## Synthesis of nano-sized LTL zeolite by adding Ba precursor with superior n-octane aromatization performance

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Fig.S1. TEM image of Sample BaKL-3.



Fig.S2. Particle size distributions of different samples.



Fig.S3. XRD patterns of LTL-type zeolites with different Ba precursors.





(a) KL-Blank, (b) KL- Ba(NO<sub>3</sub>)<sub>2</sub>, (c) KL-BaCl<sub>2</sub> and (d) KL- Ba(OH)<sub>2</sub>.



**Fig.S5.** XPS pattern of Ba3d for  $Ba(NO_3)_2$ .

| Cat.      | Precursor   | Pt content<br>(wt.%) <sup>a</sup> |
|-----------|---|-----------------------------------|
| Pt/BaKL-0 | Pt(NH <sub>3</sub> ) <sub>4</sub> Cl <sub>2</sub> | 0.49                              |
| Pt/BaKL-1 | Pt(NH <sub>3</sub> ) <sub>4</sub> Cl <sub>2</sub> | 0.48                              |
| Pt/BaKL-2 | Pt(NH <sub>3</sub> ) <sub>4</sub> Cl <sub>2</sub> | 0.48                              |
| Pt/BaKL-3 | Pt(NH <sub>3</sub> ) <sub>4</sub> Cl <sub>2</sub> | 0.49                              |

Table S1Characteristic of Pt/BaKL catalysts.

<sup>a</sup> Determined by ICP-AES.