Supporting Information

Variable self-assembly and in situ host-guest reaction of beta-cyclodextrin-modified graphene oxide composite Langmuir films with azobenzene compounds

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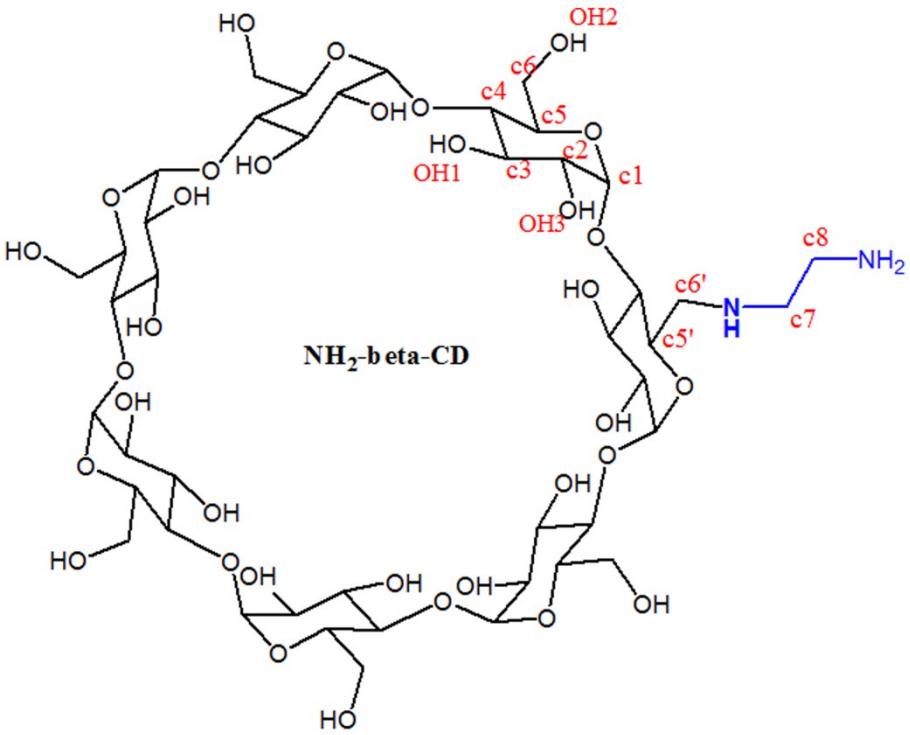

Fig. S1. Molecular structure of synthesized beta-cyclodextrin derivative NH_2-beta-CD.

