

Supplementary Information

Azo addition to exfoliated graphene: a facile and high yield route to functionalized graphene

*Xiaoyong Zhang, Mingsong Han, Shu Chen, Lin Bao, Ling Li and Weijian Xu**

College of Chemistry and Chemical Engineering, Hunan University, Changsha

410082, P. R. China.

Experimental Sections

Materials: All chemical materials were analytical grade and used without further purification unless otherwise stated. Microcrystalline graphite was purchased from Kermel Chemical Reagent Co. Ltd., Tianjin, China. The others were obtained from Sinopharm Chemical Reagent (Beijing, China).

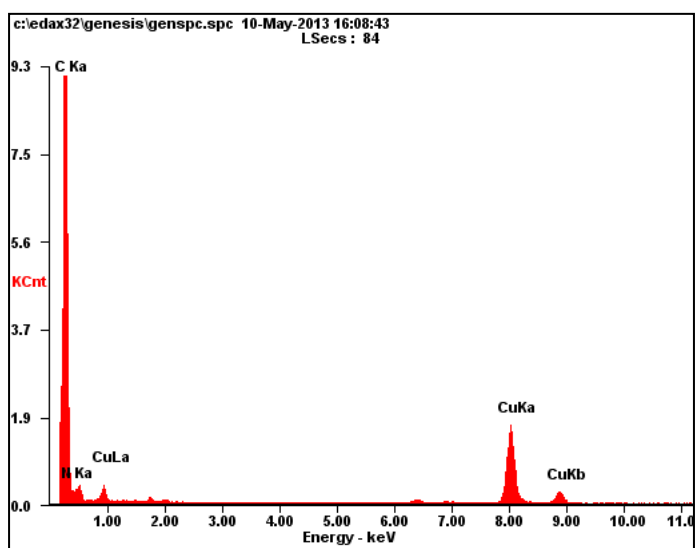
Preparation of graphene dispersion

In a typical reaction, microcrystalline graphite (3 g) was added to the mixed solvents of N-methyl-2-pyrrolidone (NMP) (90 mL) and toluene (60 mL), and the liquid was sonicated for 3 hr. After that, the dark slurry was filtered through a 0.22 μ m PTFE (Teflon) membrane and the filter cake was redispersed in 500 mL of NMP, which was sonicated for 7 hr. The final graphene dispersion was obtained.

Atomic Concentration Table

Abcissa	C1s	N1s
	[0.314]	[0.499]
0.00	98.12	1.88

Figure S1. Atomic Concentration Table in XPS spectrum of f-GR



<i>Elem</i>	<i>Weight %</i>	<i>Atomic %</i>
<i>C K</i>	97.80	98.10
<i>N K</i>	02.20	01.90

Figure S2. EDX spectrum of f-GR

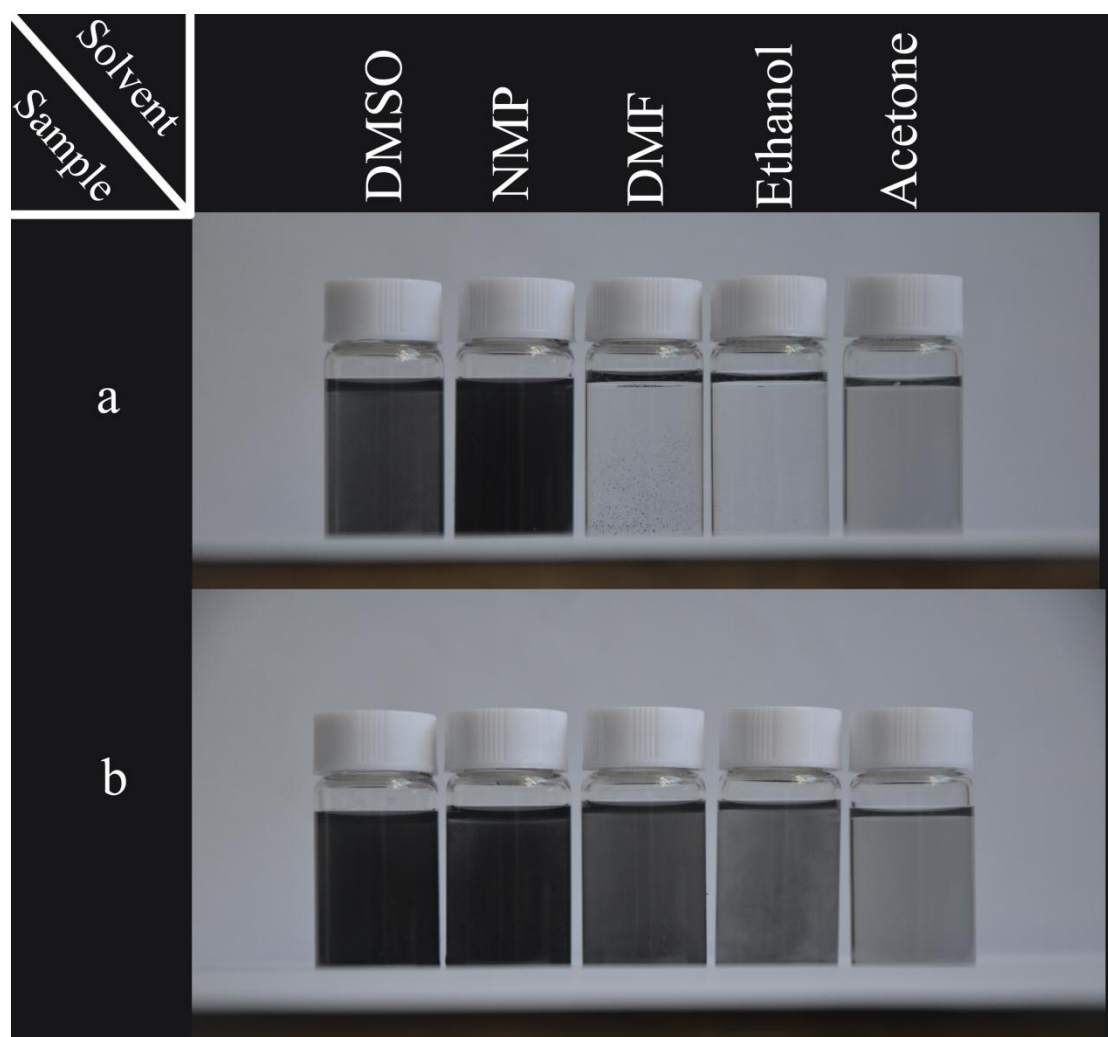


Figure S3. Photograph of the dispersion of GR (a) and f-GR (b) in various solvents

Figure S3 shows the results of dispersing GR and f-GR in various solvents. The solutions of GR and f-GR in various solvents were formed after sonication for 5 minutes and being kept still for 24 hours. Compared with GR, the dispersibility of the f-GR in dimethyl sulfoxide (DMSO), ethanol and DMF improved.