Supporting Information

Effect of Co, Cu, and Zn on FeAlK catalyst in CO_2 hydrogenation to C_{5+} hydrocarbons

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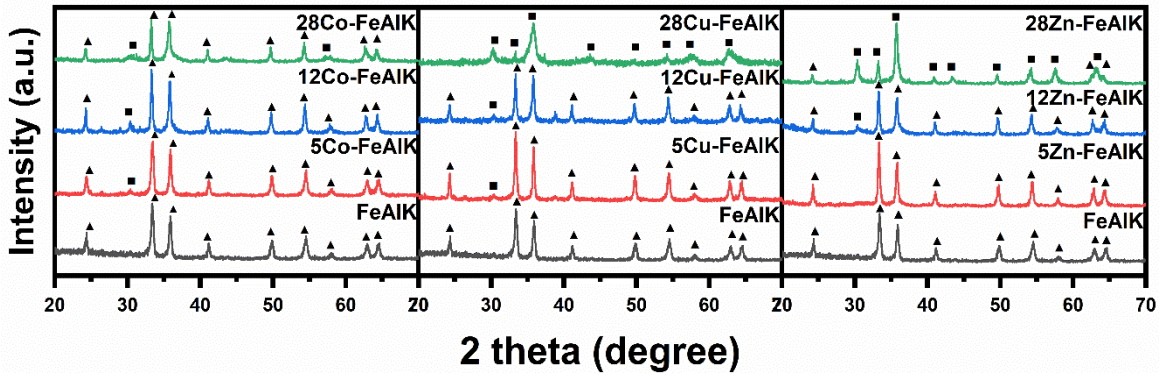

Figure S1. Fresh catalysts XRD analysis. Each symbols stands for ▲ Fe_2O_3 (JCPDS 84-0310); ■ Fe_3O_4 (JCPDS 75-0449).

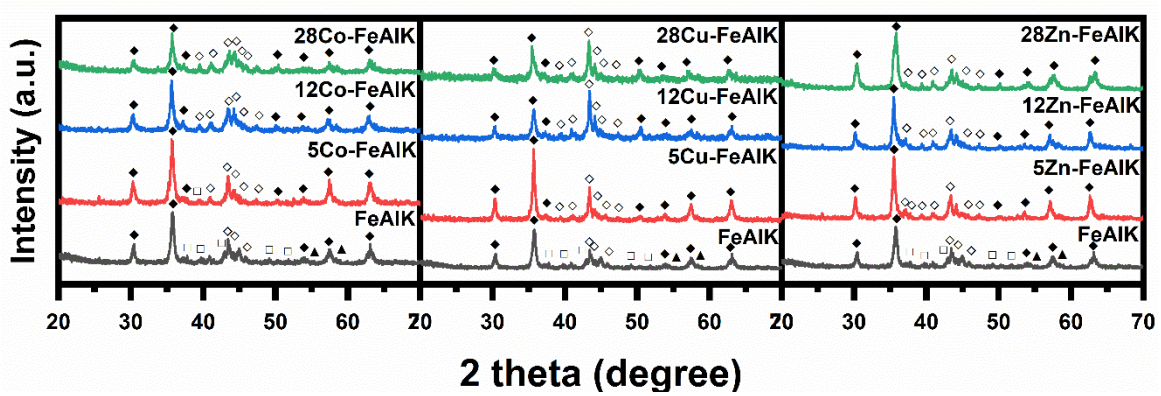

Figure S2. Spent catalysts XRD analysis. Each symbols stands for ▲ Fe_2O_3 (JCPDS 25-1202); ◆ Fe_3O_4 (JCPDS 75-0449); ◇ Fe_5C_2 (JCPDS 20-0509); □ Fe_3C_1 (JCPDS 06-0688).

