

The Growth Mode of ZnO on Porous HZSM-5 Substrates by Atomic Layer Deposition and Its Catalytic Property in the Synthesis of Aromatics from Methanol

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SUPPLEMENTARY DATA

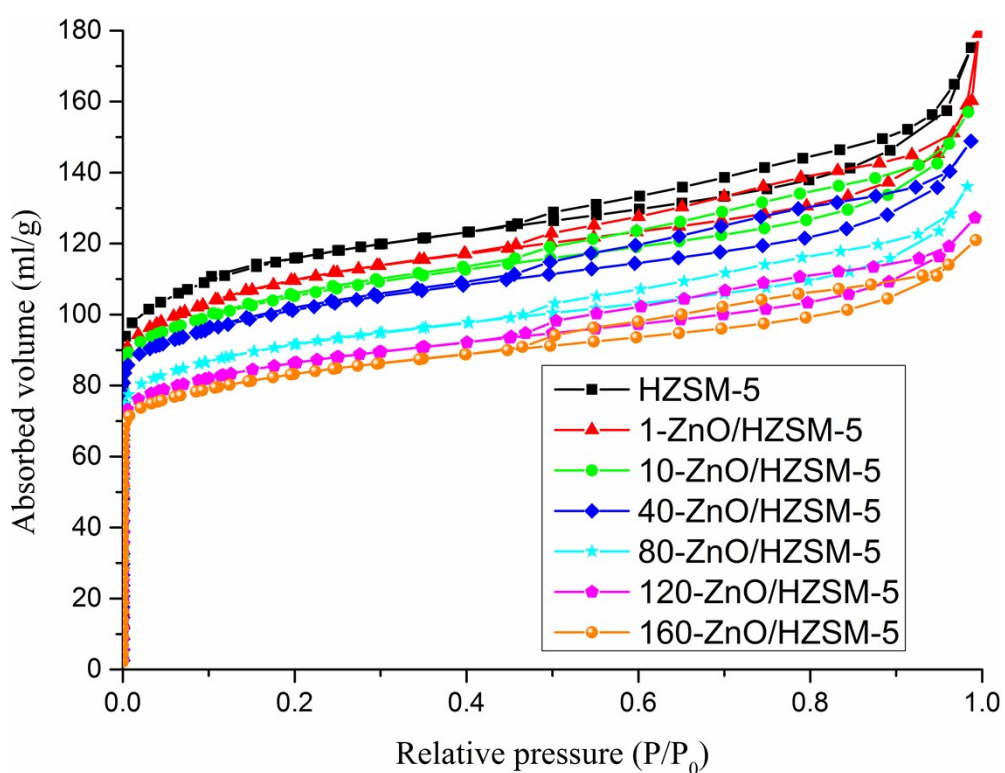


Fig. S1 The N₂ adsorption-desorption isotherms of ZnO modified HZSM-5 catalysts compared with the blank HZSM-5

