

1 **Effect of various alkaline agents on the structure of nanosized**
2 **HKUST-1 for CO₂ adsorption**

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1 **Table S1.** The size of all the HKUST-1 particles synthesized in the different
 2 conditions was calculated using the Sherrer equation.

Sample	Size (nm)
HKUST-1-N1	58.3
HKUST-1-N2	51.9
HKUST-1-N3	41.7
HKUST-1-N4	49.3
HKUST-1-N5	51.8
HKUST-1-N6	70
HKUST-1-N7	-
HKUST-1-N8	-
HKUST-1-T1	80.9
HKUST-1-T1.5	60
HKUST-1-T2	78.6
HKUST-1-T3	68.5
HKUST-1-T4	-
HKUST-1-C0	47.5
HKUST-1-C1	42.4
HKUST-1-C1.5	42.1
HKUST-1-C3	57.4
HKUST-1-C4	57

3 **Table S2.** pH value of precursors fo HKUST-1 with different amounts of NaAc and
 4 TEA in the Cu(NO₃)₂ system.

Equiv of additives	pH
0 equiv	2.35
1 equiv NaAc	2.37
2 equiv NaAc	2.65
3 equiv NaAc	3.92
4 equiv NaAc	5.58
5 equiv NaAc	6.01
6 equiv NaAc	6.28
7 equiv NaAc	6.45
8 equiv NaAc	6.55
1 equiv TEA	2.35
2 equiv TEA	2.62
3 equiv TEA	3.58
4 equiv TEA	9.87

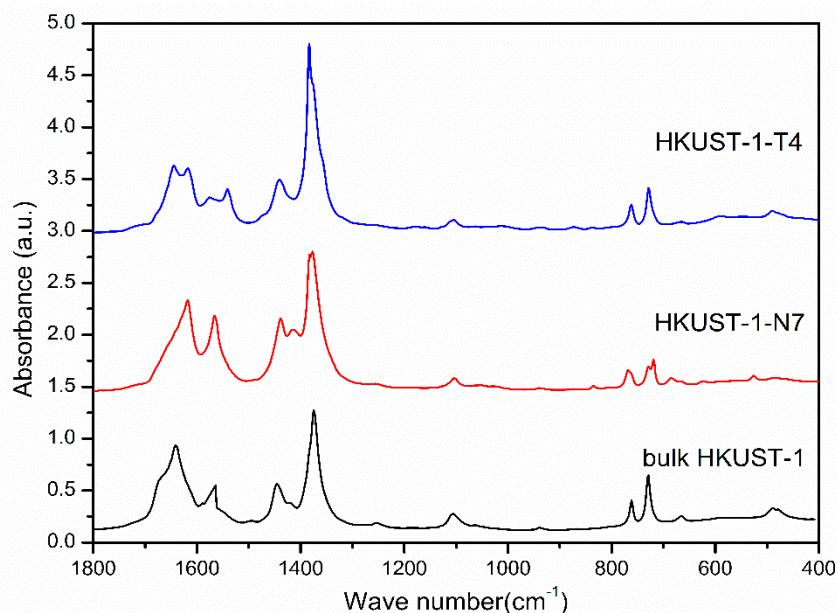
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Fig. S1 FTIR spectra of HKUST-1-T4, HKUST-1-N7 and bulk HKUST-1.

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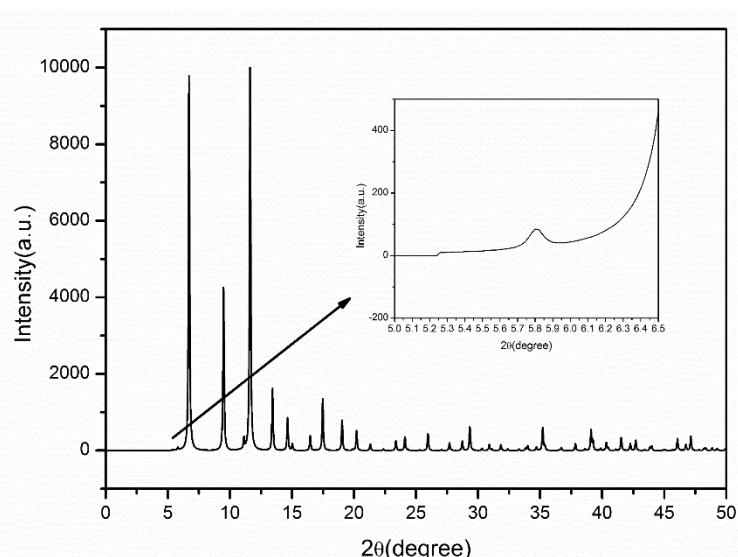
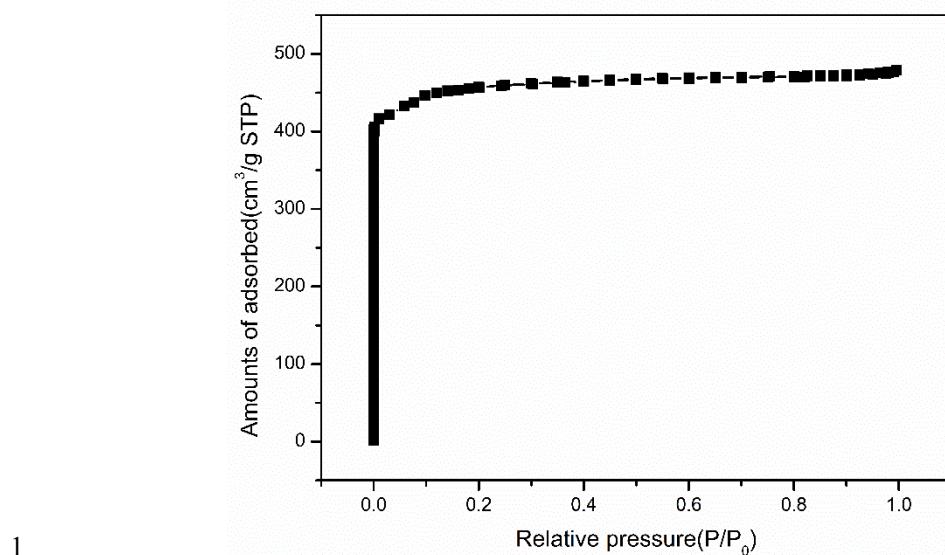


