

Double Cross-linked Transparent Superhydrophilic Coating Capable of Anti-fogging even after Abrasion and Boiling

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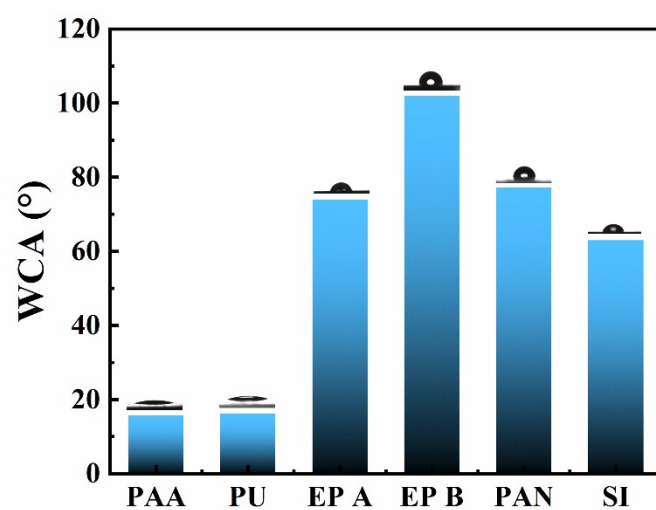


Figure S1 Water Contact Angle data for different organic resins

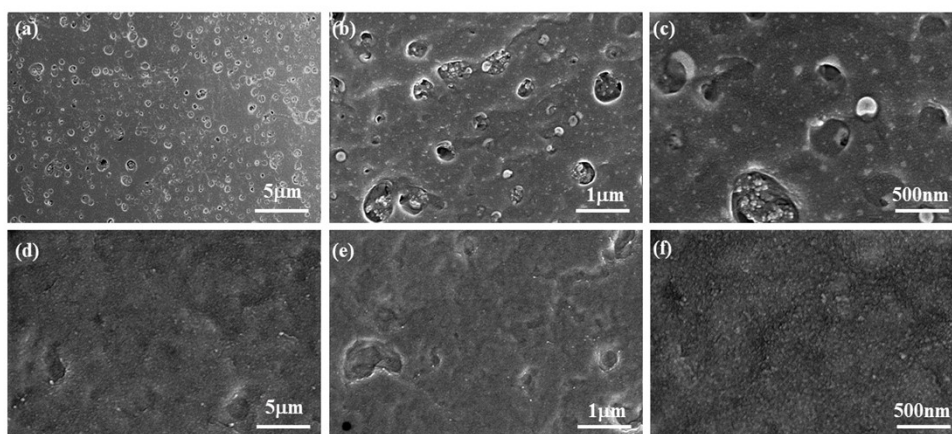


Figure S2 Comparison of surface morphology of (a-c)PU and (d-f) PAA resin cross-linked coatings at different ratios

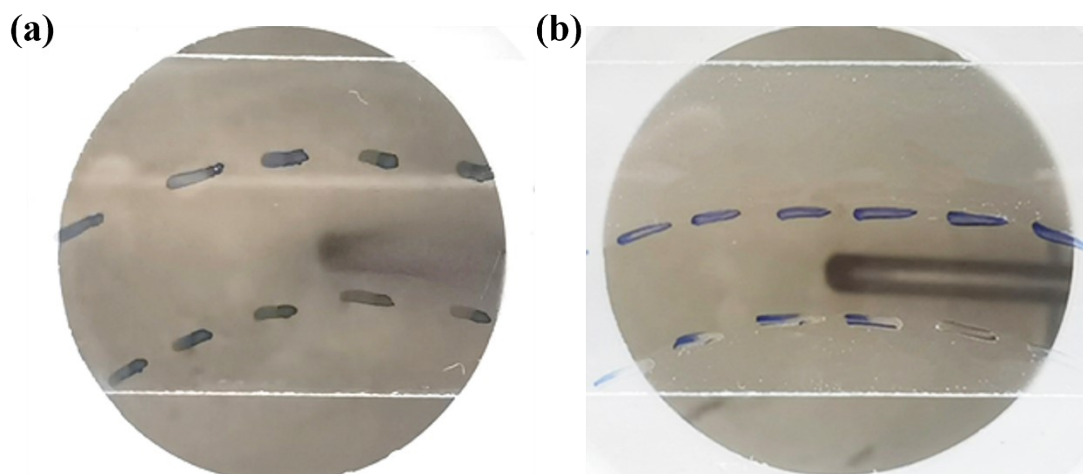


Figure S3 Anti-fogging performance of (a) PU-SiO₂ and (b) PAA-SiO₂ coatings after 240 r of Taber wear.

