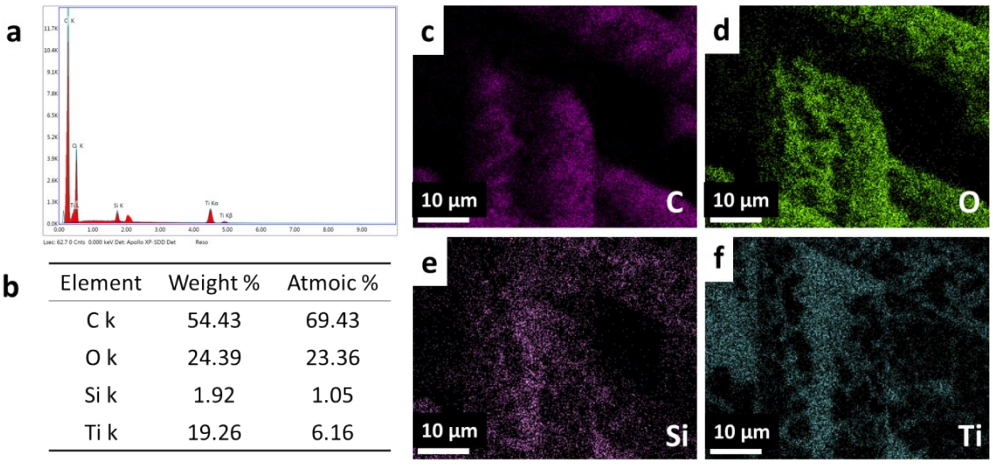
Electronic Supplementary Material (ESI) for Nanoscale.

Self-cleaning Polybenzoxazine/TiO_2 Surface with Superhydrophobicity and Superoleophilicity for Oil/water Separation

Wenfei Zhang, Xin Lu, Zhong Xin and Changlu Zhou*

Shanghai Key Laboratory of Multiphase Materials Chemical Engineering, State Key Laboratory of Chemical Engineering, School of Chemical Engineering, East China University of Science and Technology, 130 Meilong Road, Xuhui District, Shanghai 200237, People's Republic of China.

SUPPORTING INFORMATION



Element	Weight %	Atmoic %
C k	54.43	69.43
O k	24.39	23.36
Si k	1.92	1.05
Ti k	19.26	6.16

Figure S1. (a) EDS spectrum and (b) element distribution on PBZT10. Mapping images of (c) C, (d) O, (e) Si and (f) Ti of PBZT10 surface.

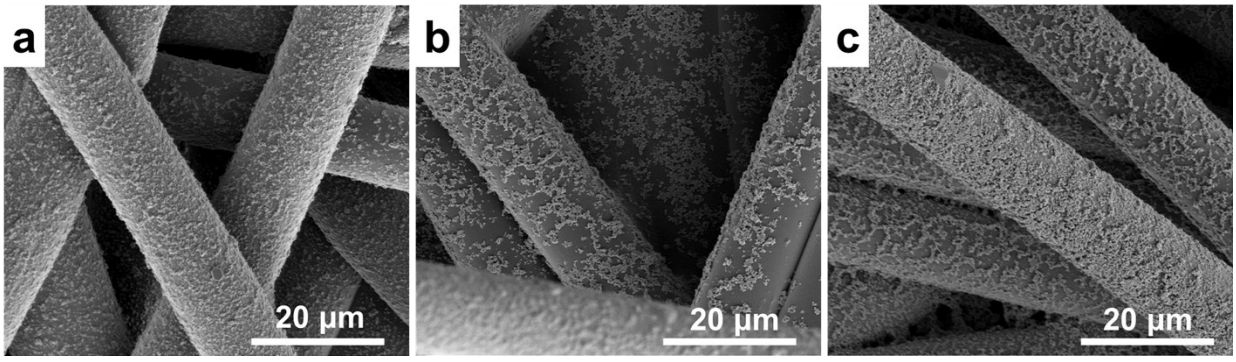


Figure S2. SEM images of (a) PBZT3, (b) PBZT10, and (c) PBZT20.

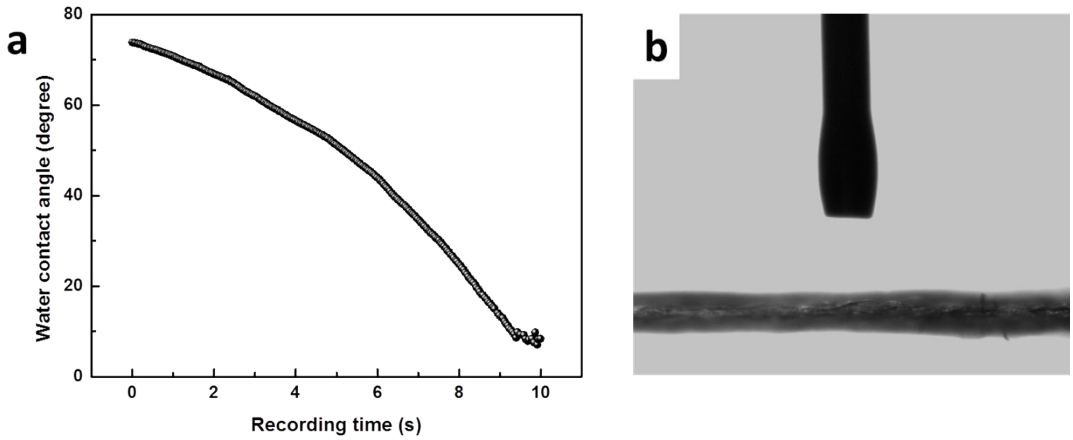


Figure S3. (a) Water CA recordings of pristine fabric. (b) Oil CA image on pristine fabric. Water droplet spread out on the pristine fabric in 10 s. The final water CA is less than 10^{o}, demonstrating the superhydrophilicity of pristine fabric. Cyclohexane droplet spread out on the pristine fabric immediately, showing the superoleophilicity of pristine fabric.

