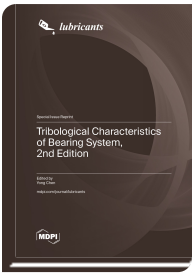
lubricants

IMPACT FACTOR 3.1

CITESCORE 3.6

Special Issue Reprint

Tribological Characteristics of Bearing System, 2nd Edition



www.mdpi.com/books/reprint/10431

Edited by
Yong Chen

ISBN 978-3-7258-3085-5 (Hardback)
ISBN 978-3-7258-3086-2 (PDF)

This Special Issue focuses on the friction characteristics of bearings, carefully compiling 16 cutting-edge research studies. Through a research path combining experiments and simulations, this Special Issue explores the lubrication mechanism, performance optimization, and fault diagnosis of bearings under different working conditions. The papers cover a wide range of dimensions, from theoretical exploration to experimental verification, showcasing the latest developments in the field of bearing lubrication. The research covers various types, such as angular contact ball bearings, gas hydrostatic thrust bearings, cylindrical roller bearings, etc. Through advanced methods such as computational fluid dynamics, artificial neural networks, and mathematical models, the influence of nozzle position, biomimetic composite cavity structure, unbalanced estimation, and other factors on lubricant distribution, load-bearing capacity, and dynamic behavior was analyzed. In addition, attention was also paid to the power loss under oil lubrication, the improvement in friction characteristics and fatigue life by carbon nitrogen co-infiltration treatment, and the lubrication challenges of bearings under special conditions such as vacuum environments and ultra-low temperatures. These research results not only provide a scientific basis for bearing lubrication design but also contribute important findings that promote technological progress and industrial upgrades in related industries. This Special Issue aims to provide new insights and reflections for both the academic and industrial communities.

MDPI

Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/10431

MDPI Books

Publishing Open Access Books & Series

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.

Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.

Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.

High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.

High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).

Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.

MDPI AG
Grosspeteranlage 5
4052 Basel
Switzerland
Tel: +41 61 683 77 34
www.mdpi.com/books
books@mdpi.com