

Supporting Information

Hyperbranched-polymer functionalization of graphene sheets for enhanced mechanical and dielectric properties of polyurethane composites

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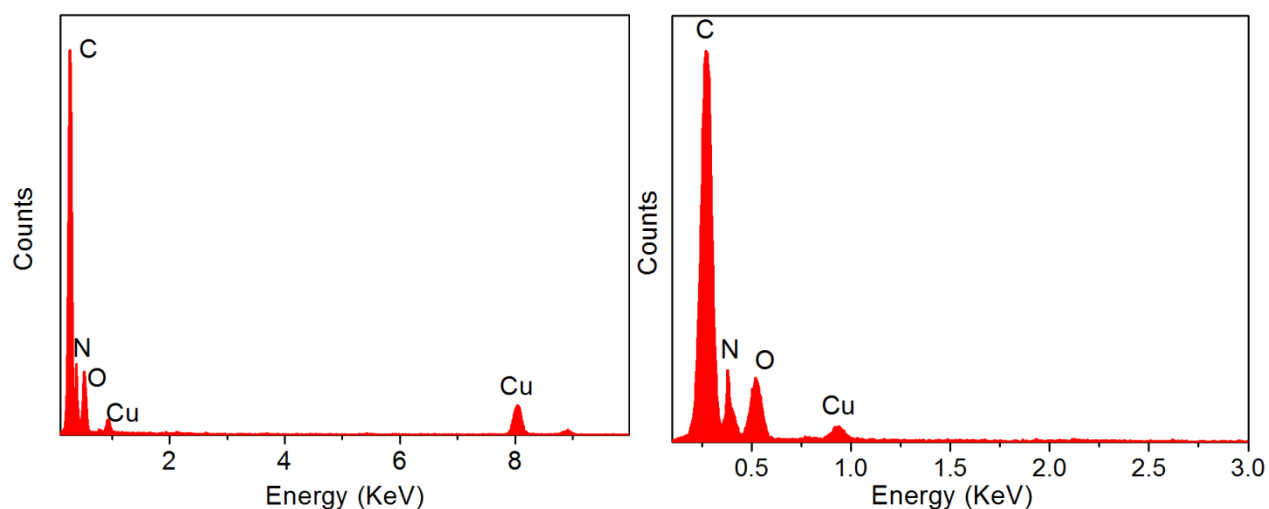


Figure S1 EDX spectra (left) and magnified EDX spectra (right) of GS-HBA

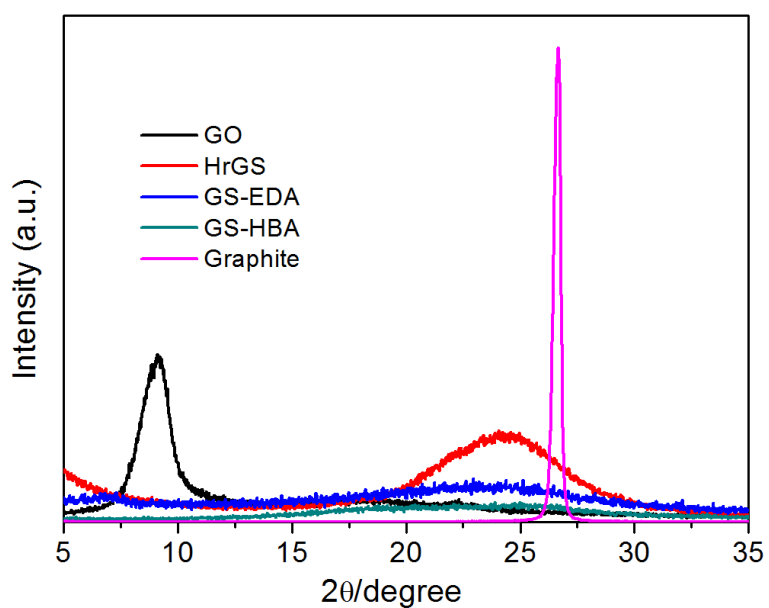


Figure S2. XRD patterns of GO, HrGS, GS-EDA, GS-HBA and Graphite.

