

Supporting Information

**Solid state transformation of TMA-magadiite into zeolite omega  
and the highly insights of the crystallization process**

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**Fig. S1**

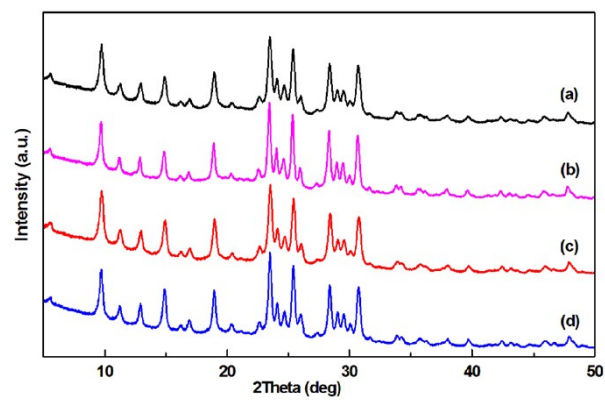


Fig. S1 XRD patterns of samples obtained by recycling waste mother liquid: (a) sample-1, (b) sample-2, (c) sample-3 and (d) sample-4. (No. 1-4, Table 2).

**Fig. S2**

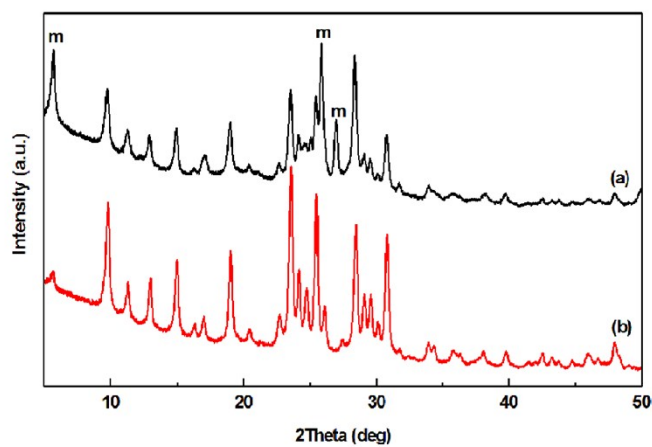


Fig. S2 XRD patterns of products obtained with different precursors which are synthesized with different stirring time: (a) 12 h and (b) 48 h (No. 7-8, Table 1). Peaks: m=magadiite, no mark=zeolite omega.

**Fig. S3**

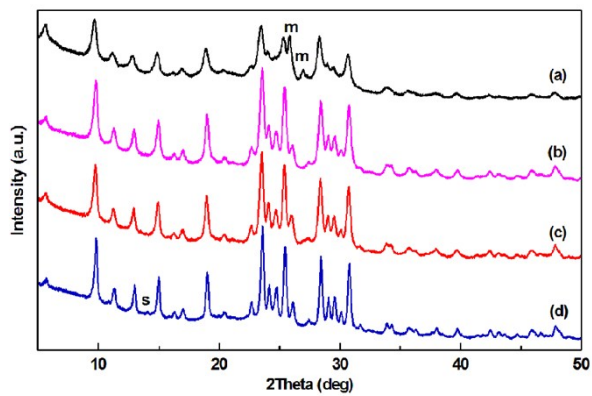


Fig. S3 XRD patterns of products obtained at various temperature: (a)70 °C, (b) 80 °C ,  
(c) 90 °C and (d) 110 °C for 12 h.(No. 9-12, Table 1).Peaks: m=magadiite, s=SOD, no  
mark=zeolite omega.

**Fig. S4**

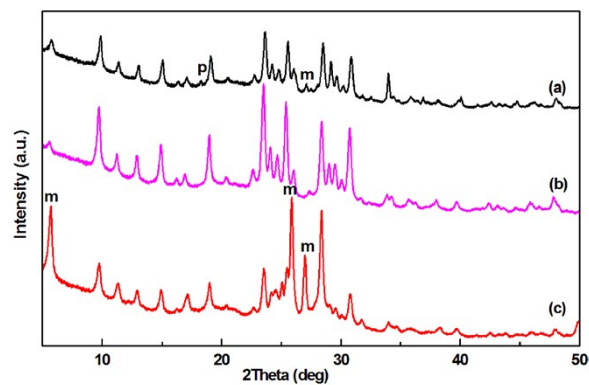


Fig. S4 XRD patterns of products obtained from different precursors which are synthesized with various SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> ratios: (a) 2, (b) 5 and (c) 10 for 12 h. (No. 13-15, Table 1). Peaks: m=magadiite, p=Na-P, no mark=zeolite omega.

