

# Electronic Supporting Information

## Separation of CH<sub>4</sub>/N<sub>2</sub> mixtures in metal-organic frameworks with 1D micro-channels

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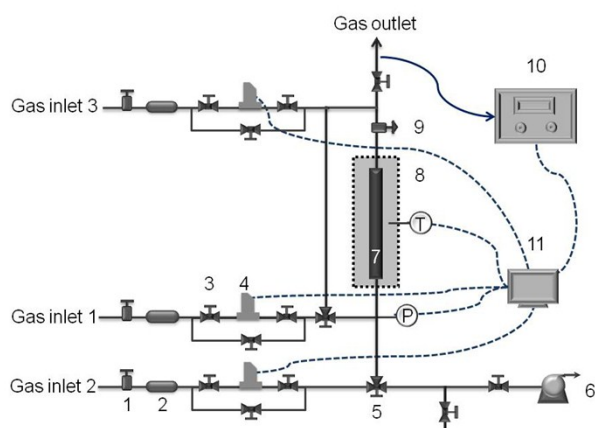
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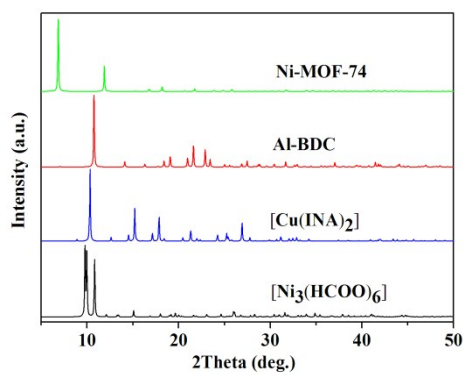
**Table S1** Column specifications and absorbent characteristics

Sample	loaded amount g	Bulk density / g·cm <sup>-3</sup>	Particle size
[Ni <sub>3</sub> (HCOO) <sub>6</sub> ]	2.53	0.80	60-80 mesh
[Cu(INA) <sub>2</sub> ]	2.45	0.77	60-80 mesh
Al-BDC	1.75	0.55	60-80 mesh
Ni-MOF-74	2.24	0.71	60-80 mesh



1 pressure reducing regulator; 2 gas purifier; 3 two-way valve; 4 flowmeter; 5 three-way valve; 6 vacuum pump; 7 adsorbent bed; 8 thermostatic chamber; 9 back pressure regulator; 10 mass spectrometer; 11 computer.

**Fig. S1** Schematic diagram of apparatus for break-through measurements of mixed gas adsorption.



**Fig. S2** Simulated PXRD patterns of selected samples.