

Table S1. Summary of performance and properties of NES and NPS series nanocomposites.

Sample	Properties									
	Crosshatch adhesion (ASTM)*	Transmittance at 400nm (%)	Refractive Index	Hardness [Hv(\pm SD)]	Young's modulus [GPa(\pm SD)]	Td ($^{\circ}$ C)	CTE (μ m/m \cdot $^{\circ}$ C)	Contact angle [degree(\pm SD)]	Water absorption (wt%)	Water vapor permeability (g \cdot mm/m 2 \cdot day)
NES00	2B	99.95	1.5199	13.25(0.13)	3.16(0.09)	340.01	212.40	73.11(1.44)	8.51	17.51
NES10	2B	99.97	1.5154	15.53(0.72)	3.78(0.22)	341.52	156.70	80.57(1.26)	7.64	12.10
NES20	2B	99.99	1.5092	17.91(0.32)	4.34(0.22)	343.66	138.00	81.07(1.20)	6.23	10.35
NES30	1B	99.98	1.4956	20.49(0.18)	4.84(0.27)	346.35	111.20	82.12(1.25)	5.25	9.17
NES40	0B	99.91	1.4849	26.12(0.82)	6.73(0.34)	350.51	105.50	86.04(1.51)	4.28	8.35
NES50	0B	99.54	1.4744	40.82(2.10)	8.63(0.32)	355.77	93.57	88.05(1.51)	3.16	7.71
NES60	0B	99.98	1.4675	54.54(2.74)	10.86(0.40)	361.48	80.30	89.77(1.58)	2.57	7.06
NPS00	4B	95.62	1.5122	10.10(1.47)	5.32(0.44)	319.42	148.60	82.06(1.95)	1.63	2.11
NPS10	4B	89.89	1.5049	14.78(1.55)	6.05(0.53)	334.03	123.50	89.72(1.72)	1.35	2.07
NPS20	4B	90.55	1.5025	18.28(1.83)	7.86(0.49)	340.97	120.20	96.99(1.57)	1.23	2.01
NPS30	4B	93.55	1.4974	22.38(1.98)	9.98(0.47)	348.26	112.80	106.21(1.58)	1.09	2.00
NPS40	4B	93.69	1.4945	30.86(2.27)	13.20(0.77)	355.48	90.59	119.87(1.82)	1.00	1.95
NPS50	3B	94.77	1.4878	47.66(2.07)	18.26(0.85)	366.86	84.19	129.60(1.50)	0.86	1.93
NPS60	3B	96.44	1.4836	65.00(2.52)	21.98(0.81)	381.03	77.08	141.52(0.49)	0.63	1.88

*5B, 4B, 3B, 2B, 1B and 0B demonstrate the peel area removed is 0%, less than 5%, 5-15%, 15%-35%, 35-65% and greater than 65%, respectively.