

Enhanced Performance of Glycerol to Aromatics Over Sn-Containing HZSM-5 Zeolites

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SUPPLEMENTARY DATA

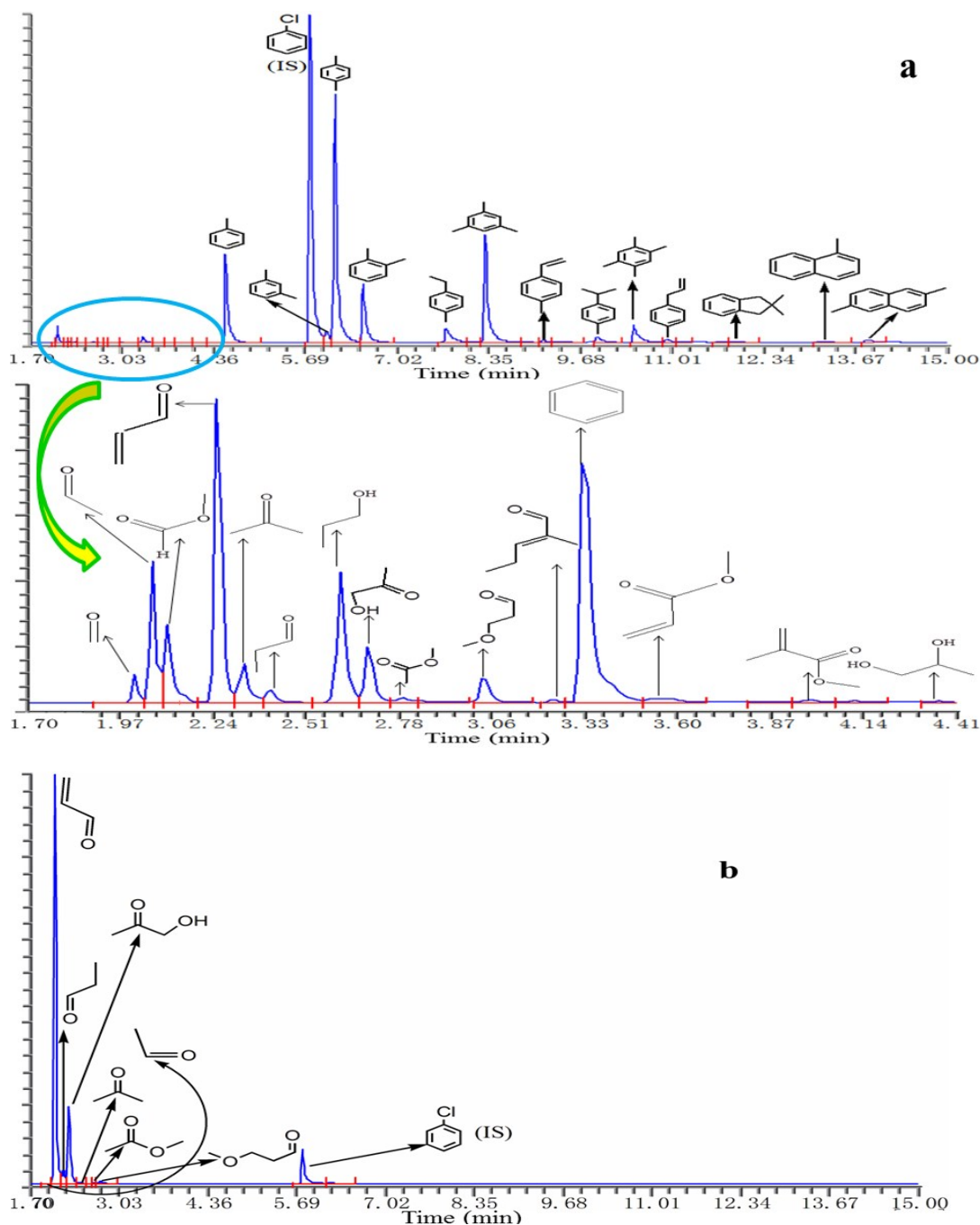


Fig. S1 a representative chromatogram of reaction products from 40% glycerol in the methanol sample collected a) between 3 and 3.5 h at 400 °C; b) between 5 and 5.5 h at

400 °C, atmospheric pressure. (IS = internal standard)

