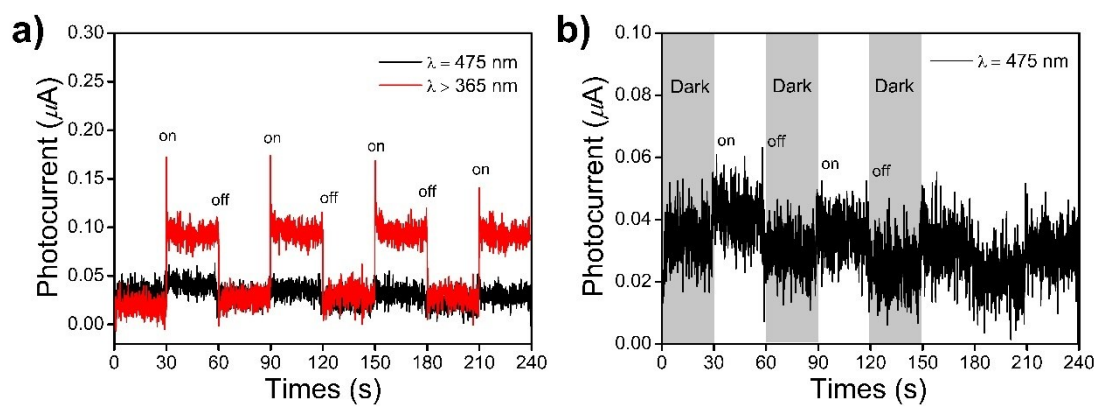


# Lanthanide-Doped Bismuth Oxobromide Nanosheets for Self-Activated Photodynamic Therapy

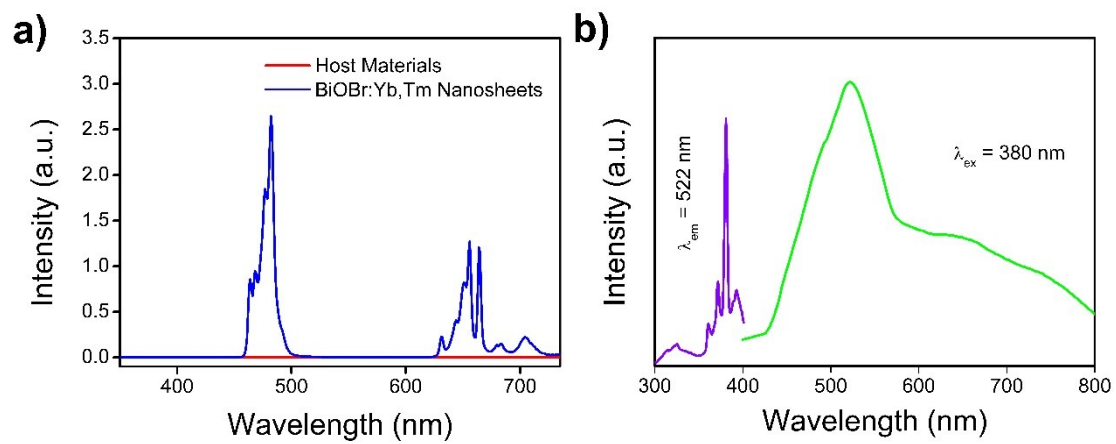
Liangge Xu, Fei He,\* Chen Wang, Shili Gai,\* Arif Gulzar, Dan Yang, Chongna Zhong, and  
Piaoping Yang\*

<sup>a</sup> Key Laboratory of Superlight Materials and Surface Technology, Ministry of Education, College  
of Material Sciences and Chemical Engineering, Harbin Engineering University, Harbin, 150001, P.  
R. China

