Defective Fe/Co-MOF with Abundant Oxygen Vacancies as an Efficient Oxidase Mimic for Colourimetric and Sensitive Determination of Tetracycline

Xiaoyue Yue [a, b, c], Chaoyun Wu [a], Chenxu Hao [a] and Yanhong Bai [a, b, c, *]

[a] College of Food and Bioengineering, Zhengzhou University of Light Industry, Zhengzhou, Henan Province, 450001, China;

[b] Key Laboratory of Cold Chain Food Processing and Safety Control (Zhengzhou University of Light Industry), Ministry of Education, Zhengzhou, 450001, China;

[c] Henan Key Laboratory of Cold Chain Food Quality and Safety Control, Zhengzhou University of Light Industry, Zhengzhou, 450001, China;

Corresponding Author: Yanhong Bai
E-mail: baiyanhong212@163.com;

Instruments

The UV absorption spectra were obtained using a multifunctional microplate reader (TECAN Spark, Australia). SEM images were taken with a high-resolution cold field emission scanning electron microscope (Regulus 8100, Japan). TEM mages were taken with a high-throughput field emission transmission electron microscope (JEOL JEM 2800, Japan). The X-ray polycrystalline diffraction (XRD) spectra were obtained using a powder diffraction instrument (Rigaku D/MAX-2600, Japan). XPS spectra were obtained using an X-ray photoelectron spectroscopy (Thermo Scientific K-Alpha, USA). The corresponding Raman spectra were obtained by a Raman spectroscopy (Thermo Scientific DXR, USA). Infrared spectra were captured by a Fourier transform infrared spectrometer (Vertex 70, Germany). The electron paramagnetic resonance spectrometer (A JES FA200, Japan) was used to detect free radicals.

Captions of Figures

Fig. S1. Optimization of detection conditions.

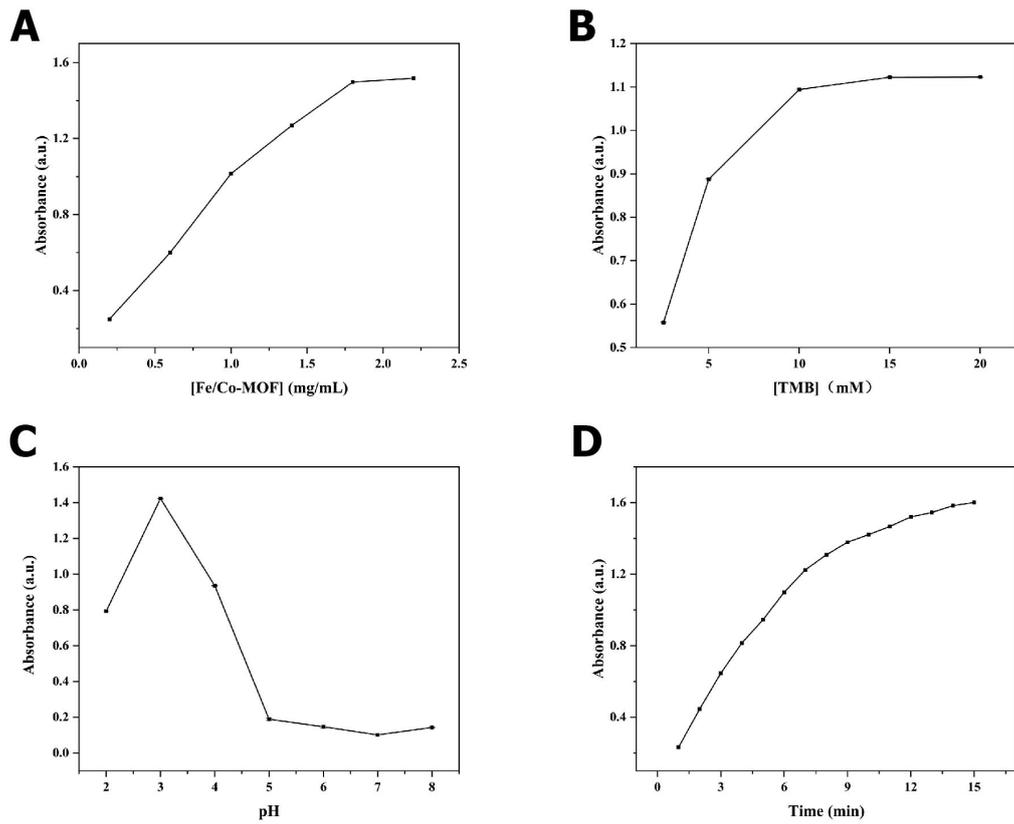**Fig. S2**. Explore the optimal ratio between the D-Fe/Co-MOF/TMB system and the target detection object.
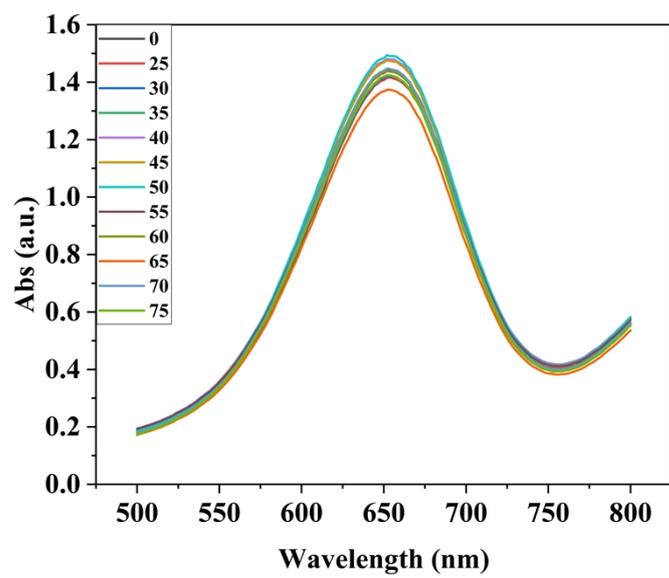
Fig. S1

Fig. S2