

Table S1. The source of reagents used in this work ^a

Reagent	Manufacturer	Content (wt.%)
Tetraethylorthosilicate (TEOS)	Tianjin Kermel Chemical Reagents Company	≥ 98.0
Tetrapropylammonium hydroxide (TPAOH) solution	Shanghai Bangcheng Chemical Reagents Company	25
Al(NO ₃) ₃ ·9H ₂ O	Beijing Chemical Reagents Company	≥ 99.0
Tetrabutyl orthotitanate (TBOT)	Sinopharm Chemical Reagent Co., Ltd.	≥ 98
Tetramethylguanidine (TMG)	Sass Chemical Reagents Company	98
Dodecylguanidine hydrochloride (DGH)	Shaoxing Shangyu Simo Institute of Organic Chemistry	≥ 35
Polyhexamethylene biguanidine hydrochloride (PHMB)	Shanghai Dejian Chemical Co., Ltd.	20

^a All of the reagents were used without purification.

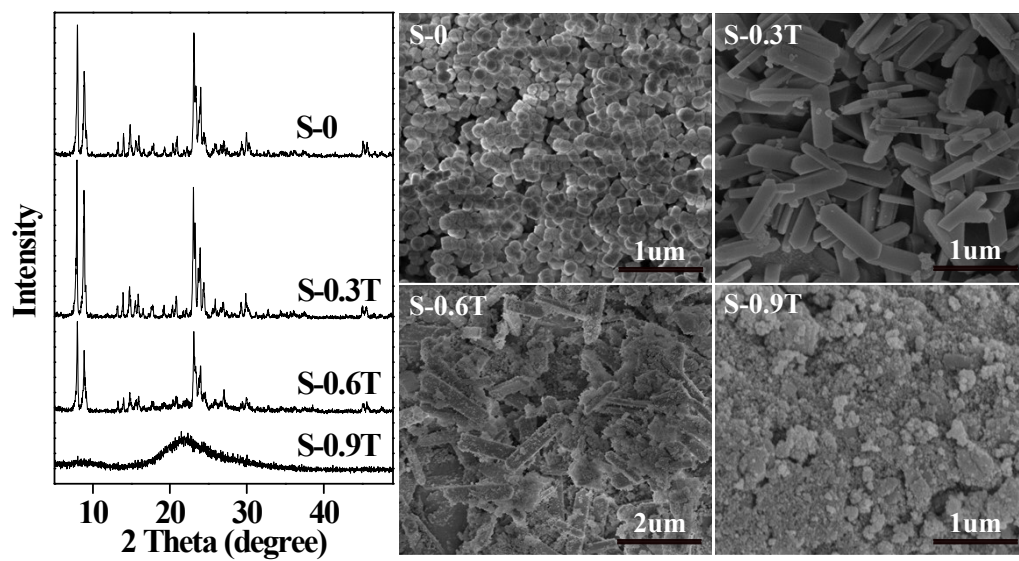


Fig. S1 XRD patterns and SEM images of S-1 samples being synthesized in the presence of different amounts TMG.

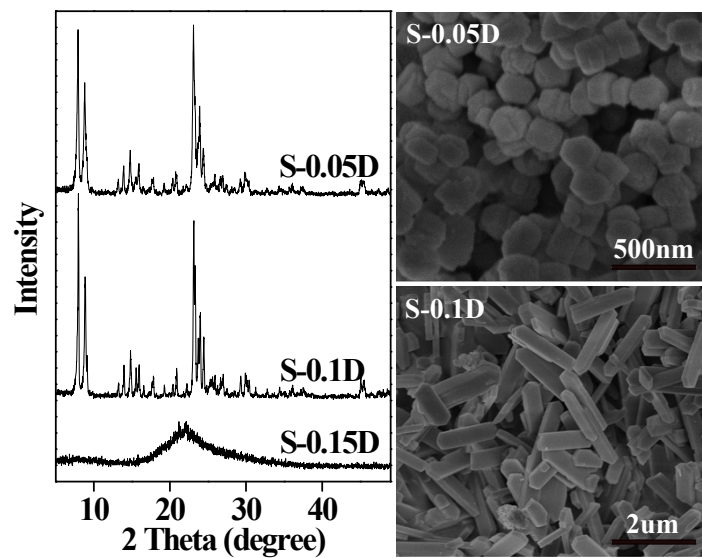


Fig. S2 XRD patterns and SEM images of S-1 samples being synthesized in the presence of different amounts DGH.

