

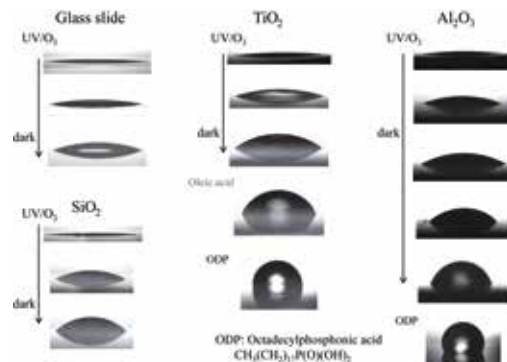


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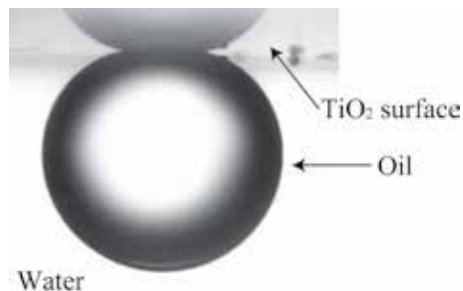


Study on photocatalytic self-cleaning surfaces

Wettability of solid surface is interesting. Also it is important for our daily life. Titanium dioxide (TiO_2) surface shows super-hydrophilicity (water contact angle less than 5 degree) by the irradiation of ultra violet light. TiO_2 -coated materials such as glasses and tiles as self-cleaning materials have been widely used as self-cleaning materials. Recently, we focus on niobium oxide-based photocatalyst as high functional self-cleaning material. We are trying to develop next environmentally friendly self-cleaning coatings.



Study on underwater super-oleophobic surfaces



Oil wettability of solid is an important physical property of the materials. We have developing functional materials with underwater super-oleophobic surface (oil contact angle larger than 150 degree). underwater super-oleophobic mesh can be applicable as a speedy oil-water separation filter. Recently, we succeeded to develop TiO_2 photocatalyst oil-water separation filter. Moreover, we are currently investigating calcium-based materials as oil-water separation filter.