

Supporting Information

HZSM-5 zeolites containing impurity iron species for the photocatalytic reduction of CO₂ with H₂O

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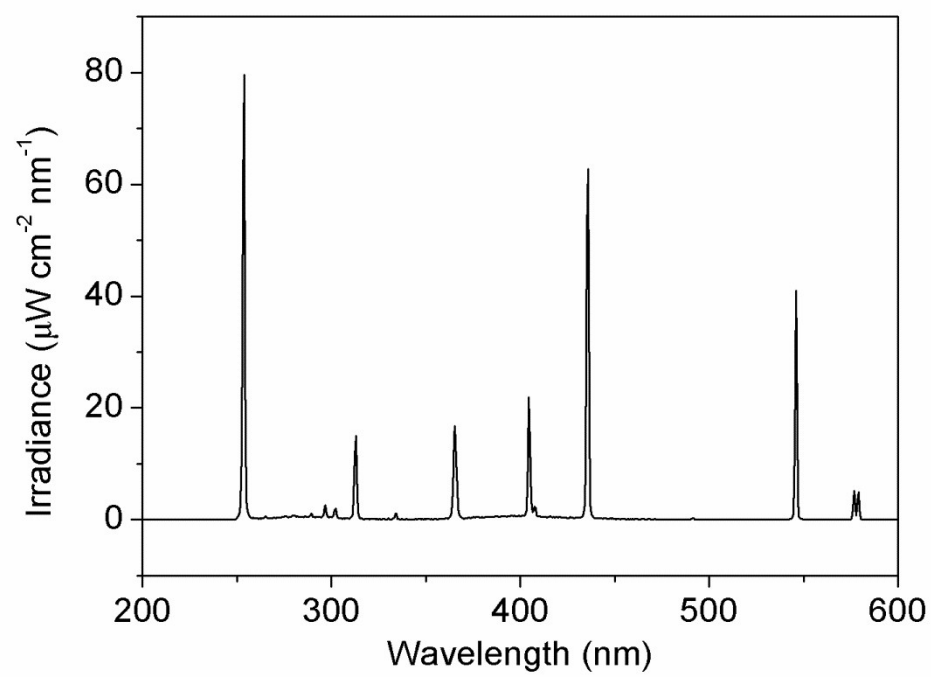


Fig. S1 Irradiance spectra of fluorescent UV light tubes.

