Supplementary Material (ESI) for Journal of Materials Chemistry
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Supporting Information

Transparent superhydrophobic / superhydrophilic TiO_2-based coatings for self-cleaning and anti-fogging

Yuekun Lai,[*ab] Yuxin Tang,[a] Jiaojiao Gong,[c] Dangguo Gong,[a] Lifeng Chi,[b] Changjian Lin[c] and Zhong Chen[*a]

[a] School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore

[b] Physikalisches Institute, and Center for Nanotechnology (CeNTech), Westfälische Wilhelms-Universität Münster, D-48149 Münster, Germany

[c] State Key Laboratory of Physical Chemistry of Solid Surfaces, and College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China

[*]E-mail: laiy@uni-muenster.de (Y. Lai); aszchen@ntu.edu.sg (Z. Chen).

Tel.: +65-9137-2963. Fax: +65-6790-9081.

Legends for supplementary videos.

Video S1: showing the transparent and superhydrophobic TNB/FAS film with extremely low water adhesion.

Video S2: showing the self-cleaning ability of the transparent and superhydrophobic TNB/FAS film with extremely low water adhesion.

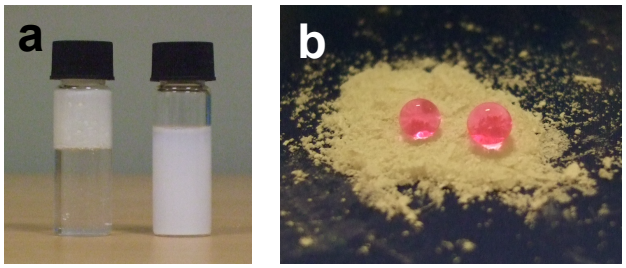

Figure S1. (a) Optical images of the solubility of TNB/FAS powder in water (left) and ethanol solution (right). TNB/FAS powder was self-assembled into a compact film along the glass bottle upper the water surface by shaking the solution. (b) Water droplet on the highly hydrophobic TNB/FAS powder.

