lubricants

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Superlubricity: From Nanoscale to Macroscale

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Message from the Guest Editors

Outstanding works have been published in the field of superlubricity in recent decades. With the rapid development of this area, the central issue—how to promote superlubricity from the experimental level to application in real life—should be readily raised to all researchers. Generally, the first point to consider is to clarify the time (or velocity) and size dependence for a superlubric system. From the theoretical perspective, this calls for the understanding of the physical origin of superlubricity, e.g., theoretical models and numerical computations to explore the time/size scaling of friction behavior from nanoscale to macroscale. From the experimental perspective, to the goal is the measurement of friction at a wide range of velocities and contact area sizes for a certain superlubric sample. In addition, materials showing superlubricity at macroscale (μm to m) or high sliding speed ($\mu m/s$ to m/s) should be highly emphasized.

The Special Issue aims to promote the application of superlubrication. It reports the recent advances of both the solid-solid structural superlubricity and the solid-liquid hydration superlubricity from nanoscale to macroscale.