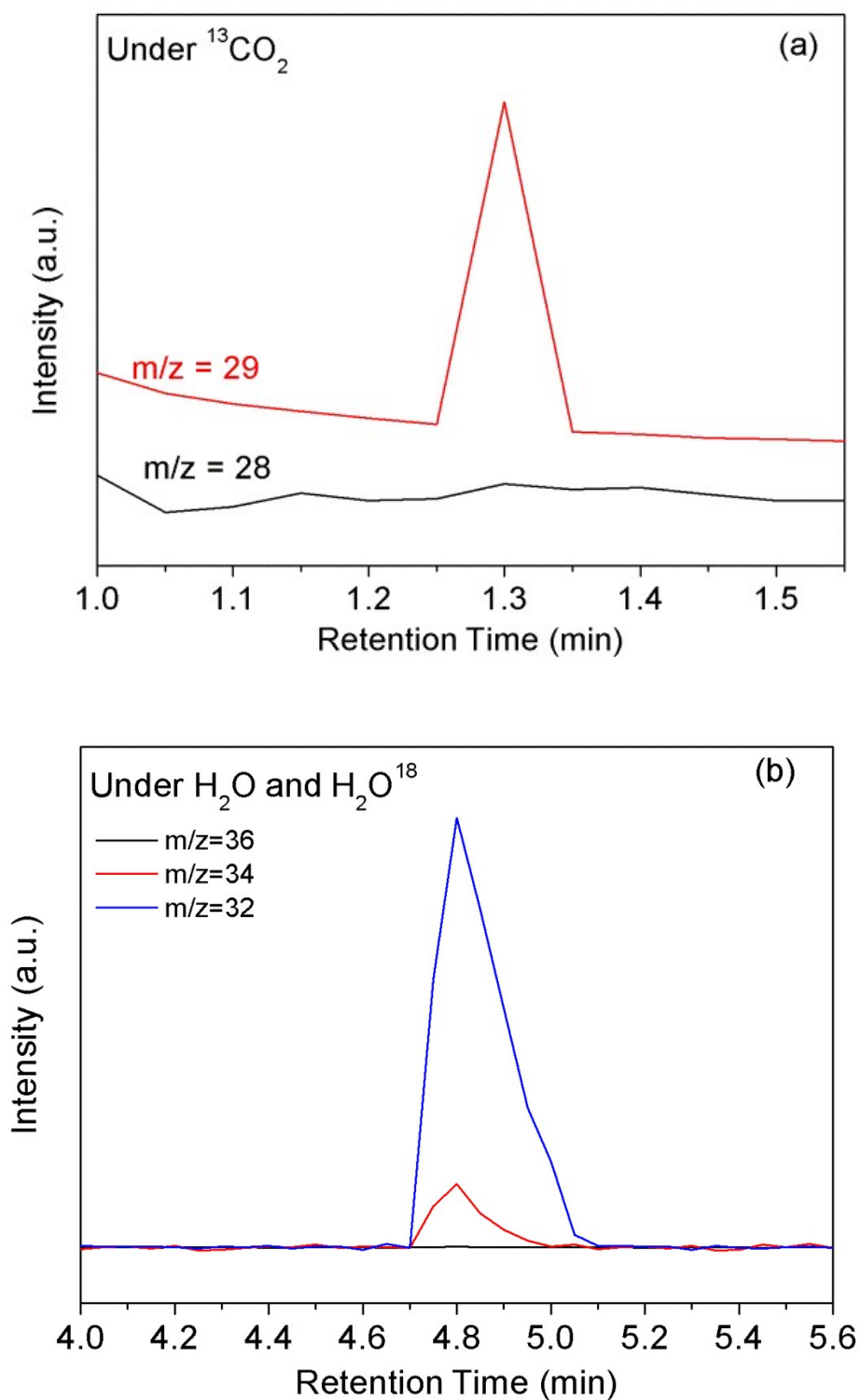


Fig. S2 Mass spectra of gas phase analyses after photocatalytic CO_2 reduction using (a) $^{13}\text{CO}_2$ (^{13}C content 99 atom %) and H_2^{16}O ; (b) $^{12}\text{CO}_2$ and 1.01 mL H_2O ($\text{H}_2^{18}\text{O} : \text{H}_2^{16}\text{O} = 1:100$) as a reactant. The photocatalytic reactions were conducted in CO_2 -saturated aqueous solution with NK38 under UV light irradiation.

