

Supporting Information

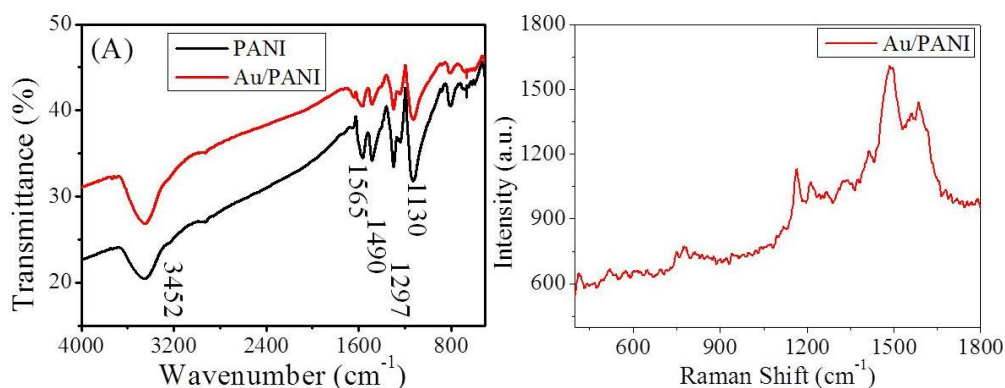


Figure 1S. (A) IR spectrum of the PANI and Au/PANI composites and (B) the SERS spectrum of pure Au/PANI.

The FT-IR spectrum (see Figure 1S-A) of the PANI composites showed two main peaks at 1490 and 1565 cm⁻¹ corresponding to the stretching deformation mode of N-B-N (B represents the quinoid ring) groups. The band at 3452 cm⁻¹ represents N-H stretching mode. The band at 1297 cm⁻¹ is assigned to the C-N stretching mode in a secondary aromatic amine. The band at 1130 cm⁻¹ corresponds to an aromatic C-H in-plane bending mode¹.

Raman spectrum of the Au/PANI is given in Figure 1S-B. The characteristic peaks at 1586, 1490 and 1164 cm⁻¹ conform that the PANI is closed to Au nanoparticles¹.

1. K. Mallick, M. J. Witcomb, A. Dinsmore and M. S. Scurrill, *Macromol Rapid Comm.*, 2005, **26**, 232-235.