

Supplementary Information

Figure S1 Permeance and selectivity evolution of ZIF-7 membrane under thermal activation.

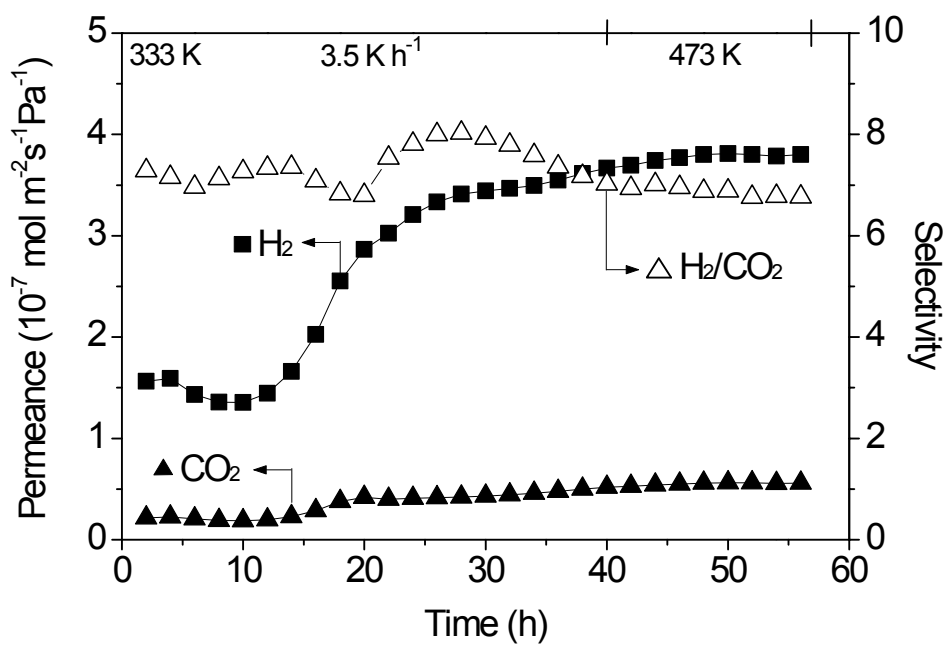


Table S1 Gas permeance and activation energy of permeation through the ZIF-7 membrane evaluated using single gas (top) and equimolar mixed gas feed (bottom).

	Gas	Permeance (10^{-7} mol m ⁻² s ⁻¹ Pa ⁻¹)				Activation energy (kJ mol ⁻¹ K ⁻¹)
		423 K	473 K	523 K	573 K	
Single gas permeance test	H ₂	3.2	3.4	3.7	4.0	1.3
	CO	0.4	0.4	0.4	0.4	0.8
	CH ₄	0.4	0.4	0.4	0.4	0.6
	CO ₂	0.5	0.5	0.4	0.4	-0.8
Mixed gas permeance test (equimolar)	H ₂	2.8	3.0	3.3	3.6	1.5
	CO	0.4	0.4	0.4	0.5	0.9
	CH ₄	0.4	0.4	0.4	0.4	0.9
	CO ₂	0.5	0.5	0.5	0.5	-0.5