Fig. S2 XRD pattern of simulated HKUST-1 (the embedded diagram is the enlargement of simulated pattern in the 2θ range of 5-6.5)



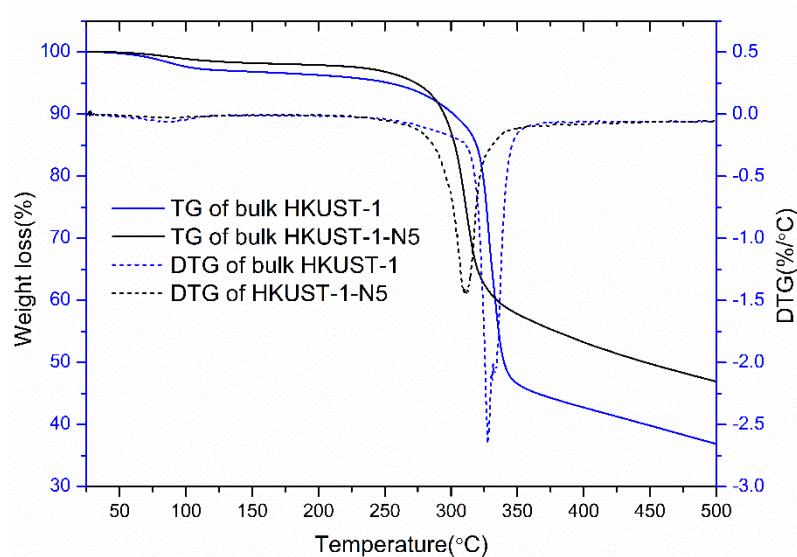
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2 Fig. S3 N₂ adsorption isotherm for bulk HKUST-1.

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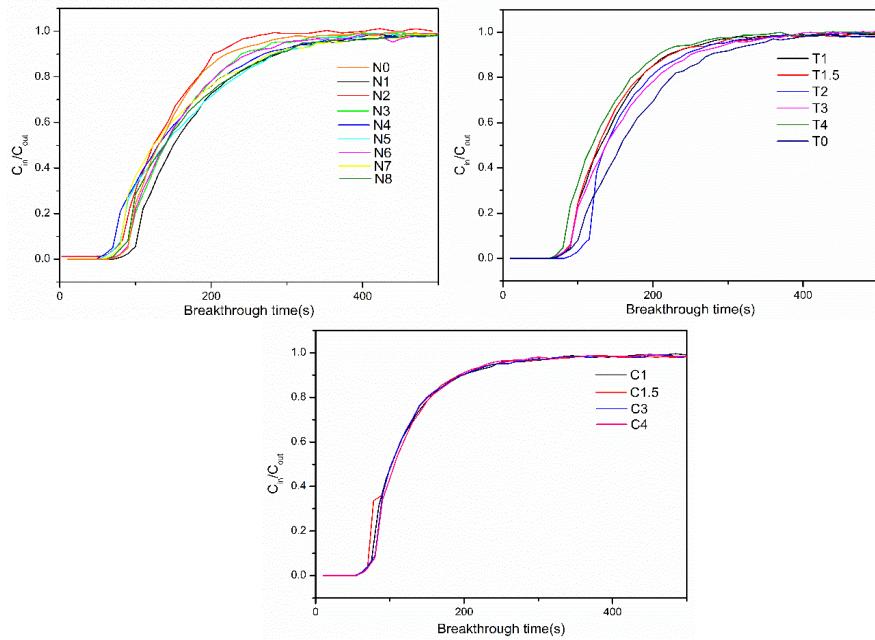
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7 **Fig. S4** TG/DTG curves of nanosized HKUST-1 (HKUST-1-T1.5) and microsized
8 HKUST-1.
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Fig. S5. Breakthrough curves of all the HKUST-1 samples.