Supporting Information

BiOCl:Er³⁺ Nanosheets with Tunable Thickness for Photon Avalanche Phosphors

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Figure S1. SEM images of B-6 before (a) and after (b) annealing.



Figure S2. Rising profiles of the UC green (a) and red (b) emission of B-6 at the excitation power density of 60 and 85 W/cm², respectively.



Figure S3. (a) Green emission and (b) red emission in B-6 sample as a function of incident power at 980 nm excitation.



Figure S4. FT-IR of prepared BiOCl: Er³⁺ nanosheets with different thickness.



Figure S5. PL spectra of BiOC1: Eu^{3+} nanosheets with different pH value. (a) Emission spectrum under 465 nm excitation; (b) The emission intensity ratio of I_{698}/I_{614} under 466 nm excitation.



Figure S6. XRD patterns of prepared BiOC1: Er^{3+} nanosheets at pH = 6 with different reaction times. (a) 18h and (b) 24h.



Figure S7. SEM patterns of prepared BiOCl: Er^{3+} nanosheets at pH = 6 with different reaction times. (a) 18h and (b) 24h.



Figure S8. (a) UC luminescence spectra; Power dependence of (b) green and (c) red UC intensities of BiOCI: Er^{3+} nanosheets at pH = 6 with different reaction times under the excitation of 980 nm.



Figure S9. (a) NIR emission and (b) Power dependence of NIR emission of BiOCI: Er^{3+} nanosheets at pH = 6 with different reaction times under the excitation of 980 nm.



Figure S10. UV-vis absorption spectra of prepared BiOCl: Er³⁺ nanosheets with different

thickness.



Figure S11. NIR emission of B-6 under the excitation of 808 nm.