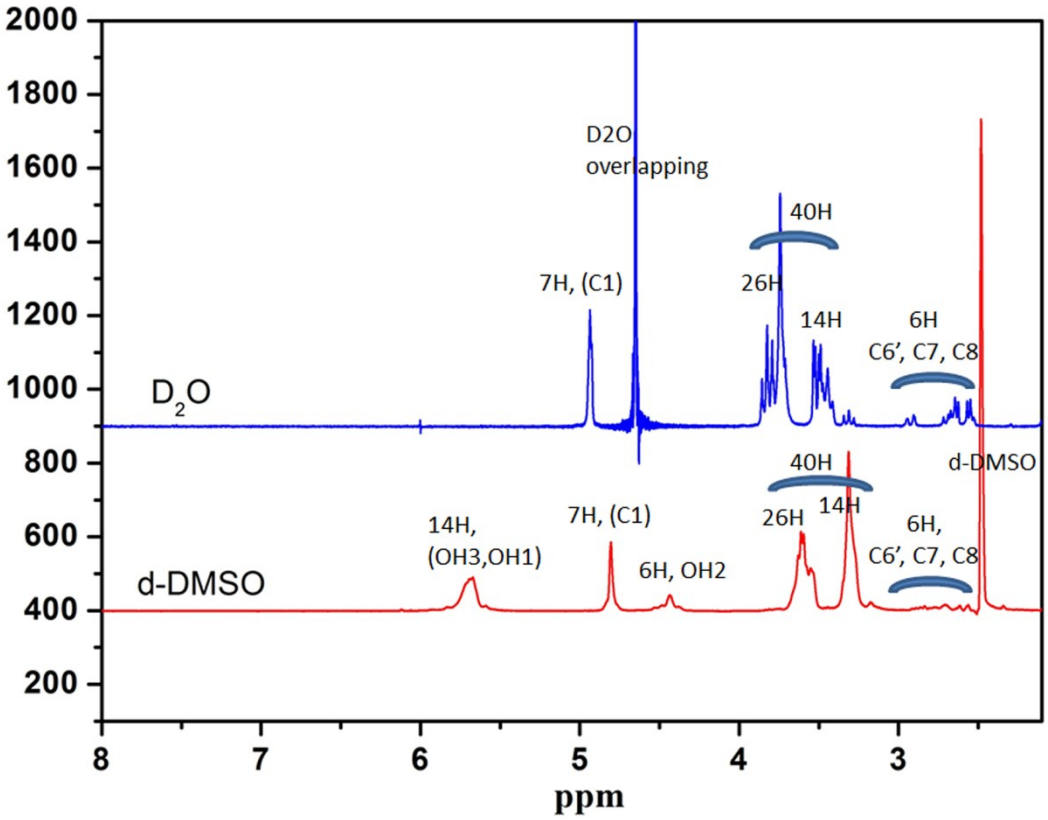

Fig. S2. ^{1}H NMR characterization of synthesized NH_2-beta-CD in D_2O and d-DMSO.

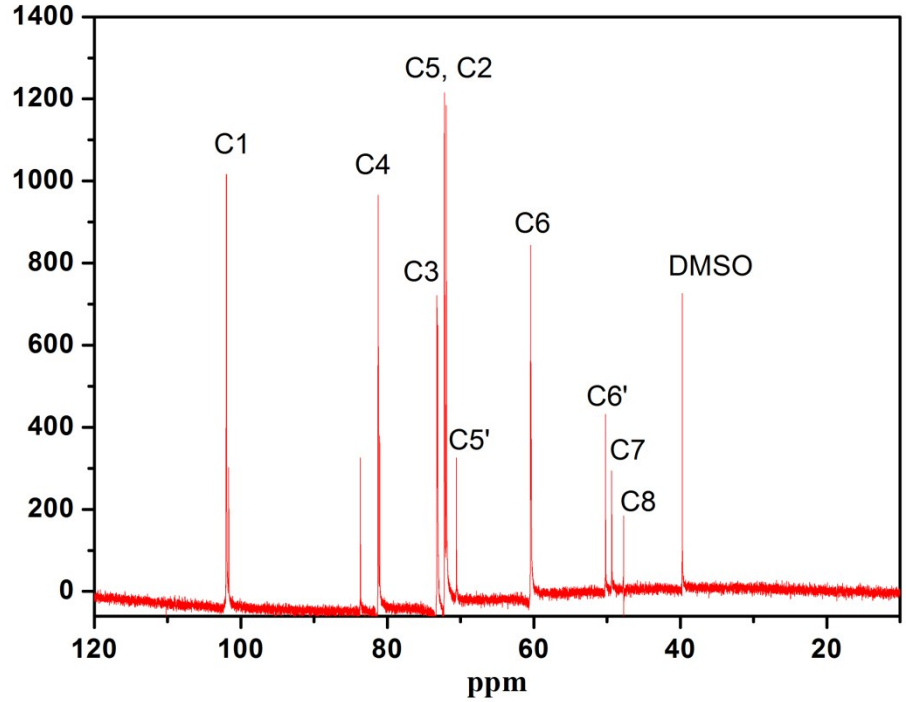

Fig. S3. ^{13}C NMR characterization of synthesized NH_2-beta-CD in d-DMSO.

