

Dummy Molecularly Imprinted Polymers Using DNP as a Template Molecule for Explosive Sensing and Nitroaromatic Compound Discrimination

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Supplementary Information

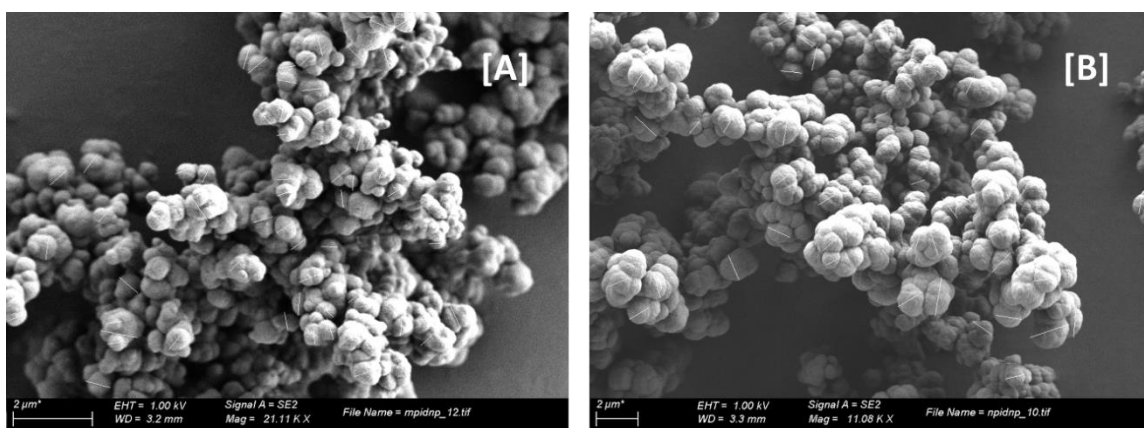


Figure S1. Representative SEM images employed to determine the polymers particle size for [A] MIP and [B] NIP. As can be seen in the figures each counted particles has a measurement line (light grey) that the employed software will process in order to obtain the histograms.

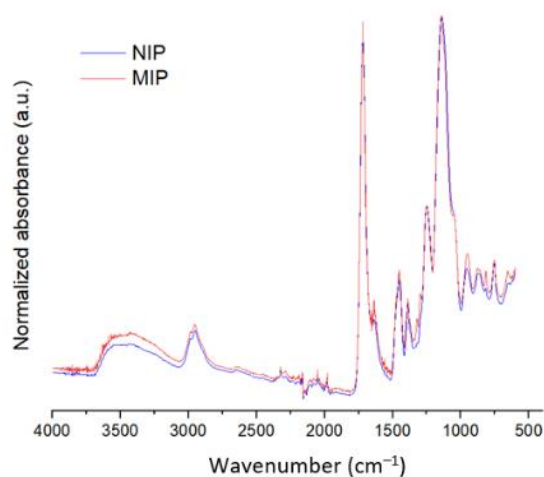


Figure S2. Comparison between the synthesised MIP (red) and NIP (blue) FT-IR spectra.

