

Supplementary Information

Facile control of inter-crystalline porosity in the synthesis of size-controlled mesoporous MFI zeolites via in-situ converting silica gel into zeolite nanocrystals

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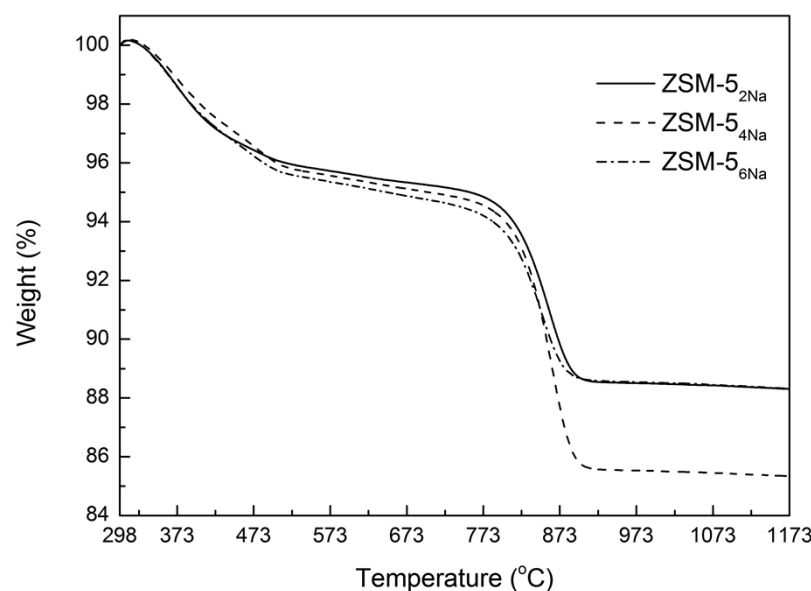


Fig. S1 TG curves of deactivated ZSM-5_{x-Na} (x=2, 4, and 6) samples at the same conversion of approximately 88% in cracking of n-hexane.

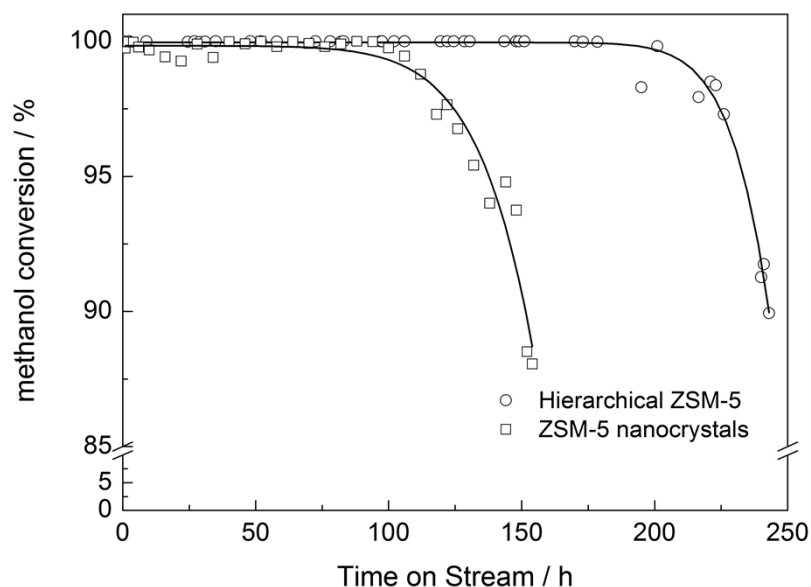


Fig. S2 The lifetime of hierarchical ZSM-5 and ZSM-5 nanocrystals in methanol to propylene reaction at 743 K, 37 kPa methanol, 63 kPa H₂O, WHSV=4.

Table. S1 The selectivity of methanol to propylene reactions over hierarchical ZSM-5 and ZSM-5 nanocrystals at 743 K, 37 kPa methanol, 63 kPa H₂O, WHSV=4.

	Hierarchical ZSM-5	ZSM-5 Nanocrystals
Conversion	100%	100%
Selectivity(%)		
Methane	1.16	1.37
Ethane	0.09	0.11
Propane	0.72	0.8
Ethene	5.95	6.2
Propylene	45.4	44.74
Butylene	25.98	26.31
Butane	1.92	1.94
C5+	18.75	18.44
P/E ratio	7.62	7.21