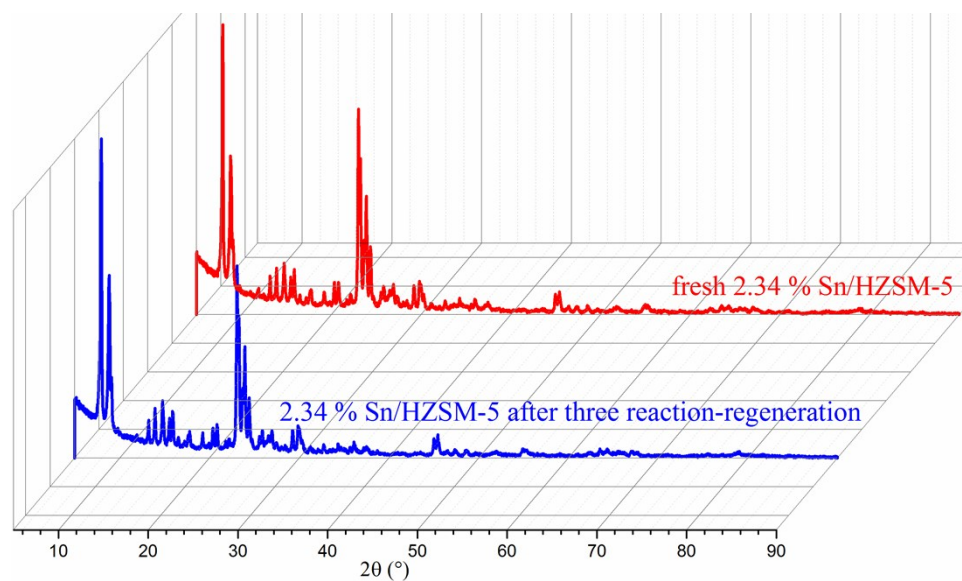


Fig. S2 XRD patterns of fresh and regenerated 2.34 wt% Sn/HZSM-5 catalyst

Catalyst	S_{BET} ($\text{m}^2 \text{g}^{-1}$)	Pore volume ($\text{cm}^3 \text{g}^{-1}$)	Metal loading (wt %)
Sn/HZSM-5 (fresh)	336	0.256	2.34
Sn/HZSM-5 (after the third reaction-regeneration cycle)	283	0.221	2.32

Table S1 The results of BET analysis for fresh and recycled Sn/HZSM-5 catalyst

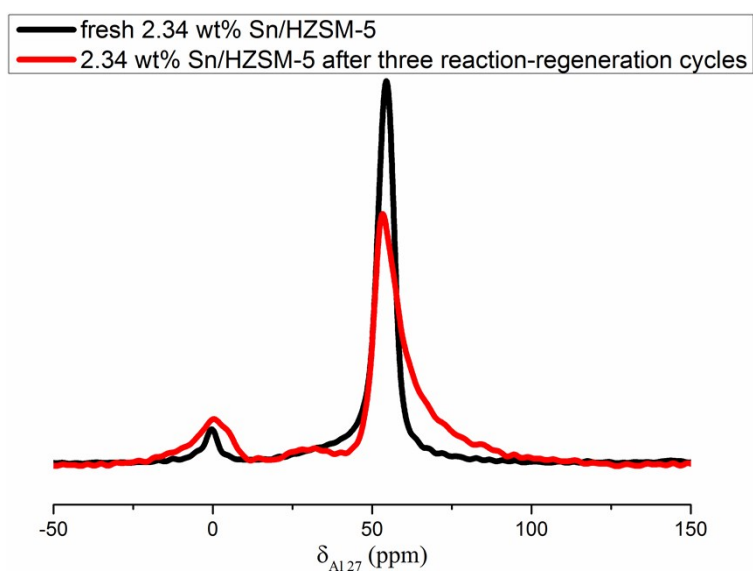


Fig. S3 ^{27}Al NMR spectra of fresh and regenerated 2.34 wt% Sn/HZSM-5 catalyst

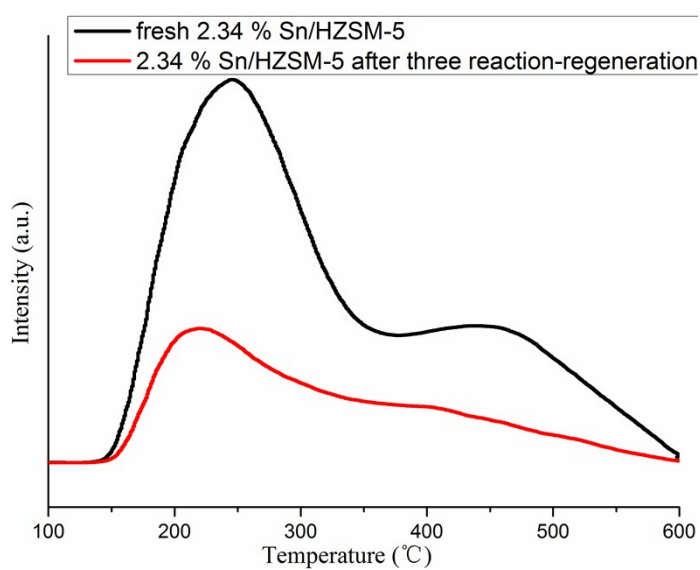


Fig. S4 NH₃-TPD spectra of fresh and regenerated 2.34 wt% Sn/HZSM-5 catalyst

Catalyst	S _{BET} (m ² g ⁻¹)			Pore volume (cm ³ g ⁻¹)	
	Tota l	Micro	External	Total	Micro
HZSM-5 before reaction	347	263	84	0.259	0.134
HZSM-5 2.5h time on stream	270	187	83	0.254	0.095
HZSM-5 4.5h time on stream	183	123	60	0.228	0.050
HZSM-5 5.5h time on stream	15.1	0	15.1	0.066	0

Table S2 The results of BET analysis for HZSM-5 catalyst during the GTA reaction process