Electronic Supplementary Material (ESI) for New Journal of Chemistry. This journal is © The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2024

## **Supporting Information**

## Photocatalytic degradation of tetracycline hydrochloride by

## BiVO<sub>4</sub>/MIL-88B(Fe) heterojunction

Ziwei Zhao <sup>a</sup>, Qi Ling <sup>a</sup>, Shangkun Deng <sup>a</sup>, Ziliang Li <sup>a</sup>, Jianguo Lv <sup>b</sup>, Lei Yang <sup>c</sup>, Chunbin Cao <sup>d</sup>, Zhaoqi Sun <sup>a</sup>, Miao Zhang <sup>a,e</sup>

<sup>a</sup> School of Materials Science and Engineering, Anhui University, Hefei 230601, China

<sup>b</sup> School of Physics and Materials Engineering, Hefei Normal University, Hefei 230601, China

<sup>c</sup> School of Energy Materials and Chemical Engineering, Hefei University, Hefei 230601, China

<sup>d</sup> School of Science, Anhui Agricultural University, Hefei, Anhui, 230036, PR China

<sup>e</sup> Key Laboratory for Photoelectric Detection Science and Technology of Education Department of Anhui Province,

Hefei Normal University, Hefei 230601, China

e Corresponding author

E-mail address: zhmiao@ahu.edu.cn.



BiVO<sub>4</sub> powder was prepared and synthesised according to the method in the text.

Figure S1. (a) XRD patterns of BiVO<sub>4</sub>; (b) SEM images of BiVO<sub>4</sub>; (c) TEM image of BiVO<sub>4</sub>, and (d) HRTEM images of BiVO<sub>4</sub>.



Figure S2. (a) UV–visible absorption spectrum (the corresponding absorption edges of  $BiVO_4$ ); (b)  $BiVO_4$  at 1000 Hz, 1500 Hz and 2000 Hz frequencies for Mott Schottky plots.



Figure S3. (a) Transient photocurrent responses of BiVO<sub>4</sub>; (b) Electrochemical impedance spectra of different samples of BiVO<sub>4</sub>; (c) PL spectra of BiVO<sub>4</sub>.

1 mg of BiVO<sub>4</sub> powder (the sample on 1 cm  $\times$  2 cm FTO about 1 mg) was tested in 5 mL of degradation solution.



Figure S4. MIL-88B, 1-BV/MIL-88B, 2-BV/MIL-88B, 3-BV/MIL-88B, 4-BV/MIL-88B and 5-BV/MIL-88B for TC-HCl adsorption curves.



Figure S5. Photocatalytic efficiency for degradation for 10 mg/L TC-HCl of the 1 mg of  $BiVO_4$ .