Supplementary Data File

Adsorption of Carbon Dioxide, Methane and Nitrogen Gases onto ZIF Compounds with Zinc, Cobalt and Zinc/Cobalt Metal Centers

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S1. Regression of mass transfer coefficients

Table S1 summarizes the Regression of mass transfer coefficients for the adsorption of nitrogen, methane and carbon dioxide gases onto different adsorbents of ZIFs; ZIF, Co-ZIF-8, Zn/ Co-ZIF-8.

Table S1. Regression and the coefficients of determination (R^2) for the overall mass transfer coefficient ($10^4 \times k$, s^{-1}) against ($1/P$, MPa^{-1}) for adsorption of methane, nitrogen and carbon dioxide gases on ZIF-8, Co-ZIF-8 and Zn/Co-ZIF-8 adsorbents at different temperatures.

Sample	*T* (°C)	Nitrogen	Methane	Carbon dioxide
ZIF-8	25	5.51/*P*-4.41 (R^2= 0.95)	8.96/*P*-0.42 (R^2=0.90)	0.40/*P* +0.06 (R^2 = 0.90)
	35	5.90/*P* +5.97 (R^2= 0.93)	10.63/*P*+0.84 (R^2=0.99)	0.45/*P* +0.33 (R^2 = 0.95)
	45	6.16/*P* +6.86 (R^2= 0.97)	12.88/*P* -1.82 (R^2=0.99)	0.47/*P*+ 0.34 (R^2 = 0.98)
	55	7.18/*P* +5.79 (R^2= 0.98)	16.48/*P* -2.94 (R^2=0.99)	0.95/*P*- 0.44 (R^2 = 0.86)
Co-ZIF-8	25	7.95/*P*+125 (R^2=0.93)	5.80/*P* +2.74 (R^2=0.99)	0.55/*P*-0.02 (R^2=0.97)
	35	11.41*P* +127 (R^2=0.97)	8/*P* +0.95 (R^2=0.99)	0.67/*P*-0.04 (R^2=0.99)
	45	18.17/*P*+122 (R^2=0.91)	8.95/*P*-0.11 (R^2=0.99)	0.73/*P*-2.22 (R^2=0.99)
	55	20.22/*P* +130 (R^2=0.93)	10.33/*P* +0.54 (R^2=0.99)	0.79/*P* -0.39 (R^2=0.99)
Zn/Co-ZIF-8	25	68.88/*P* -1.70 (R^2=0.99)	2.66/*P* +5.51 (R^2=0.99)	3.55/*P* -1.58 (R^2=0.99)
	35	67.30/*P* -0.30 (R^2=0.99)	2.57/*P* +8.36 (R^2=0.90)	3.71/*P* -1.53 (R^2=0.98)
	45	73.99/*P* -1.56 (R^2=0.99)	3.04/*P*+8.60 (R^2=0.90)	3.82/*P* -1.79 (R^2=0.99)
	55	69.56/*P* +0.44 (R^2=0.97)	4.08/*P* +7.96 (R^2=0.98)	3.86/*P* -0.81 (R^2=0.94)