

Electronic Supplementary Information

Direct exfoliation of graphite using non-ionic polymer surfactant for fabrication of transparent and conductive graphene film

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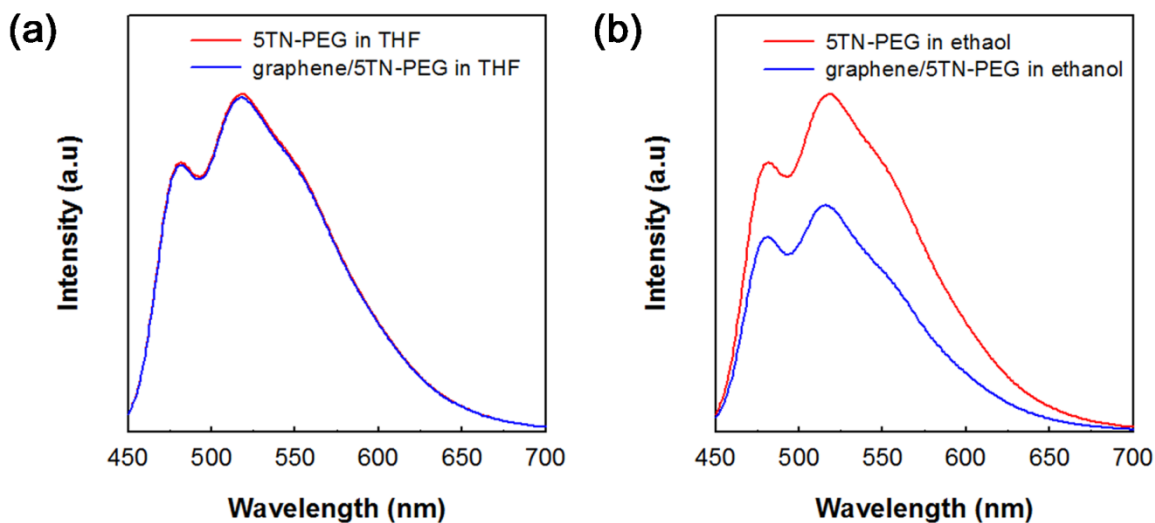


Fig. S1 Photoluminescence spectra of (a) 5TN-PEG and graphene/5TN-PEG in THF; (b) 5TN-PEG and graphene/5TN-PEG in ethanol.

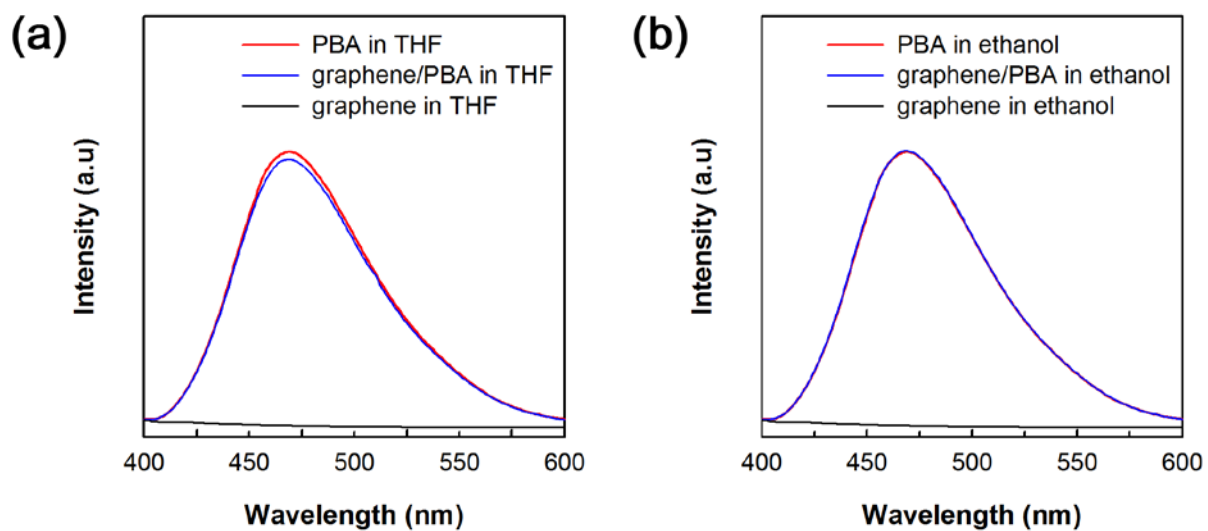


Fig. S2 Photoluminescence spectra of (a) PBA, graphene/PBA and graphene in THF; (b) PBA, graphene/PBA and graphene in ethanol.

