

Supplementary Information

Synergistic Short and Long Spacer Fluorinated Chain Extenders for Low Refractive Index Waterborne Polyurethane Acrylate Coatings

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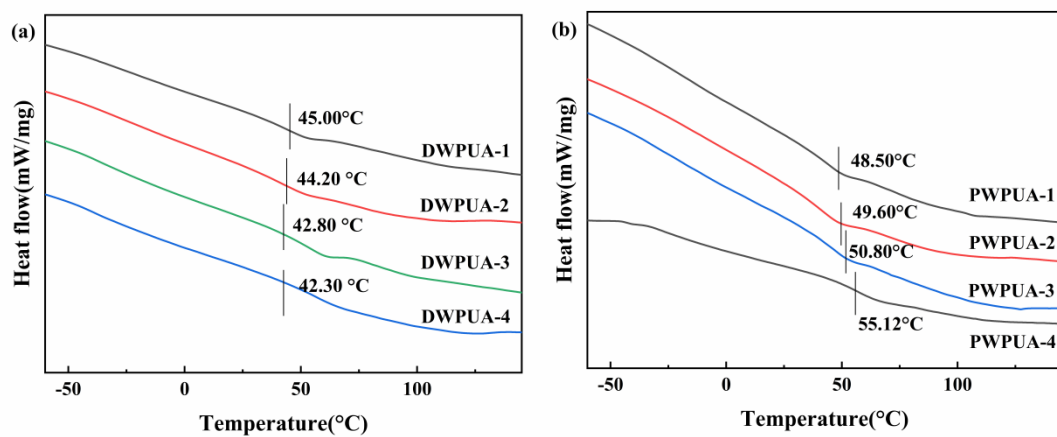


Fig S1 DSC curves of (a) DWPUA-1~4 and (b) PWPUA-1~4.

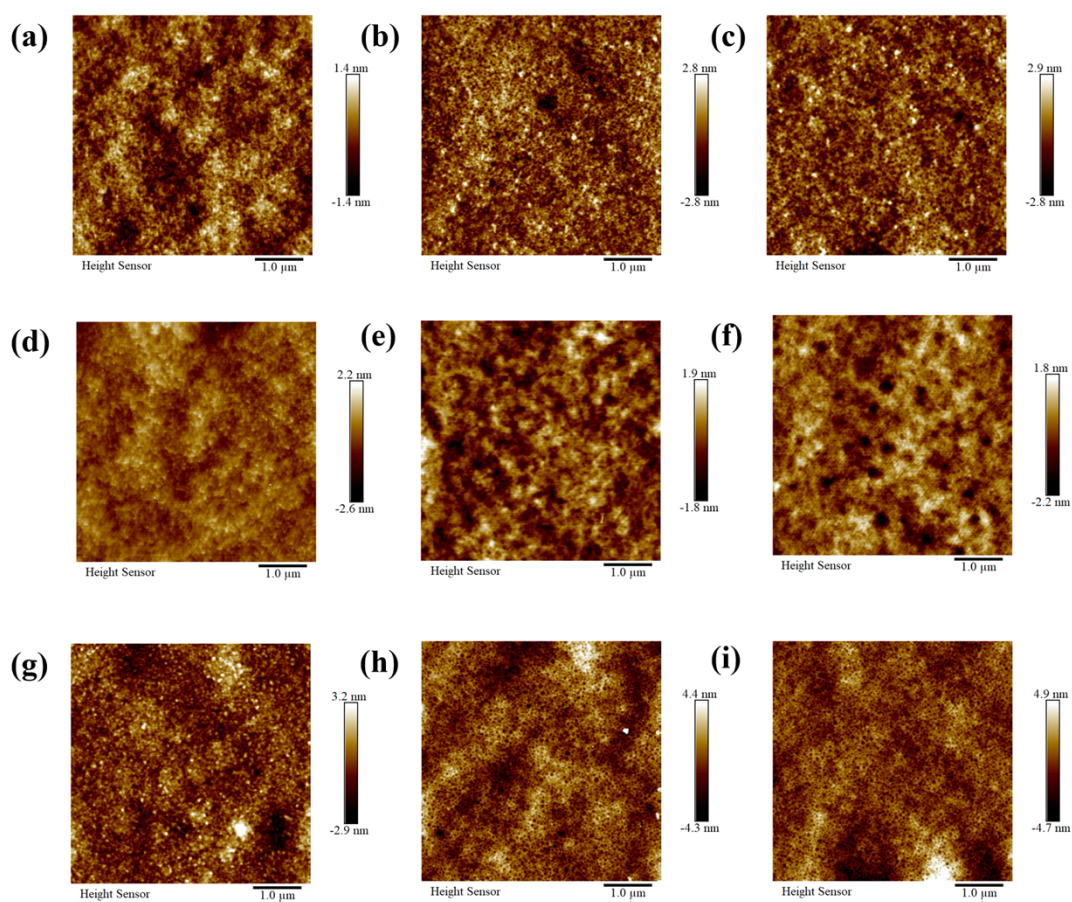


Fig S2. AFM images of DWPUA-1~3 (a-c), PWPUA-1~3 (d-f), and DPWPUA-1~3 (g-i).

Table S1 Surface roughness of DWPUA1~3, PWPUA1~3, and DPWPUA1~3 coatings

determined by AFM.

Samples	R _a (nm)	R _q (nm)
DWPUA-1	0.334	0.417
DWPUA-2	0.611	0.777
DWPUA-3	0.609	0.773
PWPUA-1	0.333	0.427
PWPUA-2	0.418	0.525
PWPUA-3	0.429	0.553
DPWPUA-1	0.628	0.818
DPWPUA-2	0.948	1.300
DPWPUA-3	0.940	1.230

Table S2 Comparison of low refractive index materials.

Material System	Refractive index	Trans. (%)	WCA (°)	PET Adhesion	Flexibility	Ref.
UV-WPUA	1.507	92.84	114.4	Grade 0	Good	This work
WPU	1.532	87.6	—	—	—	[1]
UV-WPUA	≈1.50-1.52	—	100.8	—	—	[2]
Solvent UV epoxy	1.4930-1.5576	90.8-91.3	66.1-79.2	Glass	Rigid	[3]
Solvent polycarbonate	1.495-1.51	Transparent	—	SiO ₂	—	[4]
iCVD p(PFDA-co-VP)	1.36	>90	122	—	Flexible	[5]
pF8NDC	1.361	High	—	—	—	[6]
Porous Teflon AF	1.10-1.45	High	—	Acrylic	—	[7]
Fluoro polysilsesquioxanes	1.335-1.427	High	92-131	Glass	—	[8]
poly(methylmethacrylate)	1.23-1.26	High	120	Glass	—	[9]

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