Journal of Materials Chemistry A

RSCPublishing

ARTICLE

Toward effective and tunable interphases in graphene oxide/epoxy composites by grafting different chain lengths of polyetheramine onto graphene oxide

Cite this: DOI: 10.1039/x0xx00000x

Received 00th January 2014,
Accepted 00th January 2014

DOI: 10.1039/x0xx00000x

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Li-Zhi Guan,[a,1] Yan-Jun Wan,[a,1] Li-Xiu Gong,[a] Dong Yan,[b] Long-Cheng Tang,[a,*] Lian-Bin Wu,[a] Jian-Xiong Jiang,[a,*] and Guo-Qiao Lai [a]

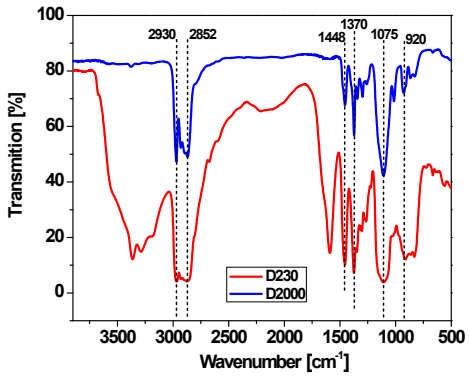


Fig. S1 FTIR spectra of D230 and D2000 molecules.

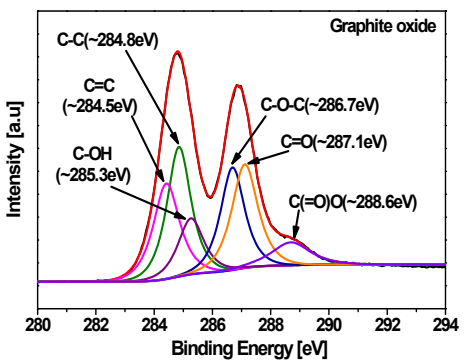


Fig. S2 C1 XPS spectrum of graphite oxide.

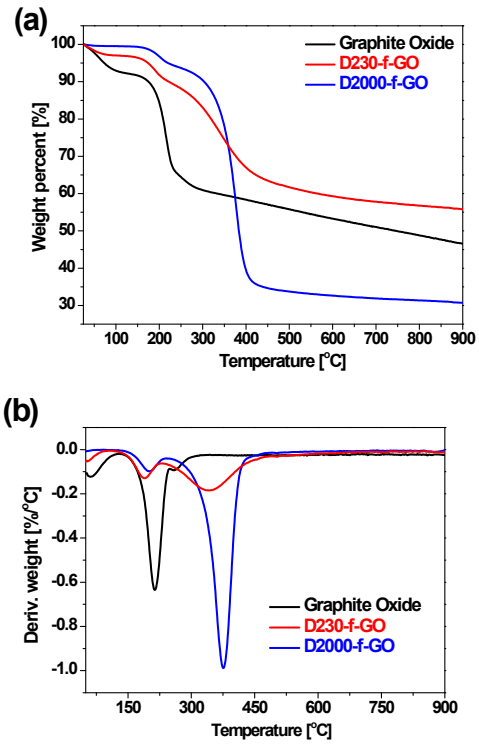


Fig. S3 (a) TGA and (b) DTG curves of graphite oxide and PEA-f-GO in nitrogen condition.

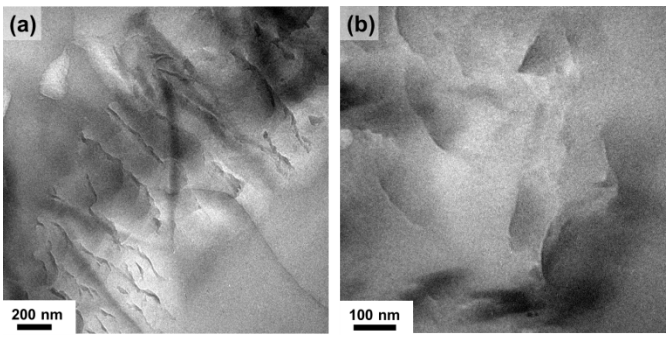


Fig. S4 TEM images of epoxy nanocomposites containing D2000-f-GO: (a) agglomerate and (b) good dispersion.

