

Table S1 ICP results of all the catalysts.

Catalyst	Element	Intensity	Calib Units	Sample Conc. Units
			(mg/L)	(mg/L)
Fe ₃ O ₄	Fe	4420962.8	14.91	14.91
0.5Ag/Fe ₃ O ₄	Fe	2968109.4	9.998	9.998
	Ag	4119033.8	6.600	6.600
0.8Ag/Fe ₃ O ₄	Fe	2679949.8	9.023	9.023
	Ag	4798372.5	7.631	7.631
Ag/Fe ₃ O ₄	Fe	2292262.3	7.712	7.712
	Ag	5574656.4	8.810	8.810

Table S2 FT performances of Ag-free, 0.5Ag/Fe₃O₄, 0.8Ag/Fe₃O₄, and Ag/Fe₃O₄ catalysts. Catalytic tests were performed at 280 °C, a H₂/CO ratio of 1, and 20 bar.

Catalyst	Reaction time	Tail gas (mol%)		H ₂ conversion	CO conversion
	(h)	H ₂	CO	(%)	(%)
Ag-free	24	21.8	1.48	81.7	98.8
	48	23.1	2.02	80.2	98.3
	72	26.8	4.38	75.9	96.1
0.5Ag/Fe ₃ O ₄	24	30.2	3.92	71.8	96.3
	48	32.0	11.3	67.0	88.4
	72	34.7	22.1	58.6	73.2
0.8Ag/Fe ₃ O ₄	24	29.1	3.89	73.0	96.4
	48	29.1	3.78	72.6	96.4
	72	29.8	3.59	71.7	96.6
Ag/Fe ₃ O ₄	24	30.0	11.5	69.6	88.4
	48	35.6	22.6	55.5	71.8
	72	36.7	24.0	52.2	68.8