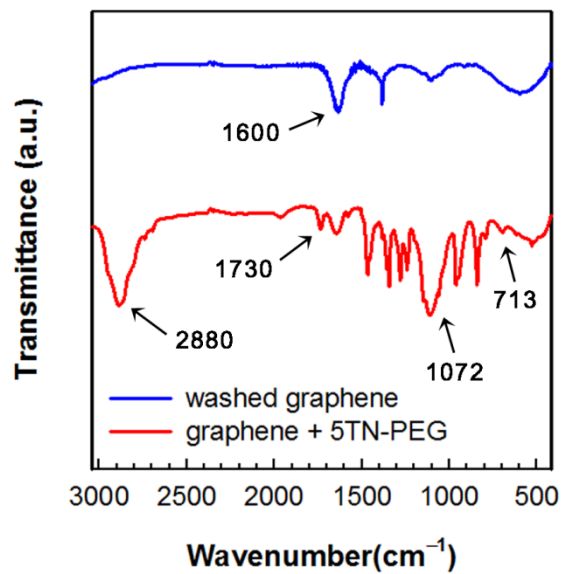


Fig. S3 Comparison of FT-IR spectra of washed graphene with that of graphene + 5TN-PEG.

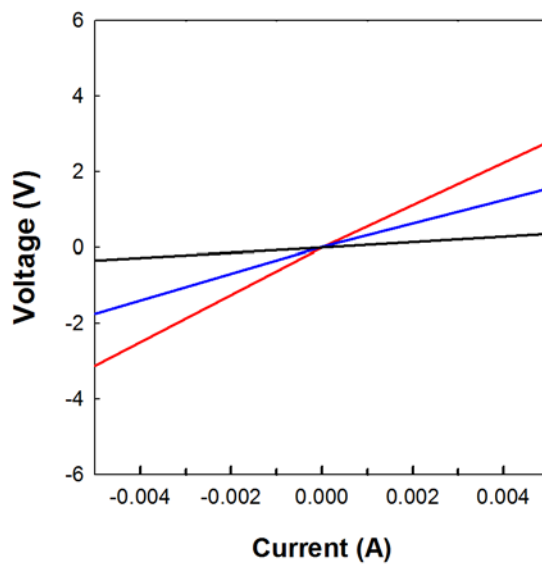


Fig. S4 I-V curves of graphene films

| Color | Transmittance at 550 nm (%) | Resistance (Ω) | Sheet resistance ($\Omega \text{ sq}^{-1}$) |
|-------|-----------------------------|-------------------------|---|
| Red | 96 | 613.825 | 2200 |
| Black | 82 | 380.254 | 1200 |
| Blue | 74 | 67.328 | 300 |

