

Supplementary Information

Table S1. The basic structural characteristic of commercial zeolites and synthesized MWW-type materials

Zeolite		Structural code	Dimensionality of pore system	Pore system	Pore size (nm)	Si/Al
Commercial	Beta-25	BEA	3D	12 12	0.66 x 0.67 0.56 x 0.56	25
	USY-15	FAU	3D	12	0.74 x 0.74	15
	USY-40					40
	ZSM-5	MFI	3D	10 10	0.51 x 0.55 0.53 x 0.56	40
Synthesized	MCM-22	MWW	2D	10 10 <i>supercage</i>	0.41 x 0.51 0.40 x 0.55 <i>0.71 x 1.81</i>	> 15
	MCM-49	MWW	2D	10 10 <i>supercage</i>	0.41 x 0.51 0.40 x 0.55 <i>0.71 x 1.81</i>	< 13
	MCM-36	x	2D / pillared	10 <i>semicups</i>	0.41 x 0.51 <i>0.71 x 0.90</i>	> 20
	MCM-56	x	2D / delaminated	10 <i>semicups</i>	0.41 x 0.51 <i>0.71 x 0.90</i>	< 13

Table S2. Si/Al ratio determined by ICP-OES method and shape and size of particles determined from SEM images

Catalysts		Si/Al bulk	Si/Al ICP-OES	Size of particles (μm)	Shape
Commercial	Beta-25	25	26.4	0.3 – 0.5	Round
	USY-15	15	16.0	0.5 – 1.0	Non-regular / rectangular
	USY-40	40	40.5	0.5 – 1.0	Non-regular / rectangular
	ZSM-5	40	43.8	0.2 – 0.4	Non-regular
Synthesized	MCM-22(30)	30	28.0	Thickness = 0.1 Length = 0.6 – 0.8	Thin plate-like shape
	MCM-22(60)	60	42.5	Thickness = 0.1 Length = 0.6 – 0.8	Thin plate-like shape
	MCM-36	x	58.9	Thickness = 0.1 Length = 0.5 – 0.7	Thin plate-like shape
	MCM-56	13	9.6	Thickness = 0.1 Length = 0.3 – 0.5	Thin plate-like shape
	MCM-49	10.6	8.8	Thickness = 0.1 Length = 0.4 – 0.6	Thin plate-like shape
	MWW-EDTA	x	45.7	Thickness = 0.1 Length = 0.6 – 0.8	Thin plate-like shape
	MWW-AFS	x	80.3	n.a.	n.a.
	MWW-NA	x	50.6	Thickness = 0.1 Length = 0.6 – 0.8	Thin plate-like shape

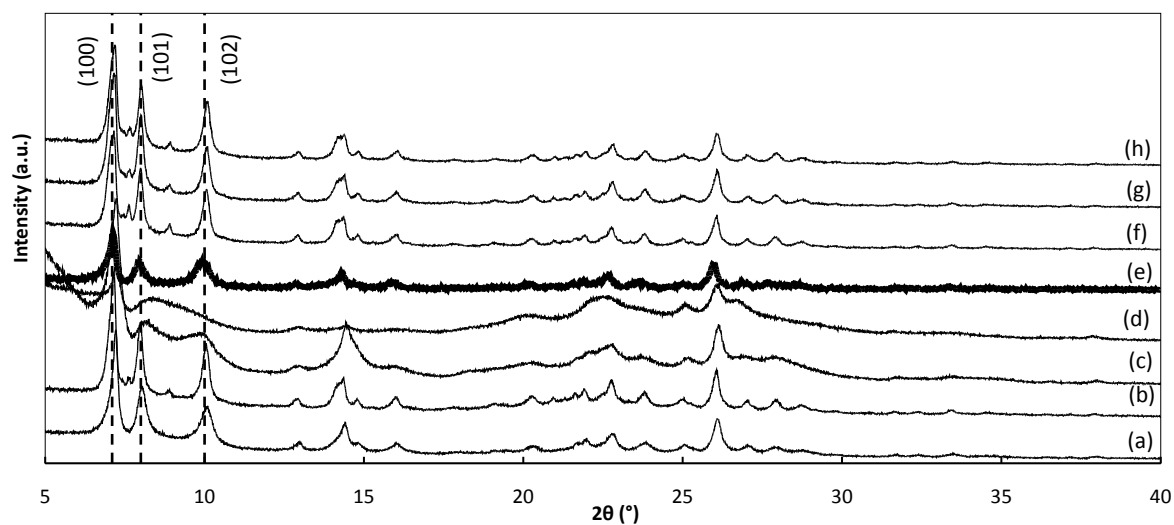


Figure S1. XRD patterns of tested MWW catalysts: (a) MCM-22(30), (b) MCM-22(60), (c) MCM-36, (d) MCM-56, (e) MCM-49, (f) MWW-EDTA, (g) MWW-AFS and (h) MWW-NA.