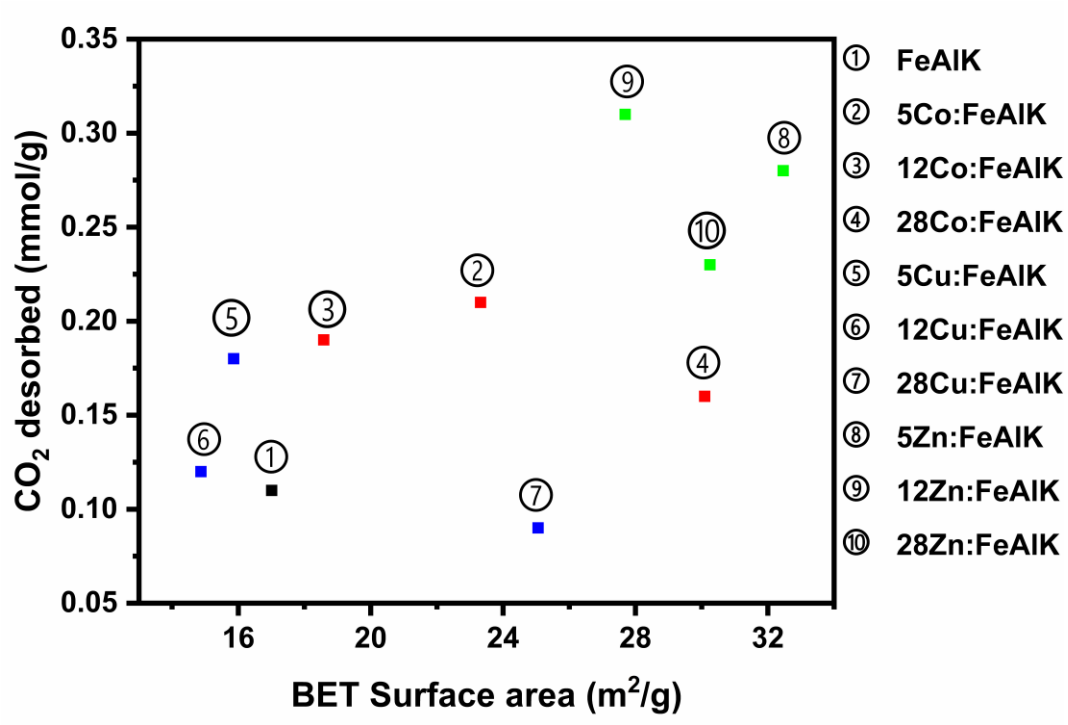

Figure S3. The relationship between CO_2 desorption and BET Surface area.

