

## Heterojunction $\text{Cu}_2\text{O}/\text{RGO}/\text{BiVO}_4$ Ternary Nanocomposites with Enhanced Photocatalytic Activities towards Degradation of Rhodamine B and Tetracycline Hydrochloride

Xiaoying Hu<sup>a</sup>, Qi Zhang<sup>a</sup>, Haoshan Nan<sup>a</sup>, Ming Wang<sup>a</sup>, Liang Qiao<sup>a</sup>, Hongwei Tian<sup>b\*</sup>

<sup>a</sup> College of Science and Laboratory of Materials Design and Quantum Simulation, Changchun University, Changchun, 130022, China;

<sup>b</sup> Key Laboratory of Automobile Materials of MOE and School of Materials Science and Engineering, Jilin University, Changchun, 130012, China.

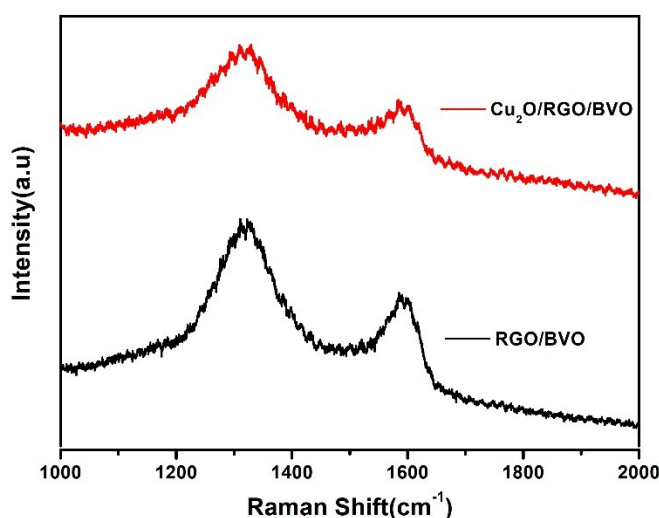


Fig. S1 Raman spectra of the  $\text{RGO}/\text{BiVO}_4$  and  $\text{Cu}_2\text{O}/\text{RGO}/\text{BiVO}_4$ .

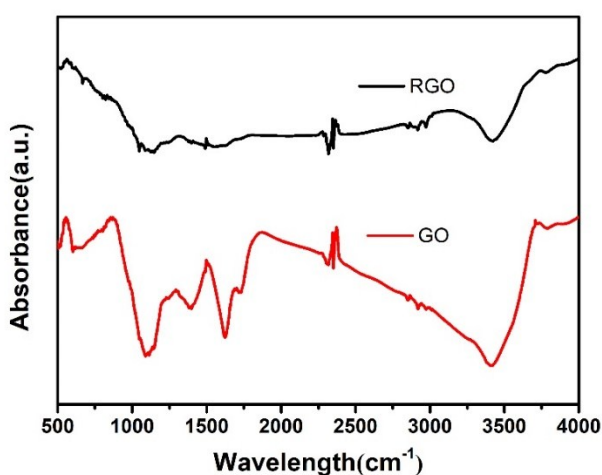


Fig. S2 FTIR spectra of the as-prepared samples GO and RGO.

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\*Corresponding authors: tianhw@jlu.edu.cn (H.W. Tian).

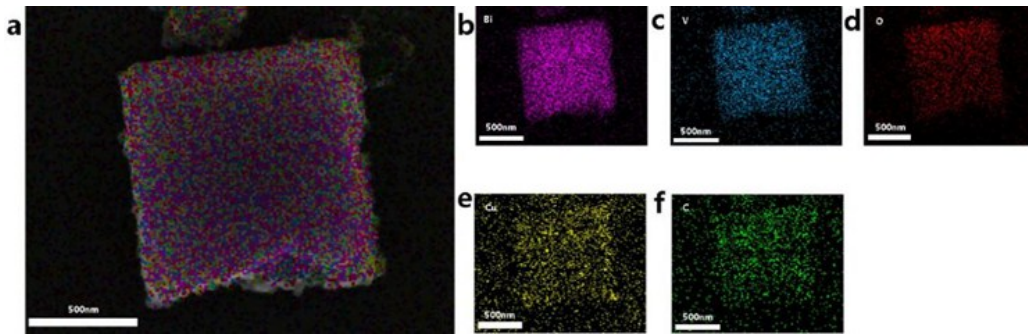


Fig.S3 The elemental mapping patterns of 5%Cu<sub>2</sub>O/RGO/BiVO<sub>4</sub>.

