Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

An Efficient Environmentally Friendly $CuFe_2O_4/SiO_2$ Catalyst for Vanillyl Mandelic Acid Oxidation in Water at Atmospheric Pressure and Mechanism Study

Haifang Mao[1], Hongzhao Wang[1], Tao Meng[1], Chaoyang Wang[1], Xiaojun Hu[1], Zuobing Xiao[2], Jibo Liu[1]**

1. School of Chemical and Environmental Engineering, Shanghai Institute of Technology, 100 Haiquan Road, 201418, Shanghai, China.
2. School of Perfume and Aroma Technology, Shanghai Institute of Technology, 100 Haiquan Road, 201418, Shanghai, China.

Scheme S1 Schematic diagram of Catalytic oxidation VMA by $CuFe_2O_4/SiO_2$

Fig.S1 The high-performance liquid chromatography (HPLC) spectrum of the reaction mixture before and after oxidation.

Fig.S2 The fourier infrared spectrum of Purified Vanillin

Fig.S3 The ^{1}H NMR spectra of Purified Vanillin

Fig.S4 The Energy Dispersive Spectrometers (EDS) of $CuFe_2O_4/SiO_2$

Fig.S5 The stability of vanillin at different pH for 6 hours under 100 ^{o}C

Fig.S6 The H_2-TPR profiles of $CuFe_2O_4/SiO_2$

Fig.S7 The ^{1}H NMR Spectrum of Reaction Mixture after oxidation for 6 hours

Scheme S1 Schematic diagram of Catalytic oxidation VMA by $CuFe_2O_4/SiO_2$

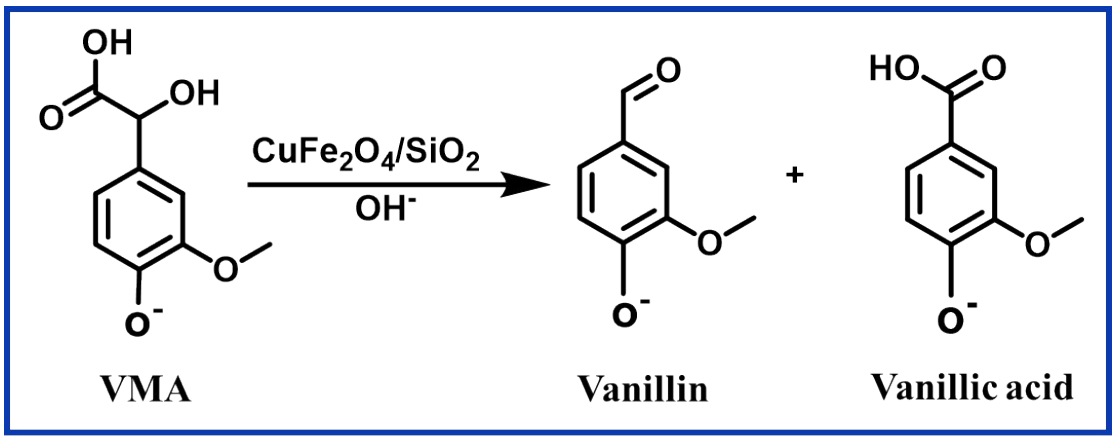


Fig. S1 The high-performance liquid chromatography (HPLC) spectrum of the reaction

