

Supporting information

Layer-by-layer reduced graphene oxide (rGO)/Gold nanosheets (AuNSs) hybrid
films: significantly enhanced photothermal transition effect compared with
rGO or AuNSs films

Kun Nie, Qi An, Shengyang Tao*, Zepeng Zhang, Xinglong Luan, Qian Zhang, Yihe Zhang**

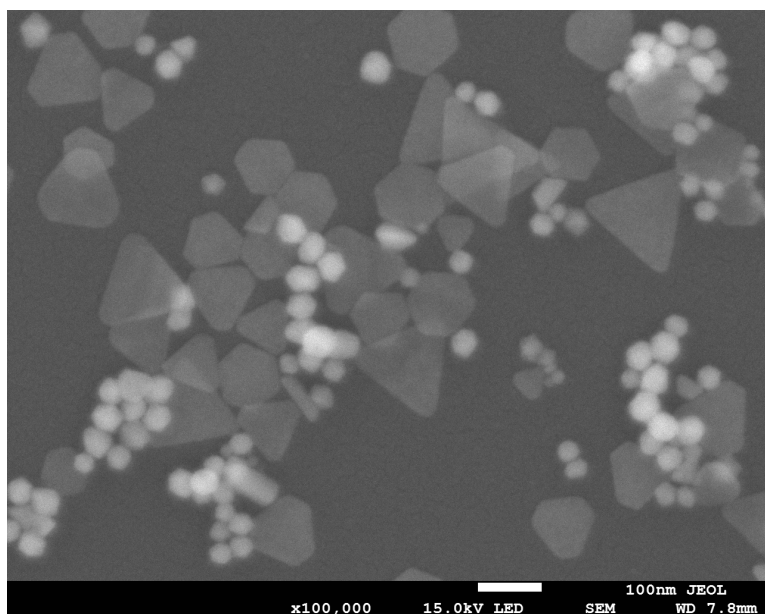


Figure S 1. SEM images of AuNSs.

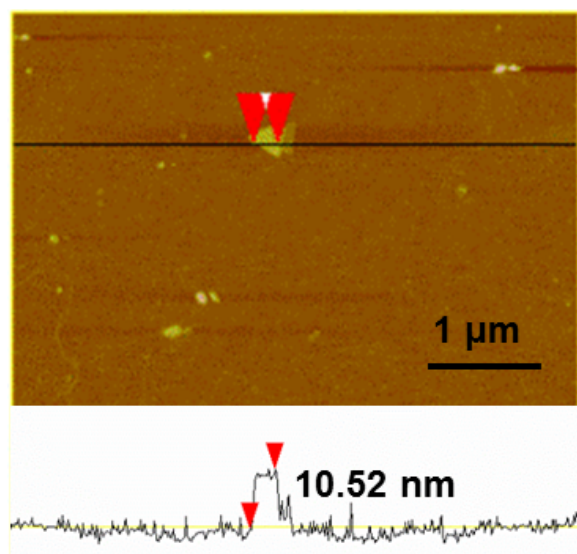


Figure S 2. AFM images with height profile of AuNSs, indicating the thickness of the gold sheet is around 10 nm. The scan size is $5\text{ }\mu\text{m} \times 5\text{ }\mu\text{m}$ (Only partial image is displayed for the reason of clarity).

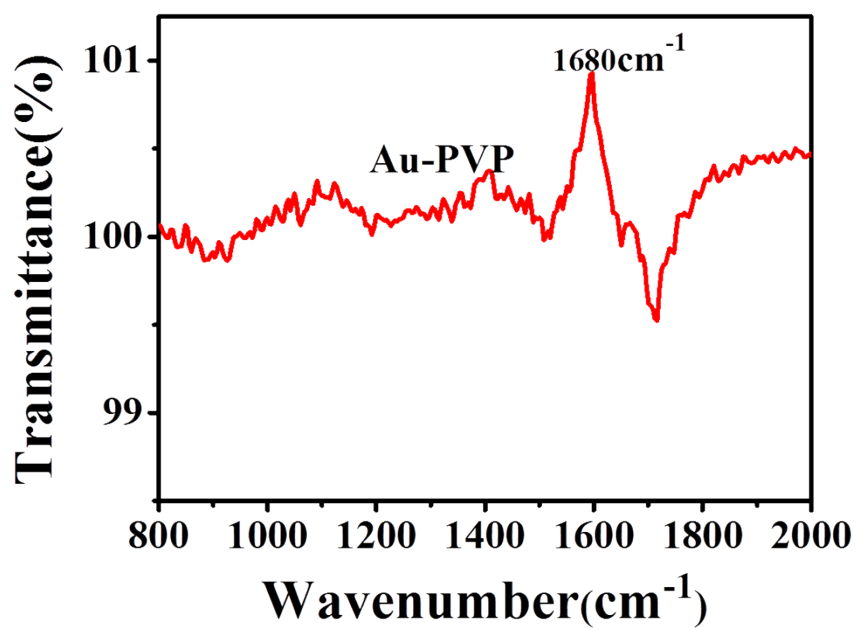


Figure S 3. ATR-IR spectra of Au nanosheets. The vibrational peak at 1680 cm^{-1} is the characteristic peak of PVP polymer.