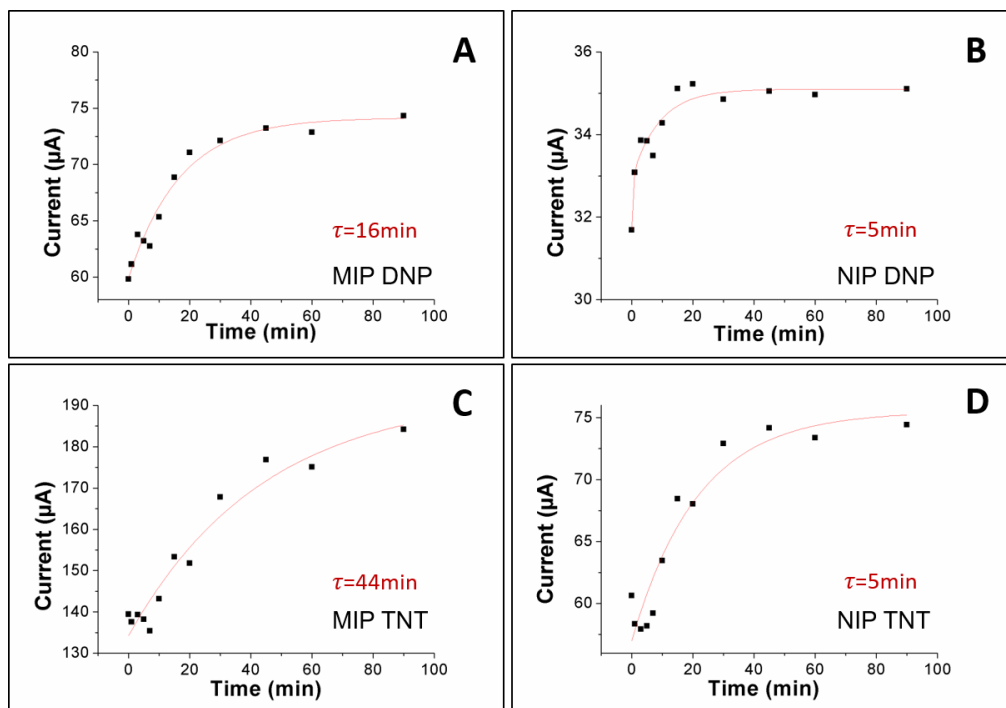


Figure S3. Adsorptive kinetics fitted curves for MIPs-sensors (A,C) and NIPs-sensors (B,D) from 0 to 100 min when measuring a stock solution of 15 $\mu\text{mol L}^{-1}$ for DNP and TNT.

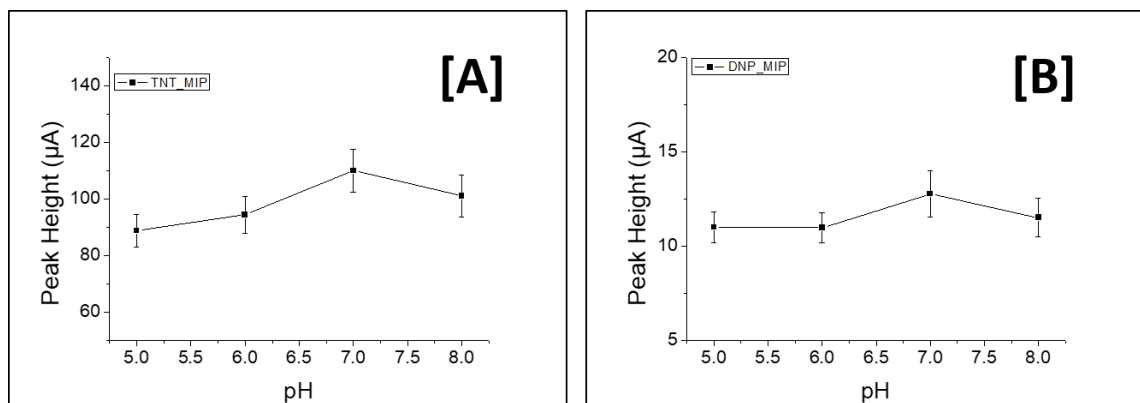


Figure S4. [A] pH study for TNT at different pH [B] pH study for DNP at different pH for three MIP sensors (n=3).