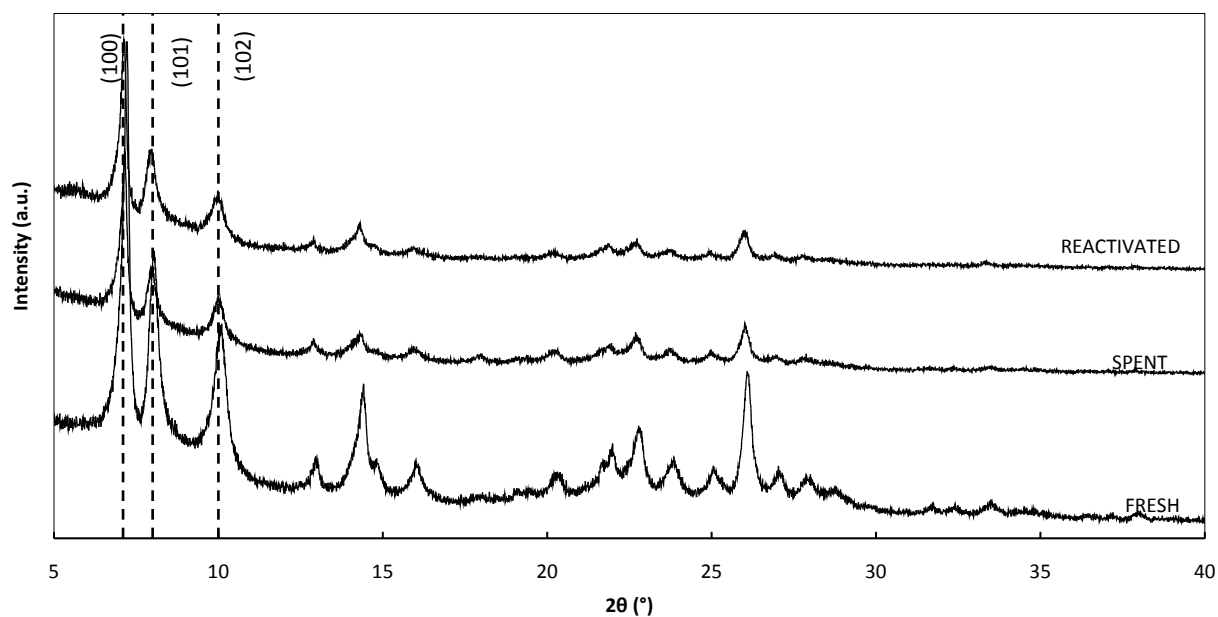


Figure S2. XRD patterns of MCM-22(30) in form as prepared and activated (FRESH), after 2 isomerization reactions (SPENT) and after reactivation of spent catalyst (REACTIVATED).