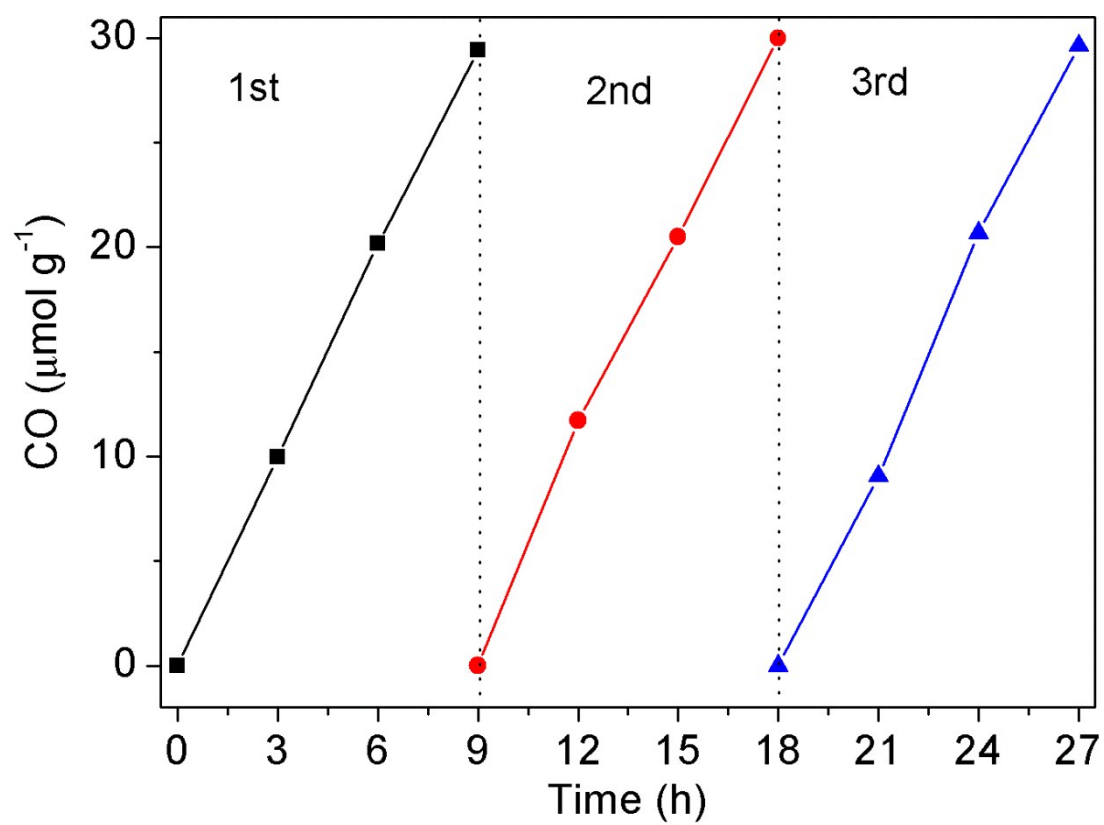


Fig. S3 The stability test of HZSM-5 in three repeats of photocatalytic operations.

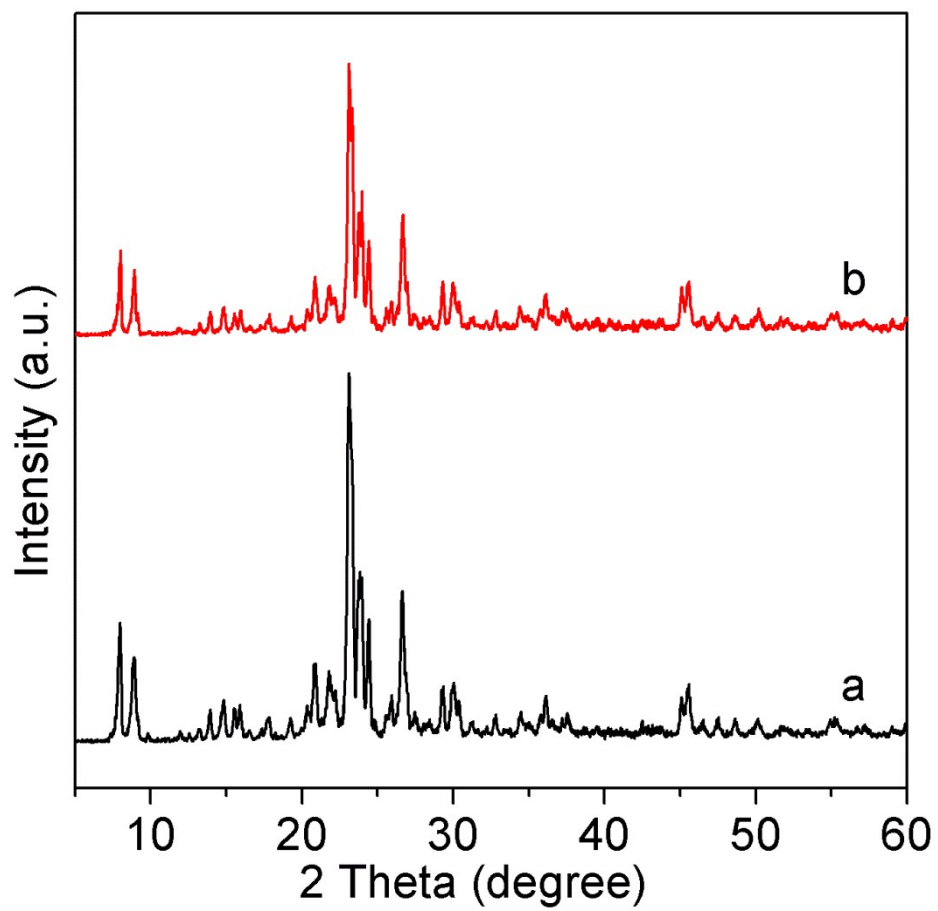


Fig. S4 Powder XRD patterns of HZSM-5: (a) fresh sample; (b) used sample.