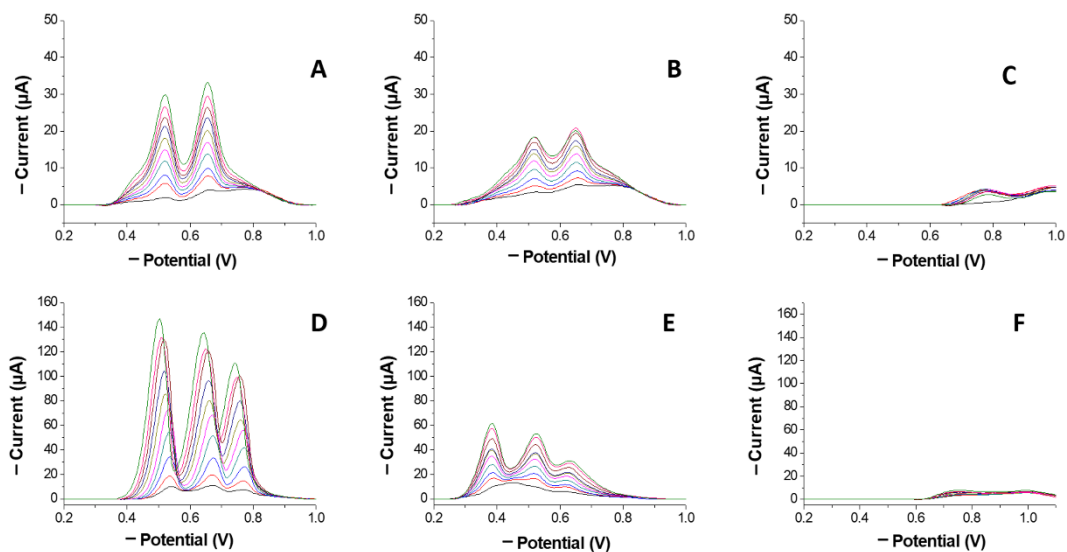


Figure S5. Voltammetric with baseline correction responses from 0.55 to 19 $\mu\text{mol L}^{-1}$ of DNP and from 0.45 Table 15. $\mu\text{mol L}^{-1}$ TNT for the different sensors (each color represents an increasing concentration of the corresponding compound). **A)** Voltammetric response *vs.* DNP measured with the MIP sensor. **B)** Voltammetric response *vs.* DNP measured with the NIP sensor. **C)** Voltammetric response *vs.* DNP measured with the GEC sensor. **D)** Voltammetric response *vs.* TNT measured with the MIP sensor. **E)** Voltammetric response *vs.* TNT measured with the NIP sensor. **F)** Voltammetric response *vs.* TNT measured with the GEC sensor.