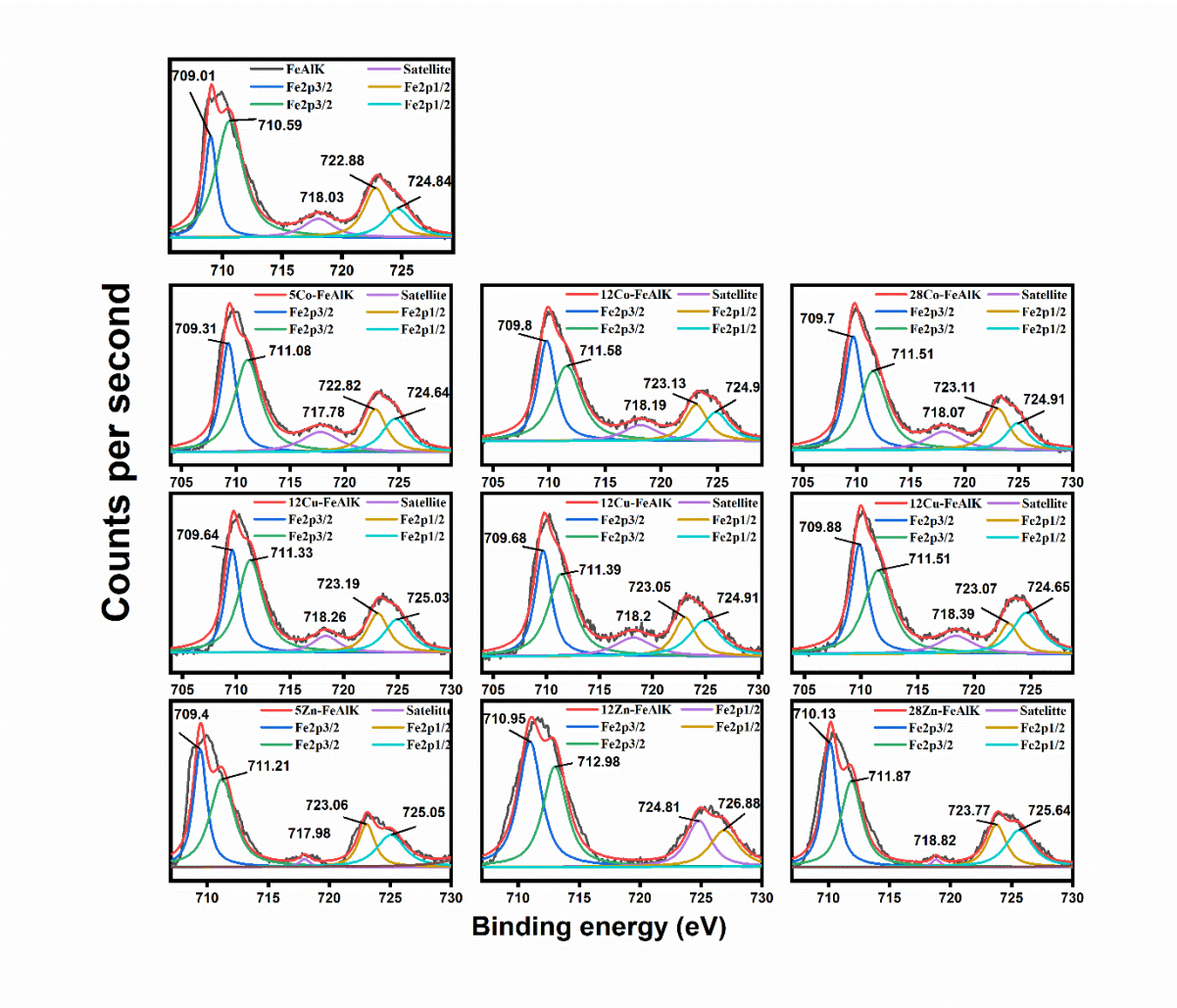

Figure S4. Fe 2p XPS of fresh catalysts. Fresh FeAlK, xCo-FeAlK, xCu-FeAlK and, xZn-FeAlK catalysts High Resolution XPS profiles.

