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Title: **Hard Anti-Smudge Epoxy Coatings**

**Abstract**

Omniphobic surfaces repel a multitude of liquids of different surface tensions and polarities. Textured superomniphobic surfaces, slippery liquid infused porous surfaces (SLIPS), and grafted monolayers are example omniphobic surfaces. However, the commercial applications of these surfaces have been limited due to their tedious preparation and lack of long-term stability and durability. To overcome these limitations, we have fabricated robust, transparent anti-smudge NP-GLIDE coatings (bearing **nano-pools** of a **grafted lubricating ingredient** for **dewetting enablement**). On NP-GLIDE coatings various liquids including water, diiodomethane, hexadecane, dodecane and decane readily and cleanly glide. Applied marker ink or graffiti paint can immediately shrink. However, the matrices used for preparing NP-GLIDE coatings had been organic polymers. Despite that the NP-GLIDE coatings based on these organic polymers were much more wear tolerant than traditional omniphobic coatings, I have further improved the mechanical strength of NP-GLIDE coatings by using an organic/inorganic hybrid material as the coating matrix. This miraculous material is so strong that it is not abraded even by steel wools. I will describe the preparation and properties of NP-GLIDE coatings made of this fascinating material.

