

Phototunable SLIPS using Transparent ZnO nanowires for Self-cleaning and Antifouling

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Slippery liquid infused porous surfaces(SLIPS) were fabricated by an ZnO nanowires. ZnO nanowires were synthesized by thermal method and the length of ZnO nanowires is 500nm to make the SLIPS be transparent. As fabricated SLIPS shows 110~ 120 water contact angle and 70~ 80 oil contact angle. Also it has low contact angle hysteresis, low sliding angle and self-healing property. It means SLIPS has an antifouling ability that applied to various fields instead of superhydrophobic surface. Using ZnO nanowire, SLIPS is be able to control the transparent by varying the length of ZnO nanowire. Also by controlling the length of ZnO nanowire, transparency is determined from opaque to transparent. It is important to apply the other fields. To do this, SLIPS is patterned by photo illumination easily. As controlled the ZnO nanowire, SLIPS is patterned and restore the former one. These SLIPSs is applied to various field for phototunable, transparent and antifouling.