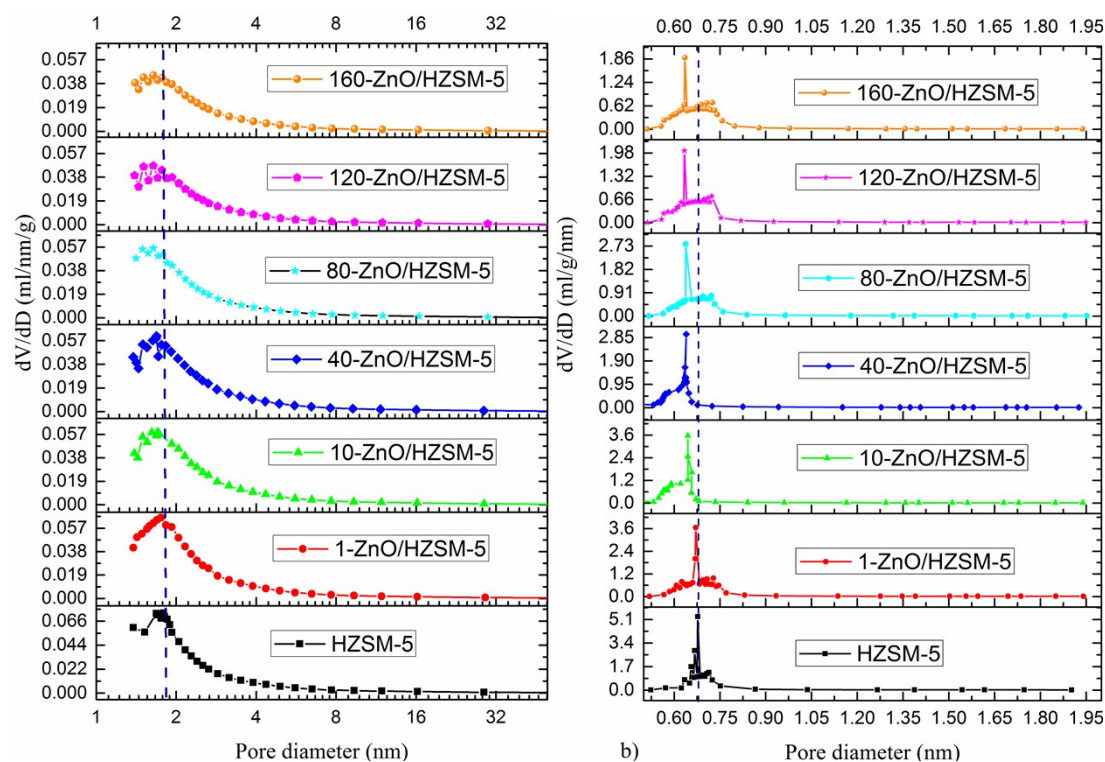


Fig. S2 The pore size distribution of blank HZSM-5 and ZnO ALD modified samples: a) mesopore size distribution which is determined by the BJH analysis of adsorption isotherm data; b) micropore size distribution which is evaluated by the HK method