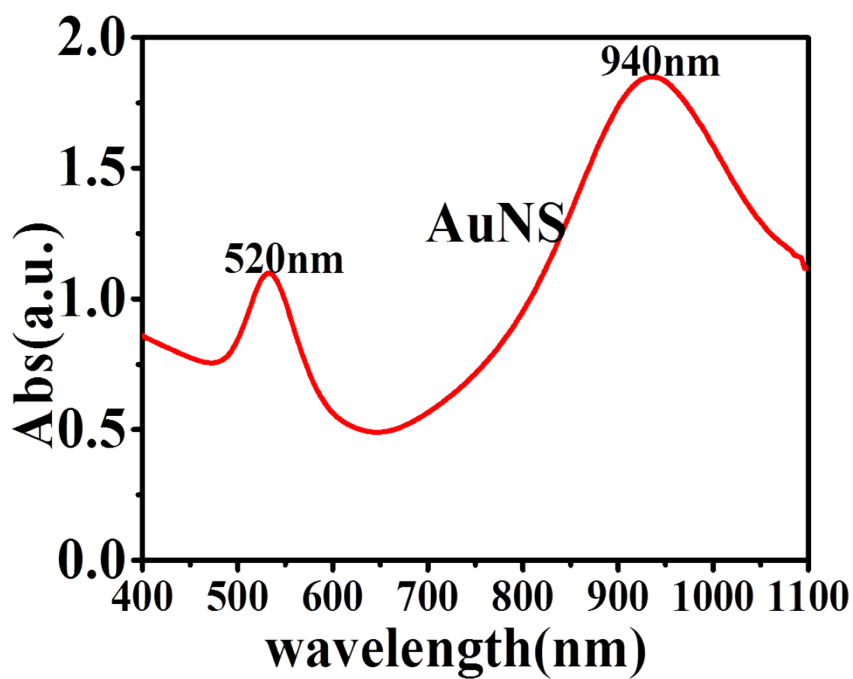


Figure S 4. UV-vis spectra of AuNSs, absorbing lights in both visible and near infrared regions.

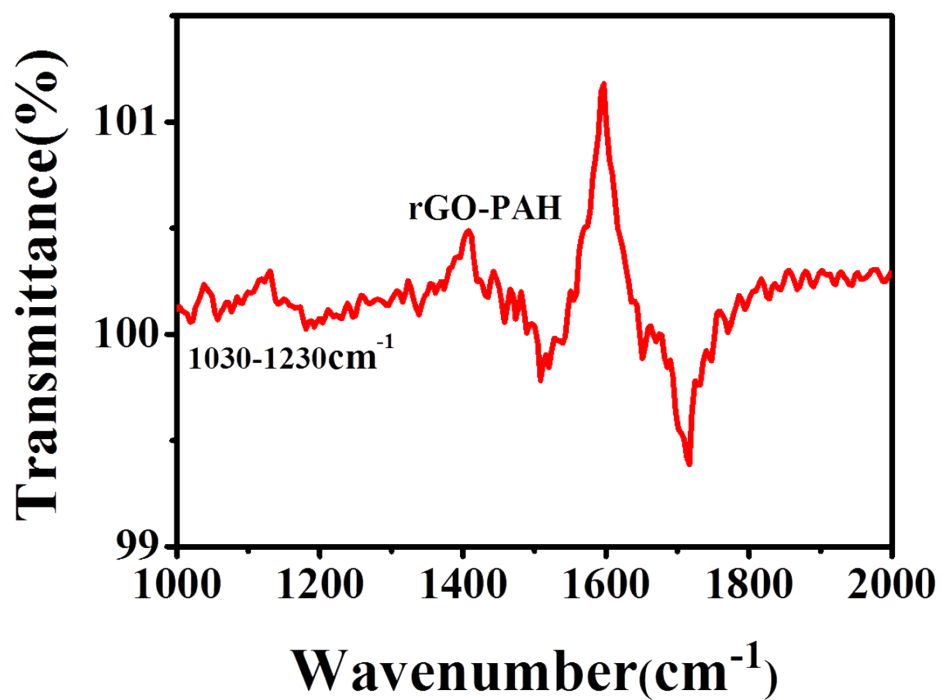


Figure S 5. ATR-IR spectra of rGO(-PAH). The vibrational absorbance at 1030-1230 cm^{-1} is the characteristic peak of PAH polymer.

