Supplementary Materials: Hydroprocessing of Oleic Acid for Production of Jet-Fuel Range Hydrocarbons over Cu and FeCu Catalysts

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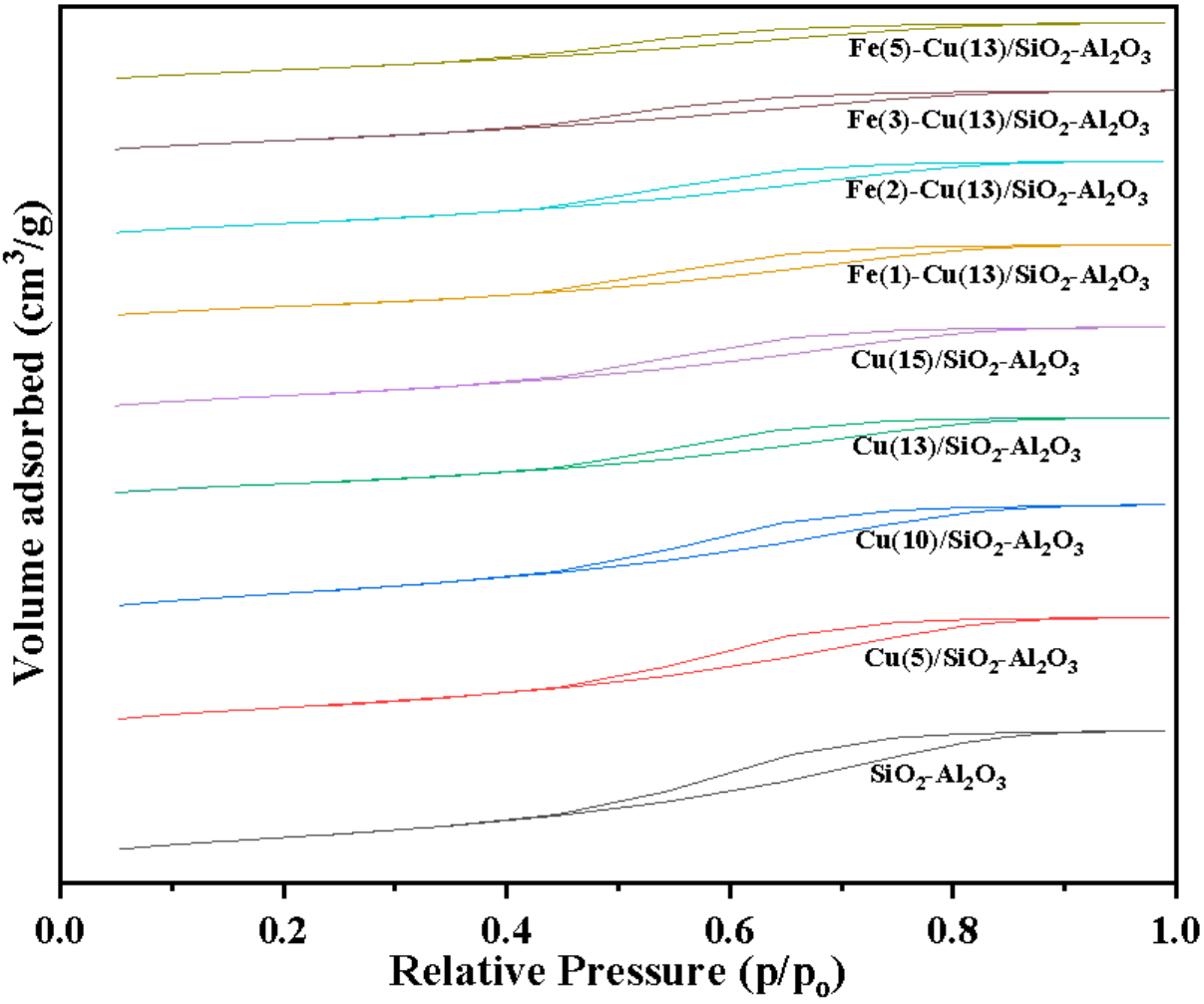

Figure S1. N_2-adsorption isotherms of SiO_2-Al_2O_3, Cu(5)/SiO_2-Al_2O_3, Cu(10)/SiO_2-Al_2O_3, Cu(13)/SiO_2-Al_2O_3 and Cu(15)/SiO_2-Al_2O_3, Fe(1)-Cu(13)/SiO_2-Al_2O_3, Fe(2)-Cu(13)/SiO_2-Al_2O_3, Fe(3)-Cu(13)/SiO_2-Al_2O_3 and Fe(5)-Cu(13)/SiO_2-Al_2O_3 catalysts

