

Supplementary Information

Anti-soiling performance of high reflective superhydrophobic nanoparticle-textured mirror

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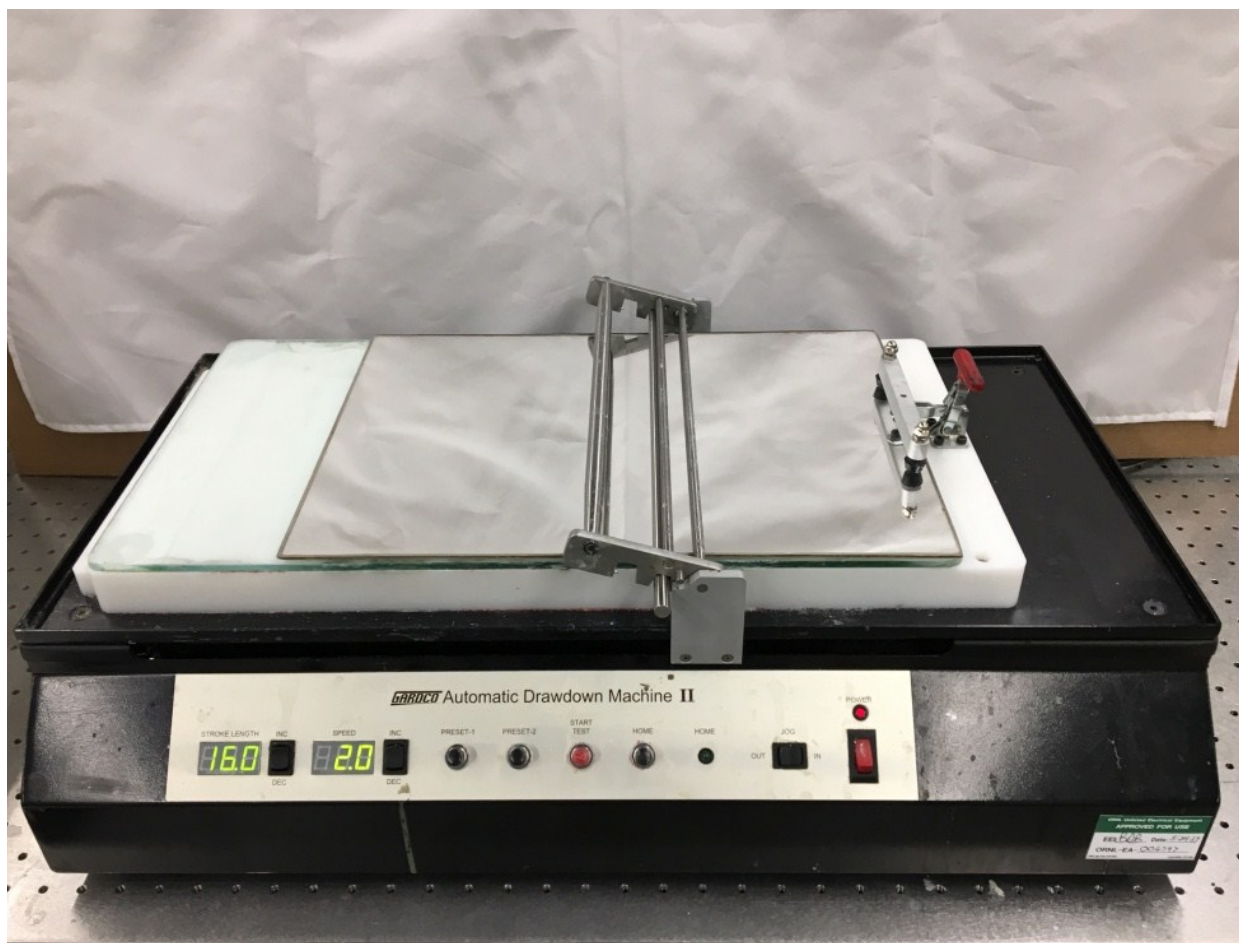


Figure S1. Fabrication of SiO₂ nanoparticle thin film by rod draw-down coating. Photograph of a large scale NP thin film deposited by rod-coating on solar mirror (600 cm²)