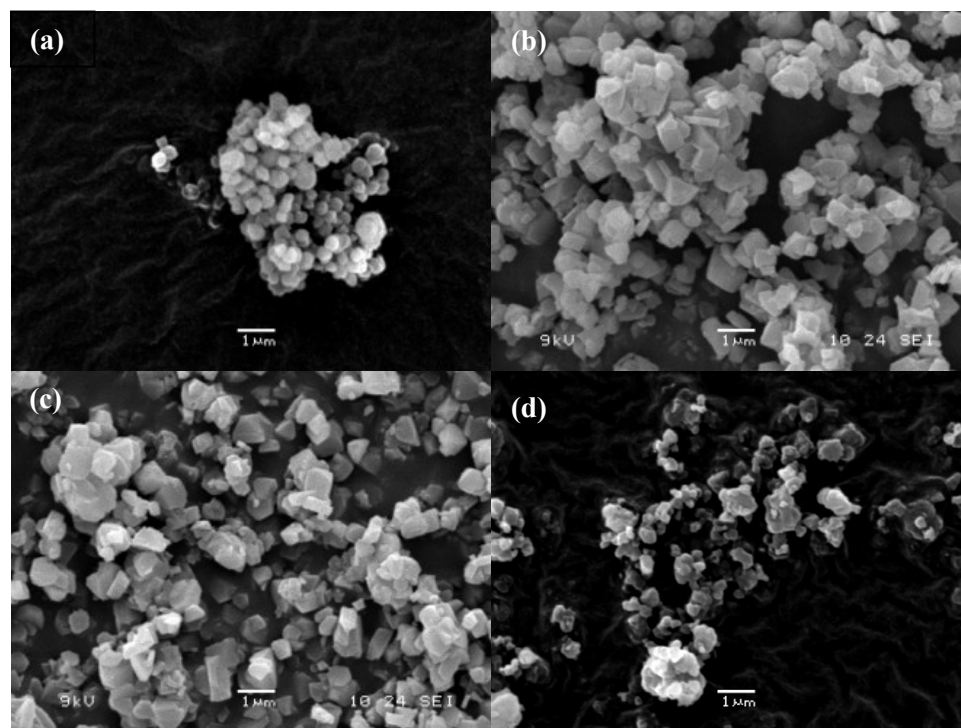
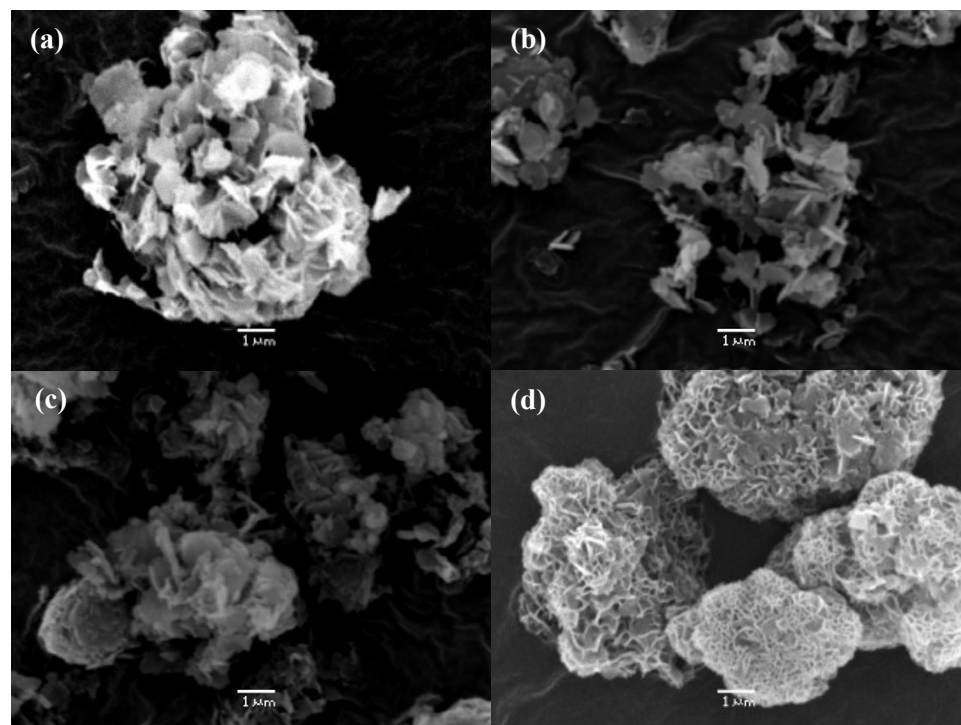


Figure S3. SEM images of commercial zeolites (a) Beta-25, (b) USY-15, (c) USY-40 and (d) ZSM-5.



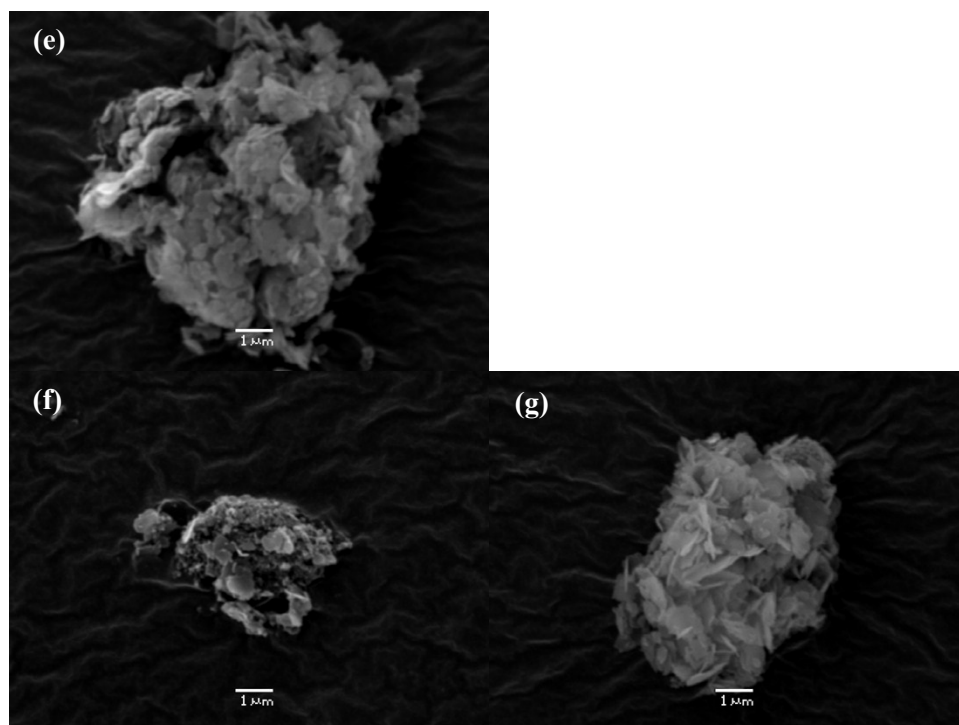


Figure S4. SEM images of synthesized zeolites (a) MCM-22(30), (b) MCM-22(60), (c) MCM-36, (d) MCM-56, (e) MCM-49, (f) MWW-EDTA and (g) MWW-NA.