

Nanotribology and hard hydrophobic coatings

Fernando L. Freire Jr.

Departamento de Física, Pontifical Catholic University of Rio de Janeiro
22451-970, Rio de Janeiro, RJ, Brazil

Water, not necessarily in ice form, is a good lubricant in everyday life, making it “slippery when wet.” It also acts as a lubricant in numerous industrial and biological settings, where it keeps sliding surfaces apart from each other and allows easy shearing. However, it is not necessarily true at nanometer scale. In this work we will review some basic aspects of the effects of the humidity and their relations with the friction and wear at nanometer scale. We will also present some results on the tribology of hard hydrophobic coatings (diamond-like carbon and carbon-fluorine films) together with some potential applications for these materials.

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