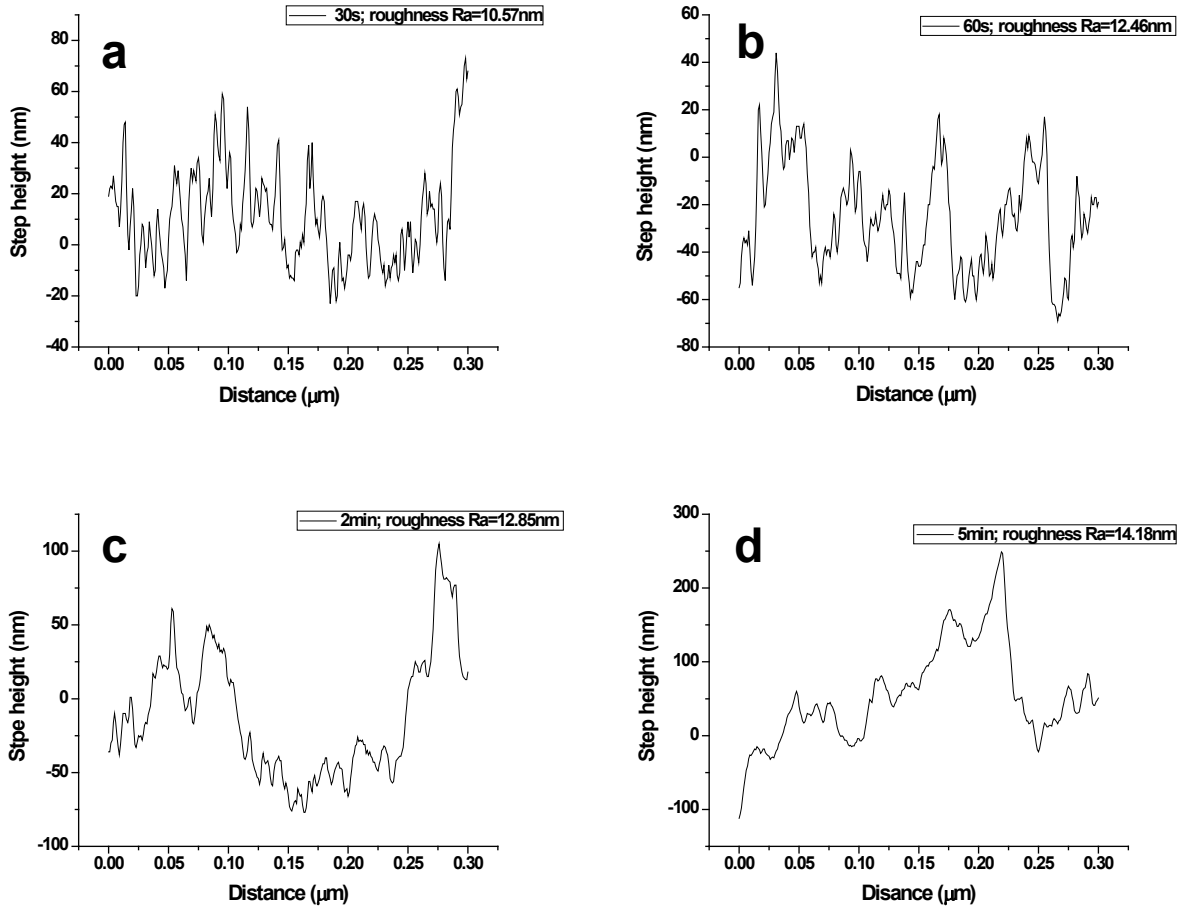

Figure S2. Profilometry of the TNB/FAS film on ITO glass substrate showing film average roughness (Ra). Deposition time: (a) 30 s, (b) 1 min, (c) 2 min, and (d) 5 min.

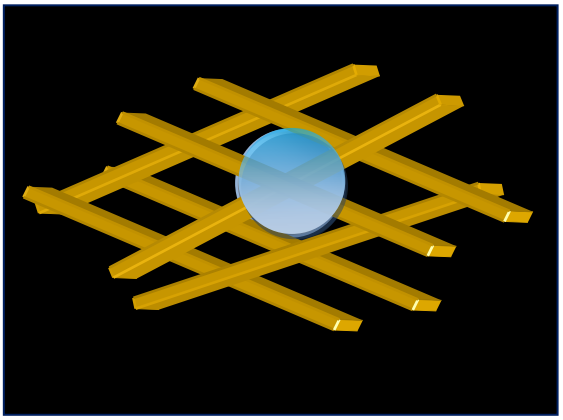

Figure S3. Schematic illustration of the water behavior on the as-prepared cross-aligned superhydrophobic TNB/FAS film. Water droplet was suspended by the air trapped inside the 3-D porous and cross-aligned TNB/FAS film.

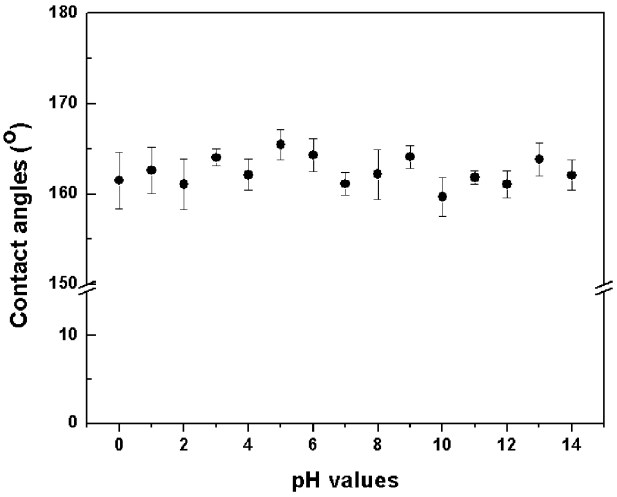

Figure S4. Relationship between pH values and water contact angles of the TNB/FAS films deposited for 5 min.

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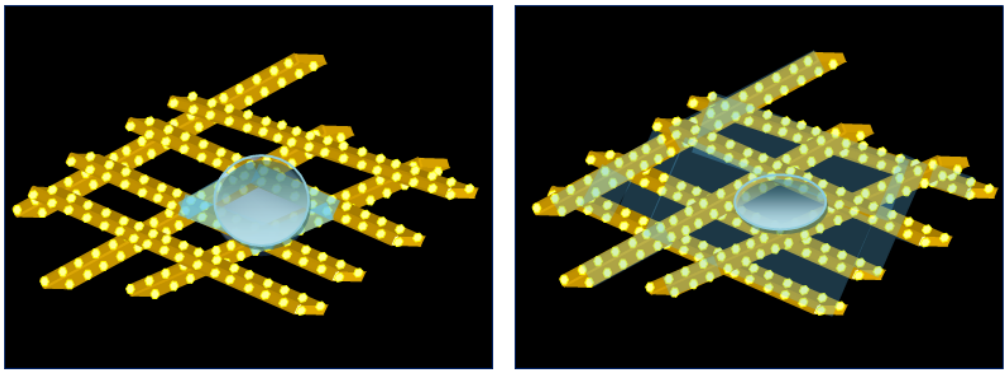

Figure S5. Schematic illustration of the ultra-fast water spreading on the micor/nano-scale porous superhydrophilic TiO_2(B) film. The 3-D cross-aligned TiO_2(B) network and micro- and nanoscale pores result in great capillary effect to quick water invasion.