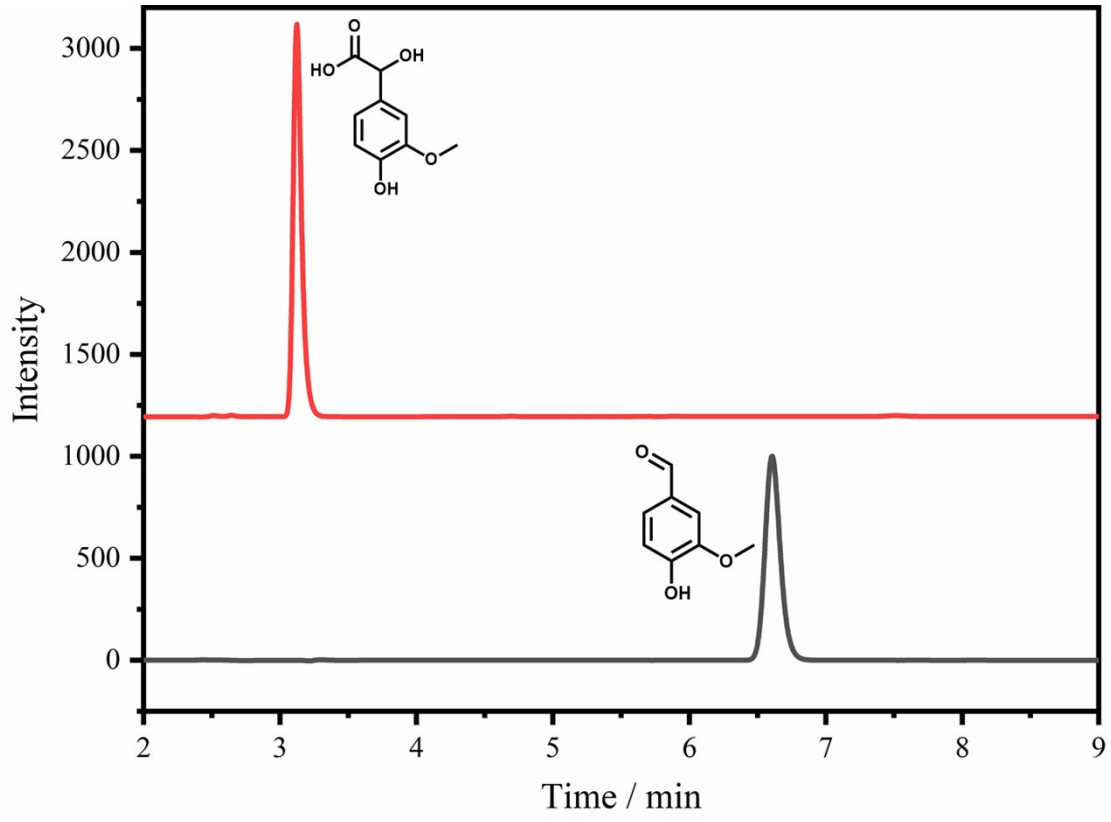


Fig.S2 The Infrared spectra of Purified Vanillin

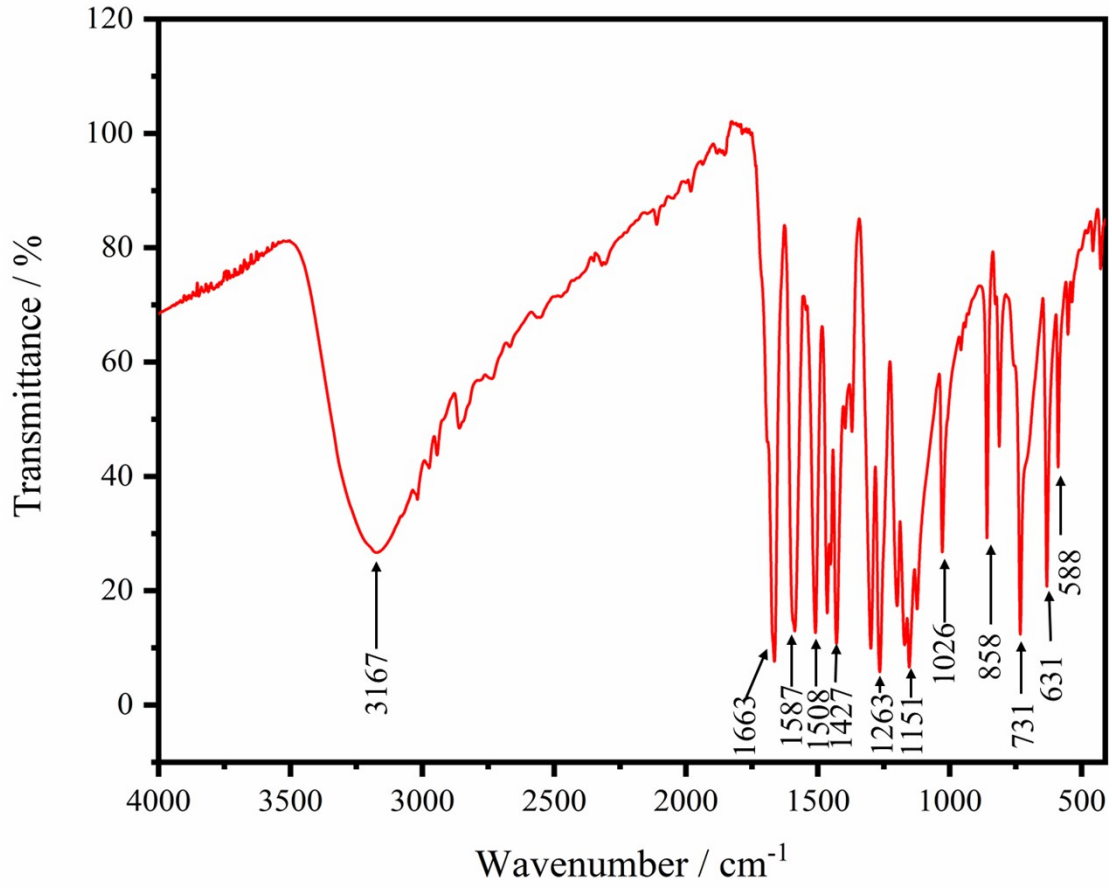
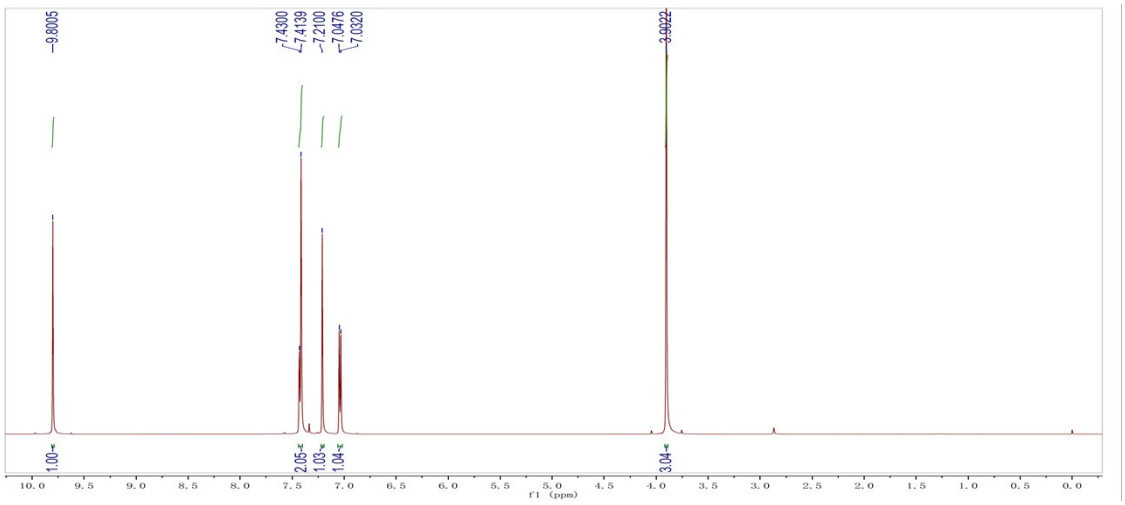


Fig.S3 The ^{1}H NMR spectra of Purified Vanillin



^{1}H NMR (500 MHz, $CDCl_3$): δ = 9.80 (s, 1H), 7.42 (d, *J* = 8.0 Hz, 1H), 7.21 (s, 1H), 7.04 (d, *J* = 8.0 Hz, 1H), 3.90 (s, 3H).