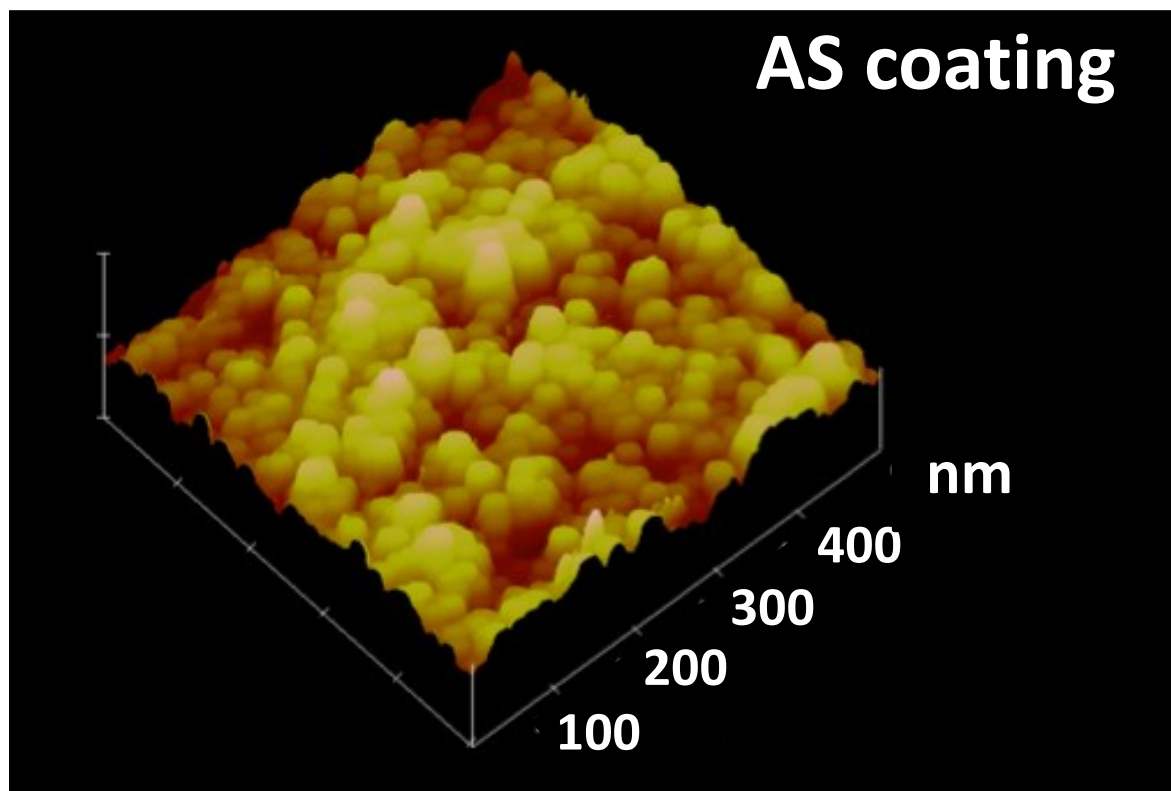


Figure S2. AFM image of AS coated surface with 30.1 nm of RMS roughness

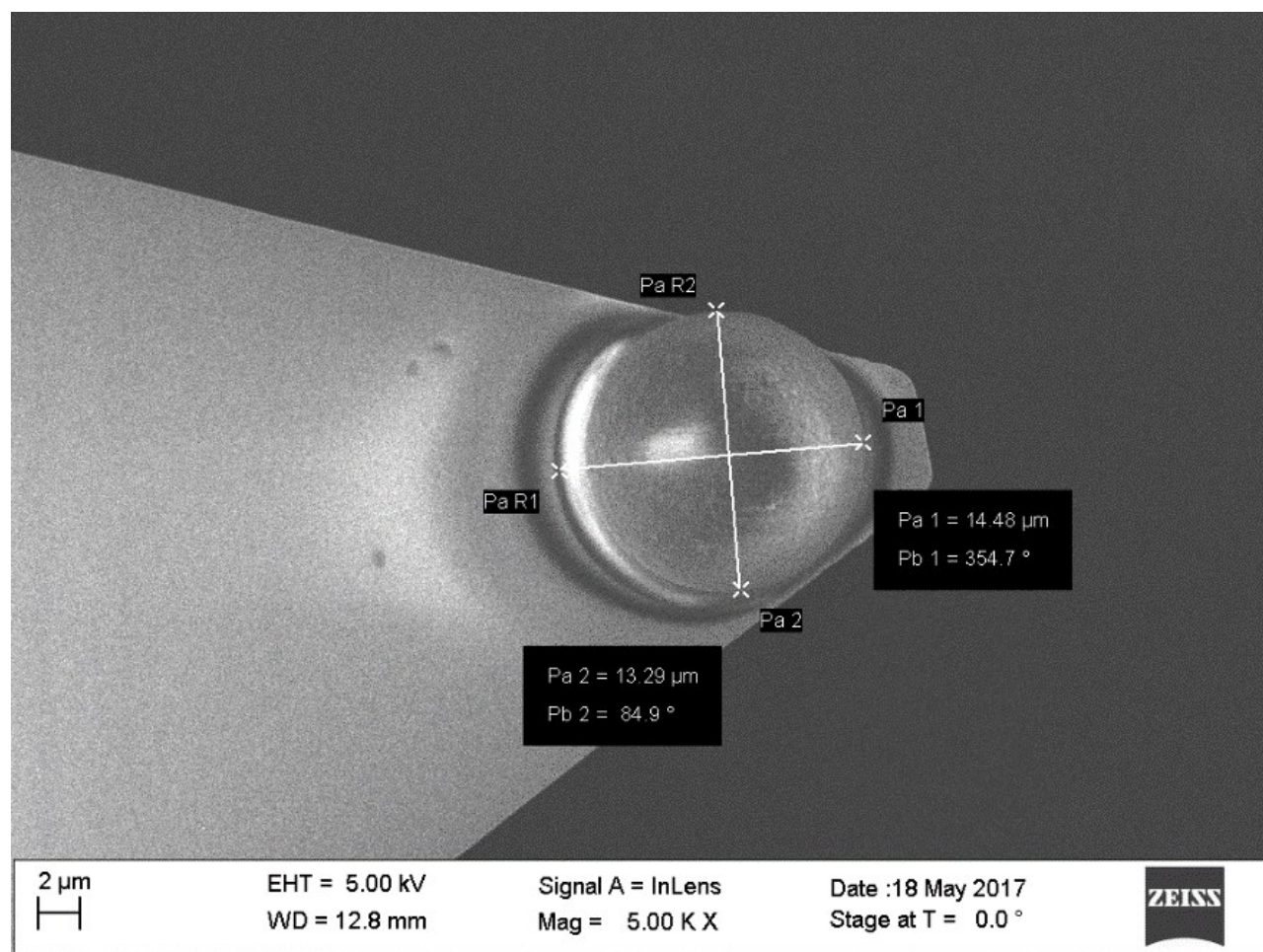


Figure S3 SEM image of the AFM cantilever used to measure the adhesive force