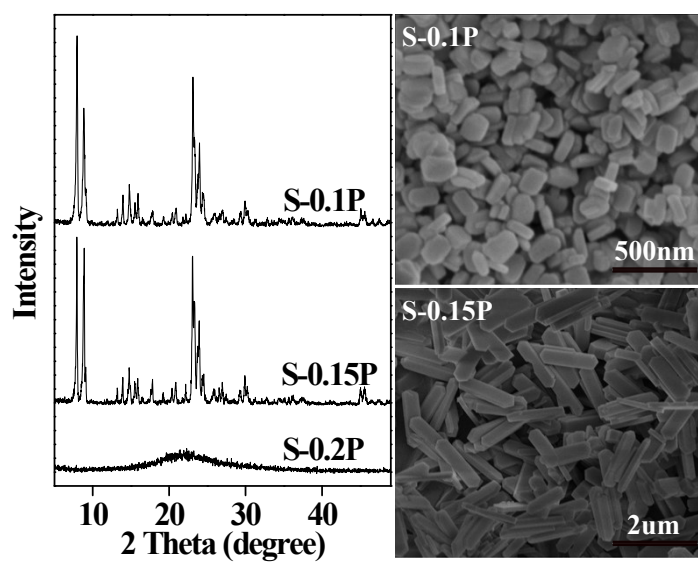


Fig. S3 XRD patterns and SEM images of S-1 samples being synthesized in the presence of different amounts PHMB.

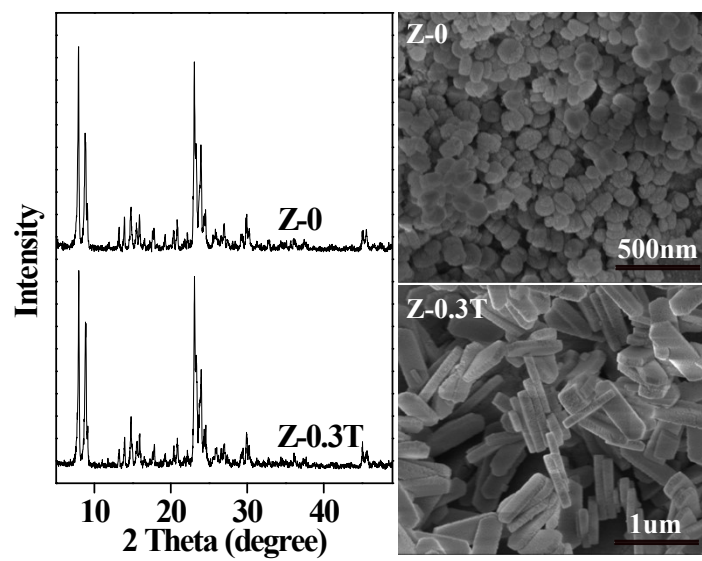


Fig. S4 XRD patterns and SEM images of ZSM-5 samples being synthesized in the presence of different amounts TMG.

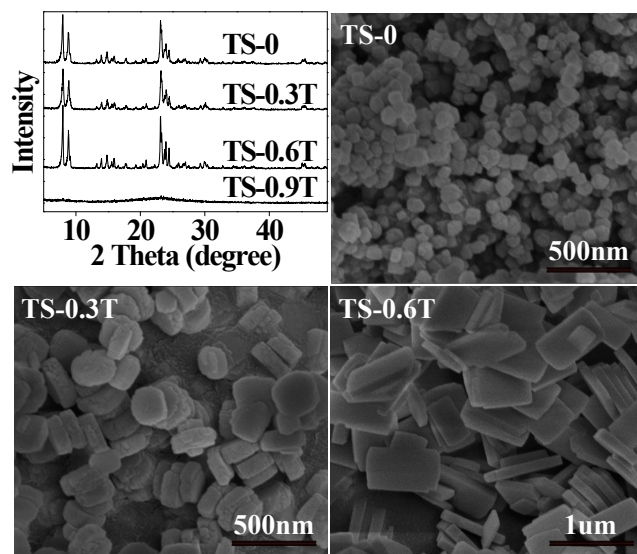


Fig. S5 XRD patterns and SEM images of TS-1 samples being synthesized in the presence of different amounts TMG.