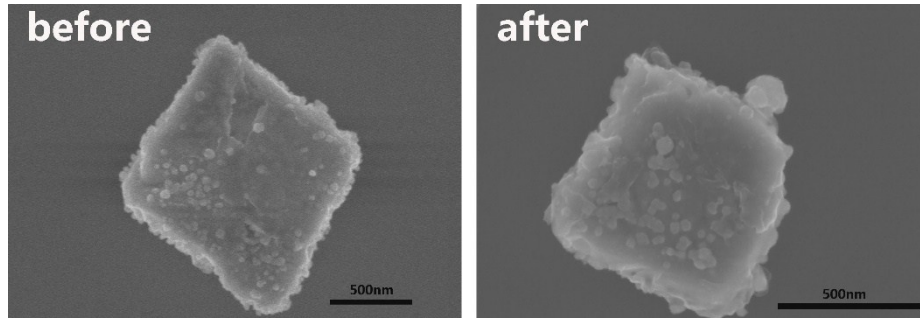


Fig.S4 SEM images of 5%Cu<sub>2</sub>O/RGO/BiVO<sub>4</sub> before and after cycling stability testing.

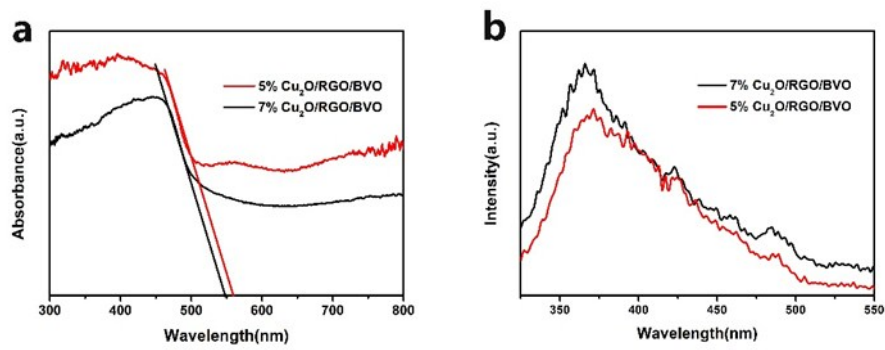


Fig.S5. UV-vis diffuse reflectance spectra(a), Photoluminescence (PL) spectra(b) of 5%Cu<sub>2</sub>O/RGO/BVO and 7%Cu<sub>2</sub>O/RGO/BVO

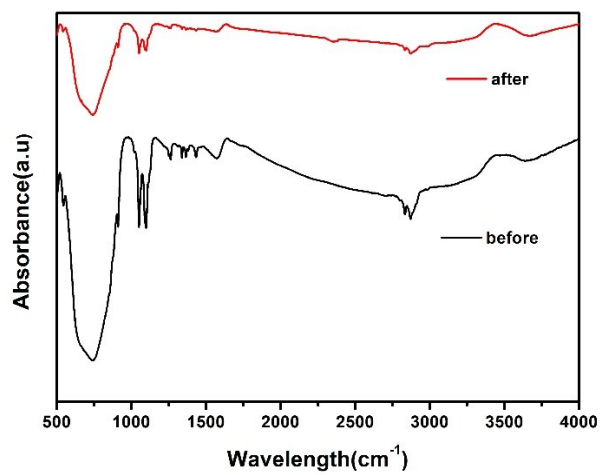


Fig.S6 FTIR spectra of 5%Cu<sub>2</sub>O/RGO/BiVO<sub>4</sub> before and after cycling stability testing.

Table 1. Comparison of degradation of dye over reported BiVO<sub>4</sub> based composites.

Catalysts	Light source	degradation rate (30min)	Ref.
Cu <sub>2</sub> O/RGO/BiVO <sub>4</sub>	300 W Xe lamp $\lambda > 420$ nm	90%	This work
CeVO <sub>4</sub> /RGO aerogel/BiVO <sub>4</sub>	300 W Xe lamp $\lambda > 420$ nm	50%	1
RGO/CN/BVO	300W Solar Simulator $\lambda > 420$ nm	39%	2
Ag/Ag <sub>3</sub> PO <sub>4</sub> /BiVO <sub>4</sub> /RGO	300 W Xe lamp $\lambda > 400$ nm	90%	3
Ag@g-C <sub>3</sub> N <sub>4</sub> @BiVO <sub>4</sub>	300 W Xe lamp $\lambda > 420$ nm	70%	4
g-C <sub>3</sub> N <sub>4</sub> /BiVO <sub>4</sub>	300 W Xe lamp $\lambda > 420$ nm	90%	5
BiVO <sub>4</sub> /TiO <sub>2</sub>	300 W Xe lamp $\lambda > 420$ nm	30%	6
AgI/rGO/BiVO <sub>4</sub>	300W Xe lamp $\lambda > 420$ nm	100%	7
$\beta$ -Ag <sub>2</sub> MoO <sub>4</sub> /BiVO <sub>4</sub>	300W Xe lamp $\lambda > 420$ nm	40%	8

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