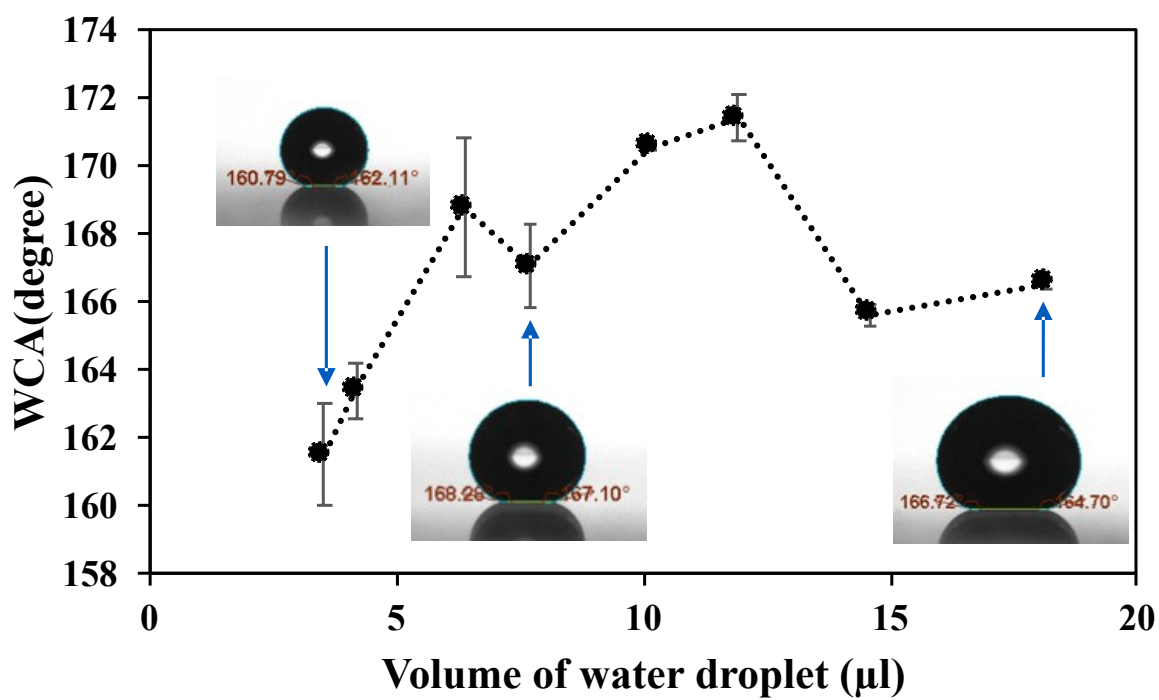


Figure S4 WCA measurement as a function of water droplet volume on the same spot of AS coated surface. The number of WCA image analysis per data point was ≥ 5 . Error bars are the standard deviations in the mean values.

