

Hard and Wear-Resistant Omniphobic Ladderlike Polysilsesquioxane Coatings for Anti-smudge and Ice-Shedding Applications

In an era where sophisticated and demanding applications require advanced materials and surface functionalities, the development of innovative coatings with superior anti-smudge and ice-shedding properties is crucial. Anti-smudge coatings enhance the aesthetic and tactile qualities of devices by preventing the accumulation of dirt, grease, and fingerprints. Likewise, ice-shedding coatings are vital for applications exposed to harsh environmental conditions, where ice buildup can compromise both functionality and safety.

In this seminar, I will present recent advancements in the performance and durability of anti-smudge and ice-shedding surfaces. Ladder-like polysilsesquioxane (LASQ)-based coatings have emerged as promising candidates due to their exceptional mechanical strength, optical clarity, and versatility. I will discuss the synthesis, characterization, and application of LASQ-based coatings, with a focus on their surface properties and practical utility in anti-smudge and ice-shedding applications.

