

Supporting Information

Rapid extraction and quantitative detection of herbicide diuron in surface water by hapten-functionalised carbon nanotubes based electrochemical analyzer

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Supporting Information T1

GC analysis was carried out by using column (30m long, 0.32mm I.D. and 0.25 μm) carrying a film 0.25 mm thick 100% methylphenyl polysiloxane (Rtx-50 Restek). The initial value of the current was kept at 1 nA throughout the analysis. The column was held at 100 °C initially for 1 min and then programmed to 180 °C at 35 °C per minute and shifted to 240 °C at 10 °C per min with a final hold at 240 °C for 5 min, and the temperature of the injector was kept at 250 °C. A constant volume of 1 μL sample was injected through auto injector (Shimadzu AOC-20 i).

Figure legends

Figure S1: FTIR spectroscopy analysis of p-CNTs, c-CNTs, h-CNTs and the hapten demonstrating carboxyl group ($>\text{C}=\text{O}$) stretching on CNTs by giving a strong peak at 1716 cm^{-1} and a weak $-\text{CH}$ stretching at 2850 cm^{-1}

Figure S2: SEM micrograph of multiwalled CNTs on the surface of SPE. The scan was recorded at 25.0 KV.

Figure S3: Confocal microrgraphs (a) bare electrode (b) bio-functionalised electrode at 20X magnification. RITC labeled anti-diuron antibodies were used in confocal studies on antigen (diuron derivative) coated SPE. A uniform coverage of antibody on CNT functionalised SPE

surface. The pixel data of micrographs confirmed high fluorescence intensity (~200) over the whole scan area on CNTs functionalised SPE.

Figure S1

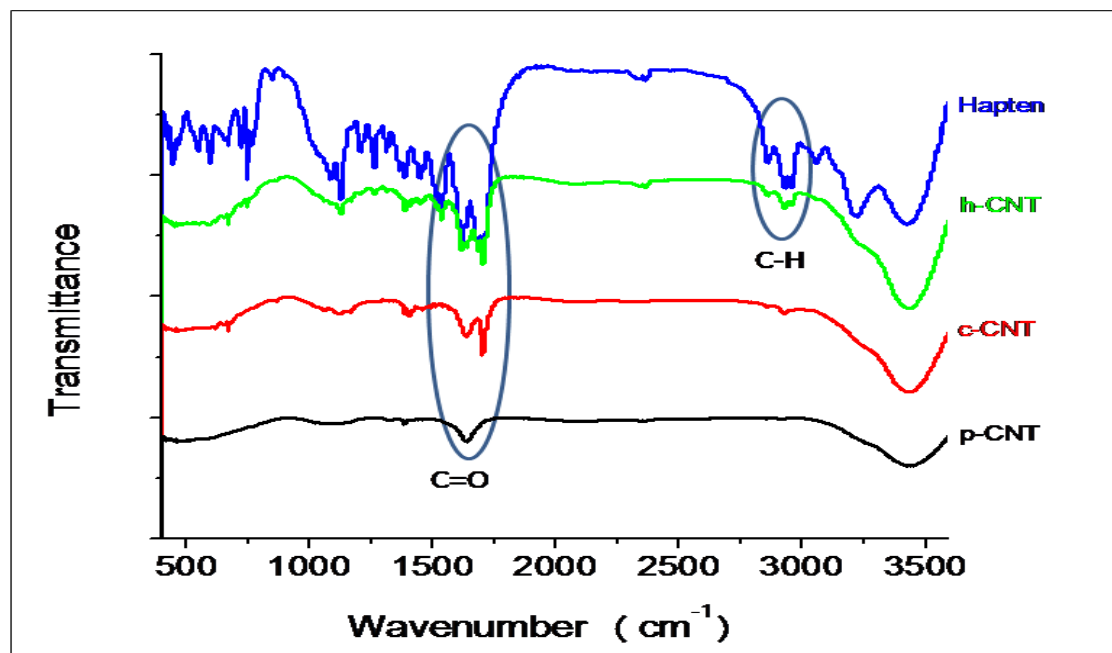


Figure S2

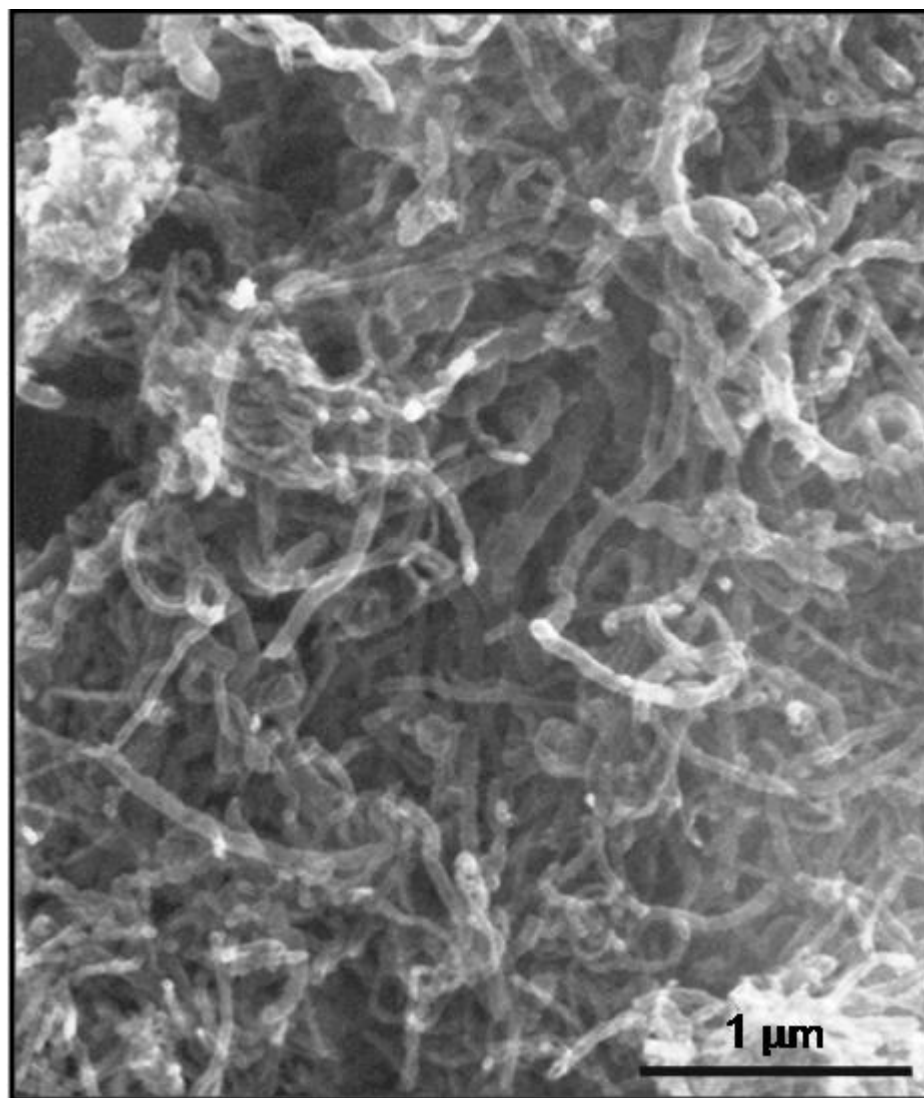


Figure S3

