

Special Issue

Gas Lubricated Bearings

Message from the Guest Editors

Gas lubricated bearings use gas to achieve complete non-contact suspension lubrication, offering advantages such as low friction loss, high precision, adaptability to various working environments, and exceptional stability. Gas lubricated bearings meet the demanding requirements of equipment with extreme performance needs, including ultra-high speeds, precise operation, high efficiency, and long lifespan. Gas lubricated bearings hold promising applications in advanced equipment such as high-speed electric spindles, hydrogen fuel cells, micro-gas turbines, and hydrogen expanders. As the application environments for gas lubricated bearings become increasingly complex, there is a growing emphasis on factors like the lubrication medium, bearing capacity, stability, and adaptability. Lubrication technology for gas bearings encompasses various research areas, including lubrication mechanisms, multi-field coupling flows, structural design and optimization, high-performance manufacturing, performance testing, and system integration.

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