Supplementary Information

A Facile Method to Fabricate Superhydrophobic Films with Multiresponsive and Reversibly Tunable Wettability

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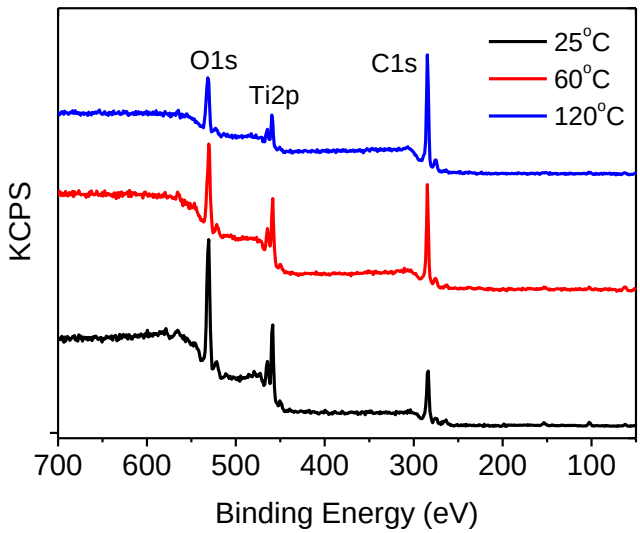

Figure S1. XPS spectra of TiO_2/P(S-BA-AA) copolymers nanocomposite films prepared at different drying temperatures. Elemental ratios: 25 ºC: C/O/Ti=45.1/43.8/10.9; 60 ºC: C/O/Ti=60.4/30.2/8.4; 120 ºC: C/O/Ti=76.3/19.2/4.5. Copolymer with T_g of 55 ºC was used.

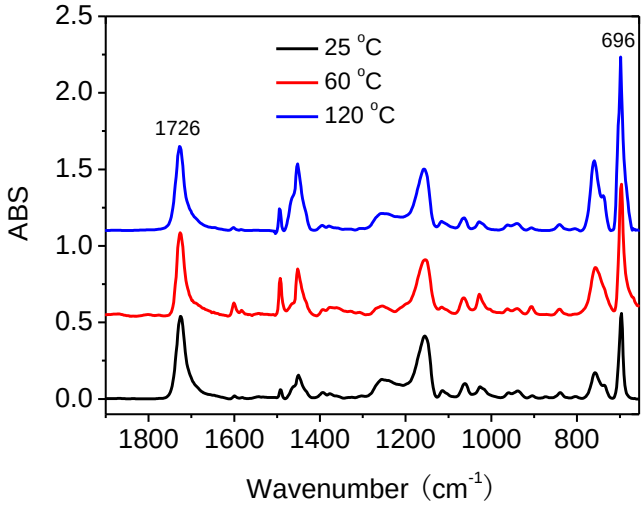

Figure S2. ATR-FTIR spectra of TiO_2/P(S-BA-AA) nanocomposite films prepared at different drying temperatures. The copolymer with T_g of –2 ºC was used.