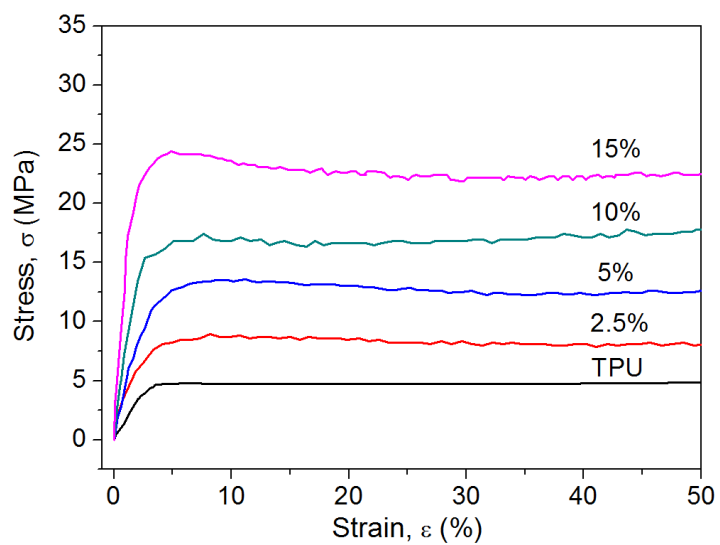


Figure S3. Representative stress-strain curves of TPU/GS-HBA composites in the low strain regime.

