shanghai University, China

The relation of White Etching Cracks with (very) high cycle fatigue
Reinder Hindrik Veger
Co-author: Junbiao Lai
SKF Research & Technology Development, Netherlands

Evolution of White Etching Cracks during bearing tests
Steve Ooi, University of Cambridge, United Kingdom

Lubricant influences on the formation of White Etching Cracks (WEC)
Dr. Christoph Mayer, Klüber Lubrication München SE & Co. KG, Germany

**Calculation and Bearing dimensioning**
Friction losses optimized rolling bearing for substitution of highly loaded tapered rolling bearings
Prof. Bernd Sauer
Co-author: Margarita Marmol Fernandez
University of Kaiserslautern, Institute of Machine Elements, Gears and Transmissions (MEGT), Germany

Revised contact elasticity calculations
Luc Houpert, The Timken Company, France

Influence of geometric form deviations on operating parameters in hydrodynamic bearings
Marko Ebermann
Co-author: Prof. Erhard Leidich
Chemnitz University of Technology, Department of Mechanical Engineering, Institute of Design Engineering and Drive Technology, Germany

Non-linearly coupled modelling of spindle bearing systems
Jens Falkner
Co-authors: Prof. Christian Brecher; Marcel Fey
RWTH Aachen, Laboratory for Machine Tools and Production Engineering (WZL), Germany

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Andreas Weber, Vestas Nacelles Deutschland GmbH, Germany
Prof. Dr. Hans-Werner Zoch, IWT Stiftung Institut für Werkstofftechnik, Germany
An analytical method to account for spinning friction in axial ball bearings using the standard DIN ISO 281
Paul Sauvage
Co-authors: Christopher Sous; Prof. Georg Jacobs
RWTH Aachen, University, Institute for Machine Elements and Machine Design (IME), Germany;
Martin Correns, Schaeffler Technologies AG & Co. KG, Germany

Reliable calculation of slewing bearings for the industrial practice
Dr. Martin Neidnicht
Co-authors: Dr. Thomas Handreck; Dr. Bernd Lüneburg
thyssenkrupp Rothe Erde GmbH, Germany;
Dr. Thomas Griggel, Thomas Gellermann, Allianz Risk Consulting GmbH, Germany

Drive technology applications and challenges to bearings
An experimental study of the effects of dynamic shaft movements on friction in cylindrical roller bearings
Andreas Meinel
Co-author: Dr. Stephan Tremmel
Friedrich-Alexander-Universität Erlangen-Nürnberg, Engineering Design, Germany

Interdisciplinary product development of optimized spherical roller bearings for wind main shaft applications
Andreas Bierlein, Schaeffler Technologies GmbH & Co. KG, Germany

The path of the common-mode currents: Measures against damage of bearings caused by electrical discharge currents at large drives derived from latest field research results
Sven Tröger
Co-author: Prof. Matthias Kroger
Technische Universität Bergakademie Freiberg, Institute for Machine Elements, Engineering Design and Manufacturing, Germany

Energy efficiency
Temperature behavior of rolling bearings exposed to centripetal acceleration
David Hochrein
Co-authors: Dr. Stephan Tremmel; Prof. Sandro Wartzack
Friedrich-Alexander-Universität Erlangen-Nürnberg, Engineering Design, Germany;
Oliver Graf-Goller, Schaeffler Technologies AG & Co. KG, Germany

Investigation of the frictional torque and temperature behavior of tapered roller bearings
Marco Schwarz, ZF Friedrichshafen AG, Germany
Co-author: Jürgen Liebrecht, Technische Universität Kaiserslautern, Institute of Machine Elements, Gears and Transmissions (MEGT), Germany

Lab testing vs. field performance
Dealing with the bearing design gap under mixed friction conditions
Dr. Nadine Nagler
Co-author: Daniel Hast
Bosch Rexroth AG, Germany

Camshaft ball bearing WEC premature failure on simplified component test: suitable bearing design and improved test with representative boundary conditions
Marc Paquien, NTN-SNR Roulements, France

Testing of main bearings of wind turbine generator
Dr. Houssein Janbein
Co-author: Lutz Heuser
Vestas Wind System, Germany

