

Superhydrophobic surface formation and modulation in a biphenyltetracarboxylic dianhydride derivative self-assembly system via alkyl chain lengths

Xinhua cao,^{a*} Aiping gao,^a Haiting Lv,^a Haichuang Lan^b Qiuli Cheng^a and Na Zhao^a

^aCollege of Chemistry and Chemical Engineering, Xinyang Normal University, Xinyang 464000, China. E-mail: caoxhchem@163.com; Tel: +86-376-6393906

^bDepartment of Chemistry, Fudan University, Shanghai 200433, China

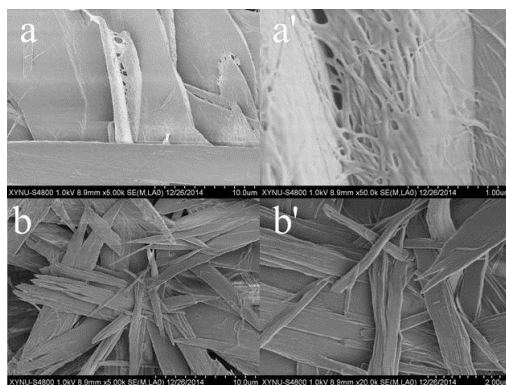


Figure S1. SEM images of the xerogels C6 at room temperature (25 °C); (a) and (a') for xerogel from DMSO; (b) and (b') for xerogel from acetone. The concentrations of the gels are 25 and 12.5 mg mL⁻¹, scale bar for a, a', b and b' are 10.0, 1.0, 10.0 and 2.0 μm, respectively.

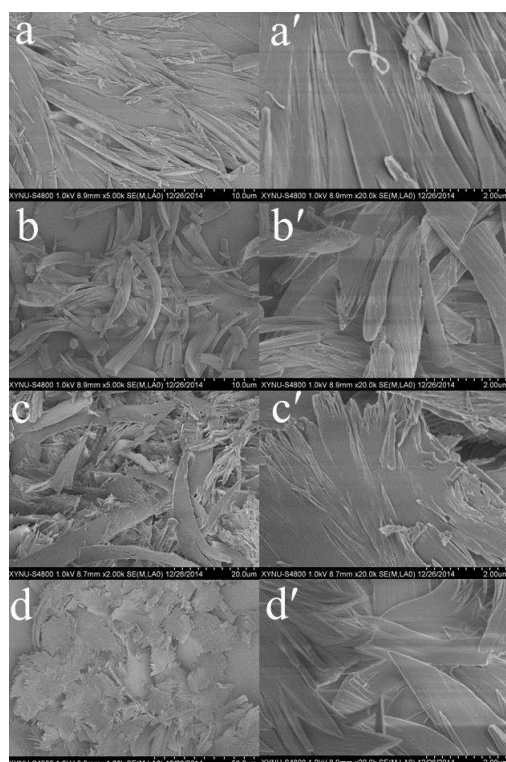


Figure S2. SEM images of the xerogels C12 at room temperature (25 °C); (a) and (a') for xerogel from methanol; (b) and (b') for xerogel from ethyl acetate; (c) and (c') for xerogel from ethanol; (d) and (d') for xerogel from DMSO. The concentrations of the gels are 25, 25, 25 and 12.5 mg mL⁻¹, scale bar for a, a', b, b', c, c', d and d' are 10.0, 2.0, 10.0, 2.0, 20.0, 2.0, 50.0 and 2.0 μm, respectively.