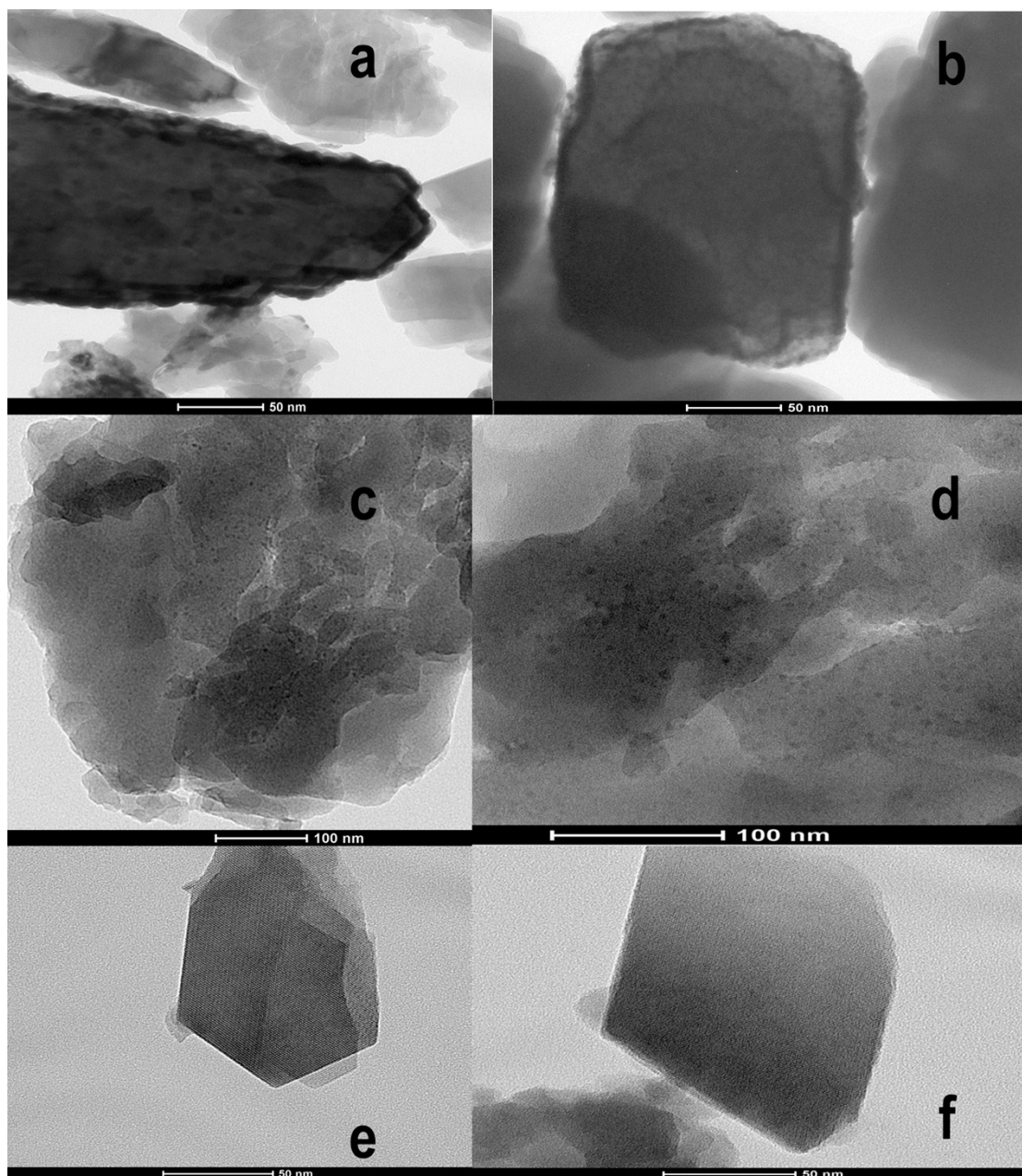


Fig. S3 a) fresh 40-ZnO/HZSM-5 (ALD); b) 40-ZnO/HZSM-5 (ALD) after three reaction-regeneration cycles; c) fresh ZnO/HZSM-5 (IWI); d) ZnO/HZSM-5 (IWI) after three reaction-regeneration cycles; e) fresh Zn/HZSM-5 (IE); f) Zn/HZSM-5 (IE) after three reaction-regeneration cycles