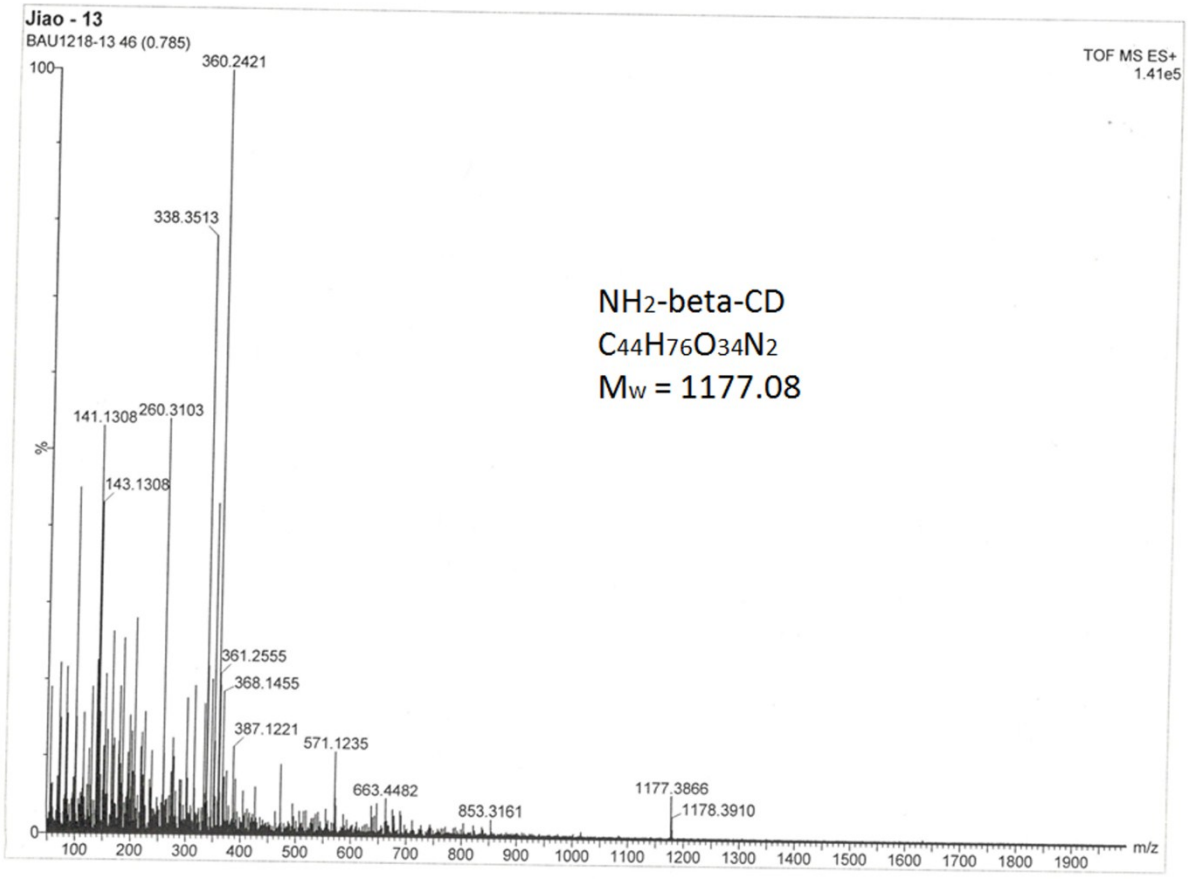

Fig. S4. Mass spectra characterization of synthesized NH_2-beta-CD in methanol.