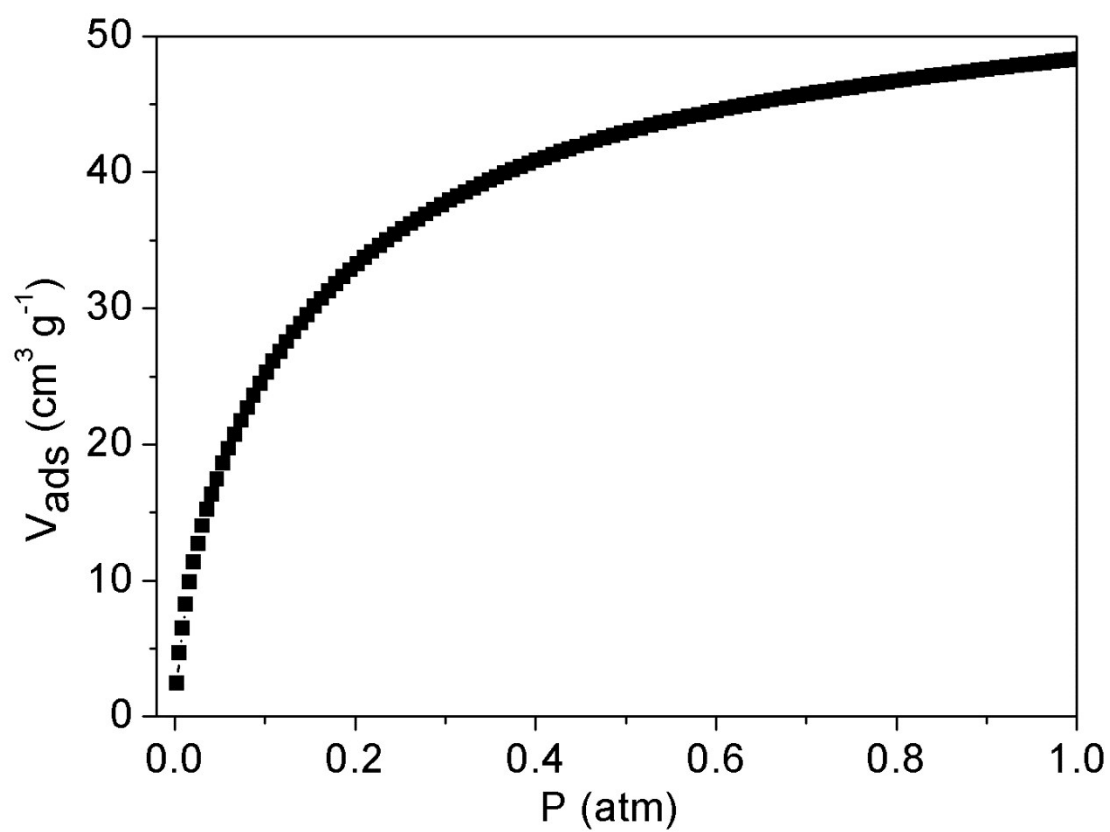


Fig. S5 CO₂ adsorption isotherm (1 atm, 273 K) of NK38 sample.

