Supplementary Materials

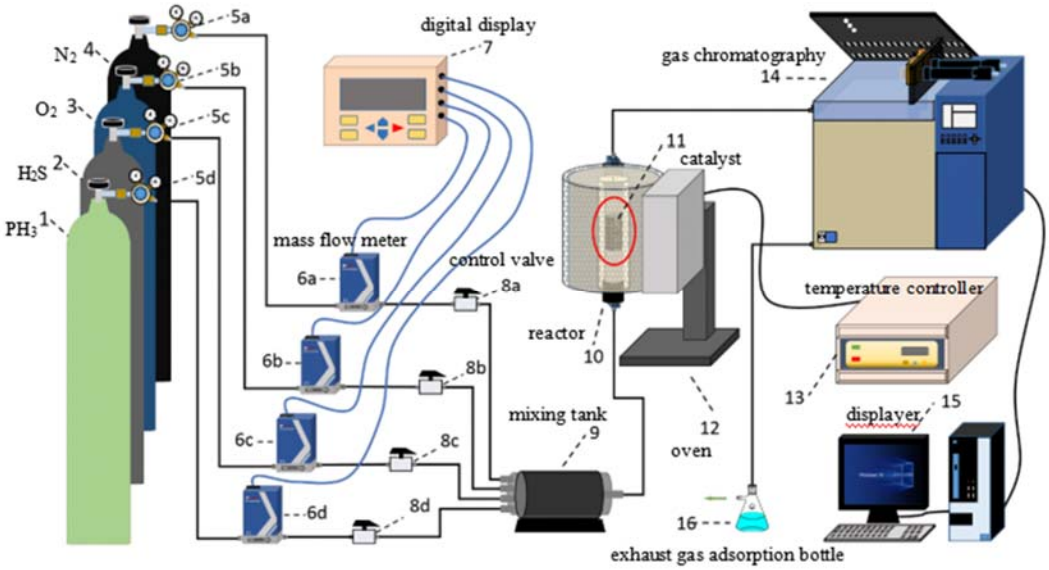

Fig. S1 The experimental workflow

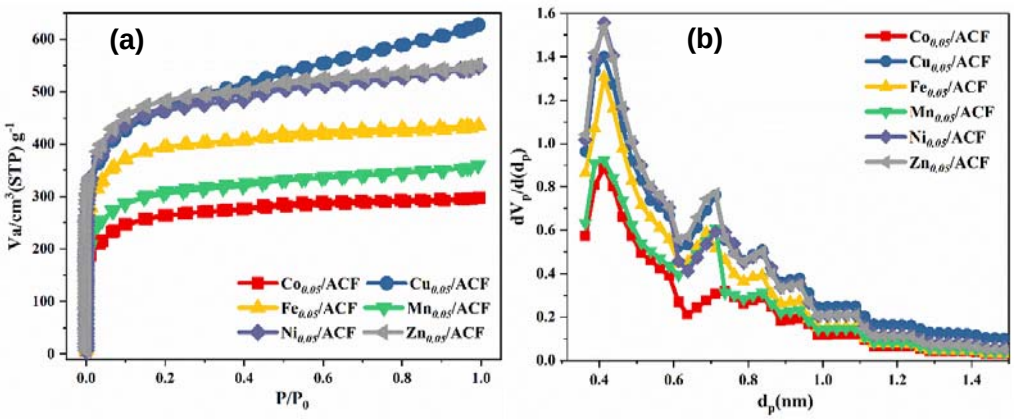

Fig. S2 The N_2 adsorption-desorption isotherms of catalysts:

(A) Isotherms and (B) Pore size distribution

Table. S1 Physical property parameters of different adsorbents

Adsorbents	SSA * (m^2 g^{-1})	APD* (nm)	TPV * (cm^3 g^{-1})
Blank ACF	1791.9	1.7	1.0
$Fe_{0.05}$/ACF	1553.2	1.9	0.7
$Zn_{0.05}$/ACF	1302.3	1.0	0.9
$Co_{0.05}$/ACF	1001.5	2.0	0.4
$Ni_{0.05}$/ACF	1502.7	1.6	0.8
$Mn_{0.05}$/ACF	1159.8	1.8	0.6
$Cu_{0.05}$/ACF	1770.0	0.8	1.0

* SSA: Specific surface area

* APD: Average pore diameter

* TPV: Total pore volume

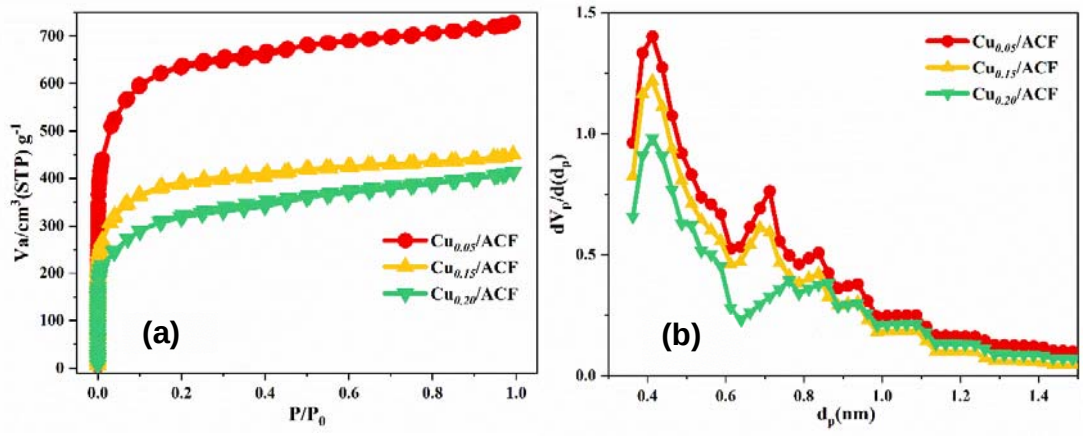

Figure. S3 The N_2 adsorption-desorption isotherms of adsorbents:

(a) Isotherms and (b) Pore size distribution

Table S2. Physical properties of samples

Samples	SSA * ($m^2 g^{-1}$)	APD * (nm)	TPV * ($cm^3 g^{-1}$)
$Cu_{0.05}$/ACF	1768	0.57	0.96
$Cu_{0.15}$/ACF	1487	0.53	0.69
$Cu_{0.20}$/ACF	980	0.38	0.51

* SSA: Specific surface area

* APD: Average pore diameter

* TPV: Total pore volume