

Supplementary Information

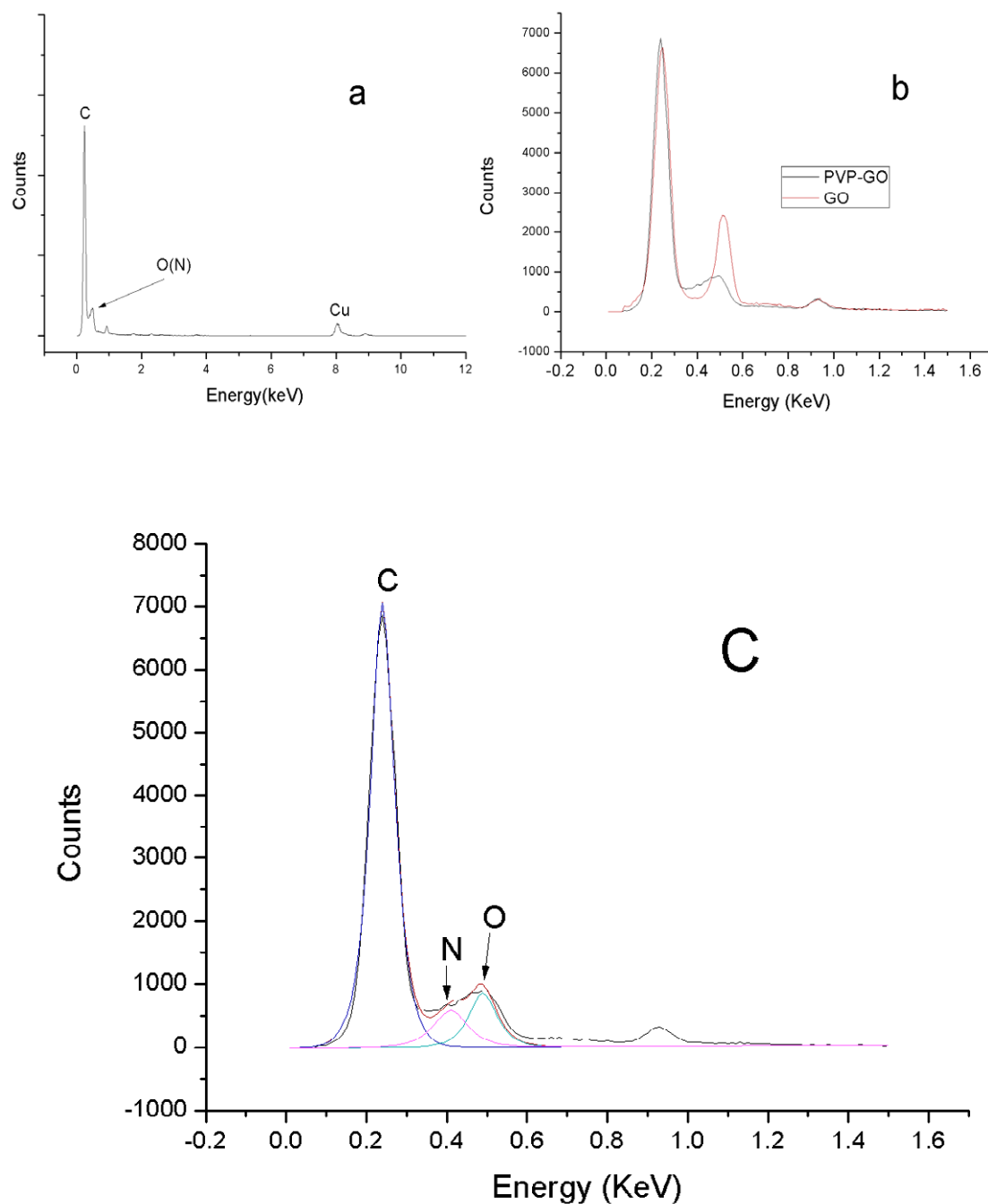


Fig. S1 (a)EDX spectrum of PVP-GO (b) EDX spectrum of PVP-GO in comparison with that of GO in the range from 0 to 1.5 KeV (c) the spectrum of PVP-GO in the range from 0 to 0.8 KeV can be divided into three peaks corresponding to C(0.24KeV), N(0.41KeV) and O(0.49KeV), respectively. The EDX spectrum of PVP-GO indicates presence of N.

