

Supplementary Results:

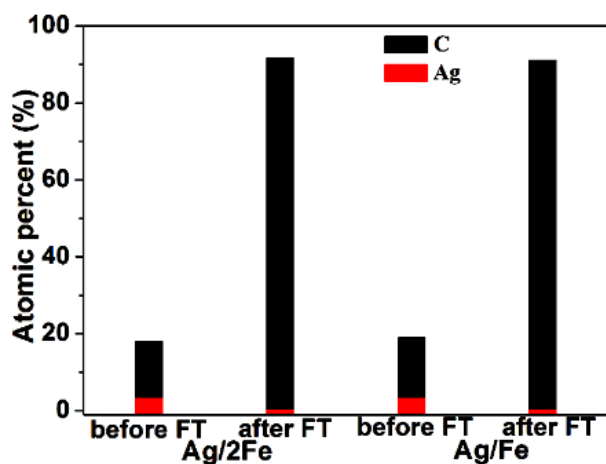


Fig. S1 Atomic percentage of C (black) and Ag (red) in Ag/2Fe and Ag/Fe obtained before and after FT reaction.

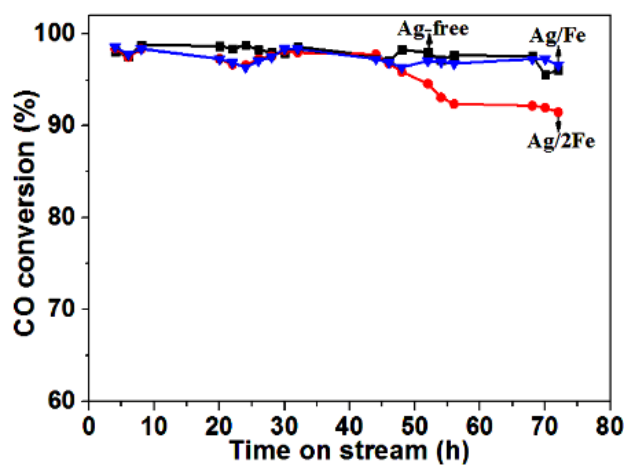


Fig. S2 CO conversion of Ag-free, Ag/2Fe, and Ag/Fe catalyst with time on stream.

Table S1 FT performances of free-Ag, 2Fe/Ag, and Fe/Ag catalysts. Catalytic tests were performed at 280 °C, a H₂/CO ratio of 1, and 20 bar, results after 24 h are shown.

Performance	free-Ag	2Fe/Ag	Fe/Ag
CO conversion (%)	98.5	98.8	98.7
Mass balance	98.3	97.9	98.7
α -Value	0.36	0.53	0.51
Product selectivity (wt%)			
CH ₄	26.1	21.4	19.6
C ₂₋₄ paraffins	36.3	21.3	20.5
C ₂₋₄ olefins	7.3	19.0	19.6
C ₅₋₁₁	25.1	37.6	38.9
C ₁₂₊	5.2	0.7	1.4
Olefin/Paraffin (wt/wt)			
C ₂₋₄	0.20	0.89	0.96
C ₅₋₁₁	0.77	0.89	1.29