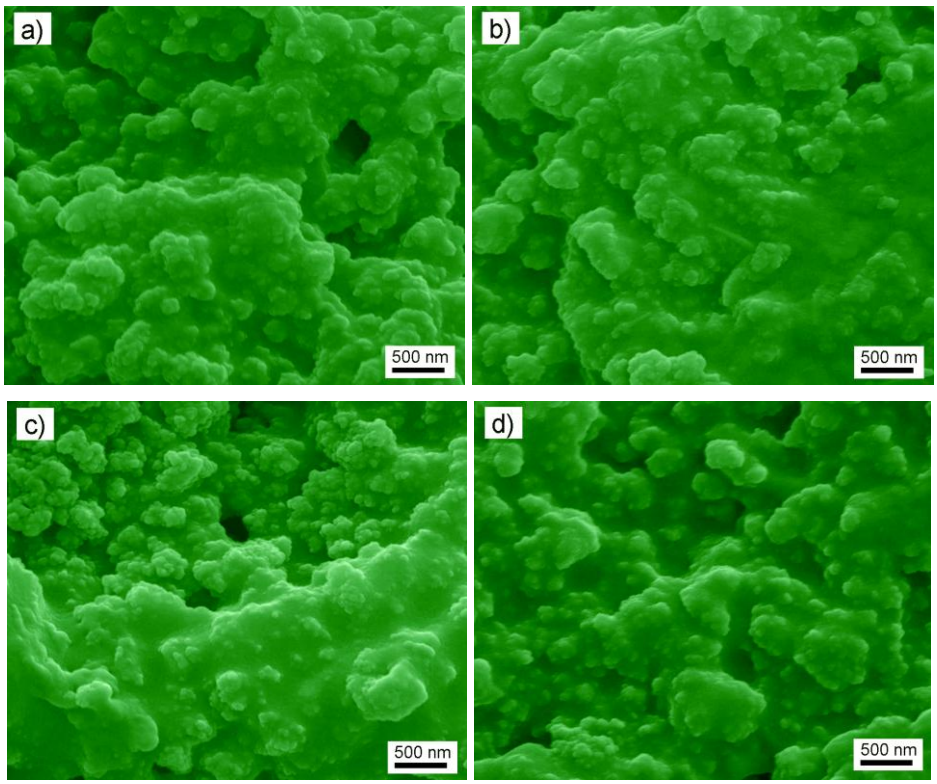

Figure S3. SEM images of the as-prepared TiO_2/P(S-BA-AA) nanocomposite films. a) after UV irradiation for 2 h, b) 2h of UV irradiated then 1h of thermal treatment at 150 ºC. c) pH=12 NaOH solution of treatment, and d) NaOH and then pH=2 HCl solution of treatment.

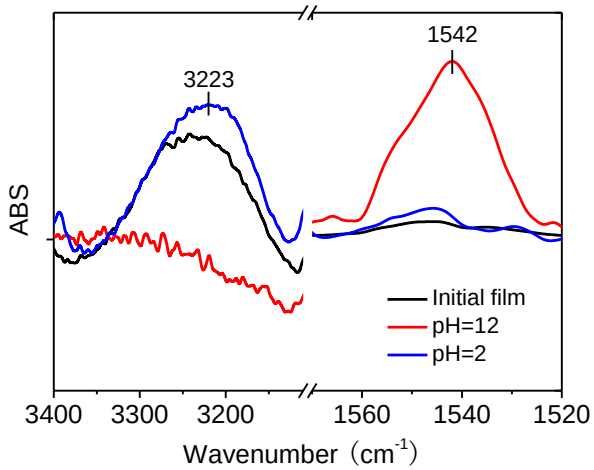

Figure S4. ATR-FTIR spectra of as-obtained TiO_2/P(S-BA-AA) nanocomposite films under different pH values.

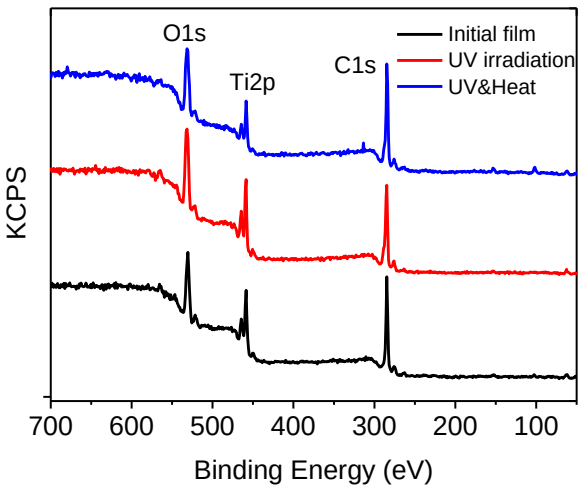

Figure S5. XPS spectra of the as-obtained TiO_2/P(S-BA-AA) nanocomposite films under different conditions. Elemental ratios: Initial film: C/O/Ti=63.6/29.1/7.1; UV irradiation: C/O/Ti=53.7/37.9/8.4; UV&Heat: C/O/Ti=67.8/26.8/5.4.

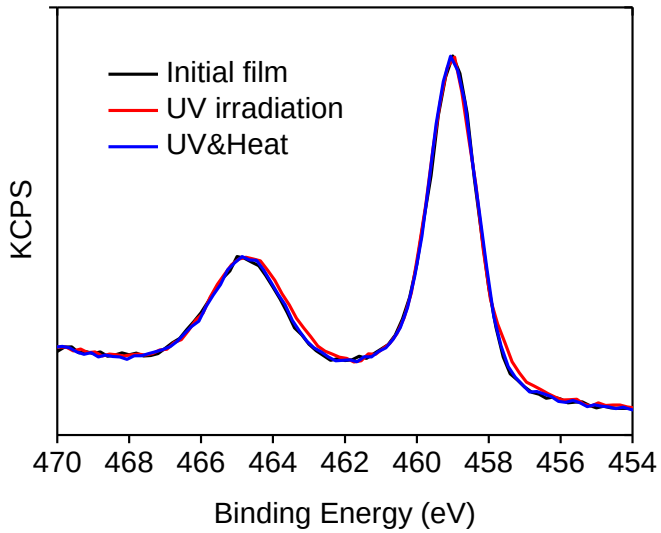

Figure S6. XPS spectra of Ti 2p peak of the as-obtained TiO_2/P(S-BA-AA) nanocomposite films under different conditions.