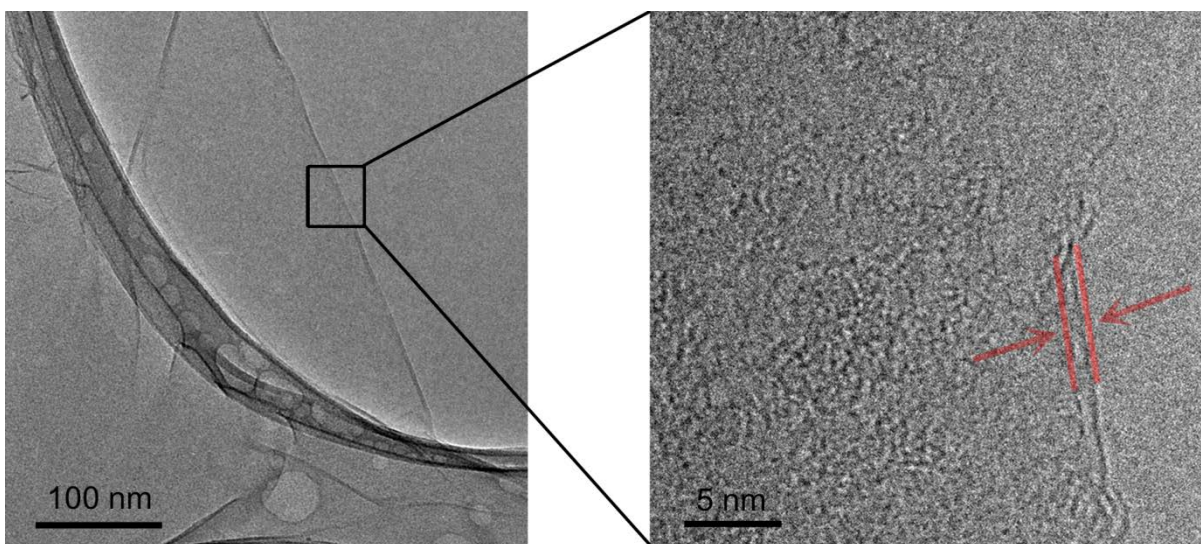


Fig. S5 HRTEM image of graphene film edge.

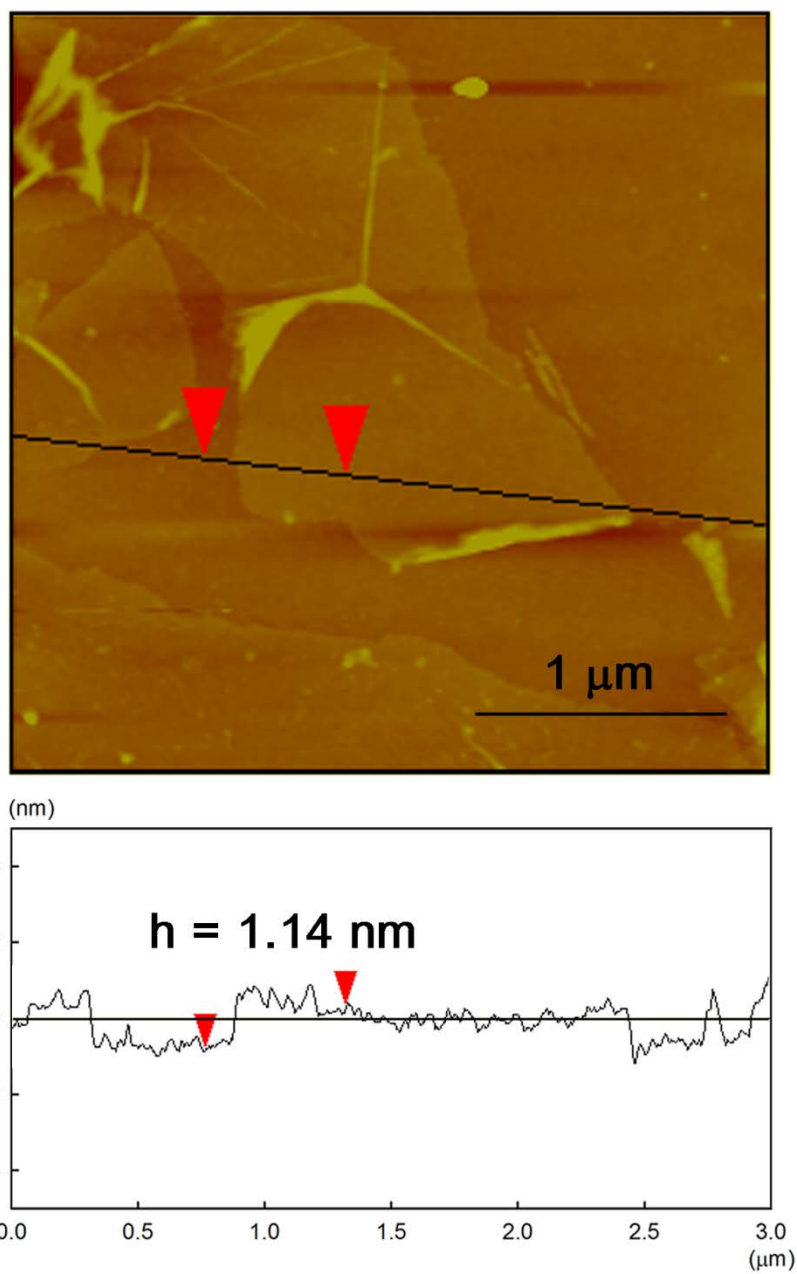


Fig. S6 Layer analysis by AFM.