Supporting Information

Growth of Preferential Orientation of MIL-53(Al) Film as Nano-Assembler

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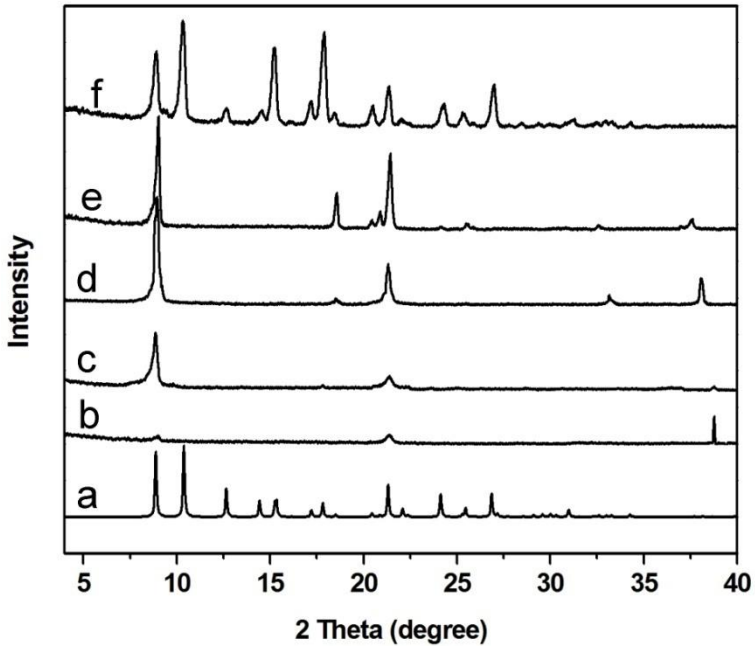

Figure S1 X-ray diffraction patterns of (a) as-synthesized bulk powder MIL-53(Al), and MIL-53(Al) films with the molar compositions of the reaction solution of $AlCl_3 \cdot 6H_2O$:*x*H_2BDC:*25*H_2O: (b) $x = 0.5$, (c) $x = 2.5$, (d) $x = 5$, (e) $x = 7.5$ and (f) $x = 10$ heating for 4 h at 200 °C.

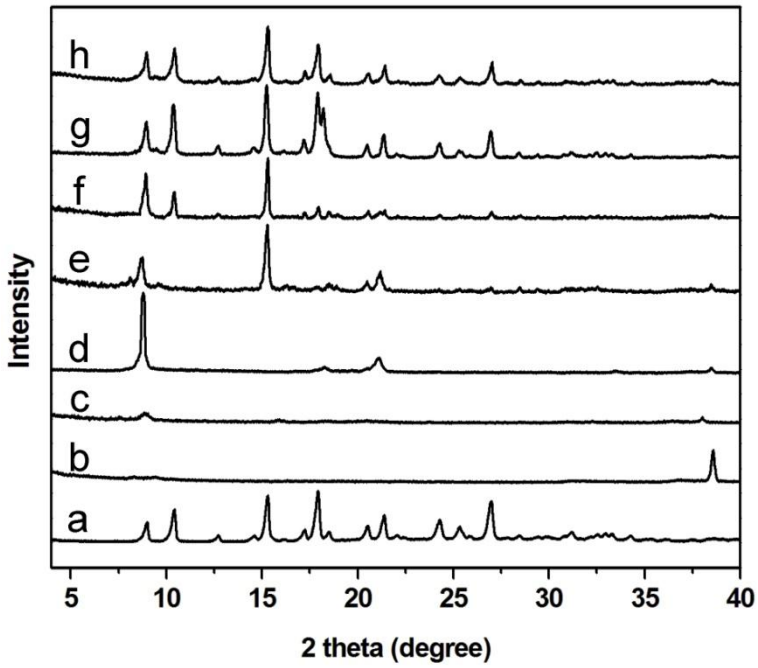

Figure S2 X-ray diffraction patterns of (a) as-synthesized bulk powder MIL-53(Al), and MIL-53(Al) films with the molar compositions of the reaction solution of $AlCl_3 \cdot 6H_2O$:5H_2BDC:25H_2O after hydrothermal treatment at 200°C for (b) 1 h, (c) 2 h, (d) 4 h, (e) 8 h, (f) 12 h, (g) 24 h and (h) 48 h.

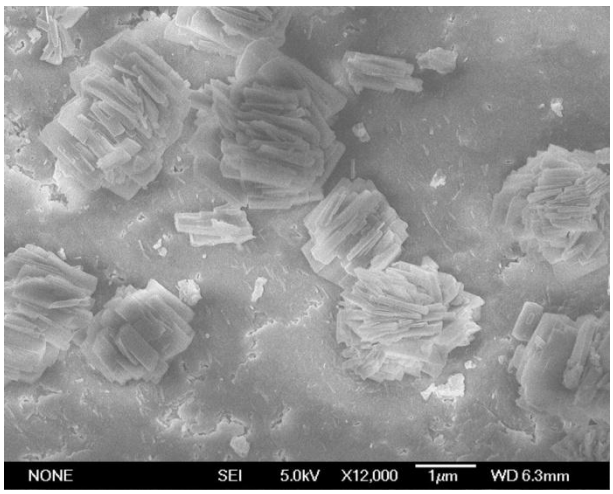

Figure S3 SEM image of the MIL-53(Al) film formed on unactivated aluminium wafer with the molar composition of the reaction solution of $AlCl_3 \cdot 6H_2O$:*5*H_2BDC:*25*H_2O after hydrothermal treatment at 200°C for 4 h.

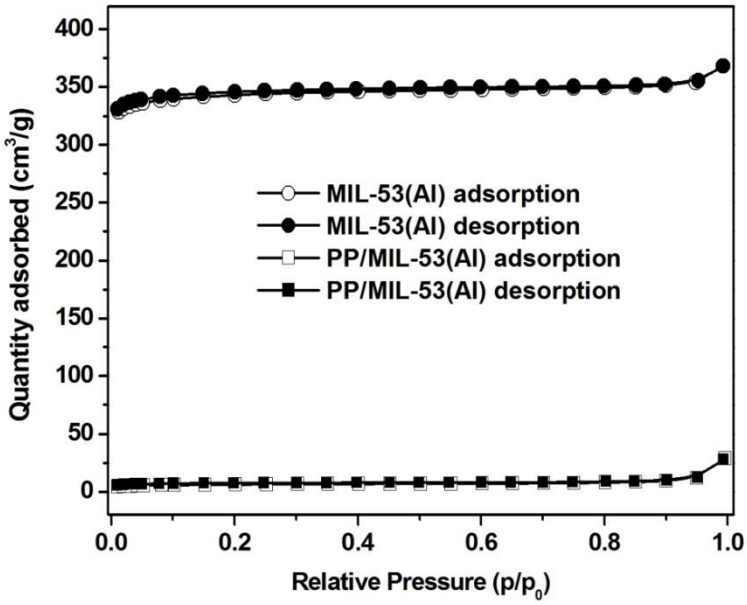

Figure S4 Nitrogen absorption-desorption isotherms for MIL-53(Al) (top) and PP/MIL-53(Al) (bottom) at 77 K.