Fig.S4 The Energy Dispersive Spectrometers (EDS) of $CuFe_2O_4/SiO_2$

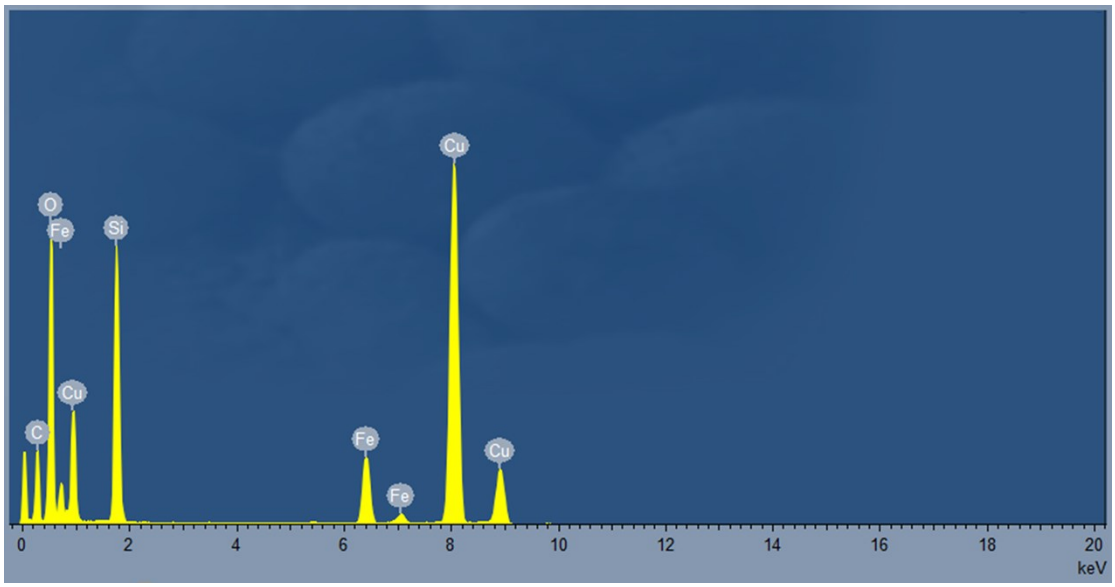


Fig.S5 The stability of vanillin at different pH for 6 hours under 100 °C

