

Supporting Information

Preparation of Mechanically Stable Superamphiphobic Coatings via Combining Phase Separation of Adhesive and Fluorinated SiO₂ for Anti-icing

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Figure S1. Photograph of the SPET/FD-POS@SiO₂ dispersion liquid. $V_{\text{non-solvent}} = 1.7$ mL, $m_{\text{SPET}} = 2.4$ g.

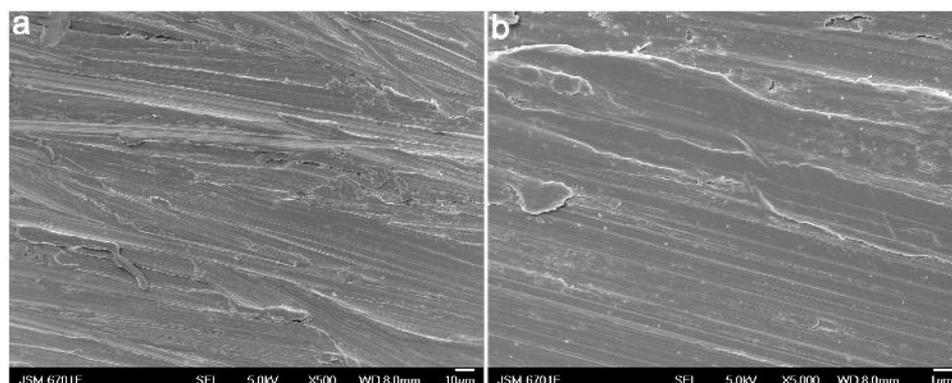


Figure S2. SEM images of the Al alloy plate.

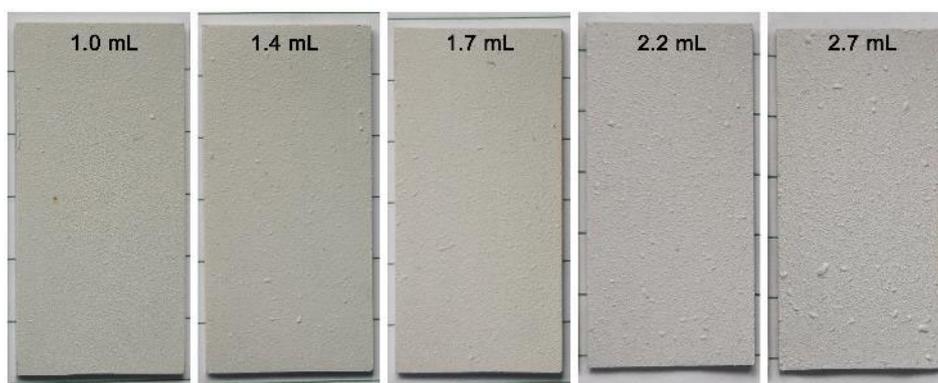


Figure S3. Photographs of the SPET/FD-POS@SiO₂ coatings with different non-solvent content. $m_{\text{SPET}} = 3.0$ g.

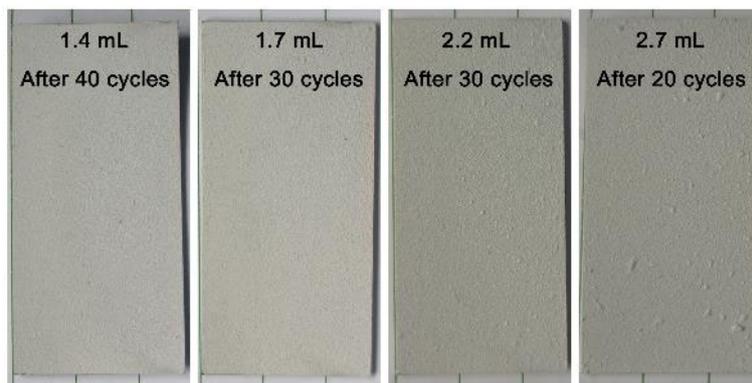


Figure S4. Photographs of the SPET/FD-POS@SiO₂ coatings with different non-solvent content after Taber abrasion test. $m_{\text{SPET}} = 3.0$ g.

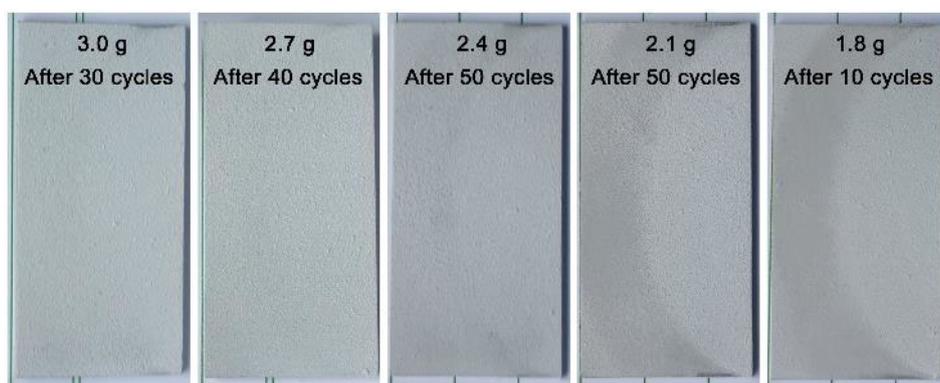


Figure S5. Photographs of SPET/FD-POS@SiO₂ coatings with different SPET amount after Taber abrasion test. $V_{\text{non-solvent}} = 1.7$ mL.