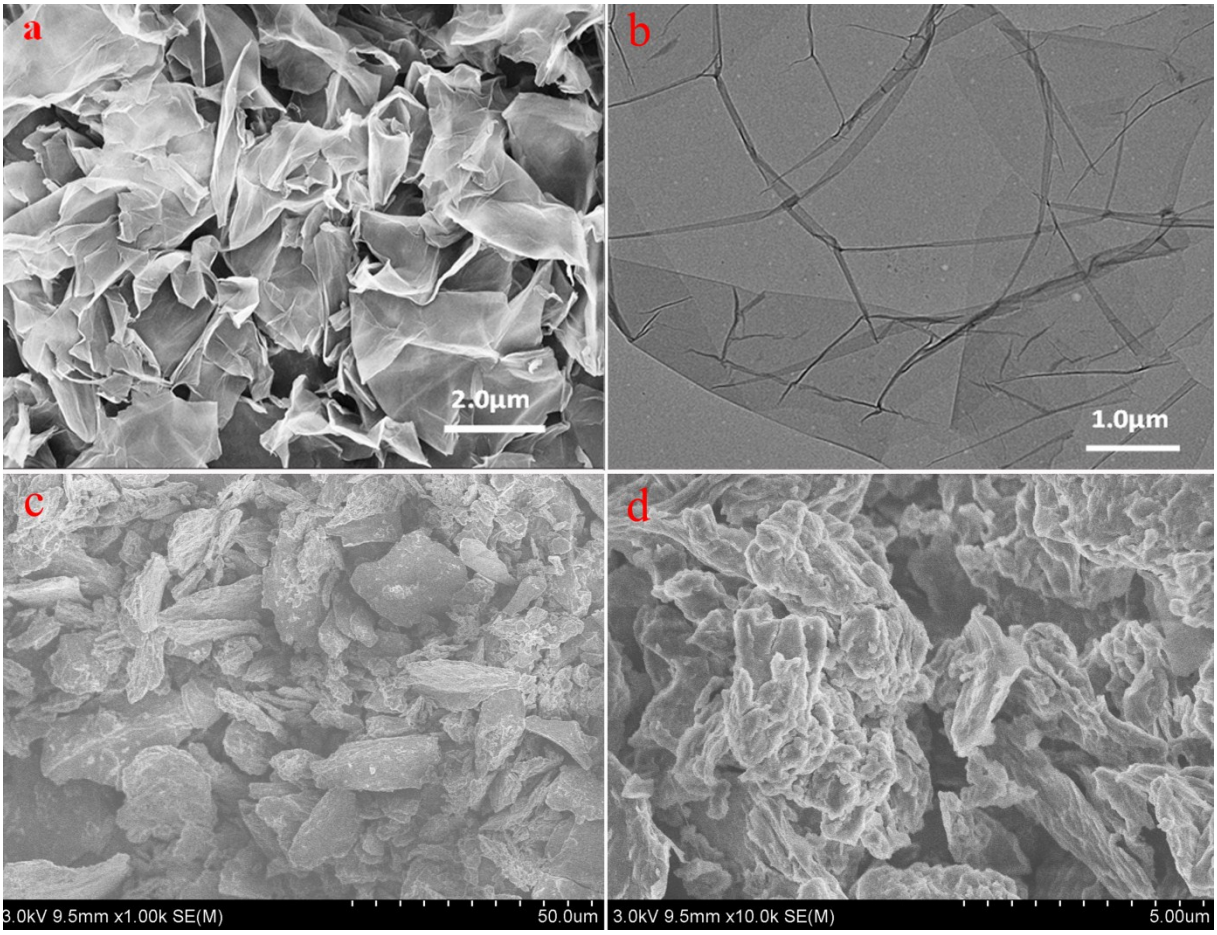

Fig. S5. SEM and TEM images of the as-prepared GO sample (a and b); SEM images of the obtained GO-CD material (c and d).

