



Advances in Molecular Rheology and Tribology

Guest Editor:

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Message from the Guest Editor

Designing efficient lubricants for various applications requires an understanding of their behaviour at the molecular scale. Lubricants' properties, such as viscosity and rheological behaviour, surface tension, liquid–surface interactions, tribo-film formation, pressure and temperature dependencies, are ultimately governed by their molecular composition. This Special Issue aims to highlight the research community's efforts to understand the behaviour of lubricants at the molecular level. All types of lubricants are considered, including mineral oils, ionic lubricants, water-based lubricants, green lubricants, bio-lubricants, boundary lubricants, self-assembled monolayers, and lubricant additives. Theoretical, modelling and experimental works are welcome, including molecular and mesoscale simulations and modelling, experimental rheological, tribological, and nanostructural characterization, and applications in boundary, elasto-hydrodynamic, and hydrodynamic lubrication regimes.