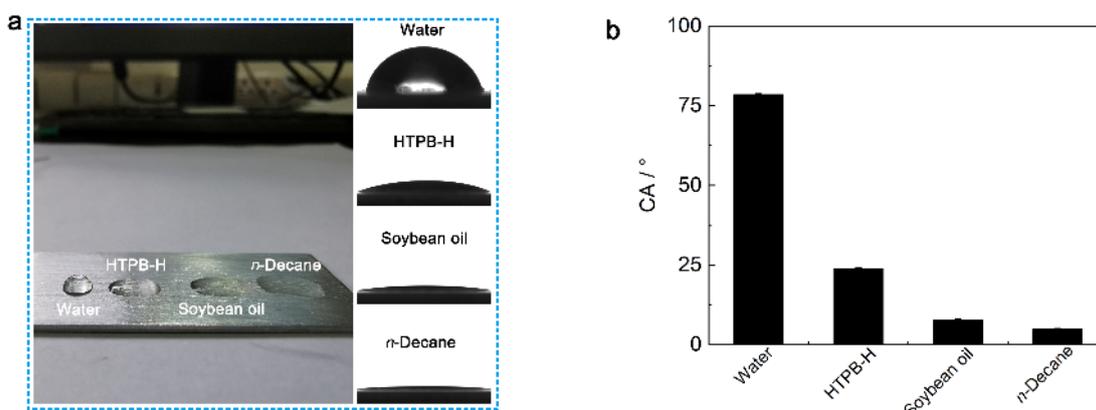


Figure S6. (a) Photographs of the Al alloy plate with droplets of different surface tension on the surface. (b) CA of various liquids on the Al alloy plate.

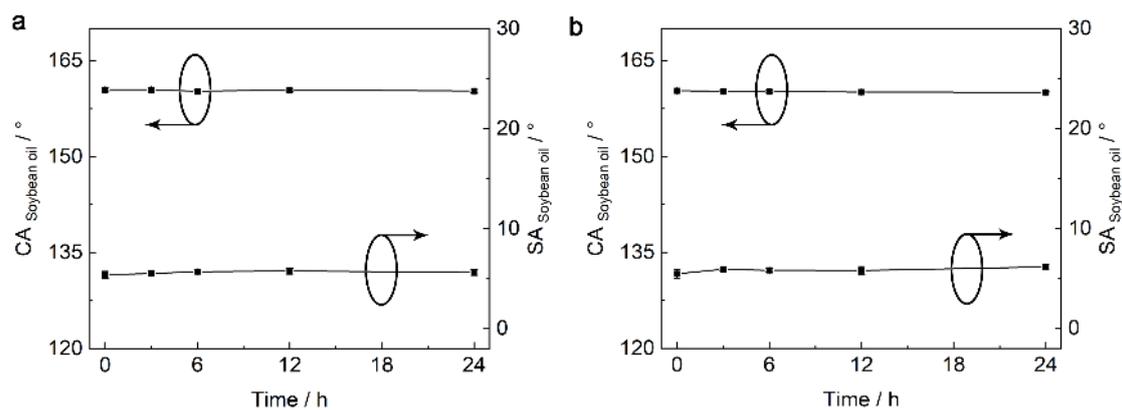


Figure S7. Changes of $CA_{\text{soybean oil}}$ and $SA_{\text{soybean oil}}$ of the SPET/FD-POS@SiO₂ coating during immersion in (a) water and (b) soybean oil. $V_{\text{non-solvent}} = 1.7 \text{ mL}$, $m_{\text{SPET}} = 2.4 \text{ g}$.

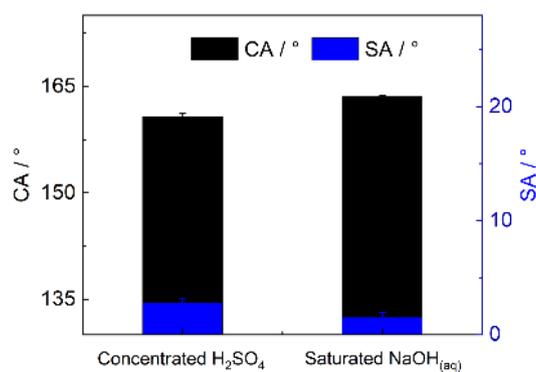


Figure S8. CA and SA of concentrated H₂SO₄ and saturated NaOH_(aq) on the SPET/FD-POS@SiO₂ coating. $V_{\text{non-solvent}} = 1.7 \text{ mL}$, $m_{\text{SPET}} = 2.4 \text{ g}$.

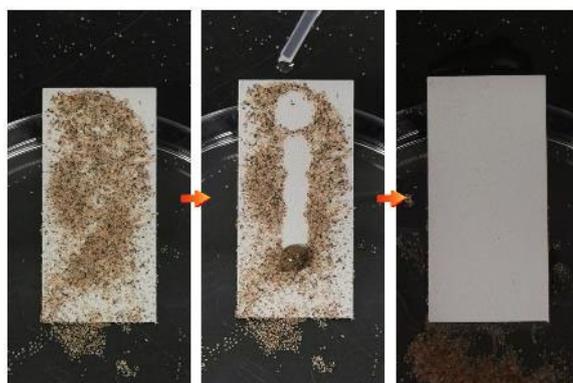


Figure S9. Self-cleaning behavior of the SPET/FD-POS@SiO₂ coating. $V_{\text{non-solvent}} = 1.7 \text{ mL}$, $m_{\text{SPET}} = 2.4 \text{ g}$.

Movie S1. Water droplet freezing process on the Al alloy plate.

Movie S2. Water droplet freezing process on the SPET/FD-POS@SiO₂ coated Al alloy plate. $V_{\text{non-solvent}} = 1.7 \text{ mL}$, $m_{\text{SPET}} = 2.4 \text{ g}$.