Electronic Supplementary Information
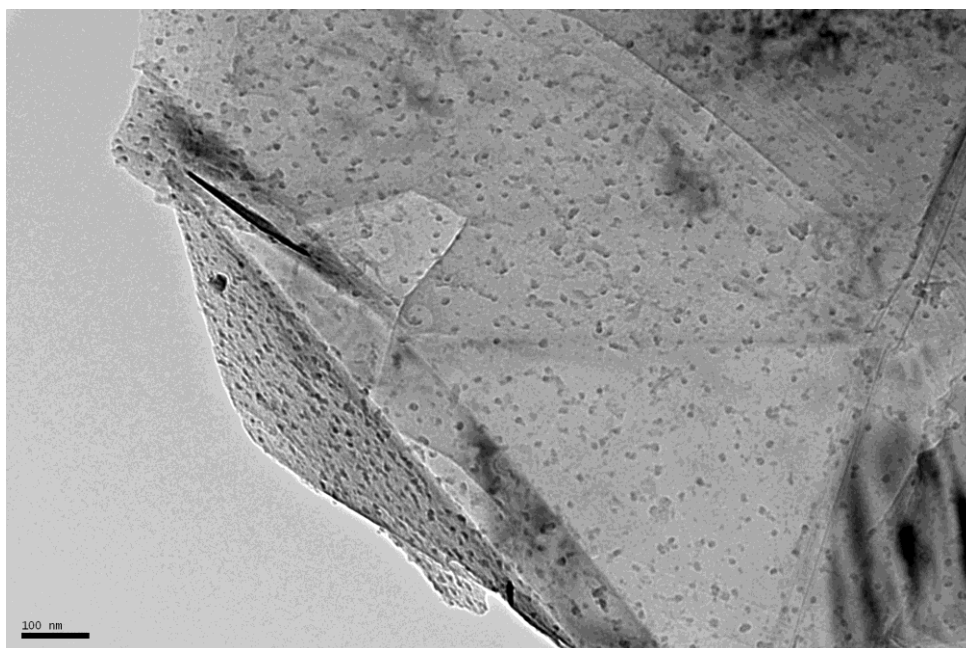
MG-IPA sample:

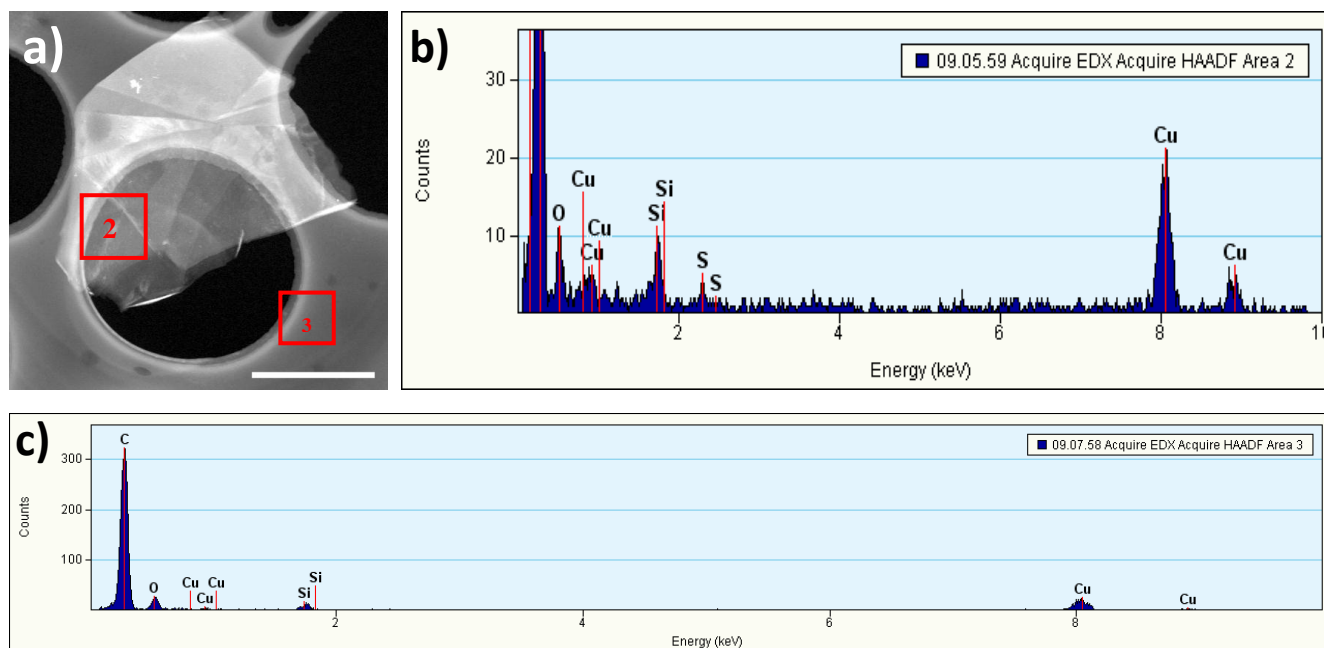**Fig. S1.** TEM of MG-IPA sample.