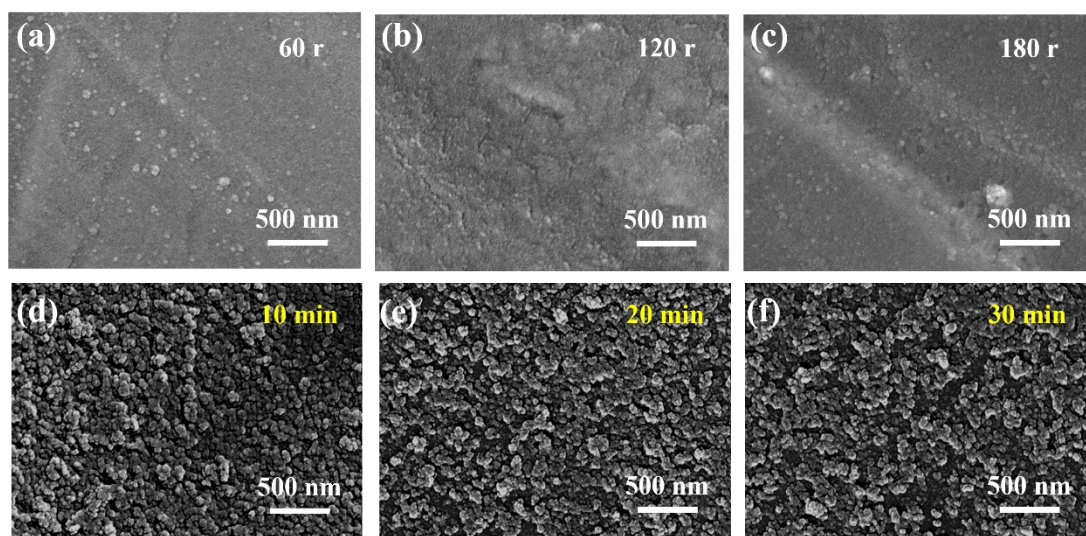


Figure S4 Morphology change of PAA-SiO₂ coating, wear resistance test of (a)60 r; (b)120r, (c) 180r, and boil resistance test of (d) 10 min, (e) 20 min, (f) 30 min.

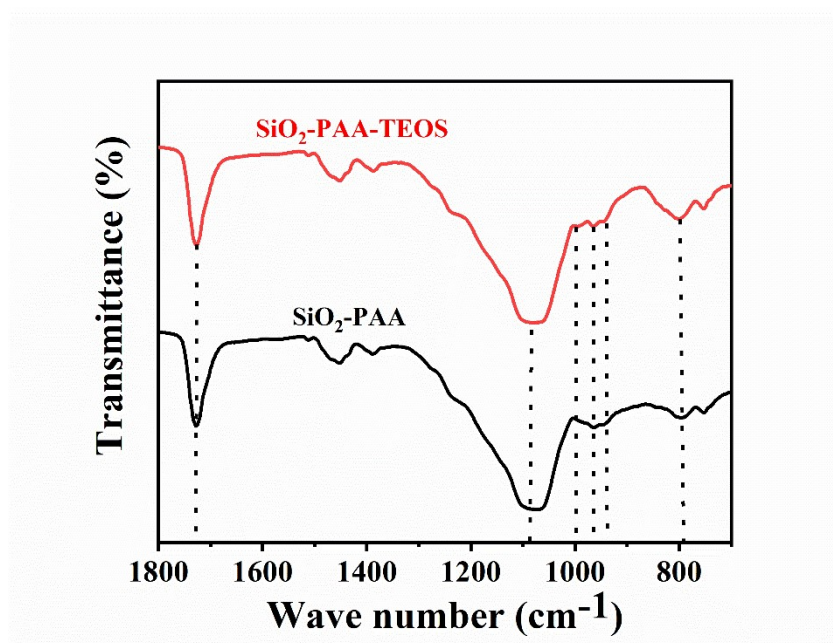


Figure S5 FT-IR spectra of SiO₂-PAA and SiO₂-PAA-TEOS coatings.

Table S1. Comparison of Taber abrasion resistance of prepared coatings with other similar SiO₂ based superhydrophilic coatings

substrate	coating material (s)	Load (g)	Anti-abrasion cycle (r)	reference
Cu mesh	SiO ₂	100	110	[1]
fabrics	SiO ₂ /PDA/CF	250	500	[2]
Glass	MSiO ₂ -MTiO ₂	500	100	[3]
polycarbonate	SiO ₂	400	20	[4]
flexible polyimide	TEOS- GPTMS)	0	15	[5]
Glass	SiO ₂ -TiO ₂	500	50	[6]
Glass	PAA/SiO ₂	250	30	[7]
Glass	P(SBMA-co- HEMA)-SiO ₂	500	500	[8]
Glass	AER-TEOS-SiO ₂	250	400	[9]
Glass	PAA-TEOS-SiO ₂	250	300	This work

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