

Supporting Information

Catalytic performance of Ni-Co/HZSM-5 catalysts for aromatic compound promotion in simulated bio-oil upgrading

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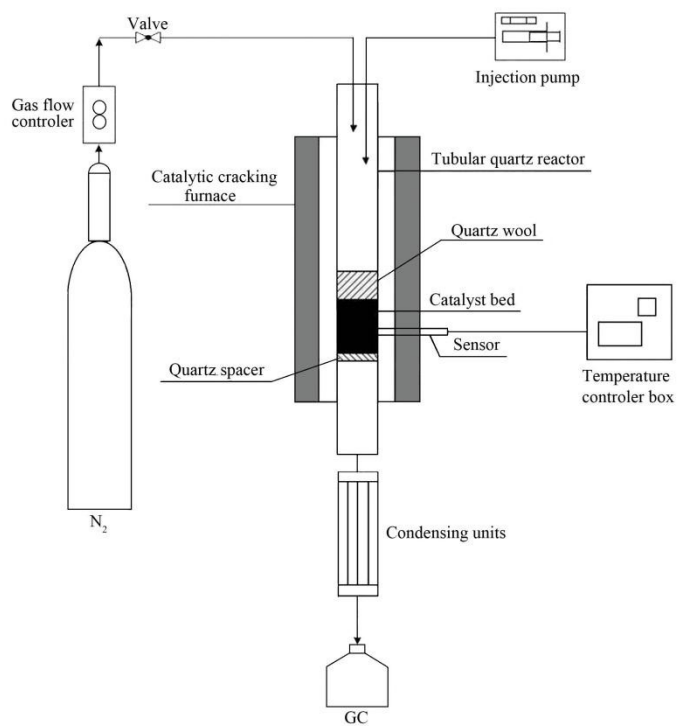


Fig. S1. Diagram of the experimental setup.

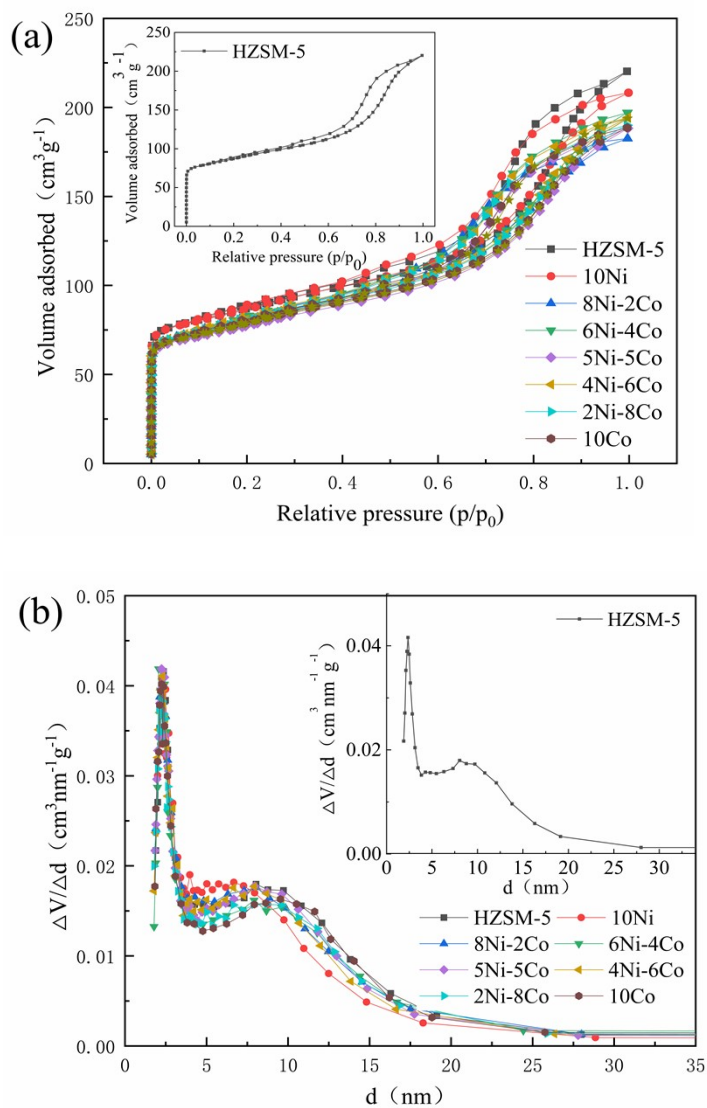


Fig. S2 (a) N_2 adsorption-desorption isotherms and (b) pore size distribution curves for the Ni-Co/HZSM-5 catalysts.