Fig. S2. EDX analysis of MG-IPA sample: Image a) is the TEM image of MG-IPA sample, the white bar is 2μm;

Image b) is the element analysis of selected rectangular red area of MG-IPA, which is denoted as No.2;

Image c) is the element analysis of selected rectangular red area of TEM grid, which is denoted as No.3.
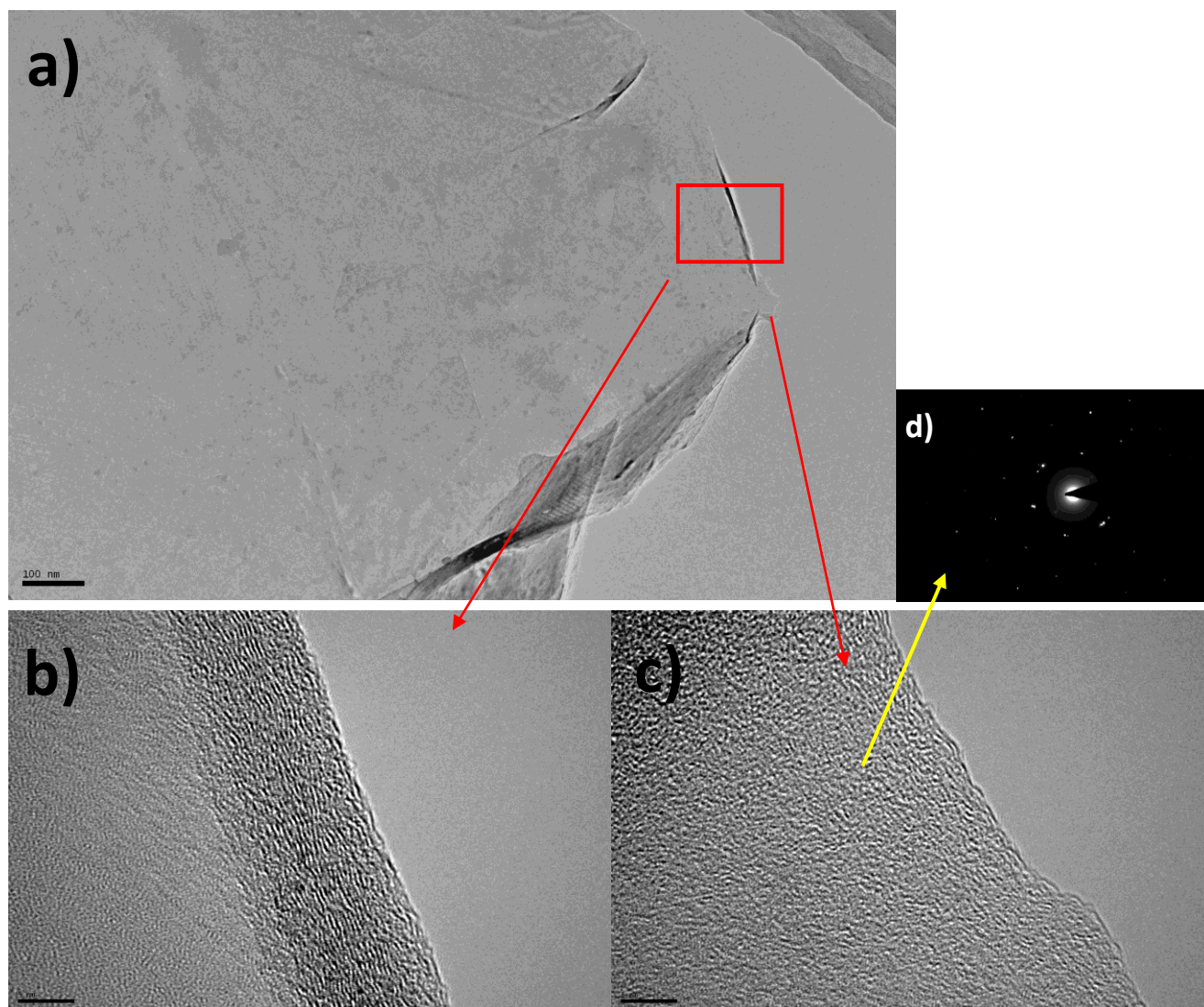
MG-HNO$_3$ sample:

