

Electronic supplementary information

Tailored graphene based polyurethane composites for efficient electrostatic dissipation and electromagnetic interference shielding applications

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Surface area measurement

The surface area of reduced graphene oxide prepared by thermal reduction of graphene oxide (synthesized by improved Hummers method) was measured by using surface area analyzer (Quantachrome, ASiQwin) and quantified by Brunauer-Emmett-Teller (BET) method. The BET surface area ($317 \text{ m}^2/\text{g}$) was significantly lower than the theoretical surface area of $2630 \text{ m}^2/\text{g}$ for individual isolated/separated graphene sheets.¹ However, in real bulk samples such as reduced graphene oxide, a significant amount of surface area is not available for nitrogen adsorption because of overlap and stacking of the exfoliated layers.² The measured surface area of the present sample is therefore consistent with the stacking structure and agglomerated morphology of the reduced graphene sheets, as deduced from Raman and SEM studies.

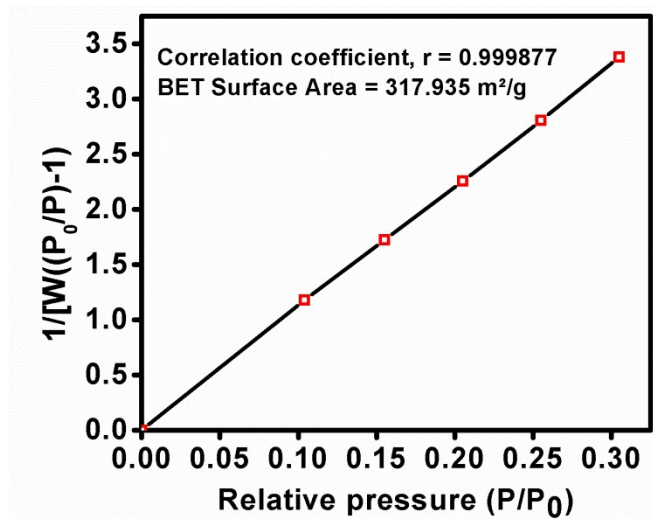


Fig. S1 BET surface area plot of RGO

Atomic force microscopy

Fig. S2 presents AFM image of the reduced graphene oxide deposited on the silicon substrate. The height profiles of lines marked in the AFM image are also shown. As can be seen in Fig. S2, RGO has a very smooth sheet like surface with folded edges. The thickness, measured from the

height profiles at various positions in the AFM image is about ~ 1.2 nm, which is consistent with the data reported in the literature.³

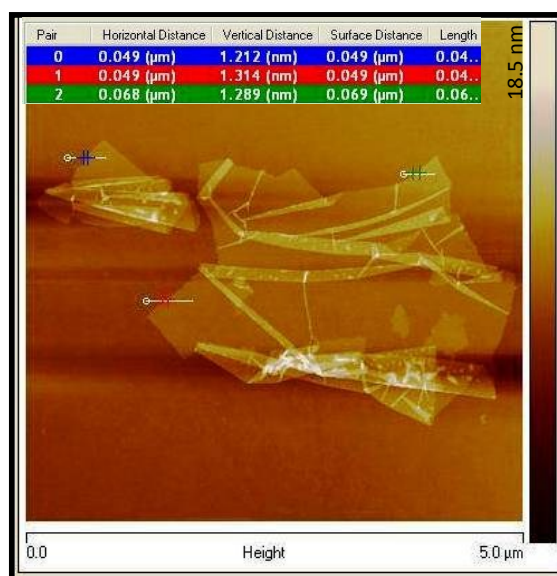


Fig. S2 Tapping mode AFM image of RGO

References

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