

Electronic Supplementary Information (ESI)

PNA-Assembled Graphene Oxide for Sensitive and Selective Detection of DNA

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Characterization of GO

Raman spectrum was performed to confirm the successful formation of GO sheet. As shown in Fig. S1, two main Raman peaks reflected the characteristics of GO. The G band at 1602.8 cm^{-1} was assigned to the vibration of sp^2 bonded carbon atoms, and another strong Raman peak at 1343.2 cm^{-1} (D band) assigned to the vibration of carbon atoms with dangling bonds in plane terminations of disordered graphite, indicating the formation of sp^3 carbon in GO. As the Raman spectra agreed with what was discussed in a previous report,¹ we would judge that the GO was successfully synthesized. The chemical structure of it was further examined by FT-IR spectroscopy (Fig. S2). Several characteristic peaks of GO were observed in the FT-IR spectrum, including a broad and intense peak of the O-H group at 3395.6 cm^{-1} , a C=O peak at 1728.7 cm^{-1} , a C-OH stretching peak at 1225.2 cm^{-1} , a C-O stretching peak at 1044.7 cm^{-1} , while the peak at 1624.3 cm^{-1} attributed to the vibration of the unoxidized graphene skeleton C=C and the absorbed water molecules.

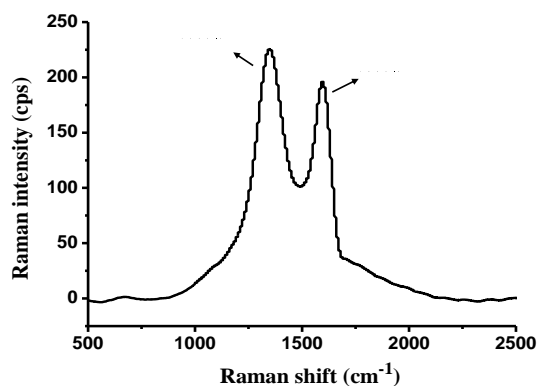


Fig. S1 Raman spectrum of GO.

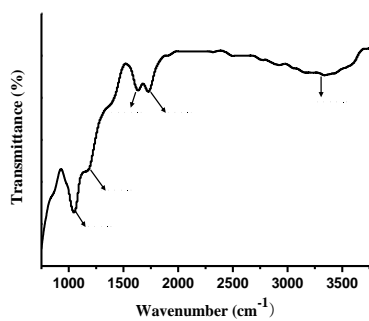


Fig. S2 FT-IR spectrum of GO

References

- 1 H. Dong, W. Gao, F. Yan, H. Ji and H. Ju, *Anal. Chem.*, 2010, **82**, 5511-5517.
- 2 Y. Xu, H. Bai, G. Lu, C. Li and G. Shi, *J. Am. Chem. Soc.*, 2008, **130**, 5856-5857.