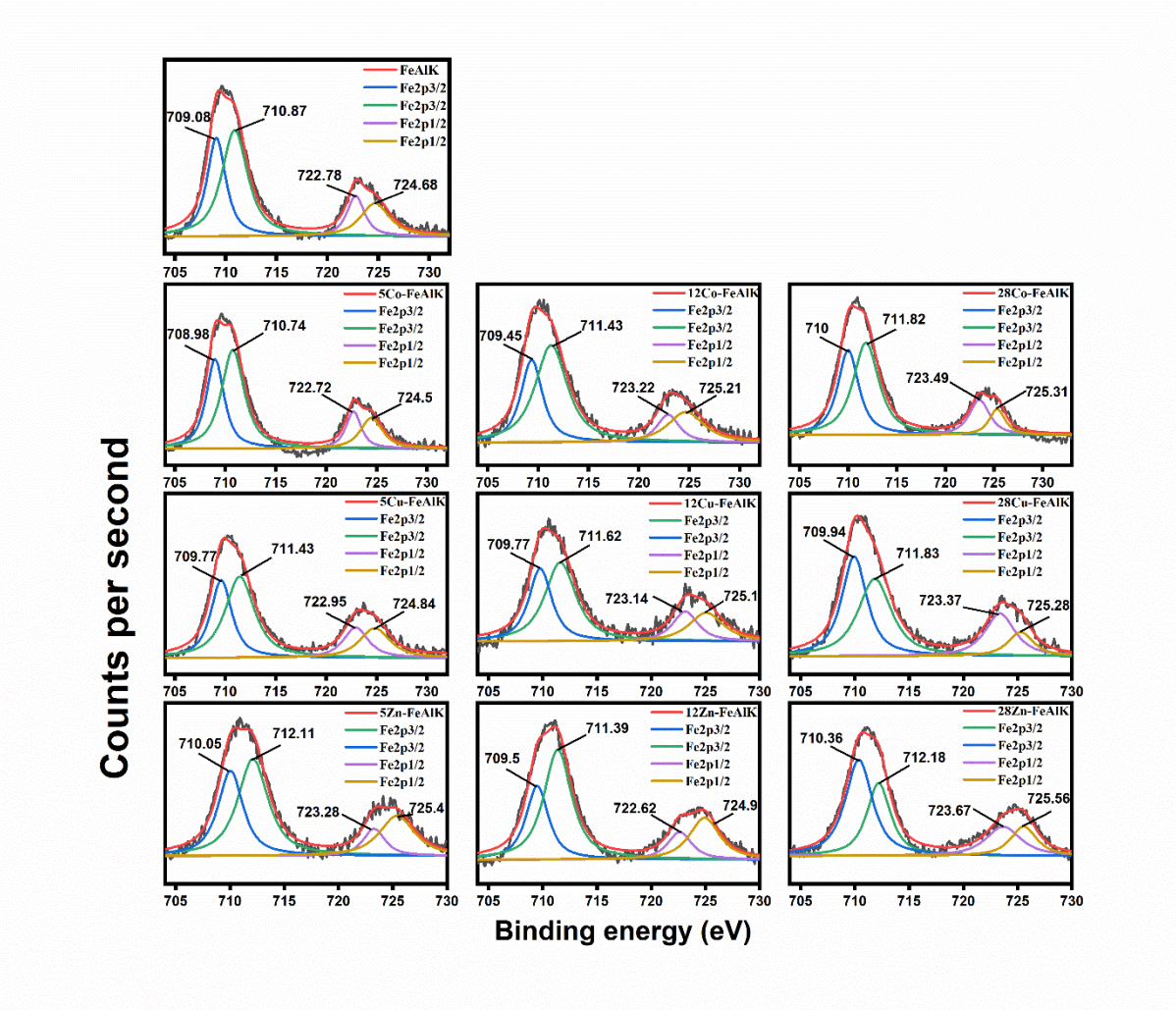

Figure S5. Fe 2p XPS of spent catalysts. Fresh FeAlK, xCo-FeAlK, xCu-FeAlK and, xZn-FeAlK catalysts High Resolution XPS profiles.