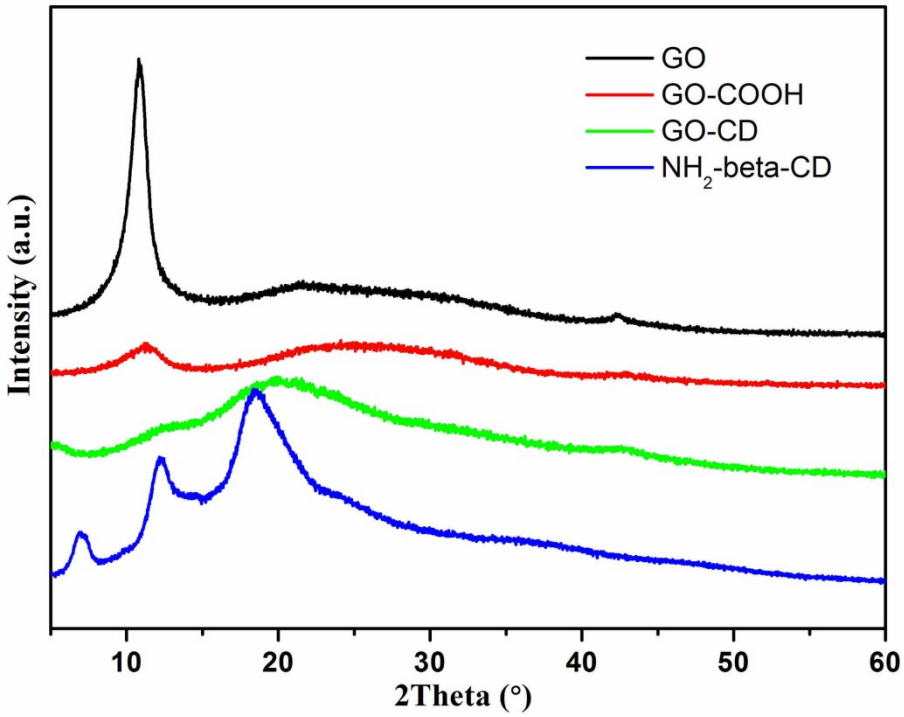

Fig. S6. XRD spectra of the as-prepared GO-CD powder and original materials

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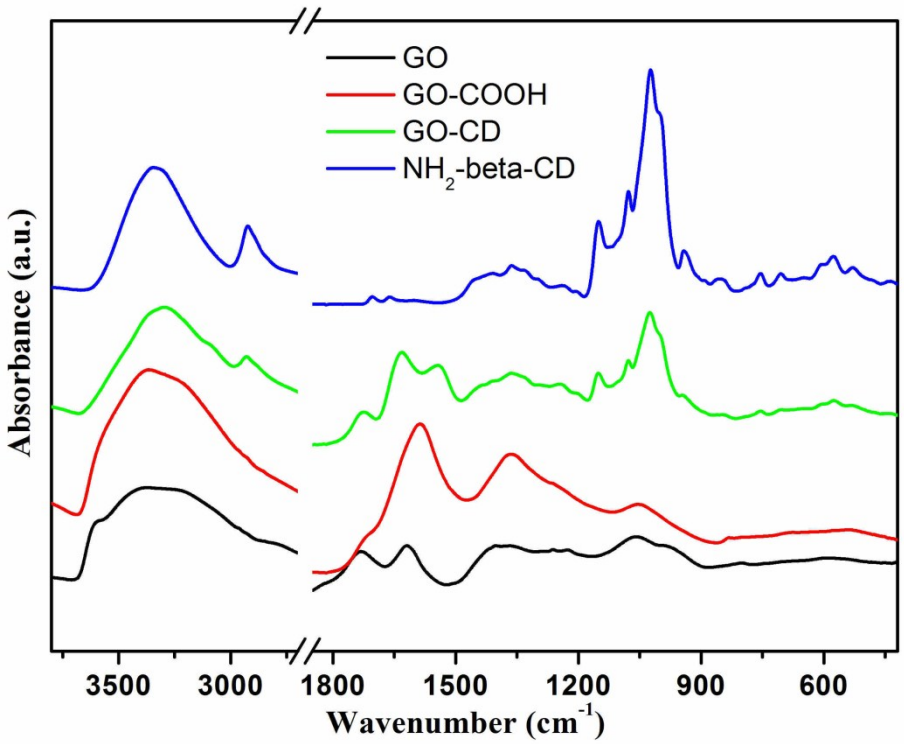

Fig. S7. FT-IR spectra of as-prepared GO-CD powder and original materials

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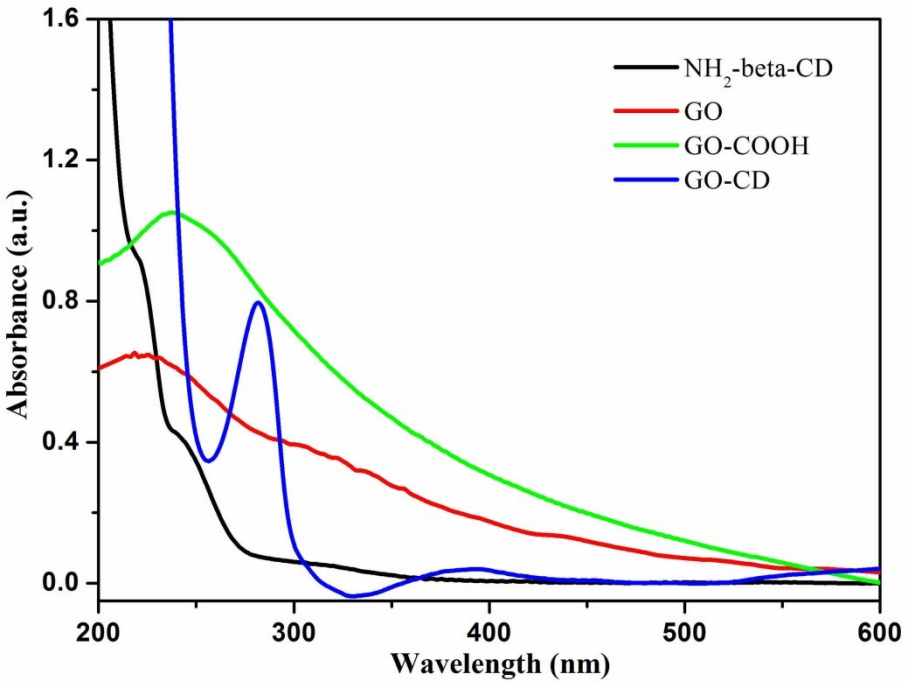

Fig. S8. UV-Vis spectra of aqueous solutions of GO-CD and original materials.

