

## Chemically Modified Superhydrophobic Zinc Oxide nanoparticle surface

이미경, 박근재, 용기중

포항공과대학교

We investigated the fabrication method of superhydrophobic nanocoating prepared by a simple spin-coating and the chemisorption of fatty acid. The resulting coating showed a tremendous water repellency (static water contact angle =  $154^\circ$ ) and the water contact angle can be modulated by changing the number of deposition cycles of ZnO and the carbon length of Self-Assembled Monolayers (SAM). Varying the number of deposition cycles of ZnO controlled the surface roughness, and affected to the superhydrophobicity. This simple coating method can be universally applicable to any substrates including flexible surfaces, papers and cotton fabrics, which can effectively be used in various potential applications. We also observed the thermal and dynamic stabilities of SAM on ZnO nanoparticles. The superhydrophobic surface maintained its superhydrophobic properties below  $250^\circ\text{C}$  and under dynamic conditions.

**Keywords:** ZnO, Superhydrophobic, Surface Modification, Impact Dynamics