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## Electronic Supplementary Information for the Manuscript:

## Synthesis of Au/Bi<sub>2</sub>S<sub>3</sub> nanoflowers for efficient photothermal therapy

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Figure S1. TEM image of BSA-Bi<sub>2</sub>S<sub>3</sub> NPs.



Figure S2. HRTEM image of Au/Bi<sub>2</sub>S<sub>3</sub> NFs.



Figure S3. XRD pattern of Au/Bi<sub>2</sub>S<sub>3</sub> NFs.



Figure S4. FT-IR spectrum of Au/Bi<sub>2</sub>S<sub>3</sub> NFs.



Figure S5. Thermogravimetic analysis (TGA) of Au/Bi<sub>2</sub>S<sub>3</sub> NFs.



Figure S6. (a) UV-vis-NIR absorption spectra and (b) fitting curve of the absorption values at 808nm of the Au/Bi<sub>2</sub>S<sub>3</sub> NFs dispersions at different concentrations in water.



Figure S7. The UV-vis spectra of  $Au/Bi_2S_3$  NFs before and after NIR irradiation.