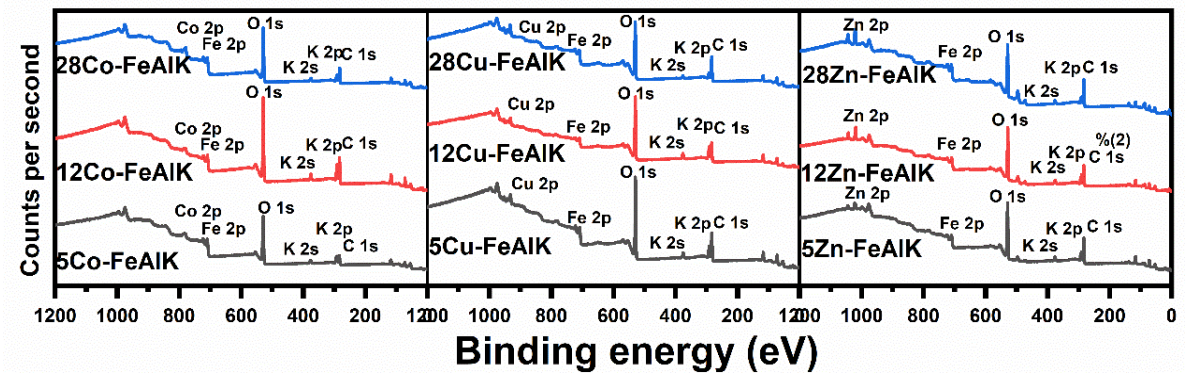

Figure S6. Survey XPS spectra of spent catalysts.

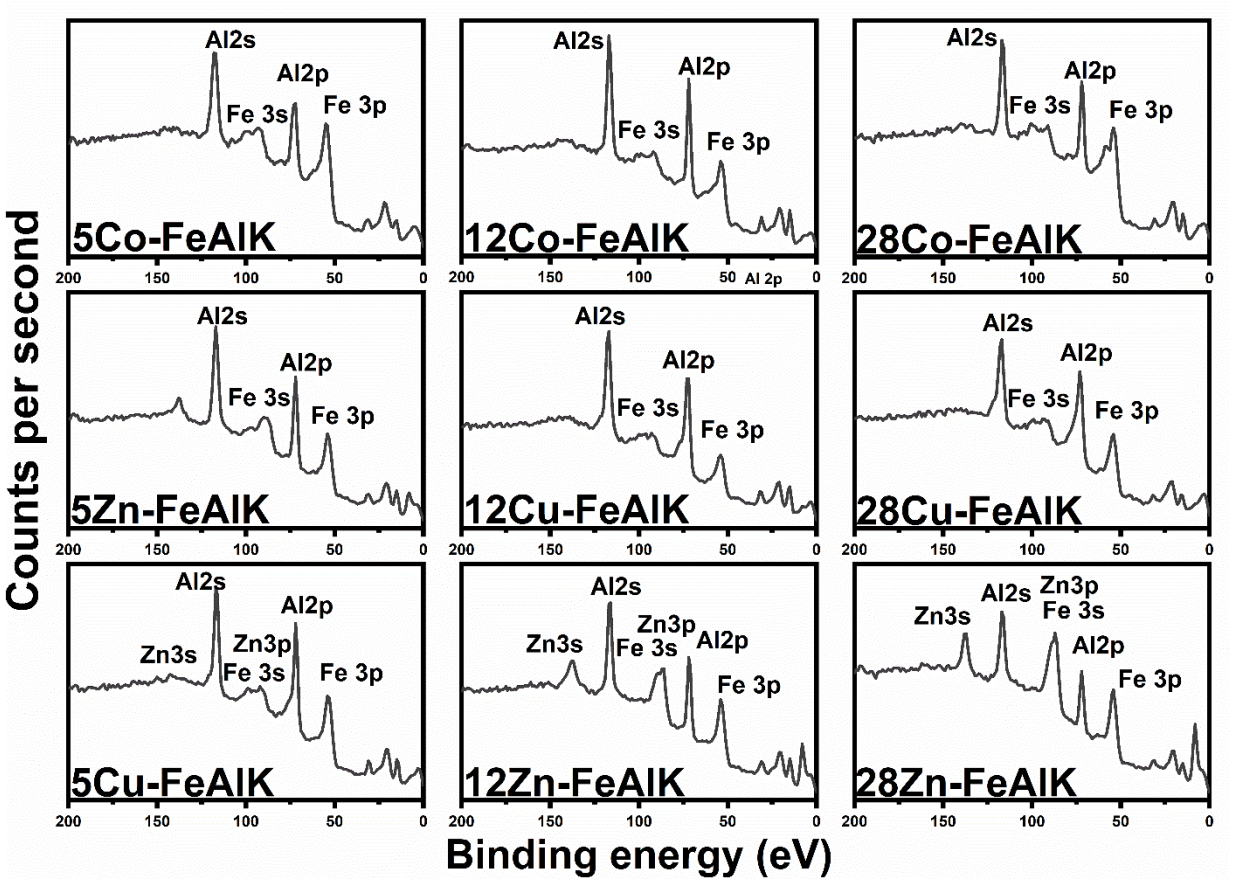

Figure S7. Spent xCo-FeAlK, xCu-FeAlK and, xZn-FeAlK catalysts Survey XPS profiles.