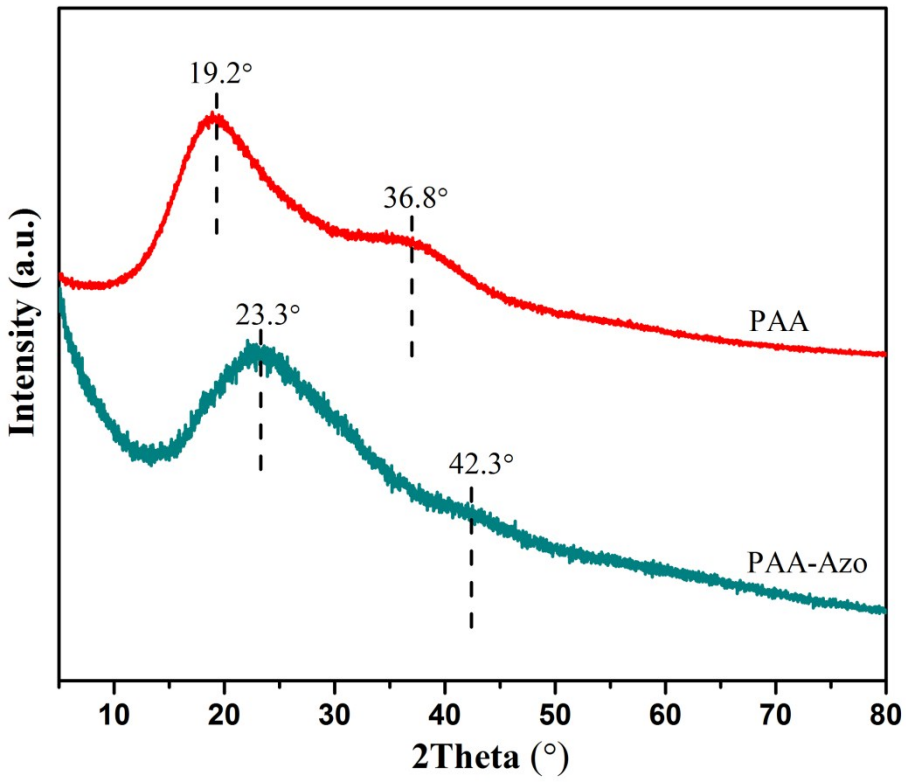

Fig. S9. XRD spectra of original PAA and as-synthesized PAA-Azo material.

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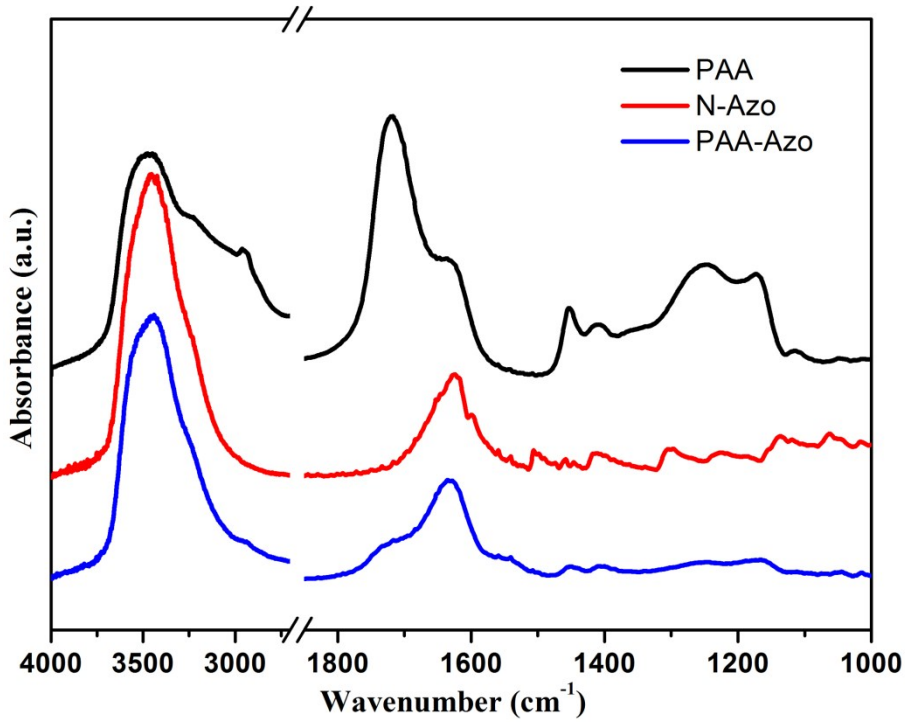

Fig. S10. FT-IR spectra of original PAA, N-Azo, and as-synthesized PAA-Azo material.

