

## Electronic Supporting Information

# Oxygen Vacancy induced Superior Visible-Light-Driven Photodegradation Pollutant performance in BiOCl microflowers

Feng Cao,<sup>a</sup> Yunan Wang,<sup>a</sup> Jianmin Wang,<sup>a</sup> Xin Lv,<sup>a</sup> Dongyan Liu,<sup>a</sup> Jun Ren,<sup>a</sup> Jun Zhou,<sup>a</sup> Ruiping  
Deng,<sup>b</sup> Song Li,<sup>\*a</sup> and Gaowu Qin<sup>\*a</sup>

<sup>a</sup>Key Laboratory for Anisotropy and Texture of Materials (Ministry of Education), School of Material  
Science and Engineering, Northeastern University, Shenyang 110819, China

<sup>b</sup>State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry,  
Chinese Academy of Sciences, Changchun 130022, China

\*Corresponding author. [lis@atm.neu.edu.cn](mailto:lis@atm.neu.edu.cn) (S. Li), [qingw@smm.neu.edu.cn](mailto:qingw@smm.neu.edu.cn) (G. W. Qin).

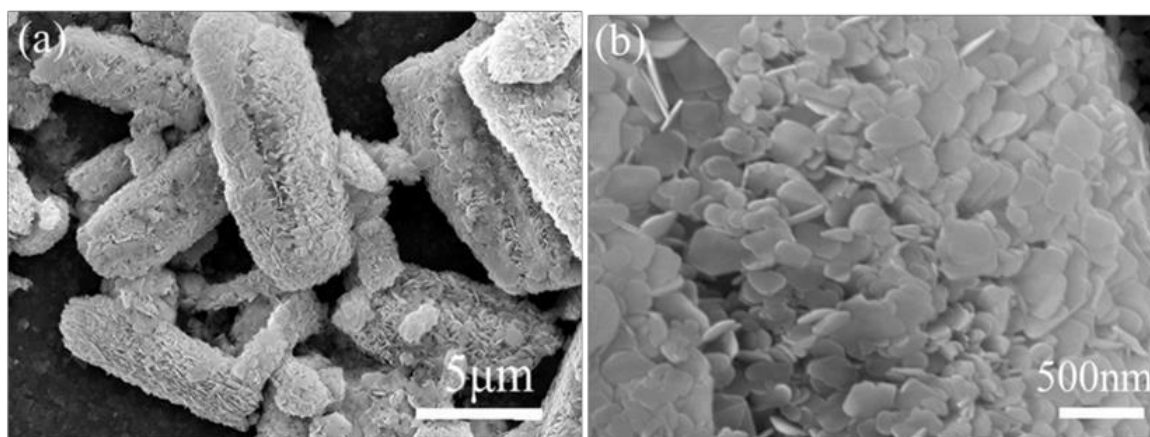


Fig. S1 SEM images of the bulk BiOCl powder.

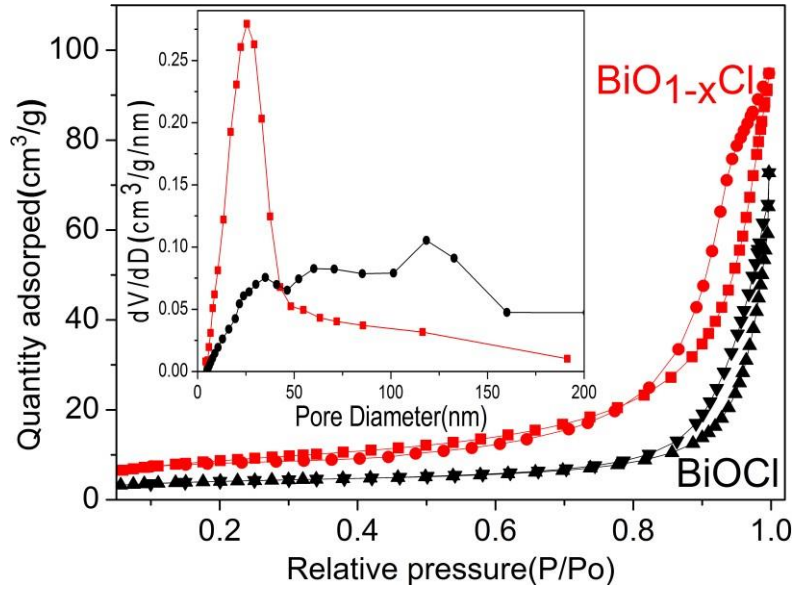


Fig. S2  $N_2$  adsorption–desorption isotherms and corresponding pore size distribution curves (inset) for  $BiO_{1-x}Cl$  and  $BiOCl$  samples.

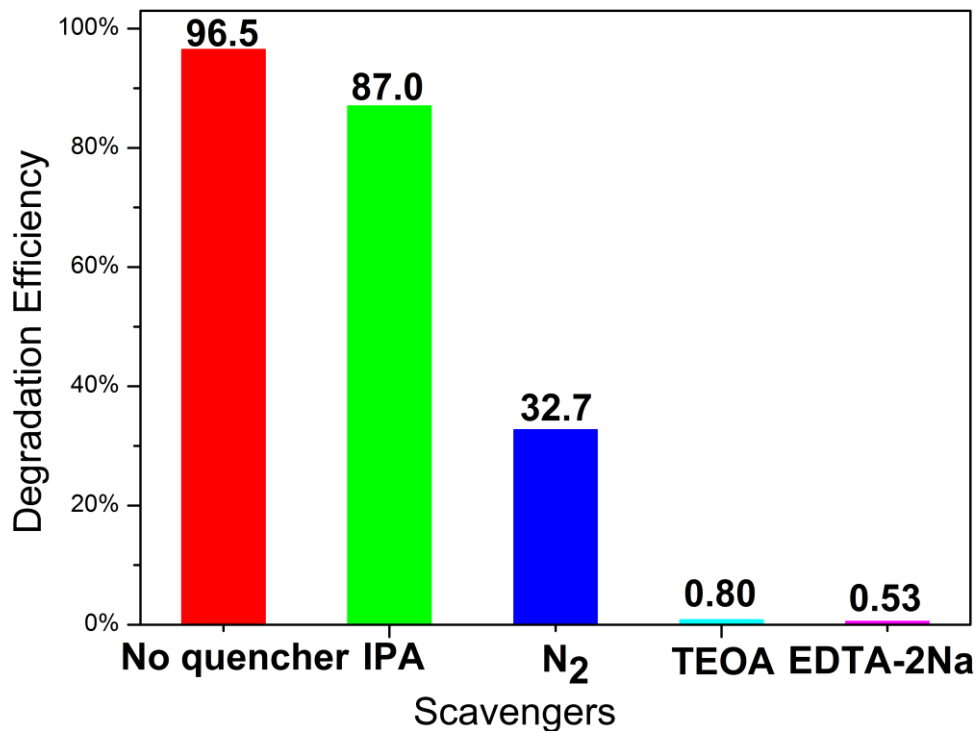


Fig. S3 Trapping experiment of active species during the photocatalytic reaction with 6 minute visible light irradiation: EDTA-2Na or TEOA (triethanolamine) as scavengers for holes; IPA (isopropanol) as scavenger for hydroxyl radicals ( $\cdot OH$ );  $N_2$  was used to confirm the effect of  $O_2$ .