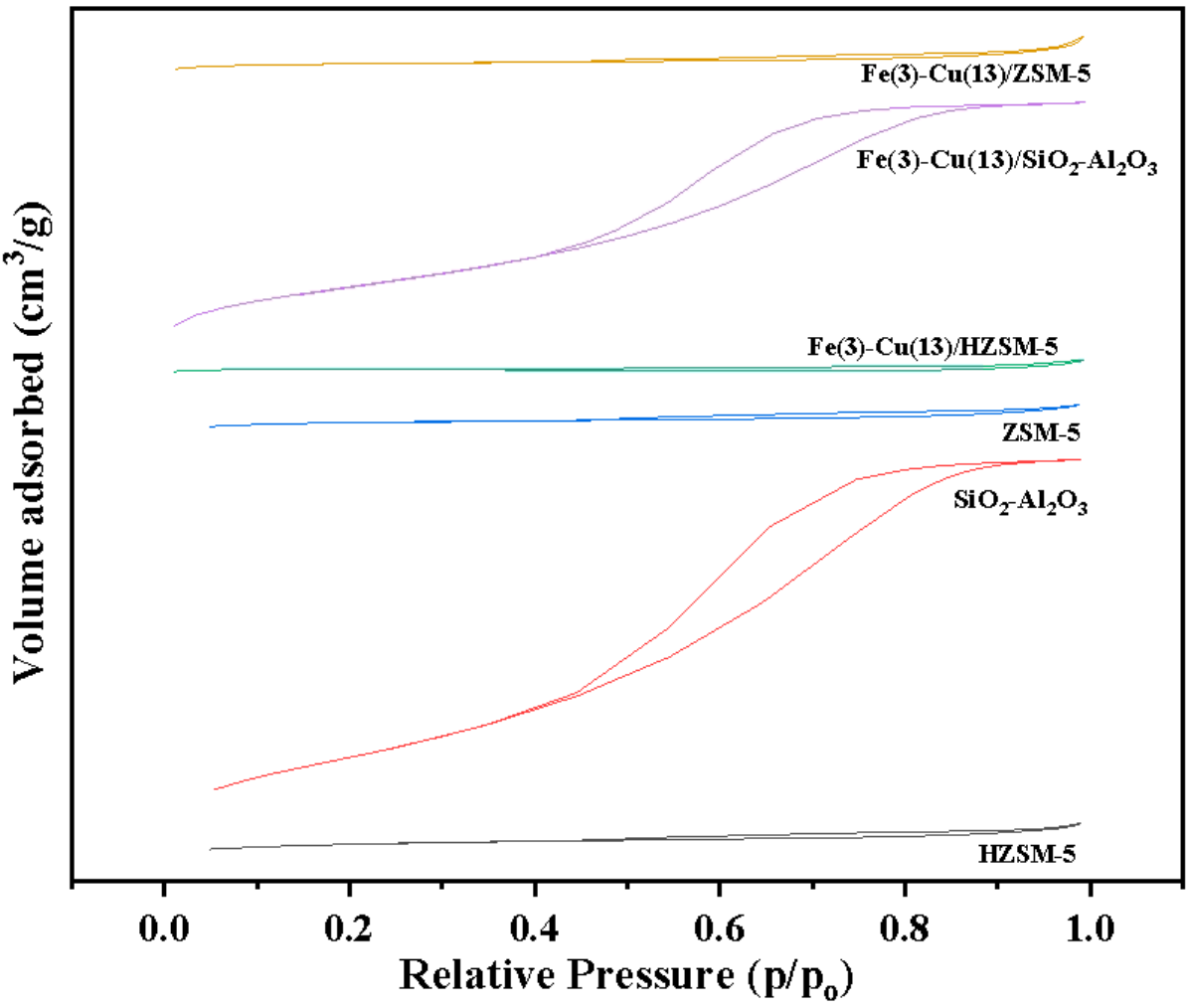

Figure S2. N_2-adsorption isotherms of SiO_2-Al_2O_3, ZSM-5 and HZSM-5 supports; Fe(3)-Cu(13)/SiO_2-Al_2O_3, Fe(3)-Cu(13)/ZSM-5 and Fe(3)-Cu(13)/HZSM catalysts