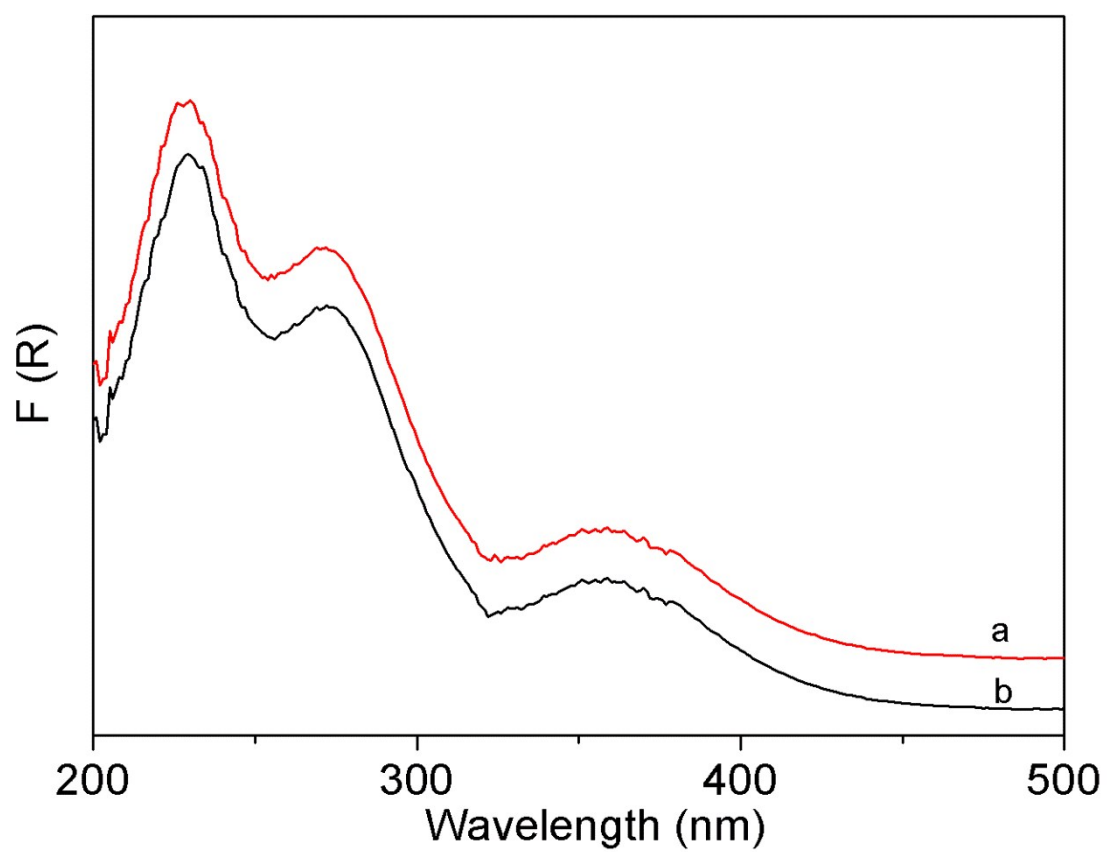


Fig. S6 UV-vis DRS spectra of HZSM-5: (a) fresh sample; (b) used sample.

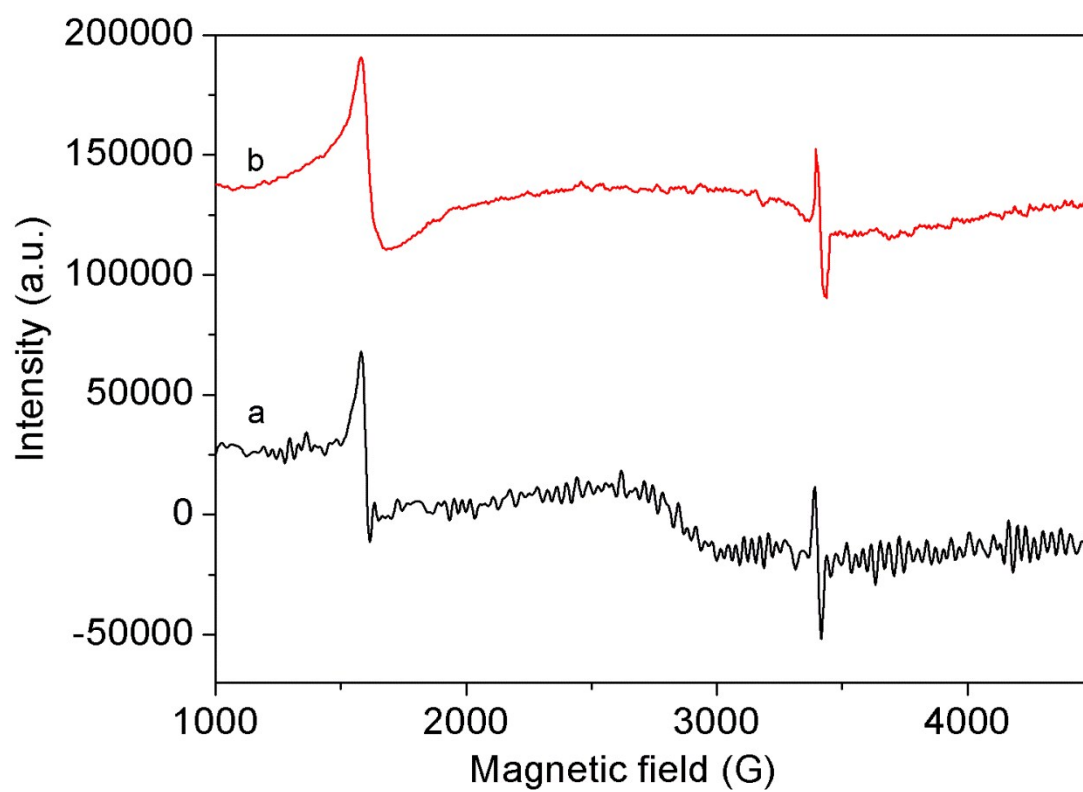


Fig. S7 ESR spectra of HZSM-5 in vacuum and darkness: (a) fresh sample; (b) used sample.