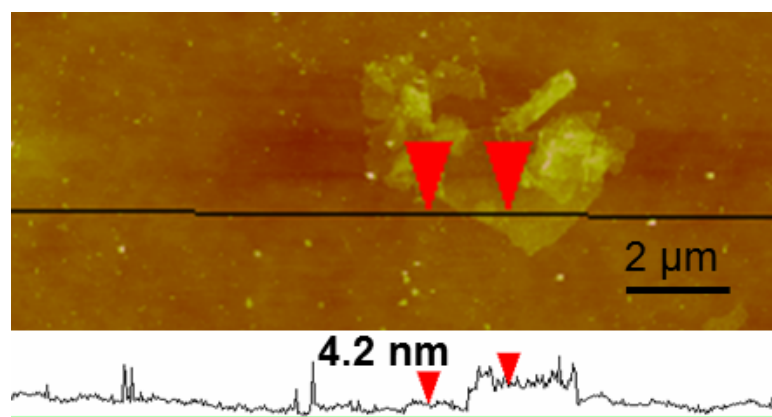


Figure S 6. AFM image with height profile of rGO (surface modified by PAH).

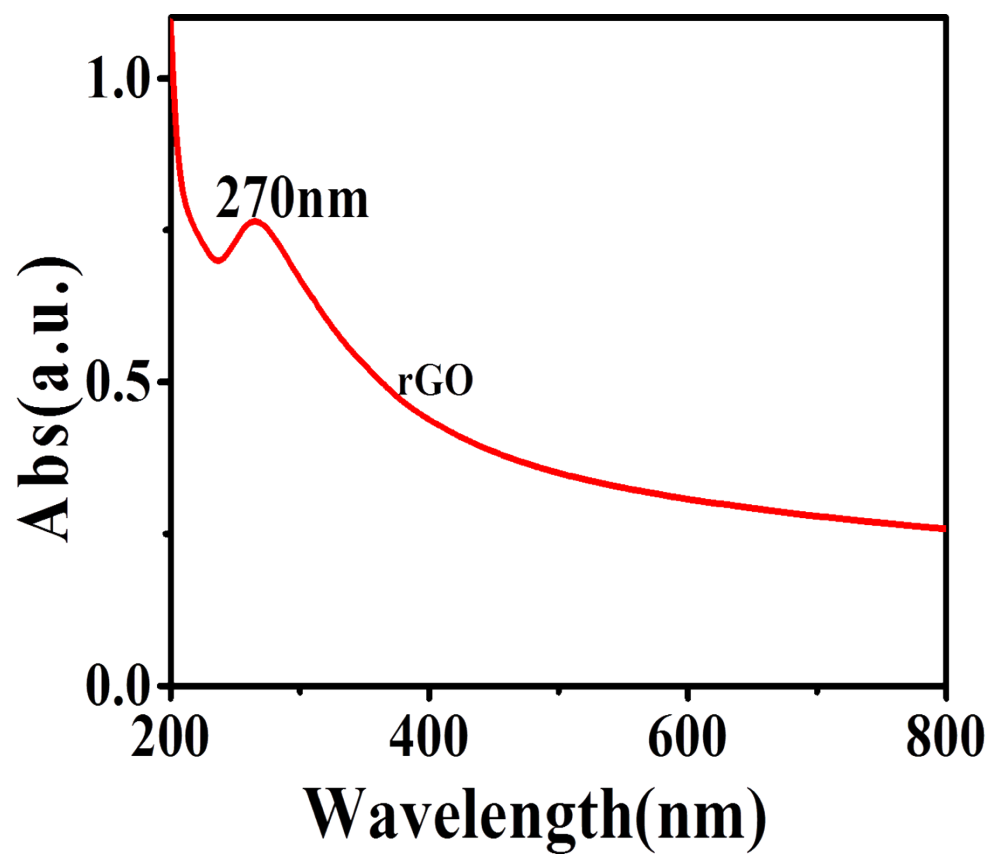


Figure S 7. UV-vis spectra of rGO, showing characteristic absorbance around 270 nm, and absorbing light throughout the UV-vis-NIR regions.

