



## Advances in Friction Modifiers and Liquid Confinement

Guest Editor:

**Dr. Hongyu (Larry) Gao**

Department of Materials Science  
and Engineering, Saarland  
University, 66123 Saarbrücken,  
Germany

Deadline for manuscript  
submissions:

**closed (31 July 2023)**

### Message from the Guest Editor

Lubrication at small-scale contact is a complex matter given the prominent size effect and atomistic nature. For example, liquids under high confinement often exhibit a layering-like structure, with in-plane molecules arranged in a disordered manner. Because of their material nature, confining geometry, etc., such a confinement-induced molecular ordering can significantly extend the structural relaxation time and thereby result in a much-enhanced shear viscosity. When first-order or second-order phase transformation takes place, collective and solid-like interfacial behavior can be observed, which in turn can affect the tribological performance of the system, as well as its stability...

This Special Issue promotes the improved understanding of interfacial (tribological) behavior of liquid lubricants and additives in the boundary lubrication regime, and origins of the potential effects. Insights can be gained from investigations at different length scales and by means of experimental, modeling, and theoretical approaches.