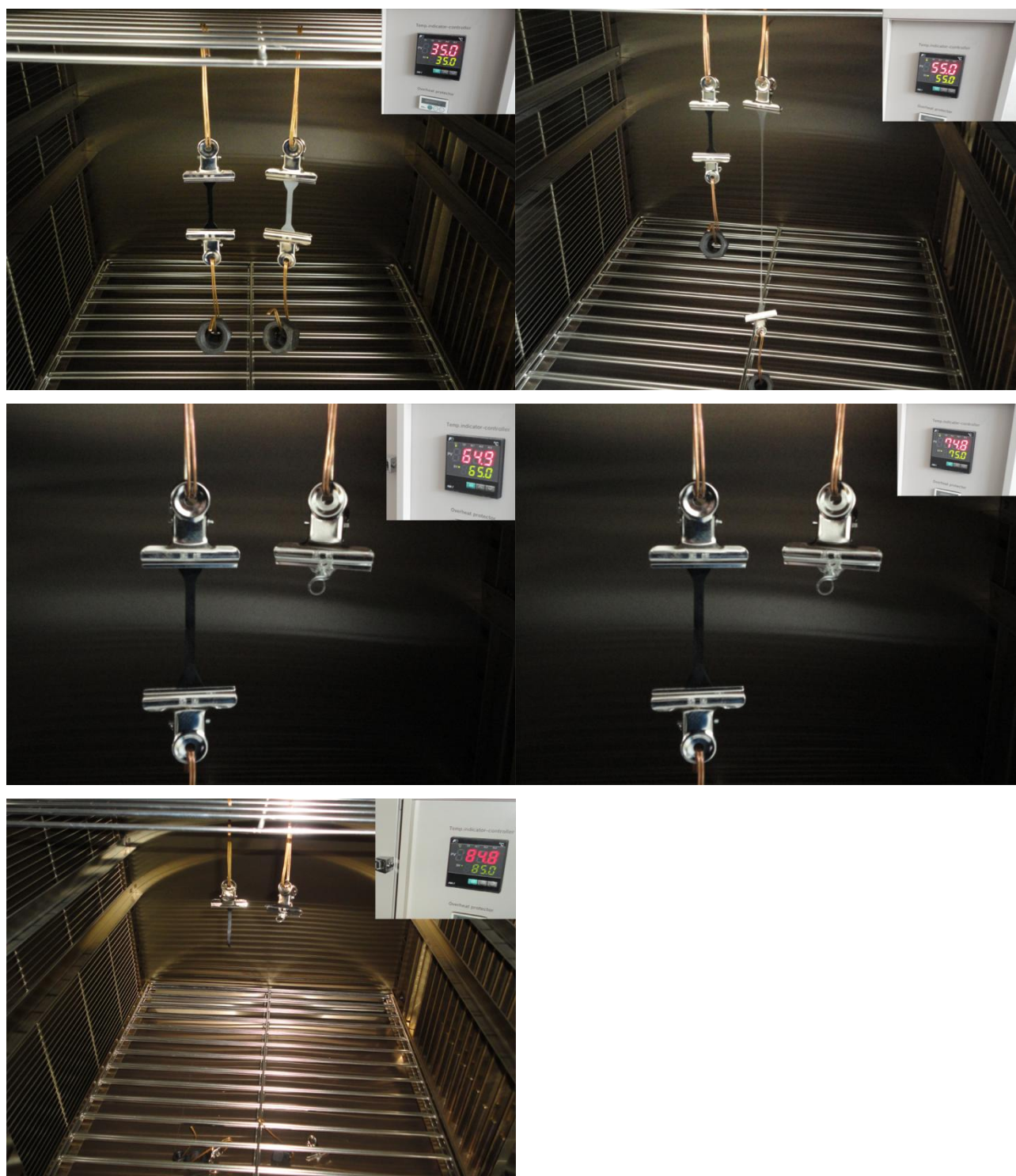


Figure S4. The photographs of mechanical behavior of the composite with 15 wt% GS-HBA (left) and the pure TPU (right) at different temperature.

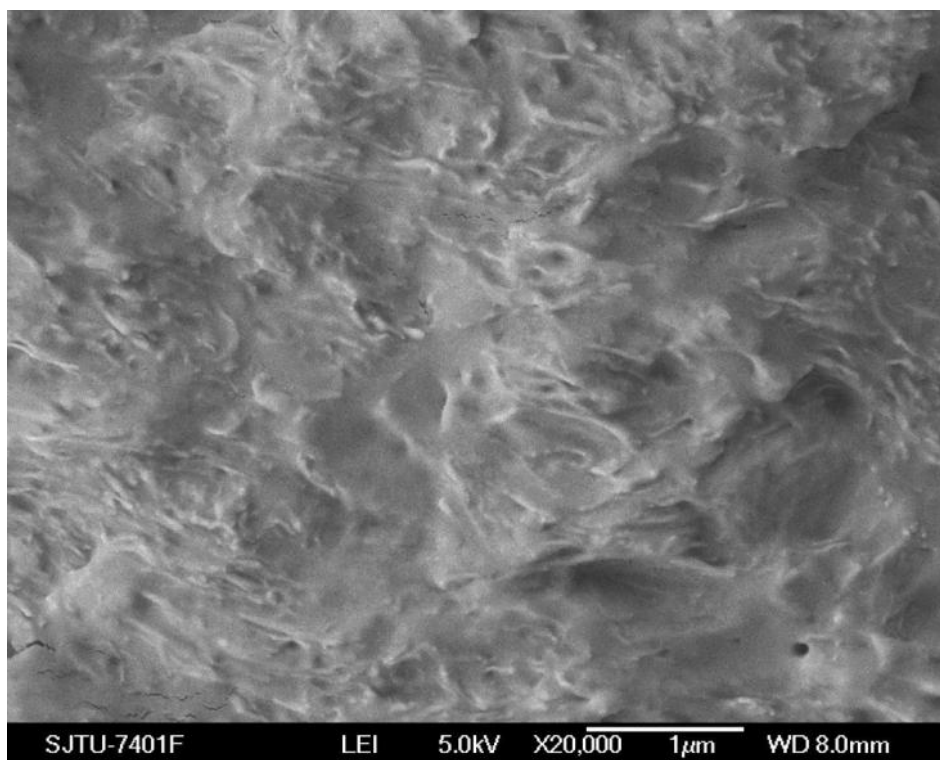


Figure S5. SEM image of the fracture surface of the composite with 15 wt% GS-HBA.