Fig. S3 TEM of MG-HNO$_3$ sample (a-c) and the electron diffraction pattern of the graphene edge (d). The black bar of image b and c is 5 nm.
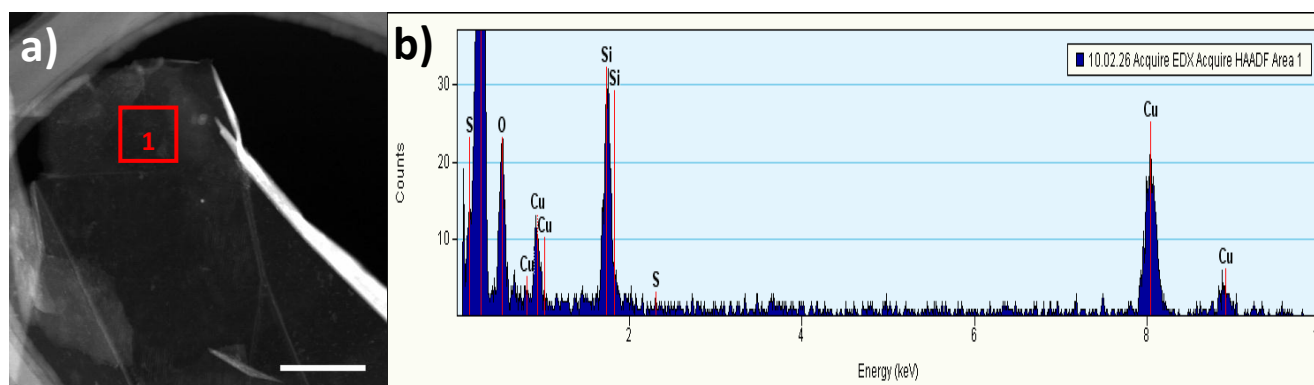

Fig. S4. EDX analysis of MG-HNO$_3$ sample: Image a) is the TEM image of MG-HNO$_3$ sample, the white bar is 500 nm; Image b) is the element analysis of selected rectangular red area of MG-HNO$_3$.
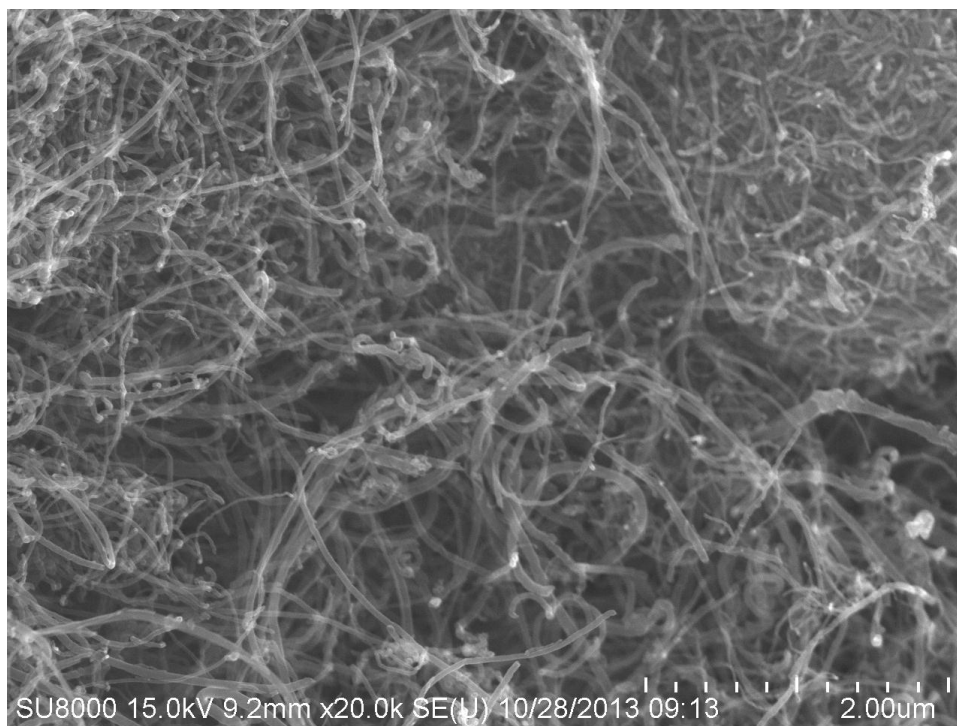
Carbon nanotube (CNT) sample

Fig. S5 SEM of CNT sample