

# **Superhydrophobic Surfaces and Some Energy Nanomaterials: Synthesis and Applications**

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## **ABSTRACT**

Superhydrophobic surfaces are gaining rising demands in various industrial sectors including consumer electronics, optical, transportation, medical, electrical and home appliances. Given the significant use of these surfaces in diverse applications, the robustness of these surfaces in terms of adhesion and durability becomes highly important. In this talk, these issues have been addressed on superhydrophobic thin films fabricated on metallic substrates by different chemical and plasma process. The physical and compositional analyses of the deposited thin films were characterized by SEM/EDX, ATR-FTIR, XRD as well as contact angle goniometer. To assess their applications, these superhydrophobic surfaces demonstrated reduced ice adhesion, corrosion, and bacterial growth. Furthermore, this talk will provide insights into the electrodeposition process for fabricating energy storage materials and their characterization for supercapacitor properties