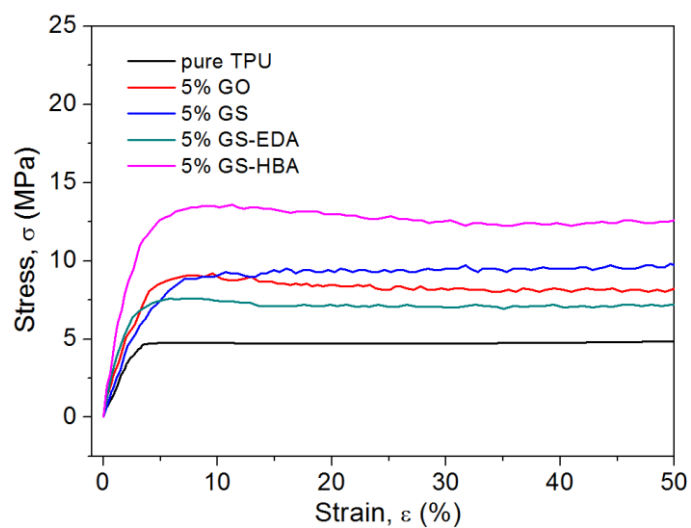


Figure S6. Representative stress-strain curves of pure TPU and its composites with HrGS and functionalized GSs in the low strain regime.

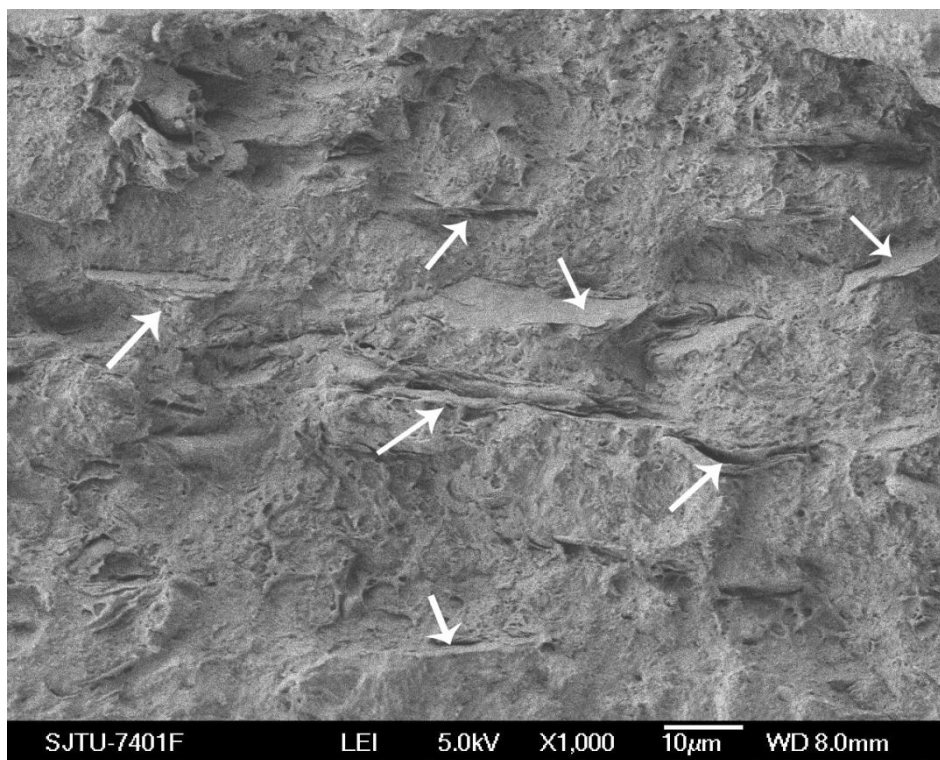


Figure S7. SEM image of the fracture surface of the composite with 5 wt% HrGS.