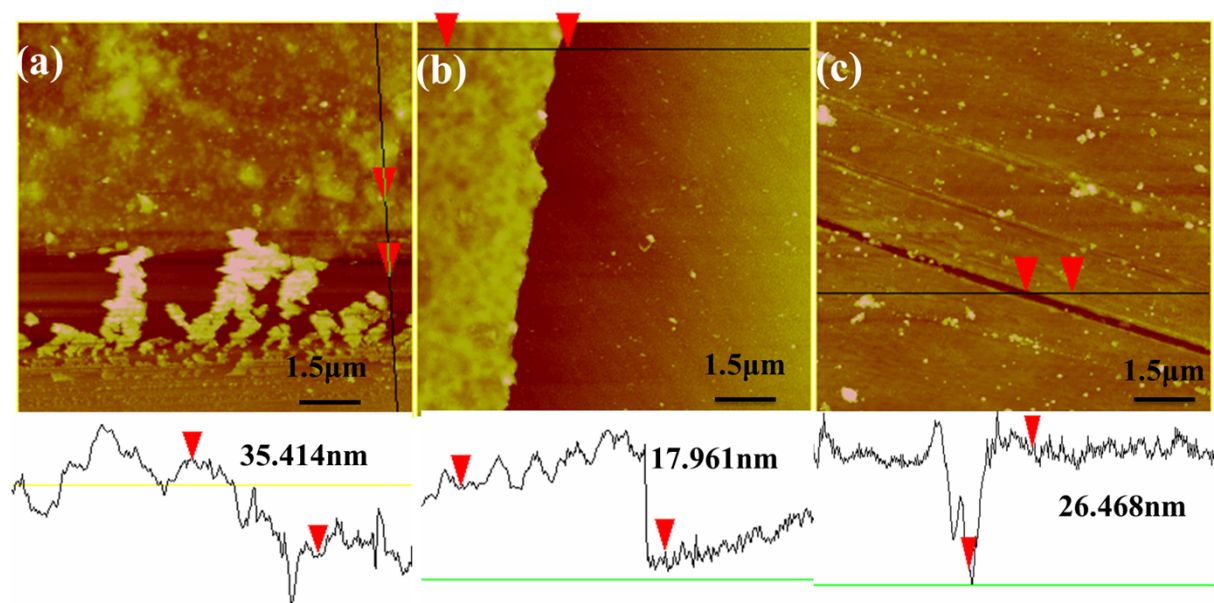


Figure S 8. AFM images and corresponding height profile at defect lines of (a) (rGO/AuNS)₅, (b) (RGO-PAH/PAA)₅ and (c) (AuNS/PAH)₅ multilayers. The defect lines was generated by scratching the surface using a pair of tweezer.

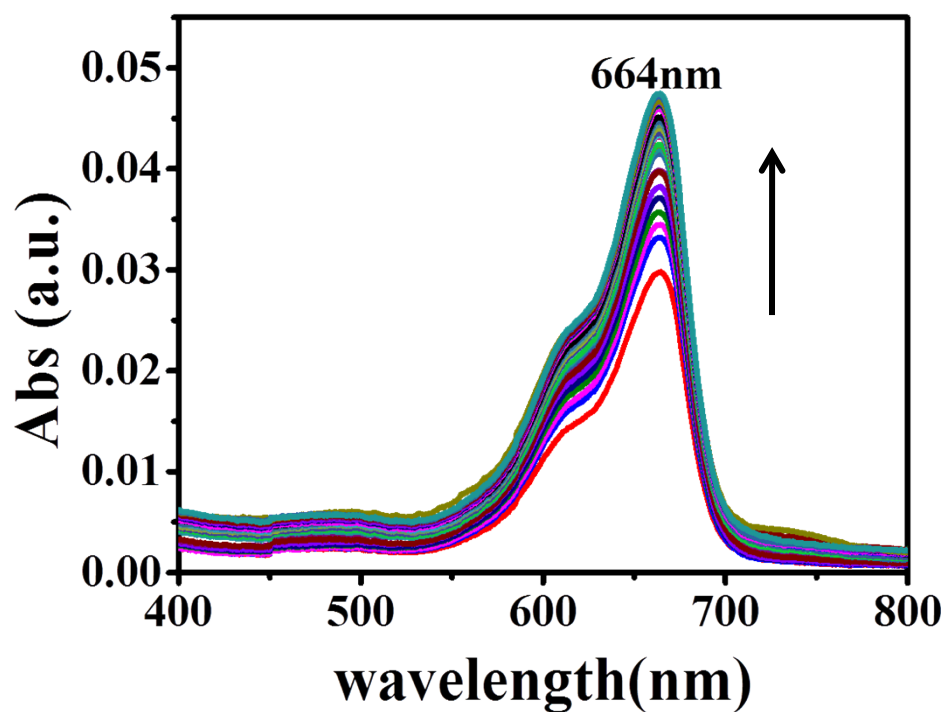


Figure S 9. The UV-vis spectra of MB during the release process.