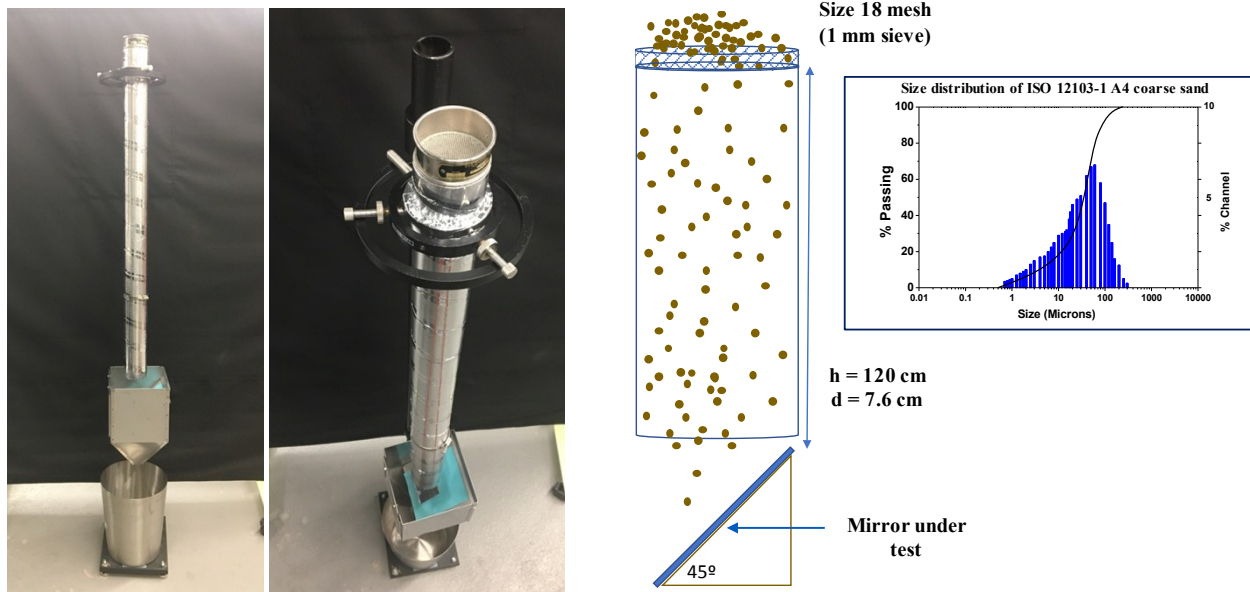


Figure S5 Modified Falling Sand Abrasion Test that provides uniform applications of test dust for gravimetric and reflectivity measurements of accumulated dust.

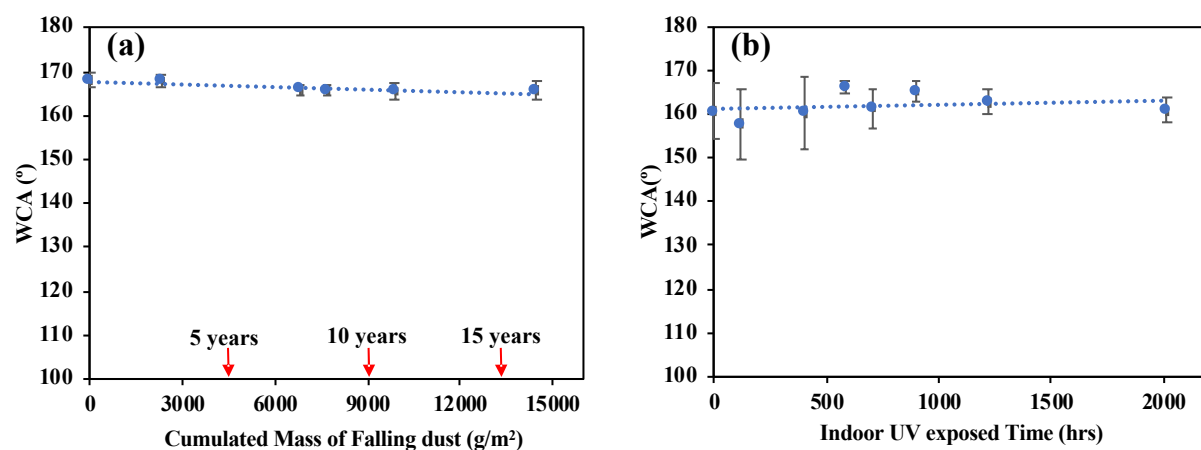


Figure S6 Mechanical/UV durability tests for SH mirror and SH glasses. a) Sand soiling abrasion tracking of SH mirror after gravimetric soiling & dusting, The 5 year sand abrasion amount is 4560 g/m², b) UV weathering feature of SH glasses.