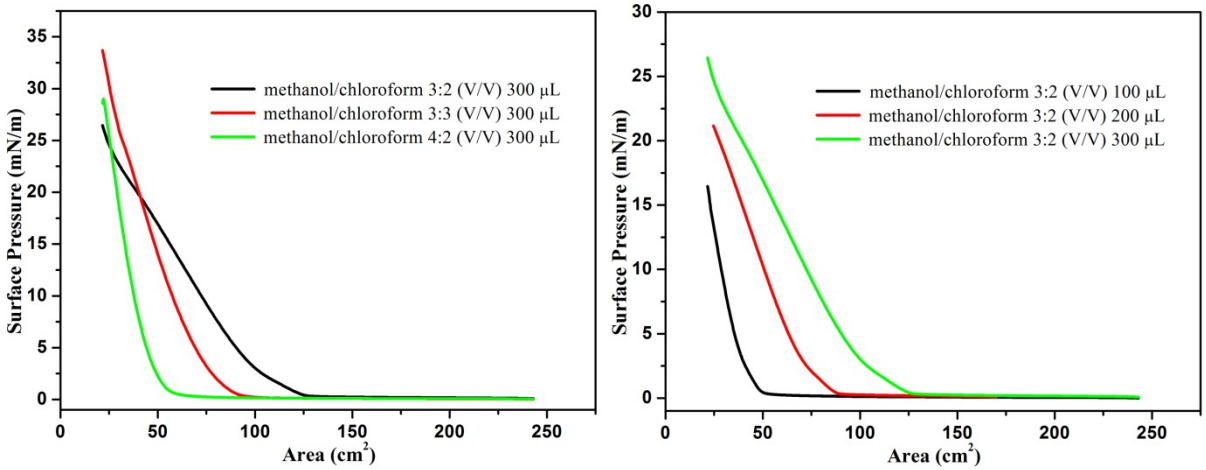

Fig. S11. Surface pressure-area isotherms of Langmuir films of as-prepared GO-CD solutions with different spreading solvents and volumes spread on pure water surface at room temperature.

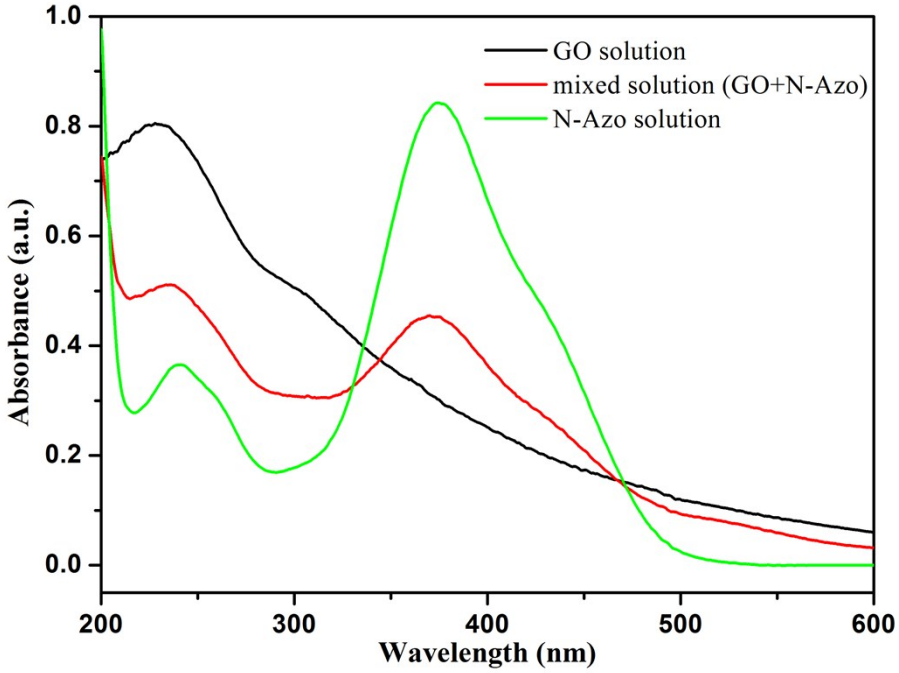

Fig. S12. UV-Vis spectra of aqueous mixed solution of GO and N-Azo.