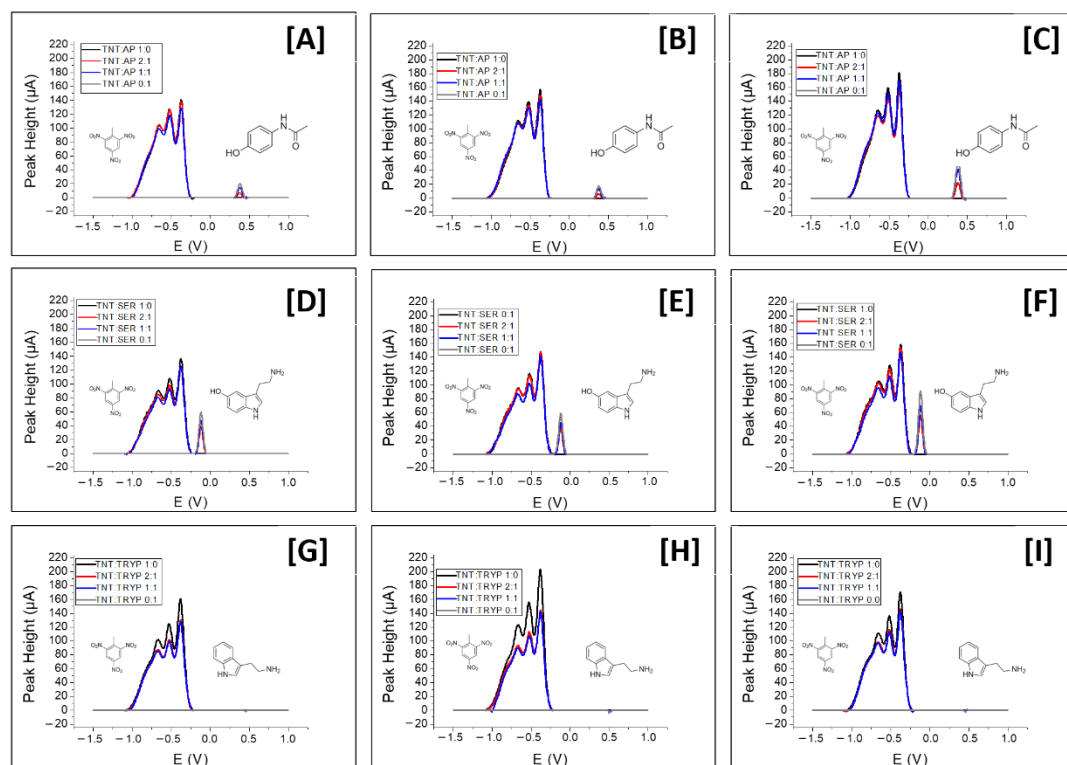


Figure S6. Interferent study at different ratios for TNT versus acetaminophen, serotonin and tryptamine. Table 1. **[A]**, sensor 2 **[B]** and sensor 3 **[C]**. TNT and serotonin are shown in the first row for sensor 1 **[D]**, sensor 2 **[E]** and sensor 3 **[F]**. TNT and tryptamine are shown in the first row for sensor 1 **[G]**, sensor 2 **[H]** and sensor 3 **[I]**.

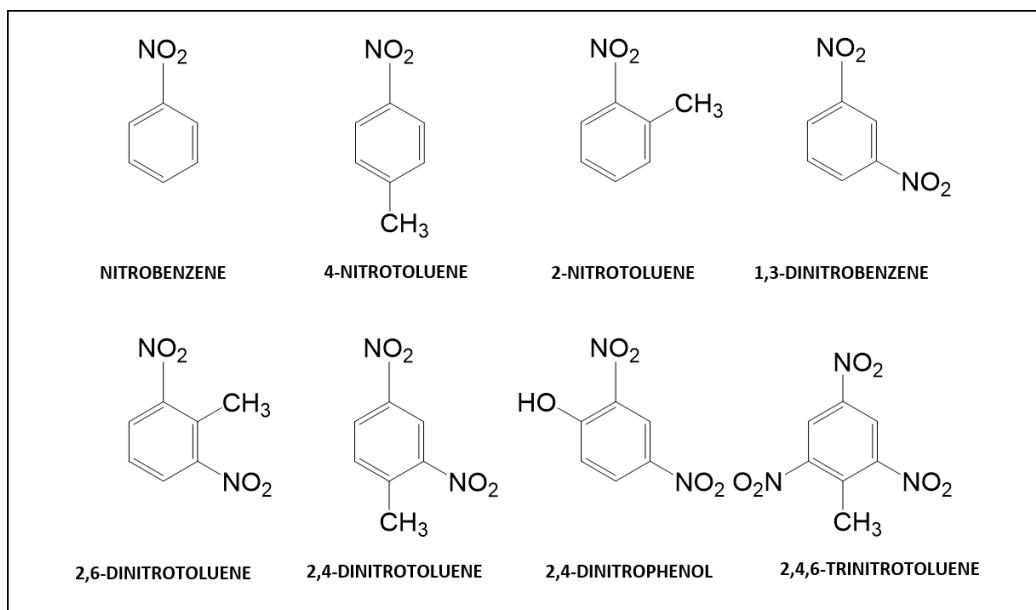


Figure S7. Schematic representation of different species used into the discrimination study.