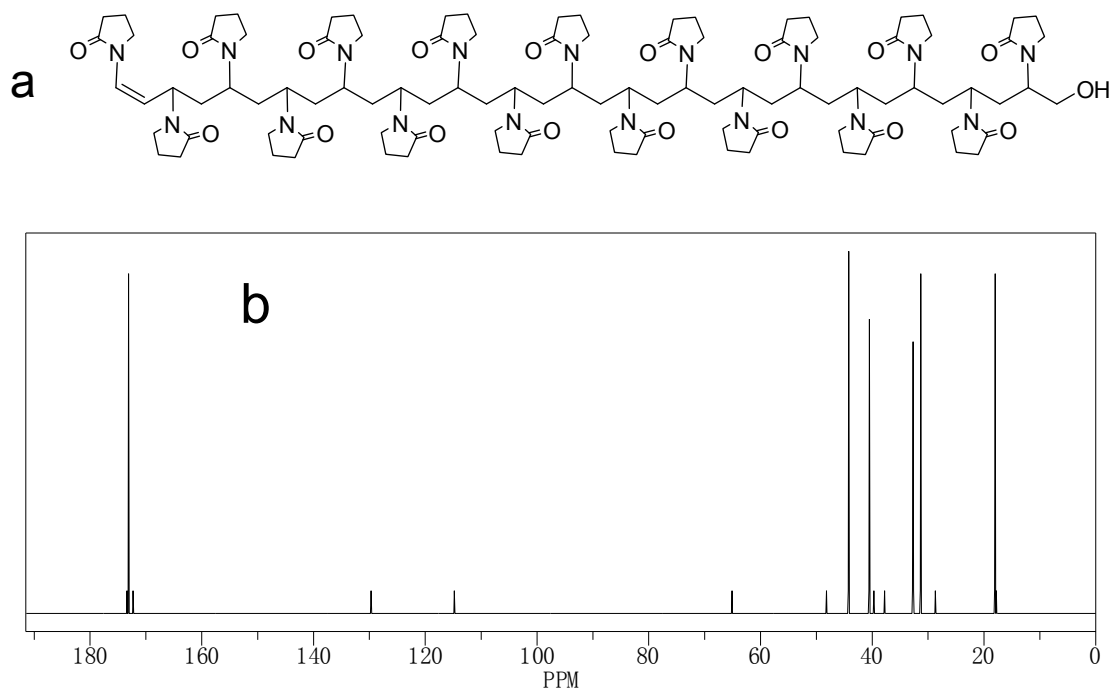


Fig. S2 (a) Scheme of PVP with a hydroxyl end group and a double bond end group and (b) its ¹³C-NMR spectrum estimated by Chemdraw Ultra.

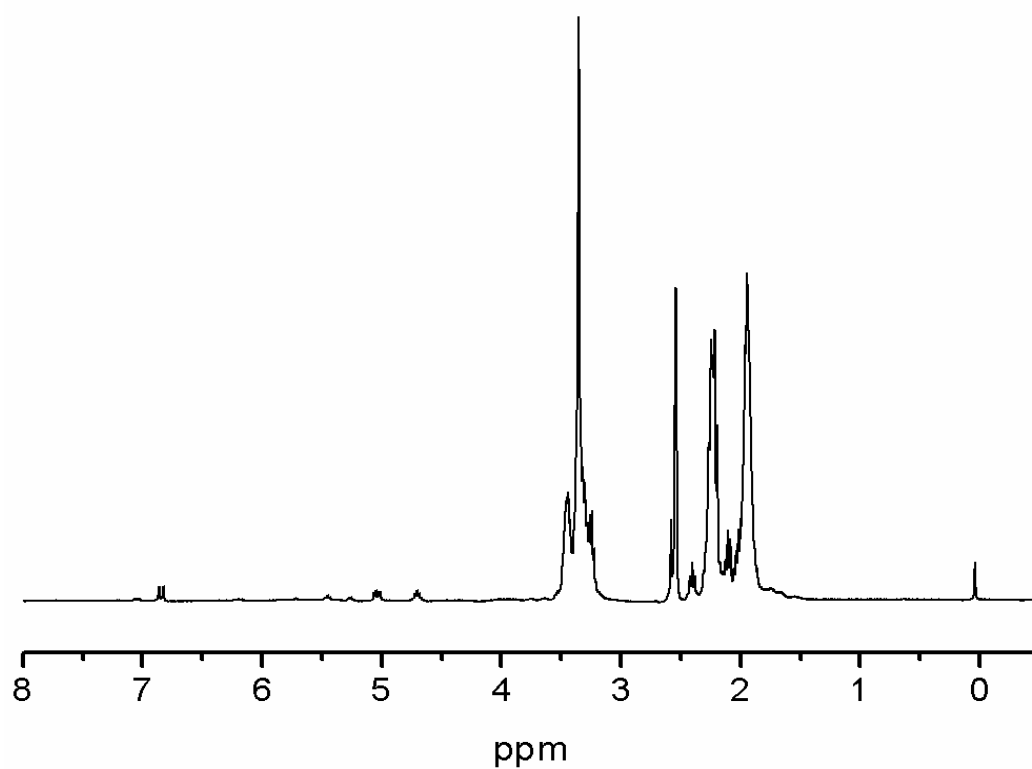


Fig. S3 ¹H-NMR spectrum of free PVP. Peaks at around 6.84ppm indicate the presence of carbon double bonds.