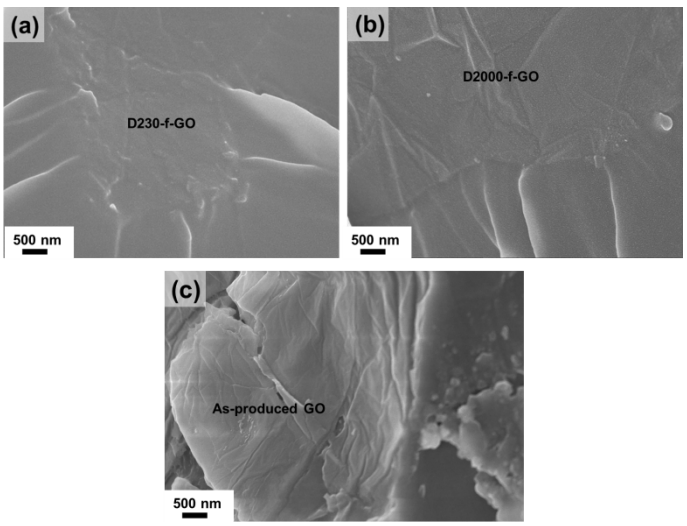
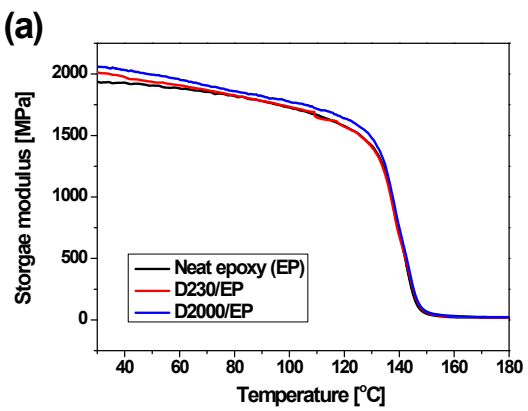


Fig. S5 Highly-magnified SEM images of fracture surface after tensile tests of epoxy nanocomposites with: (a) D230-f-GO, (b) D2000-f-GO and (c) as-produced GO.



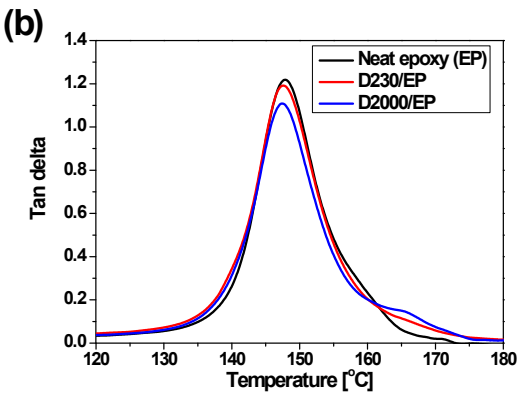


Fig. S6 DMTA curves of neat epoxy and epoxy resin with PEA molecules (0.10 and 0.15 wt% for D230 and D2000, respectively): (a) storage modulus and (b) loss factor.

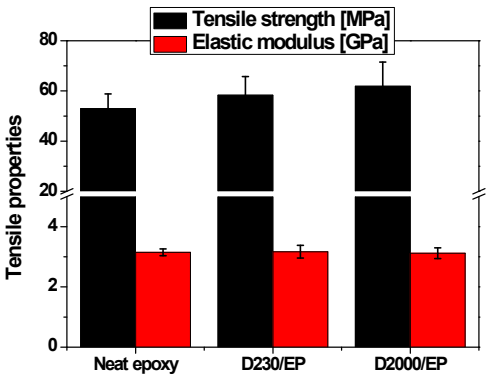


Fig. S7 Tensile properties of neat epoxy and epoxy resin with PEA molecules.

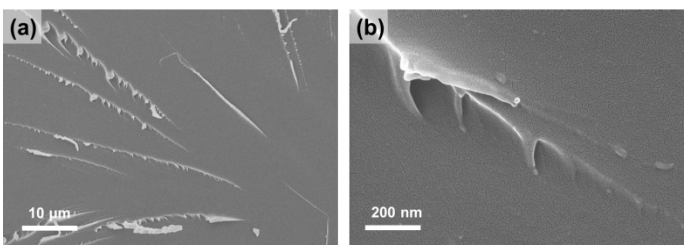


Fig. S8 SEM images of fracture surface after tensile tests of neat epoxy.

Table S1 Relative Data of TGA and DTG for graphite oxide and PEA-f-GO in nitrogen condition.

Sample	T_{d10} [°C]	T_{max} [°C]	*Residues at 800 °C [wt%]*
Graphite oxide	174.9	213.9	48.8
D230-f-GO	221.5	341.5	56.8
D2000-f-GO	303.0	376.0	31.4

T_{d10} indicates the 10% mass loss temperature; T_{max} indicates the maximum mass loss temperature from DTG curves