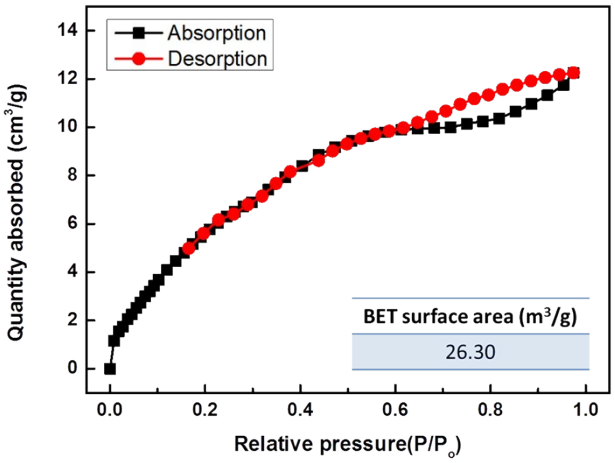


Figure S4. N_2 adsorption-desorption isotherm and BET surface area of PBZT10.

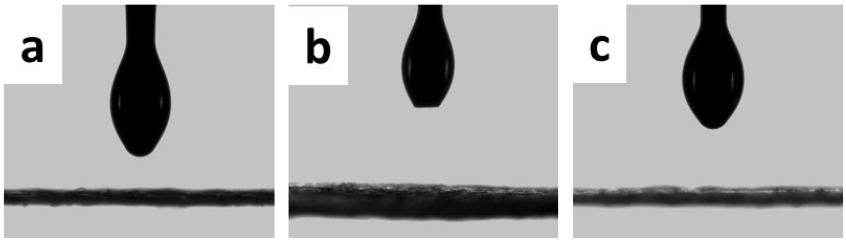


Figure S5. Oil CA images of (a) OA/PBZT10, exposed OA/PBZT10 (b) before and (c) after heat treatment at 140 ^{o}C for 1h. The surfaces are all superoleophilic with an oil droplet spreading out on the surfaces.

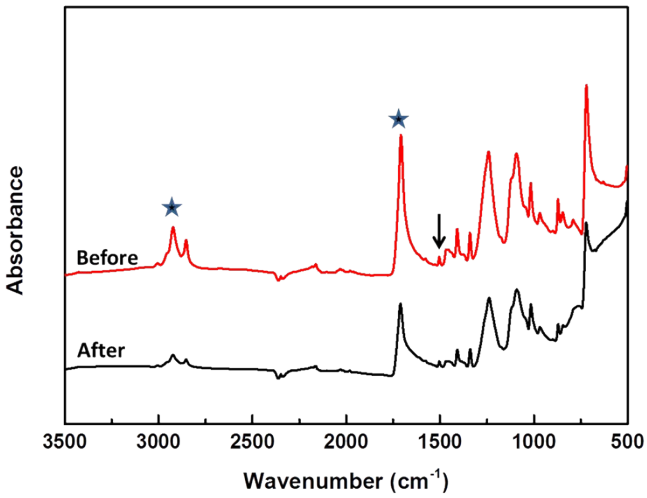


Figure S6. FTIR spectra of OA/PBZT10 before and after heating.

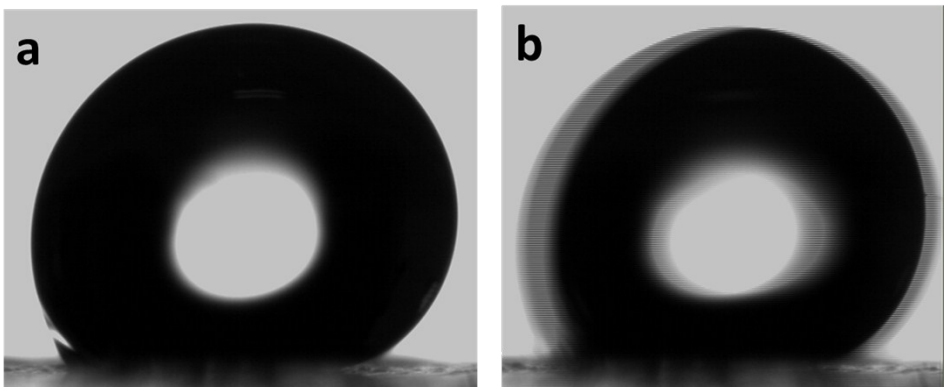


Figure S7. Images of water droplet on PBZT10 before and during rolling when the base was tilted for 25°. (water droplet, 10 μL)

Video S1. Recordings of cyclohexane droplet on PBZT10.

Video S2. DCM/water separation process.

Video S3. Toluene/water separation process.

Video S4. Recording of self-cleaning performance for the removal of particles based on PBZT10. The volume of water droplet is 2 μL.