**Fig. S5**

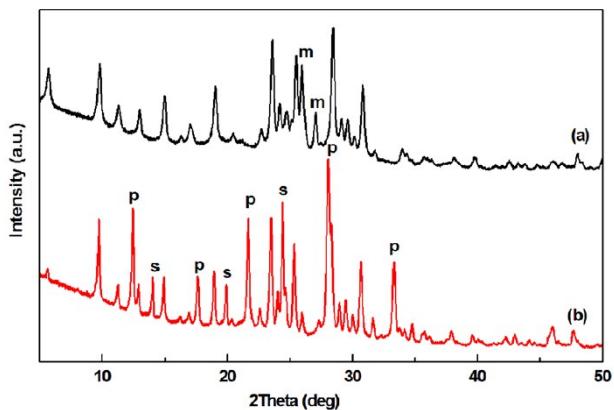


Fig. S5 XRD patterns of products obtained from different precursors which are synthesized with various Na<sub>2</sub>O/SiO<sub>2</sub> ratios: (a) 3.6 and (b) 6 for 12 h. (No. 16-17, Table 1). Peaks: m=magadiite, s=SOD, p=Na-P, no mark=zeolite omega.

**Fig. S6**

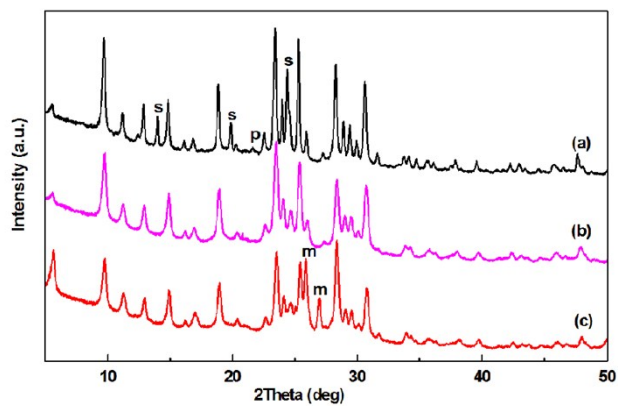


Fig. S6 XRD patterns of products obtained from different precursors which are synthesized with various  $\text{H}_2\text{O}/\text{Al}_2\text{O}_3$  ratios: (a) 140, (b) 160 and (c) 200 for 12 h (No. 18-20, Table 1). Peaks: m=magadiite, s=SOD, p=Na-P, no mark=zeolite omega.

**Fig. S7**

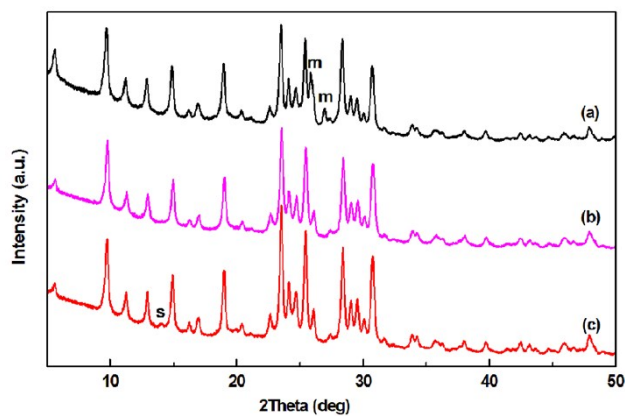


Fig. S7 XRD patterns of products obtained from different precursors which are synthesized with various TAMBr/Al<sub>2</sub>O<sub>3</sub> ratios: (a) 0.72, (b) 1.44 and (c) 1.68 for 12 h (No. 21-23, Table 1). Peaks: m=magadiite, s=SOD, no mark=zeolite omega.