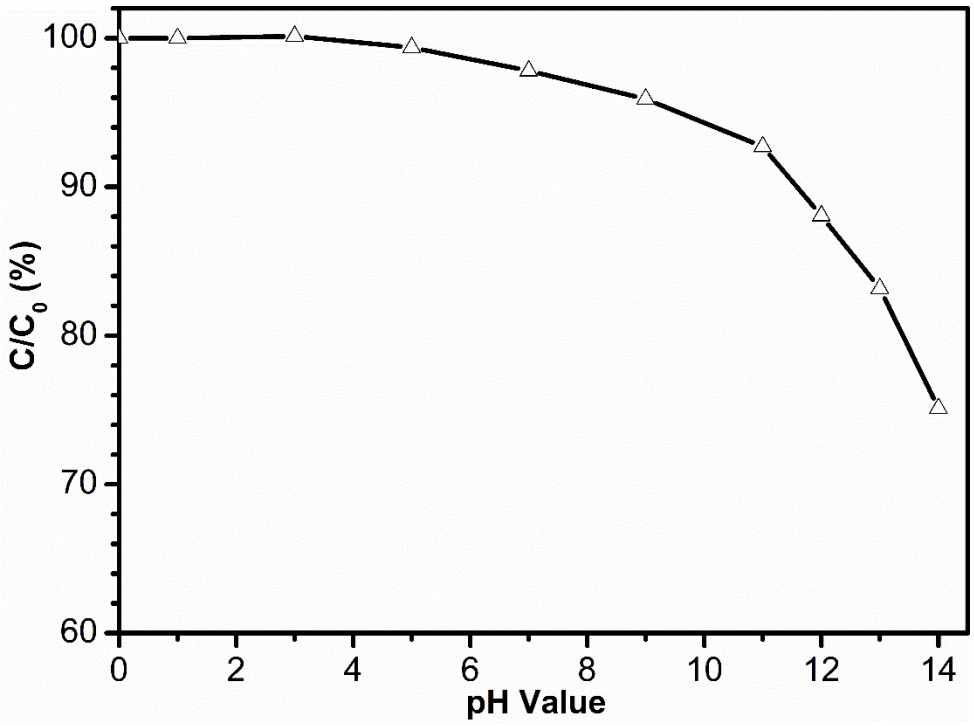


Fig.S6 The H_2-TPR profiles of $CuFe_2O_4/SiO_2$

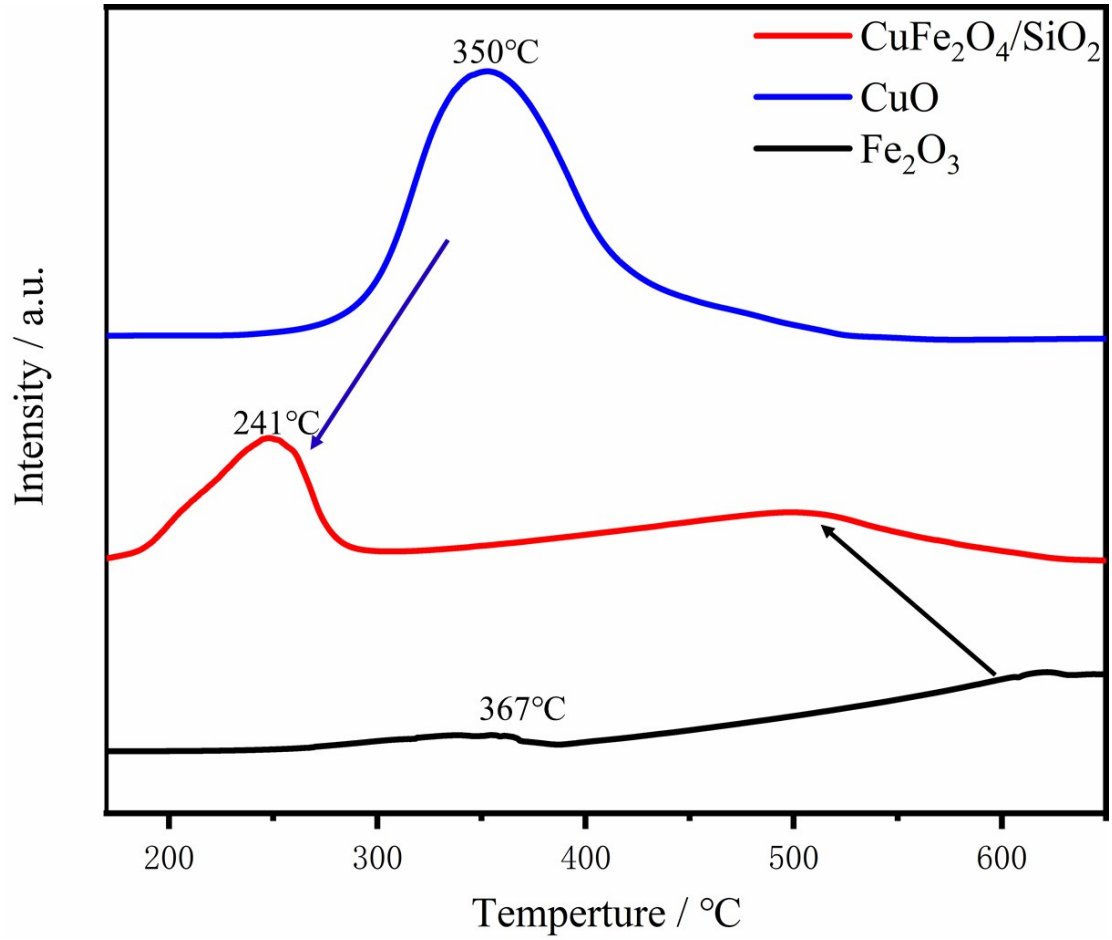


Fig.S7 The ^{1}H NMR Spectrum of Reaction Mixture after oxidation for 6 hours