"Bearing World is the international expert forum for bearings. Here, researchers and developers from universities and bearing manufacturers come together in dialogue with users and experts from the industry. The goal is to align the drive system industry more closely to the requirements of the future. There can be no progress without modern drive technologies!"
Dr. Arbogast Grunau, Corporate R&D Competence and Services, Schaeffler AG, Germany

"Bearings are the heart of every machine or device with moving parts. With presentations from international experts, Bearing World offers up-to-date knowledge related to rotating equipment and its care and maintenance. Performance and reliability are the central topics of Bearing World."
Bernd Stephan, AB SKF, Gothenburg, Sweden; CTO SKF Group

Local Host
Prof. Bernd Sauer, MEGT University of Kaiserslautern, Germany

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Development and efficiency testing of new generation „High Efficiency“ tapered roller bearings to meet efficiency of angular contact ball bearings on pinion shafts
Thorsten Klahn
Co-authors: Jean Merckling, Dragos Oprescu
Timken Europe, France
Mike Gromosiak; Caleb Chovan; Timothy Crabill, The Timken Company, France

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> Life and durability

Bearing fatigue life of a multi-material shaft with an integrated raceway
Timm Coors
Co-author: Prof. Gerhard Poll
Leibniz Universität Hannover, Institute of Machine Design and Tribology (IMKT), Germany

The effect of retained austenite and carbide distribution on the wear resistance of the bearing raceway
Zeren Özgeneci, ORS Bearings, Polatlı-Ankara, Turkey
Co-author: Bilgehan Ögel, Middle East Technical University, Metalurgical and Material Engineering Department, Turkey

Integrity assurance of silicon nitride balls for hybrid bearings
Junbiao Lai
Co-authors: Charlotte Vieillard; Yuri Kadin
SKF Research & Technology Development, Netherlands

> Lubrication

Base oil and grease effects on friction and film thickness in transition to mixed lubrication
Petr Sperka
Co-author: Ivan Krupka
Brno University of Technology, Czech Republic

Lubricant formulations in rolling bearing simulation based upon friction mapping results
Torben Fruth, FUCHS Schmierstoffe GmbH, Germany
Co-author: Dr.-Ing. Timo Kiekbusch, University of Kaiserslautern, Institute of Machine Elements, Gears and Transmissions (MEGT), Germany

Characterization of electrical lubricant properties for modeling of electrical drive systems with rolling bearings
Timo Kiekbusch
Co-author: Prof. Bernd Sauer
University of Kaiserslautern, Institute of Machine Elements, Gears and Transmissions (MEGT), Germany

Is surface texturing really efficient in hydrodynamic sliding bearings?
Prof. Michel Fillon, University of Poitiers, Institut Pprime, CNRS, France

Analyses of rheological behaviors based on a novel rheological model for the shear thinning lubricants
Ping Yang, Qingdao University of Technology, School of Mechanical Engineering, China

> Noise, Vibration, Harshness (NVH)

Optimization and assessment of bearing running noise
Dr. Hannes Grillenberger
Co-author: Joachim Schleifenbaum
Schaeffler Technologies AG & Co. KG, Germany

> Rolling bearing dynamics

Radially preloaded cylindrical roller bearings – experimental studies regarding axial roller kinematic
Roman Bölter
Co-author: Prof. Gerhard Poll
Leibniz Universität Hannover, Institute of Machine Design and Tribology (IMKT), Germany

Dynamic analysis of railway gearbox: from rotating system simulation to dynamics of a rolling bearing
Dr. Witold Marek Smoleniski
Co-author: Dr. Andrei Degtiarev
Schaeffler Technologies AG & Co. KG

Experimental bearing cage vibration and corroborations with bearing cage dynamic modeling
Prof. Farshid Sadeghi
Co-author: Lijun Cao
Purdue University, School of Mechanical Engineering, West Lafayette, (IN), USA

> Validation

Non-invasive load measurement of hertzian contact within a cylindrical roller bearing
Gary Nicholas
Co-author: Rob Dwyer-Joyce
The University of Sheffield, United Kingdom

Exhibition

Present your company in the accompanying technical exhibition.
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Registration

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BEARING WORLD – International Bearing Conference
6–7 March 2018 in Kaiserslautern, Germany

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only 07.03.2018  

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