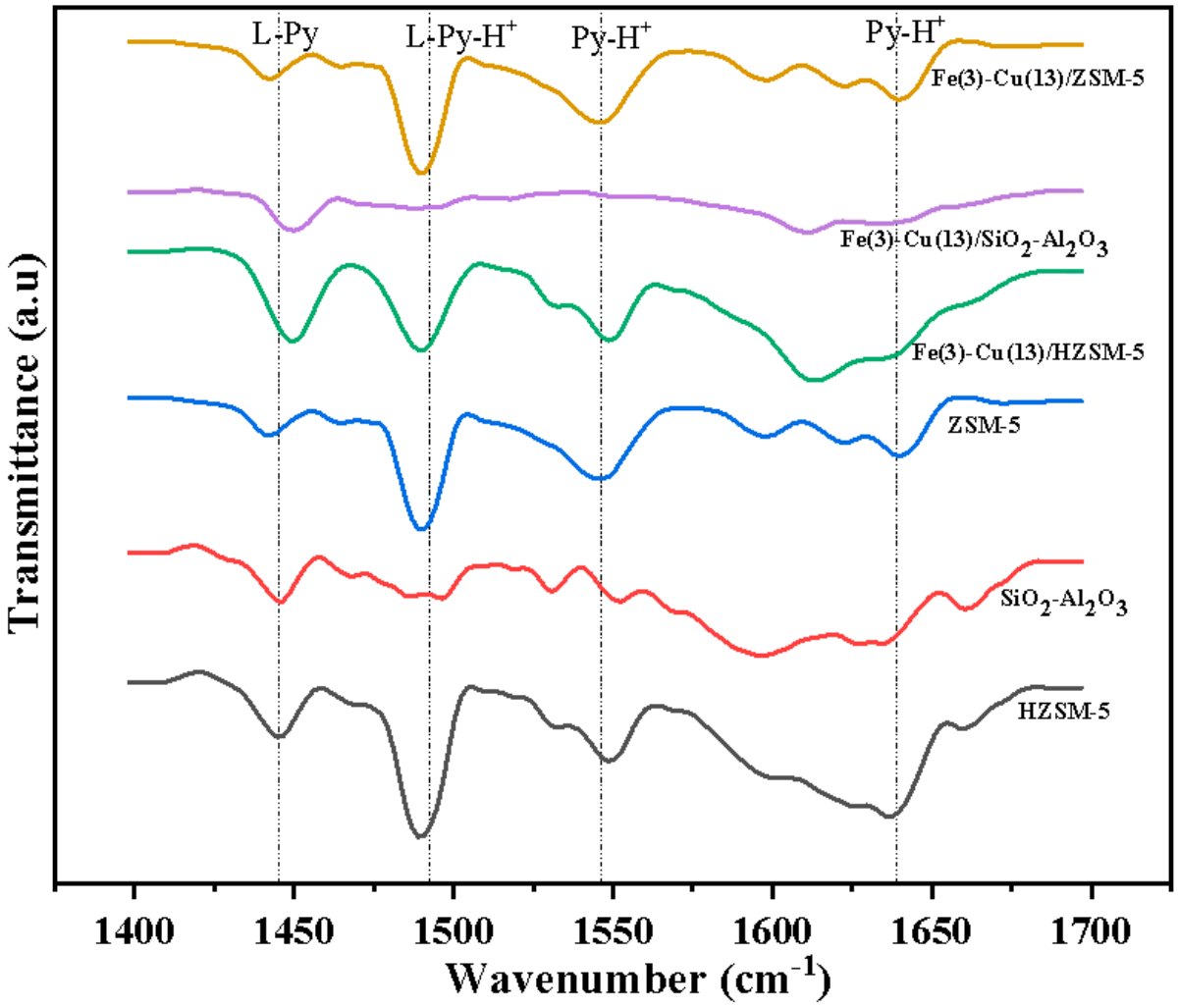

Figure S3. Py-FTIR spectra of SiO_2-Al_2O_3, ZSM-5 and HZSM-5 supports; Fe(3)-Cu(13)/SiO_2-Al_2O_3, Fe(3)-Cu(13)/ZSM-5 and Fe(3)-Cu(13)/HZSM catalysts.

Table S1. Selectivity of lighter hydrocarbons at t: 8 hrs; T: 300 °C, and P_{H2}: 2.07 MPa H_2 pressure.

Catalysts	Product Distribution (%)		
	C_5	C_6	C_7
Fe(3)-Cu(13)/SiO_2-Al_2O_3	5.1	6.7	4.6
Fe(3)-Cu(13)/ ZSM-5	8.7	9.3	7.4
Fe(3)-Cu(13)/ HZSM-5	10.1	12.5	15.2

Table S2. Selectivity of C_8-C_{16} hydrocarbons at t: 8 hrs; T: 300 °C, and P_{H2}: 2.07 MPa H_2 pressure.

Catalysts	Product Distribution (%)								
	C_8	C_9	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}

Fe(3)-Cu(13)/SiO_2-Al_2O_3	7.1	6.4	8.1	5.2	8.5	9.2	9.7	8.9	10.5
Fe(3)-Cu(13)/ ZSM-5	7.6	8.1	7.3	7.9	6.8	4.1	3.9	4.5	3.6
Fe(3)-Cu(13)/ HZSM-5	6.3	5.7	7.2	6.4	4.8	3.1	3.5	3.1	2.5

Table S3. Catalysts productivity towards C_8-C_{16} hydrocarbons at t: 8 hours; T: 300-340 ^oC, and P_{H2}: 2.07 MPa H_2 pressure.

Catalysts	Temperature (^oC)	G Jet Fuel/g Catalyst/hour	G Jet Fuel/m^2 Metals Surface Area/g Catalyst
Fe(3)-Cu(13)/SiO_2-Al_2O_3	300	1.0	2.6
	320	0.7	1.8
	340	0.9	2.2
Fe(3)-Cu(13)/ ZSM-5	300	0.7	1.8
	320	0.6	1.5
	340	0.9	2.4
Fe(3)-Cu(13)/ HZSM-5	300	0.5	1.6
	320	0.7	2.1
	340	0.7	2.1