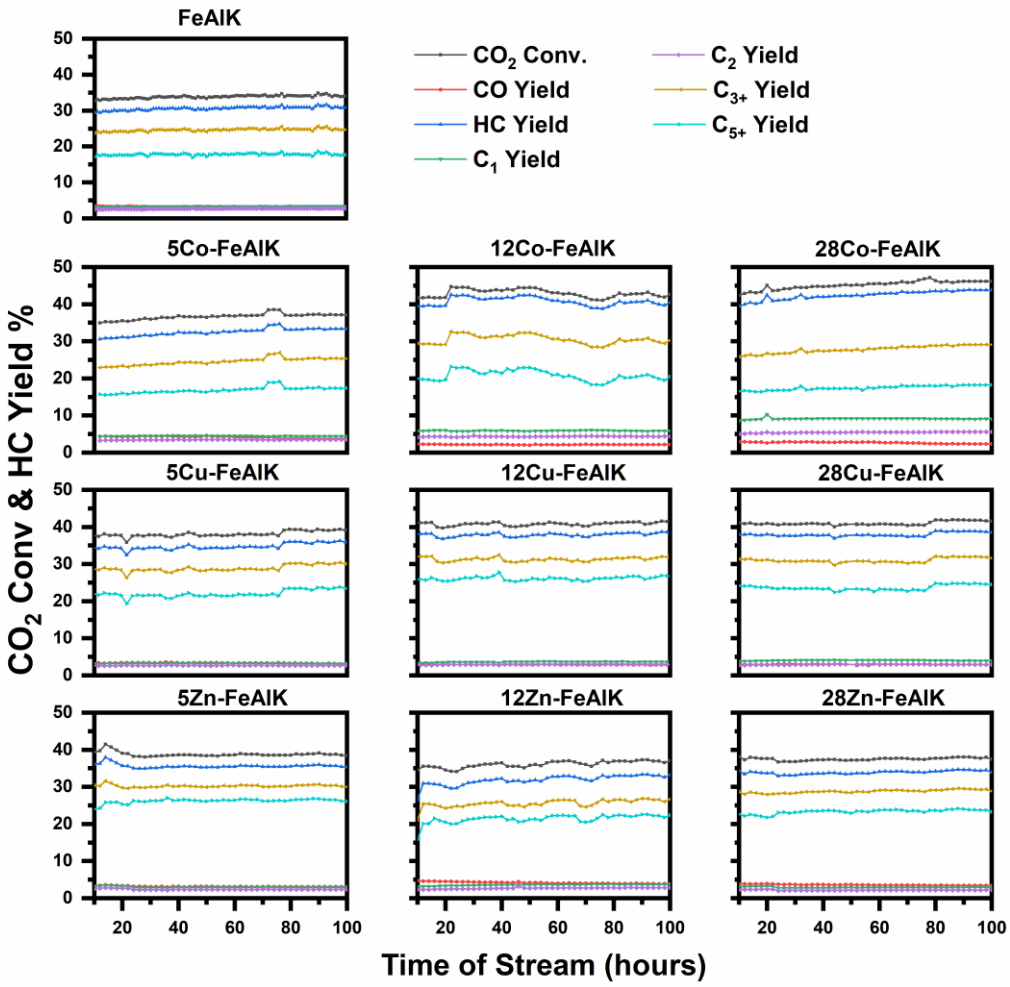

Figure S8. CO_2 conversion and products yield during 100 h of reaction.