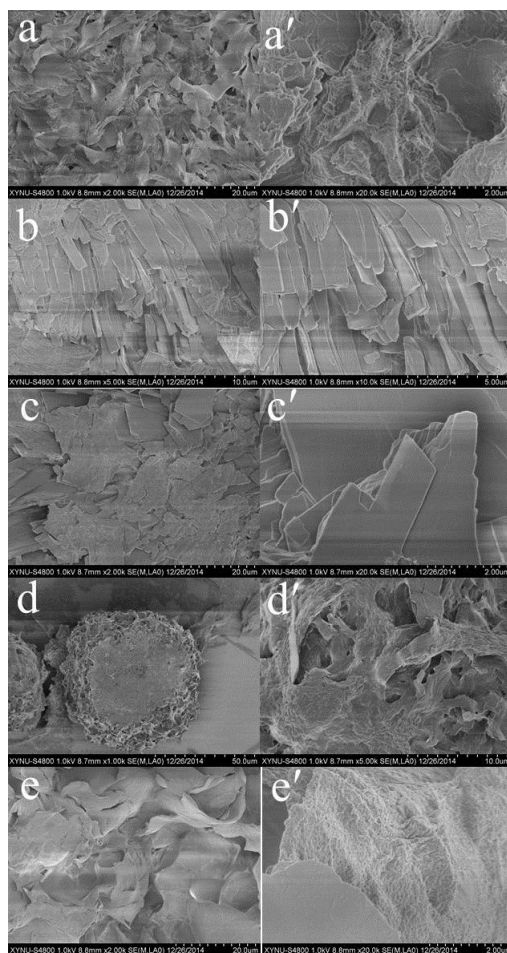


Figure S3. SEM images of the xerogels **C18** at room temperature (25 °C); (a) and (a') for xerogel from acetonitrile; (b) and (b') for xerogel from 1,4-dioxane; (c) and (c') for xerogel from hexane; (d) and (d') for xerogel from ethyl acetate; (e) and (e') for xerogel from ethanol. The concentrations of the gels are 25, 25, 5, 25 and 25 mg mL⁻¹, scale bar for a, a', b, b', c, c', d, d', e and e' are 20.0, 2.0, 10.0, 5.0, 20.0, 2.0, 50.0, 10.0, 20.0 and 2.0 μm, respectively.

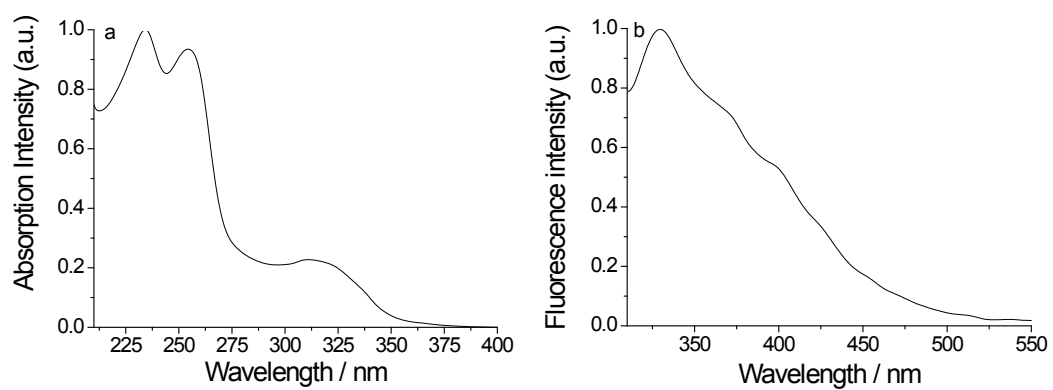


Figure S4. The absorption and emission spectra for compound **C4** in petroleum ether solution with the concentration of 10⁻⁵ mol L⁻¹. The UV-vis absorption and fluorescence emission intensity was all normalized.

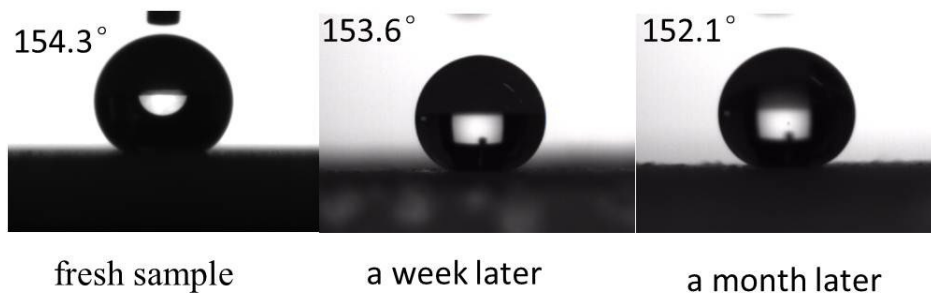


Figure S5. Water contact angle of the film coating with xerogel C18 from petroleum ether.

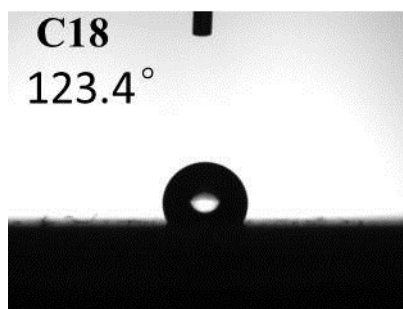


Figure S6. Water contact angle of the film coating with xerogel C18 from petroleum ether.

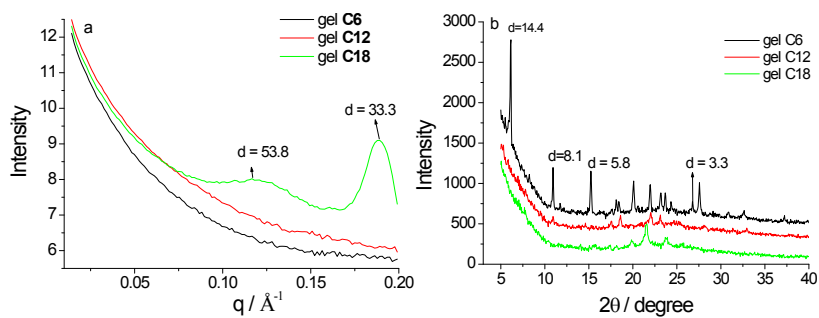


Figure S7. (a) SAXS and (b) wide-angle X-ray scattering pattern of the xerogel of C6, C12 and C18 from petroleum ether.