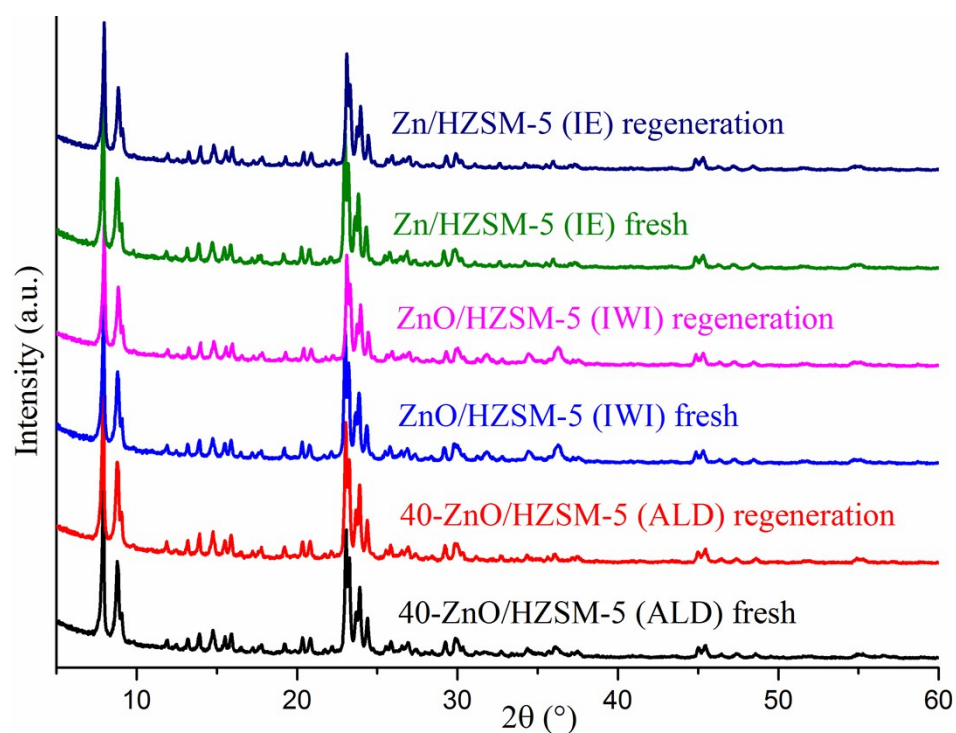


Fig. S4 XRD patterns of fresh and regenerated ZnO/HZSM-5 catalysts

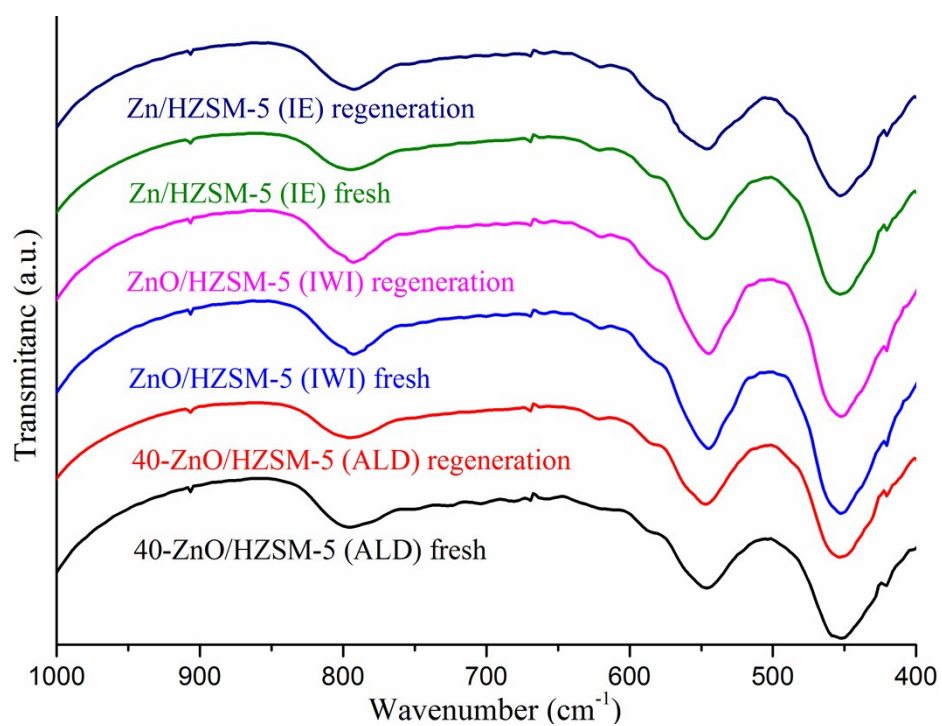


Fig. S5 FT-IR spectra of fresh and regenerated ZnO/HZSM-5 catalysts

