

Fabrication of superhydrophobic silica through PDMS combustion

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Superhydrophobic surface has various applications for its self-cleaning property. Despite its various applications and ongoing researches, fabrication of superhydrophobic surface usually requires a difficult and complicated process in multiple steps. To create superhydrophobic surface, hierarchical morphology with nano- to micro-size roughness and low surface energy are required. In this work, superhydrophobic silica particles were easily fabricated from combustion of PDMS (polydimethylsiloxane). By completely combusting PDMS, superhydrophobic silica particles were fabricated. When the surface of PDMS was slightly combusted, fabricated silica particles were deposited on PDMS, creating superhydrophobic surface. Contact angle and sliding angle of superhydrophobic silica were measured. Superhydrophobic silica particles were characterized using SEM to examine the size and morphology of silica particles and PDMS surface.