Supporting Information

Highly transparent, healable and durable anti-fogging coating by combining hydrophilic pectin and tannic acid with the poly(ethylene terephthalate)

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Fig. S1 The AFM height images of PET-TA (a, d), PET-pectin (b, e) and PET-pectin/TA (c, f) after conditioning at 0 (first row) and 90 (second row) % RH at 20 °C for 24 hours ($R_q$ values: a, 0.517 nm; b, 2.437 nm; c, 0.984 nm; d, 0.352 nm; e, 2.143 nm; f, 1.579 nm).
Fig. S2 The cross-sectional SEM images of PET (a), PET-TA (b), PET-pectin (c) and PET-pectin/TA (d).
**Fig. S3** The ATR-FTIR spectra of PET-pectin/TA after conditioning at 0, 50 and 90 % RH at 20 °C for 24 hours.
**Fig. S4** The digital images of PET-pectin/TA after holding about 5 cm over the boiling water (~55 °C, 100 % RH) for 60 s (a) and after storing in a freezer at about -20 °C for 1 h and exposing to the condition of ~20 °C and 50 % RH for 5 s (b) after conditioning at 0, 50 and 90 % RH at 20 °C for 24 hours.
**Fig. S5** The anti-fogging performances of PET-pectin/TA after immersing in the pH buffer solutions at room temperature with pH values of 12.0 (first row), 7.0 (second row) and 2.0 (third row). First and third columns: after holding about 5 cm over the boiling water (~55 °C, 100 % RH) for 60 s, second and fourth columns: after storing in a freezer at about -20 °C for 1 h and exposing to the condition of ~20 °C and 50 % RH for 5 s, first and second columns: 1 time of immersing, c and d: 2 times of immersing, g and h: 4 times of immersing, k and l: 6 times of immersing.
Fig. S6 The digital images of PET (a, e), PET-TA (b, f), PET-pectin (c, g) and PET-pectin/TA (d, h) before (first row) and after (second row) exposure to UV irradiation (UVA 365 nm) for 4 weeks.
**Fig. S7** The depth (a) and width (b) distributions of the damaged cut on the surface of PET-pectin/TA obtained from the AFM image.
Fig. S8 The digital images of PET-pectin/TA before (a) and after (b) 3 cycles of scratching and healing processes.