## How surfactants affect the wetting of superhydrophobic surfaces

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Recent advances in the control of surface wetting lead to the development of the diversity of functional materials with the special wettability for industrial applications. Superhydrophobic surfaces have aroused researchers' intense interests due to their importance in both academic science and practical applications. One of the key points for academic studies is the behavior of superhydrophobic surfaces in outdoor conditions of exploitation where the organic airborne contaminations are ubiquitously present. Typically such contaminations act as surfactants for aqueous medium/air and aqueous medium/solid interfaces. At the same time, for the superhydrophobic coatings fabricated on the basis of fluorine-containing hydrophobic agents such contaminations are surface inactive with respect to the superhydrophobic coating/air interface. Thus the evolution of wettability of superhydrophobic surfaces with respect to aqueous phases will be significantly affected by the surface activity of organic contaminations present in the atmosphere, their solubility in water, vapor pressure, and chemical structure.

In this talk we will demonstrate the intriguing peculiarities of contact angle behavior for water droplets atop of superhydrophobic surfaces in the presence of various types of surfactants and will discuss physics underlying the three phase equilibrium.