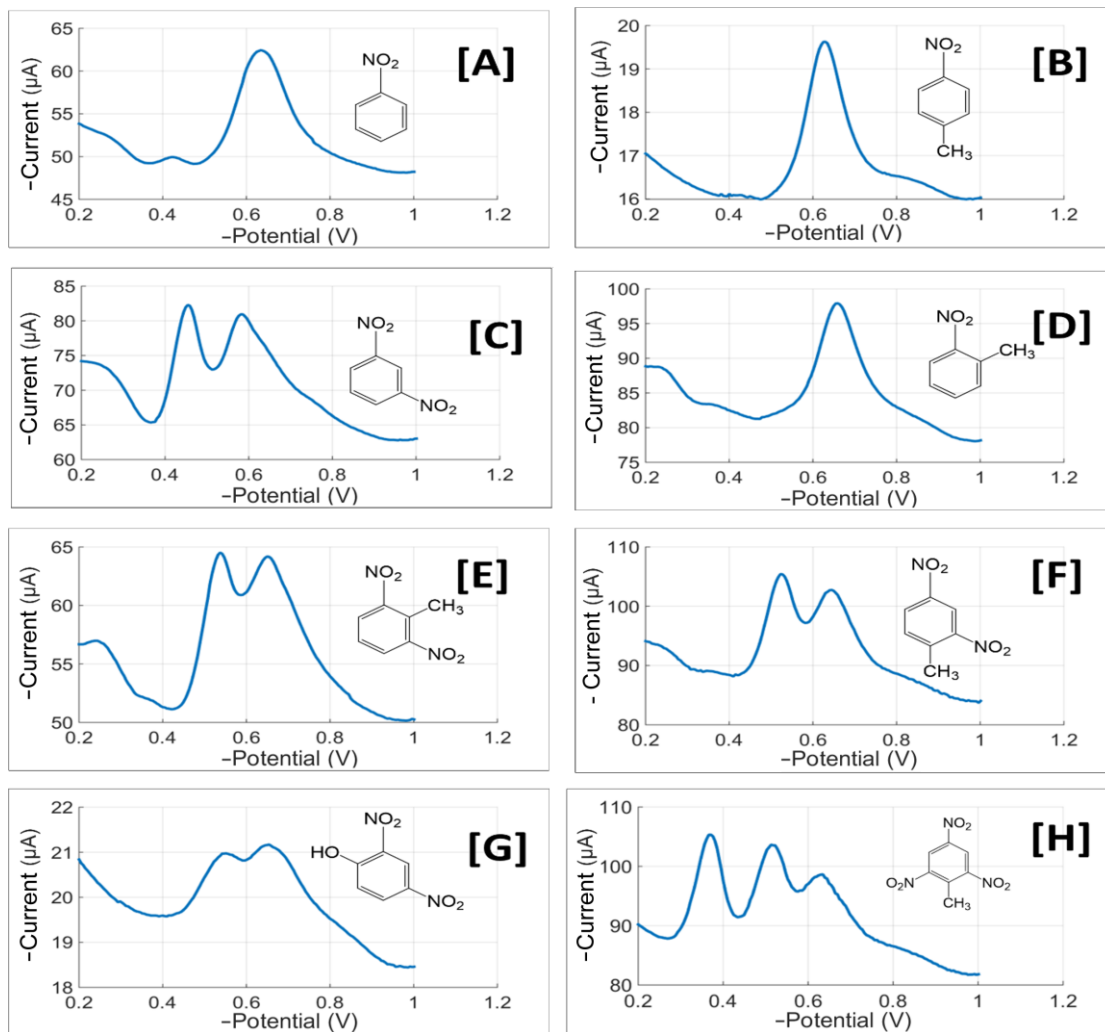


Figure S8. Differential pulse voltammograms for 10 mol L⁻¹ of [A] NB [B] NT [C] 1,3-DNB, [D] 2-NT, [E] 2,6-DNT, [F] 2,4-DNT, [G] 2,4-DNP, [H] TNT employed in the discrimination study of nitroaromatic compounds.