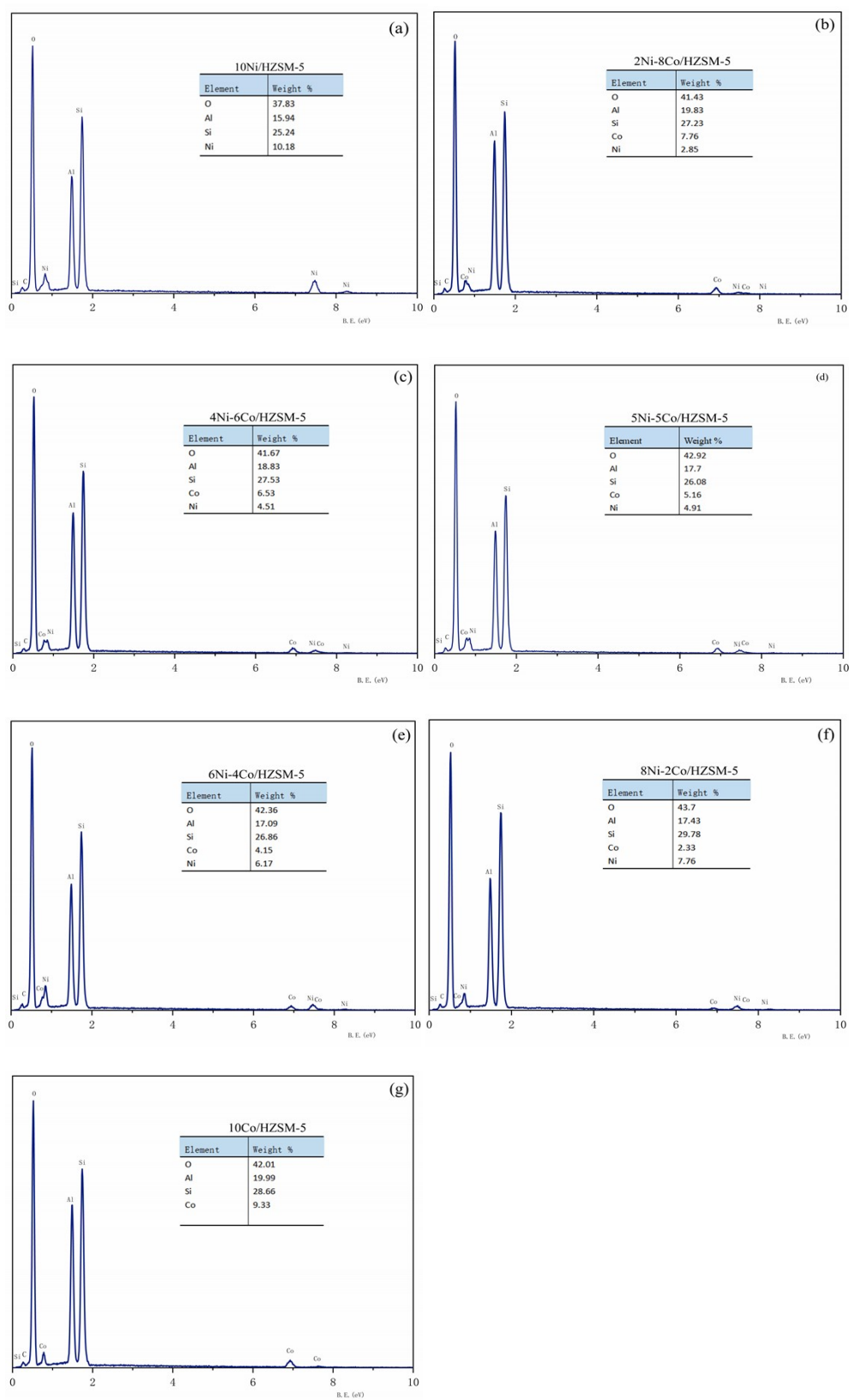


Fig. S3. EDS data for the Ni-Co/HZSM-5 catalysts.

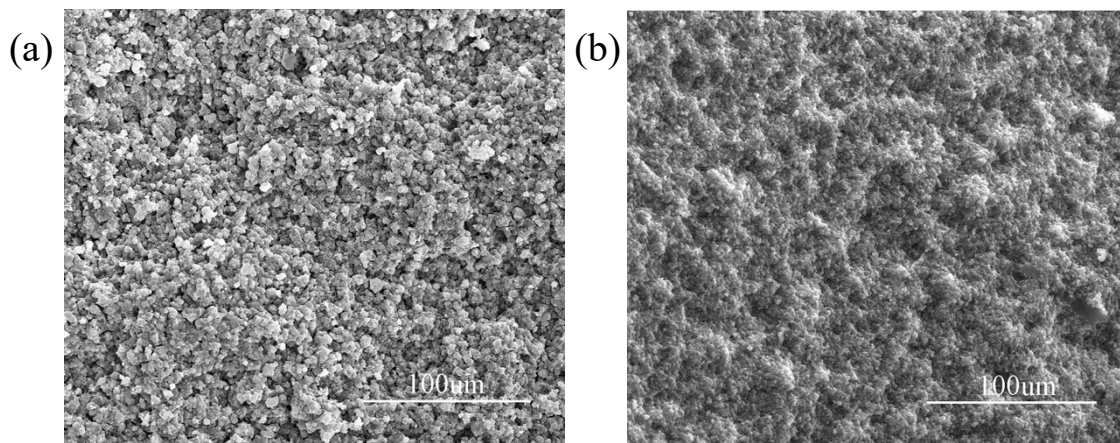


Fig. S4. SEM images of the regenerated catalysts: (a) 6Ni-4Co/HZSM-5 and (b) 10Ni/HZSM-5.

Table S1. Binding energies of the 6Ni-4Co/HZSM-5 catalyst.

6Ni-4Co/HZSM-5 Catalyst	Binding energy (eV) (Co2p _{3/2} -Co2p _{1/2})	Binding energy (eV)											
		Co ³⁺ 2p		Co ²⁺ 2p		Sat		Co ⁰	Ni ²⁺		sat		
		3/2	1/2	3/2	1/2	3/2	1/2	3/2	3/2	1/2	3/2	1/2	
Fresh	797.4-782.1 (15.3)	781.3	796.6	783.3	798.4	785.4	802.6		856.6	874.4	862.7	881.2	
After 10 min	797.4-782.1 (15.3)	781.3	796.6	783.3	798.4	785.7	802.7	776.5	856.6	874.4	862.9	881.3	
After 20 min	797.4-782.1 (15.3)	781.4	796.7	783.2	798.4	785.7	802.7		856.6	874.4	862.7	881.0	
After 30 min	797.4-782.1 (15.3)	781.3	796.6	783.2	798.4	785.7	802.7	776.5	856.6	874.4	862.7	881.1	