



Friction, Wear and Lubrication of Micro-Patterned Thin Films

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Message from the Guest Editor

The surface is the first region of any material and subject which physically acts together with the environment. Changing the surface properties can alter material interaction and response essentially. Thin films can grow on surfaces naturally or be deposited by several methods. Usually, the thickness of a thin film is below 50 μm . Even friction of a counterbody or thermal spraying can lead to a thin film. There are several reasons for deposition of thin films, like increasing the hardness and wear resistance or changing the friction, catalytic, or optic effects. The selected thin film material may send signals to cells or microorganisms. A special thin film material can act as a stimulant for bacteria growth, which may be useful for biomass decomposition. Other thin film materials can prevent inflammation due to antiseptic effect. All of these properties can be further changed by patterning the thin films additionally. Dimples, grooves, and micro-hills of different dimensions change the interaction not only with lubricants and fluids, but the reflection and adsorption of irradiation or adhesion of additives, molecules, and microorganisms.





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