

Supplementary document

Graphene as chain extender of polyurethanes for biomedical applications

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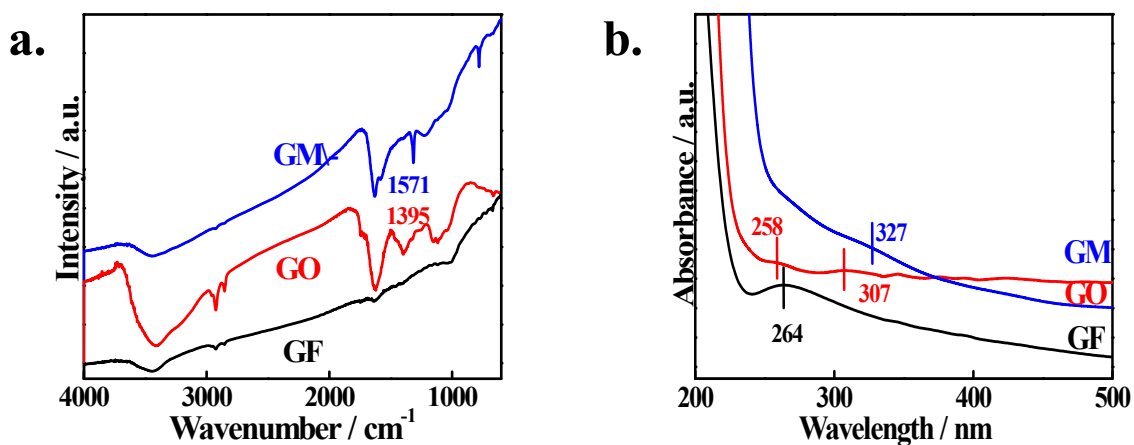


Figure S1: FTIR and UV-visible spectra of the graphite, graphene oxide and modified graphene oxide

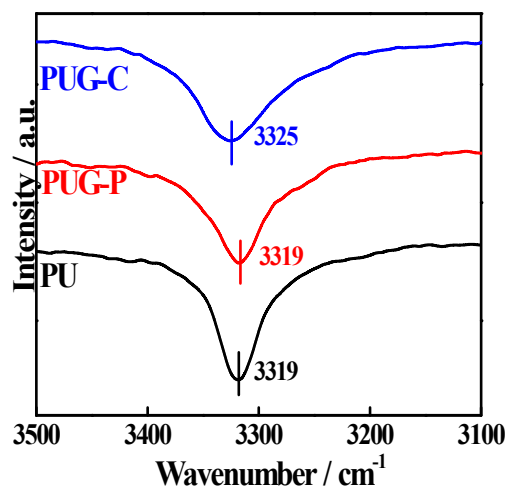


Figure S2: FTIR spectra of pure PU and its indicated nanohybrids.

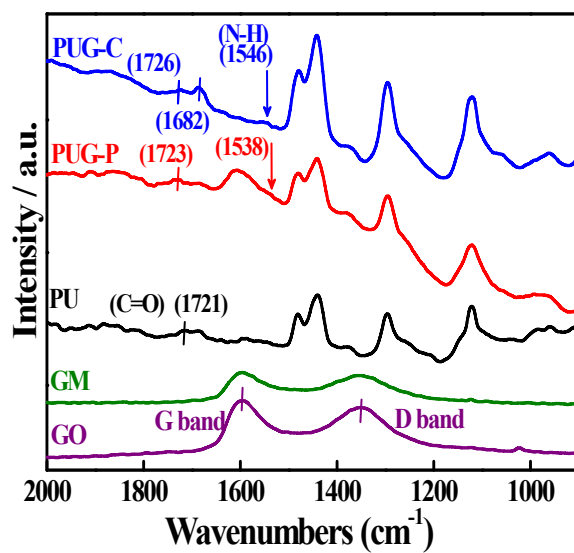


Figure S3: Raman characterization of pure PU and its indicated nanohybrids with graphene oxide and modified graphene oxide. Discussion is in the text.

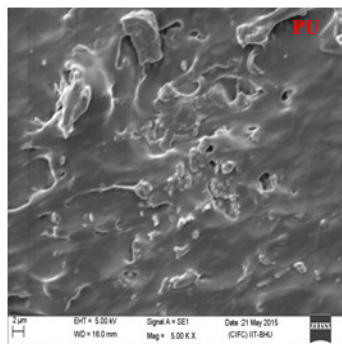


Figure S4: SEM image of the pure polyurethane polymer.

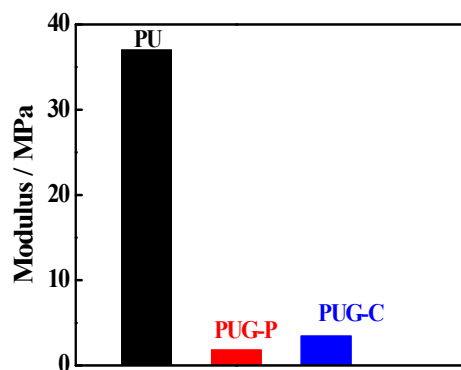


Figure S5: Bar diagram to represent the modulus of the pure PU and its indicated nanohybrids.

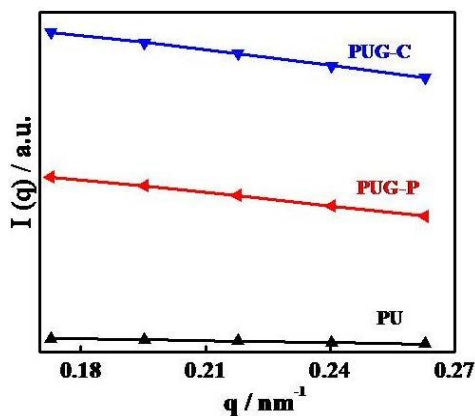


Figure S6: Debye-Bueche fitting for calculation of the correlation length.

Sample	Zero Order		First Order		Higuchi		Korsmeyer-Peppas	
	k	r^2	k	r^2	k	r^2	n	r^2
PU	0.61 ± 0.03	0.995	0.003 ± 0.00013	0.991	3.95 ± 0.11	0.993	0.54 ± 0.01	0.998
PUG-P	0.57 ± 0.04	0.992	0.0033 ± 0.00012	0.990	3.72 ± 0.06	0.994	0.70 ± 0.03	0.996
PUG-C	0.50 ± 0.02	0.990	0.0024 ± 0.0001	0.994	3.2 ± 0.07	0.991	0.72 ± 0.01	0.999

Table S1: Release rate constant (k), correlation coefficient (r^2) and diffusion release exponent (n) obtained using different mathematical models for drug loaded PU and its indicated nanohybrids