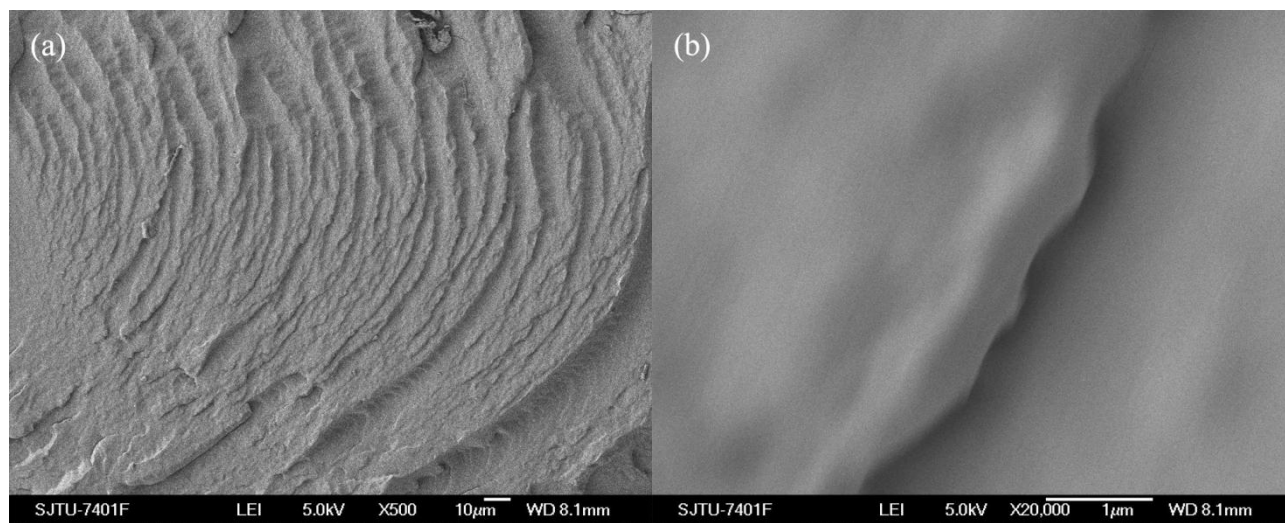


Figure S8. SEM images of the fracture surface of pure TPU.

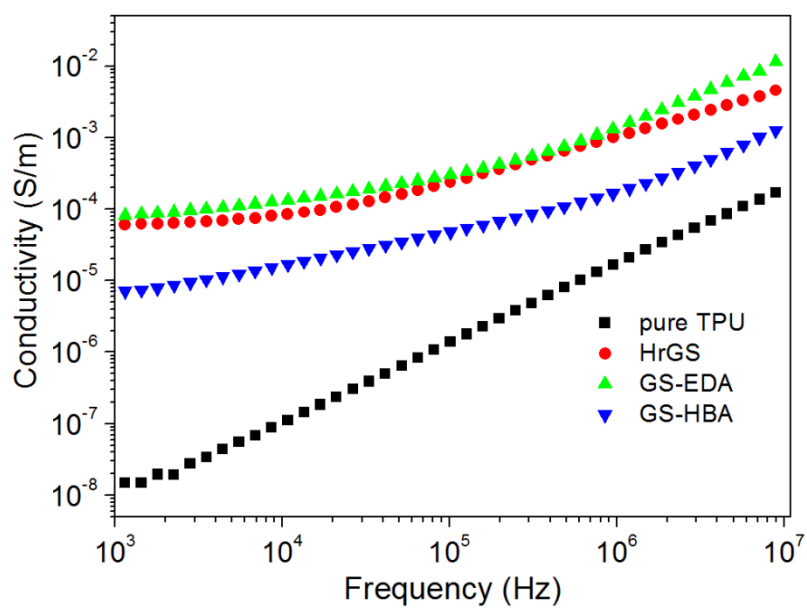


Figure S9. Frequency response of ac conductivity of pure TPU and the HrGS, GS-EDA and GS-HBA composites with the same content (5 wt%) of graphene backbone.