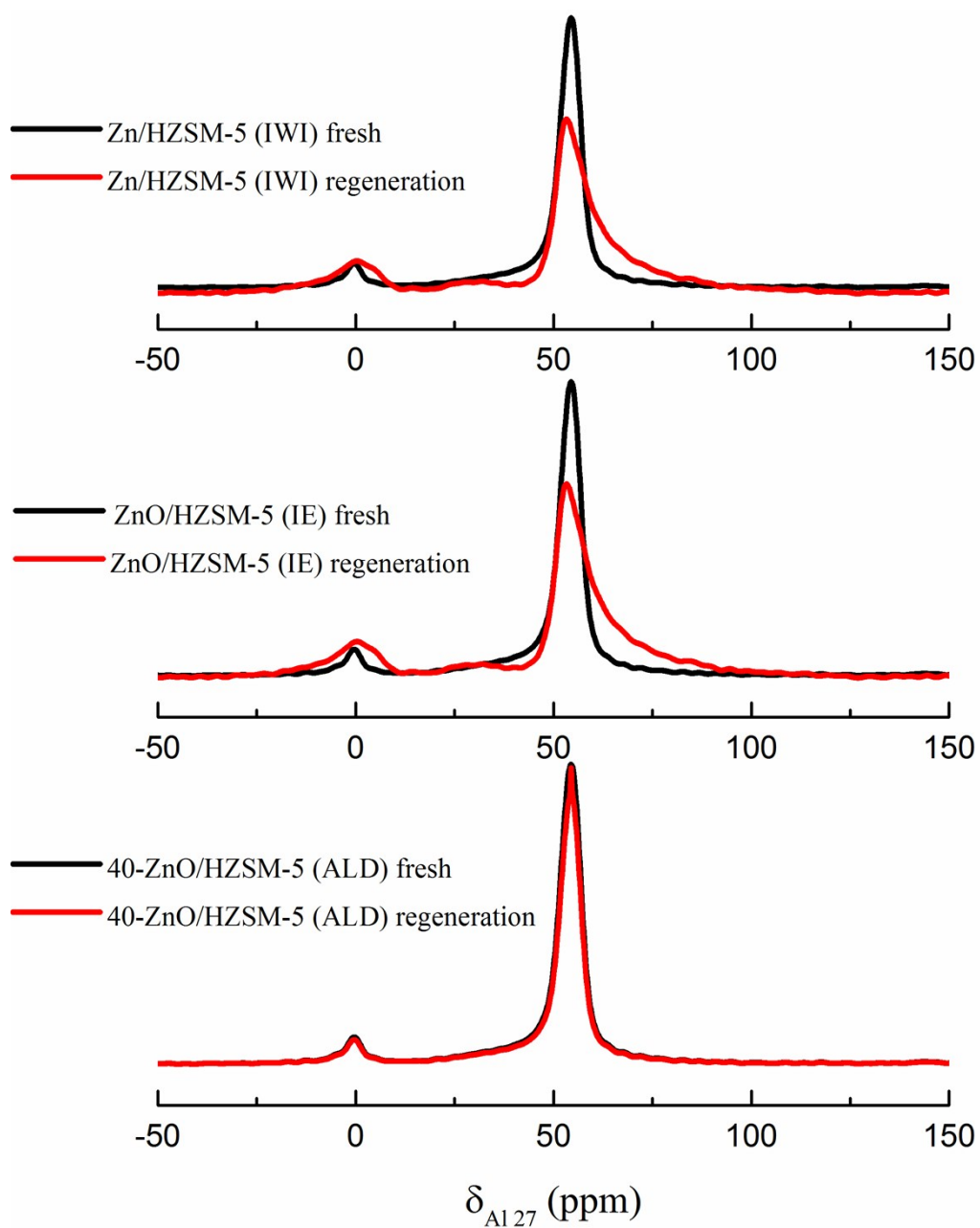


Fig. S6 ^{27}Al NMR spectra of fresh and regenerated ZnO/HZSM-5 catalysts

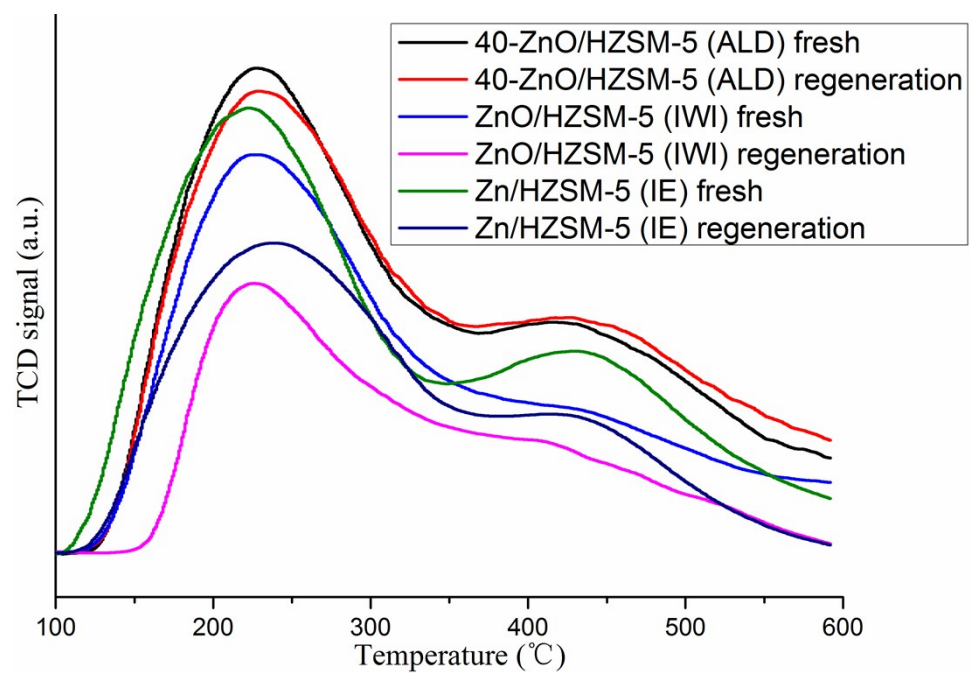


Fig. S7 NH₃-TPD spectra of fresh and regenerated ZnO/HZSM-5 catalysts