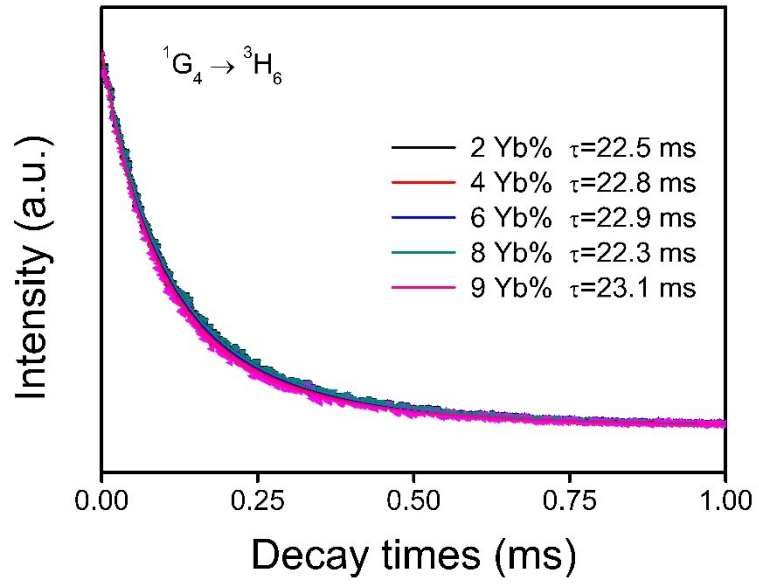
\* Corresponding author: E-mail: [yangpiaoping@hrbeu.edu.cn](mailto:yangpiaoping@hrbeu.edu.cn); [hefei@hrbeu.edu.cn](mailto:hefei@hrbeu.edu.cn);  
[gaishili@hrbeu.edu.cn](mailto:gaishili@hrbeu.edu.cn)



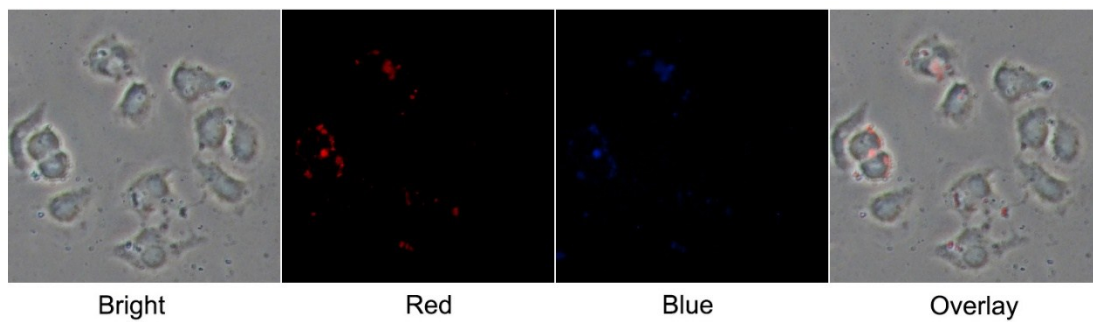
**Fig. S1** BiOBr:Yb,Tm nanosheets (a) Photocurrent responses under the different wavelength light lamp. (b) Larger image of photocurrent responses under 475 nm irradiation (1.2 V vs. Ag/AgCl, 0.5M Na<sub>2</sub>SO<sub>4</sub>).



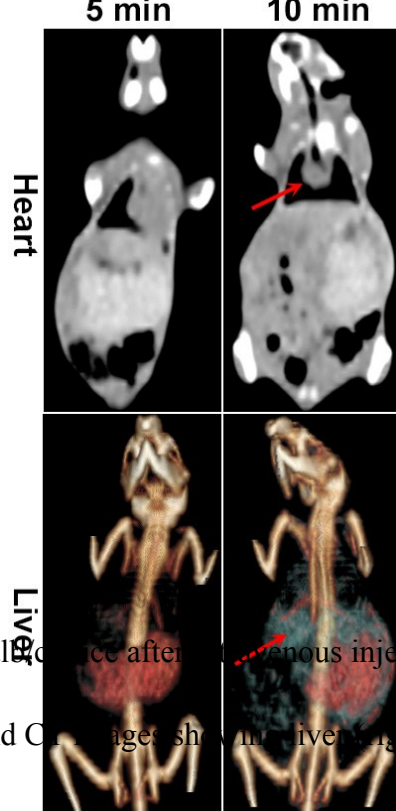
**Fig. S2** (a) UCL emission spectra of BiOBr:Yb,Tm crystals (blue) and BiOBr crystals (red) under 980 nm laser excitation. (b) Excitation (purple) and emission spectra (green) of BiOBr crystals.



**Fig. S3** Decay curves for the  ${}^1G_4 \rightarrow {}^3H_6$  emissions of  $Tm^{3+}$  in the  $BiOBr:Yb,Tm$  crystals with different  $Yb^{3+}$  concentration.



**Fig. S4** UCLM images of HeLa cells incubated with BiOBr:Yb,Tm-PEG nanosheets for 1 h.



**Fig. S5** *In vivo* CT images of a Balb/c mouse after intravenous injection of BiOBr:Yb,Tm nanosheets.

CT images showing heart (left) and CT images showing liver (right).