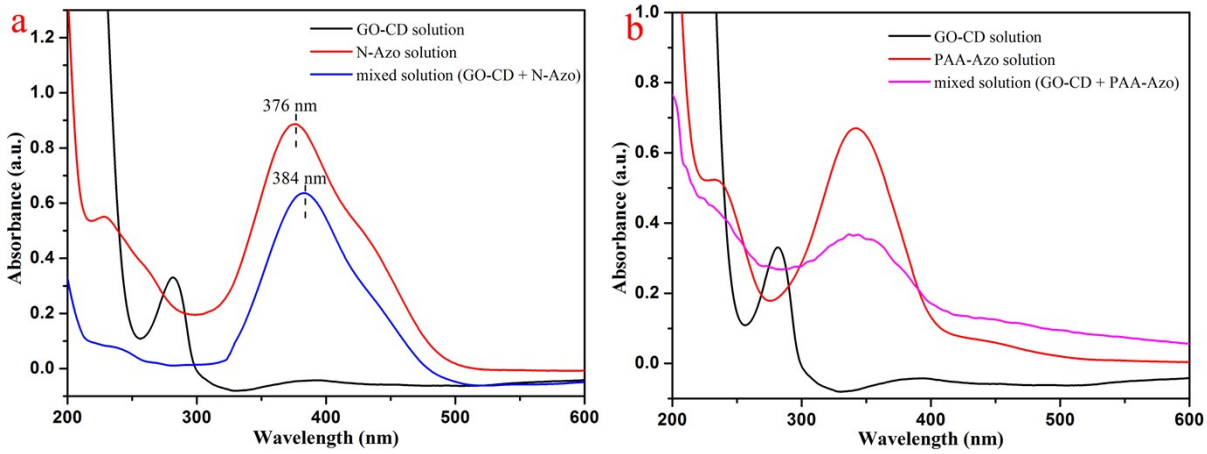

Fig. S13. UV-Vis spectra of mixed methanol solutions of GO-CD with N-Azo (a) or PAA-Azo (b), respectively.

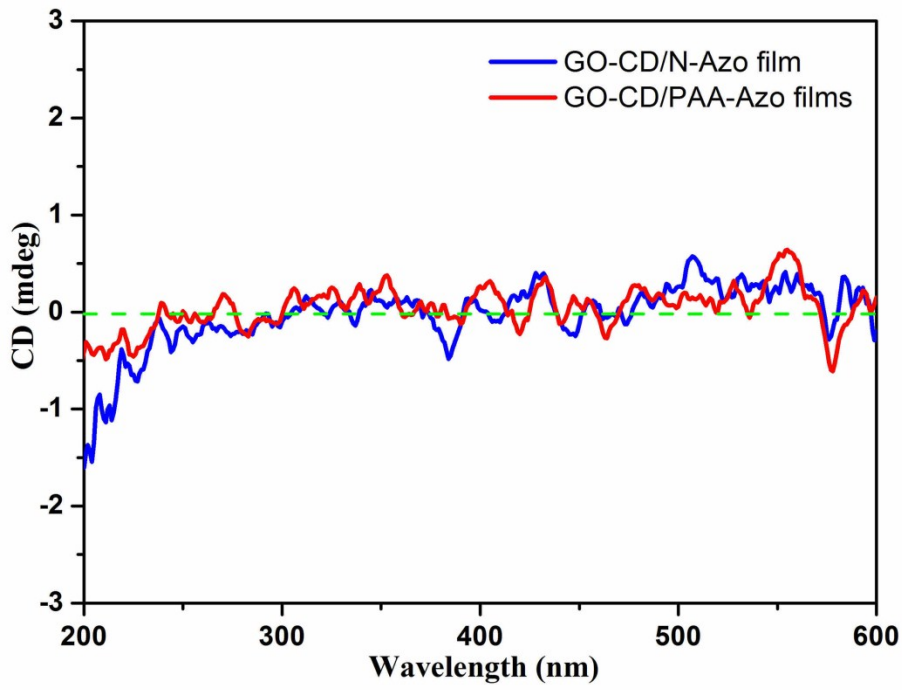

Fig. S14. CD spectra of the transferred multilayer GO-CD/N-Azo and GO-CD/PAA-Azo composite LB films.