## **Supporting Information**

## Pressure-assisted synthesis of HKUST-1 thin film on polymer hollow fiber at room temperature toward gas separation

Yiyin Mao,<sup>a</sup> Junwei Li,<sup>a</sup> Wei Cao,<sup>a</sup> Yulong Ying,<sup>a</sup> Luwei Sun,<sup>a</sup> Xinsheng Peng<sup>a,b\*</sup>

<sup>a</sup>State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering,

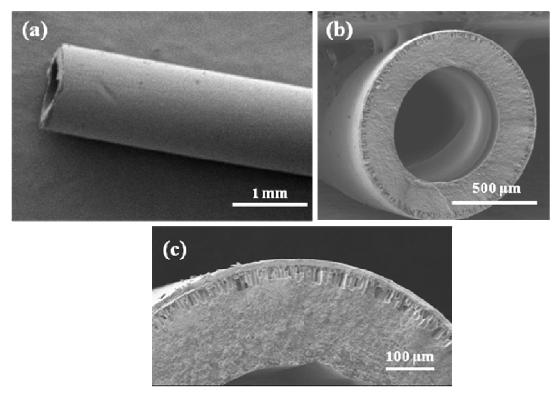
Zhejiang University, Hangzhou, 310027, P. R. China.

<sup>b</sup> Cyrus Tang Center for Sensor Materials and Application, Department of Materials Science and

Engineering, Zhejiang University, Hangzhou, 310027, P. R. China.

## 1. Low-magnification view SEM images of the HKUST-1 film on the surface of the PVDF hollow fiber

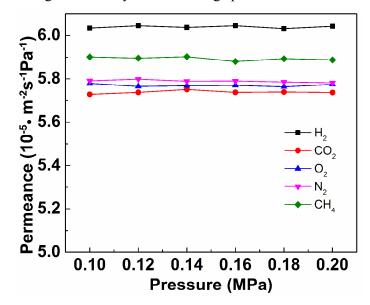
Figure S1 shows low-magnification view SEM images of membrane as shown in Figure 2a-c. Figure S2a-d indicate that the HKUST-1 film completely cover the surface of the PVDF hollow fiber support.



**Figure S1.** Low-magnification SEM images of (a) surface,(b)-(d) cross section of HKUST-1coated PVDF hollow fiber as shown in Figure 1a-c.

## 2. Gas separation performance of bare PVDF hollow fiber

Figure S2 shows the single gas permeance through the bare PVDF hollow fibers which do not have obvious gas selectivity due to the large pores.



**Figure S2.** Single gas permeance through the bare PVDF hollow fibers under different pressure. The gas flows *via* outside-in mode.