

# Special Issue

## Accuracy and Reliability of Computational Modelling of Thermo-Elastohydrodynamic Lubrication

### Message from the Guest Editor

The rising demand for high power density, performance, and energy efficiency in modern electro-mechanical drivetrains often pushes gears, bearings, and cams to their limits in terms of power transfer, load capacity efficiency, durability, and reliability. Adequate and efficient lubrication of these machine elements under various operating conditions is vital. A fundamental understanding of the physics of thermo-elastohydrodynamic lubrication (TEHL) in, e.g., bearings and gear contacts operating under stationary as well as transient and off-nominal operating conditions involving dynamic loading, accelerating/decelerating, and even oscillatory motion, is crucial to minimize premature failure and maximize efficiency. This Special Issue aims to gather the latest research from leading international research groups working in the fields of advanced lubrication modelling, material modelling, and rheology with a focus on the achieved quality in one or more of the categories defined above. All contributions from scientists working on advanced, accurate, and reliable TEHL modelling and simulation are welcome.

### Guest Editor

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### Deadline for manuscript submissions

closed (31 March 2023)



## Lubricants

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### Message from the Editor-in-Chief

Friction, wear, and lubrication are tribological phenomena that govern the behavior of interacting surfaces in a wide range of machine components. Understanding the physical and chemical nature of these phenomena is critical to achieving long component lifetime and economical operation. Research in the field of tribology is highly interdisciplinary, and encompasses the fields of physics, chemistry, engineering, and mathematical modeling. *Lubricants* invites contributions on new advances in all areas of tribology for publication as peer-reviewed research articles, reviews of current research, letters, and communications. We are committed to providing timely reviews of all articles submitted. Please consider sharing your work with the scientific community through publication in *Lubricants*.

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### Editor-in-Chief

Prof. Dr. Homer Rahnejat  
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