

Supplementary Information for

Combined Approach to Remove and Fast Detect Heavy Metals in Water Based on PES-TiO₂ Electrospun Mats and Porphyrin Chemosensors.

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1. **Figure S1:** Intensity ratio of components at $\lambda=476$ nm and $\lambda=423$ nm (I_{476}/I_{423}) vs Pb^{2+} concentration in water. UV-Vis spectra of H2T4 aqueous solution (1 μ M) were recorded in presence of increasing concentration of Pb^{2+} ions. Spectra measurements have been performed 15 minutes after addition of aliquots of $Pb(NO_3)_2$ stock solution (1 mM) to 2.5 ml of H2T4 solution. Pb^{2+} concentration ranges from 0.25 μ M to 5 μ M.
2. **Figure S2:** UV-Vis absorption spectra of H2T4 1 μ M (black line) in presence of $[Pb^{2+}]=5$ μ M (red line); after 24 hrs (green line) and 48 hrs (blue line) mats dipping. Prolonged dipping of PES/TiO₂ mats in this solution results in a decrease of Pb^{2+} concentration to about 1 μ M in 24 hrs and 0.25 μ M in 48 hrs, in good agreement with data reported in Figure S1.
3. **Figure S3:** UV-Vis absorption spectra of H2T4 1 μ M (black line) in presence of Zn^{2+} ions having concentration of 500 μ M (red line) and 5 mM (green line), respectively. Spectra measurements have been performed after 1 hour from porphyrin addition (shorter time is not enough to provide a detectable metalation).
4. **Figure S4:** UV-Vis absorption spectra of H2T4 deposited on glass before (black line) and after dipping in aqueous solutions containing $[Zn^{2+}]=1\mu$ M (red line) and $[Zn^{2+}]=5$ μ M (green line). UV-Vis spectra of H2T4 deposited on glass before and after dipping in aqueous solutions containing Zn^{2+} ions having a concentration of 1 μ M and 5 μ M. Soret band red-

shift and spectral modification in the Q-bands region provide evidence of formation of ZnT4 derivatives on glass surface.

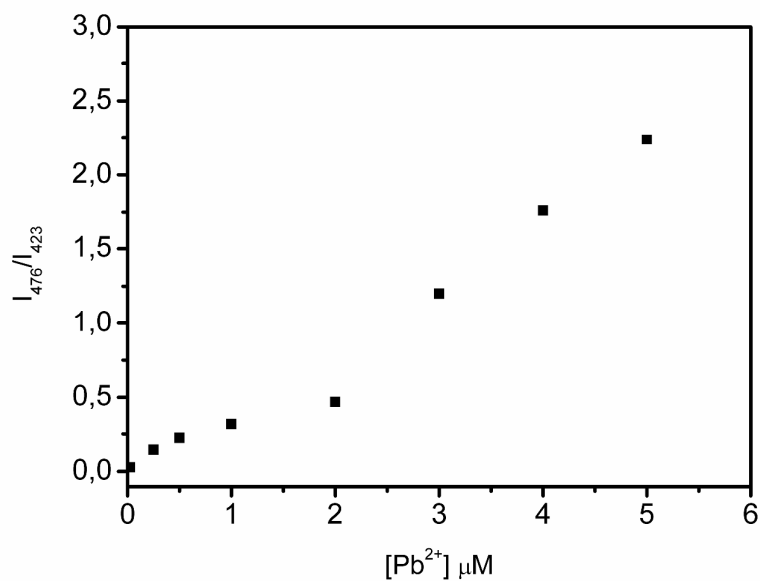


Figure S1

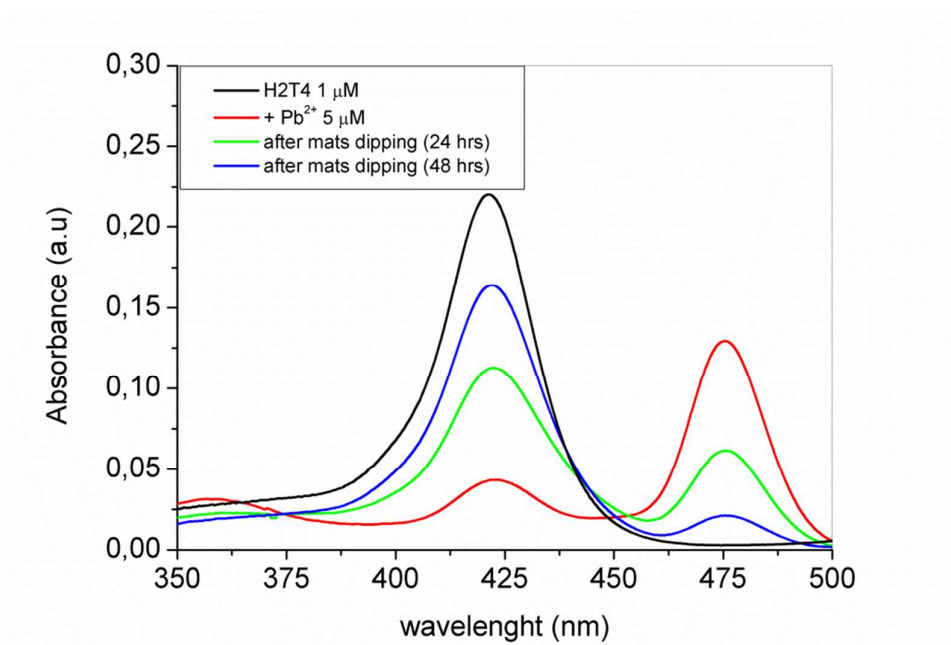


Figure S2

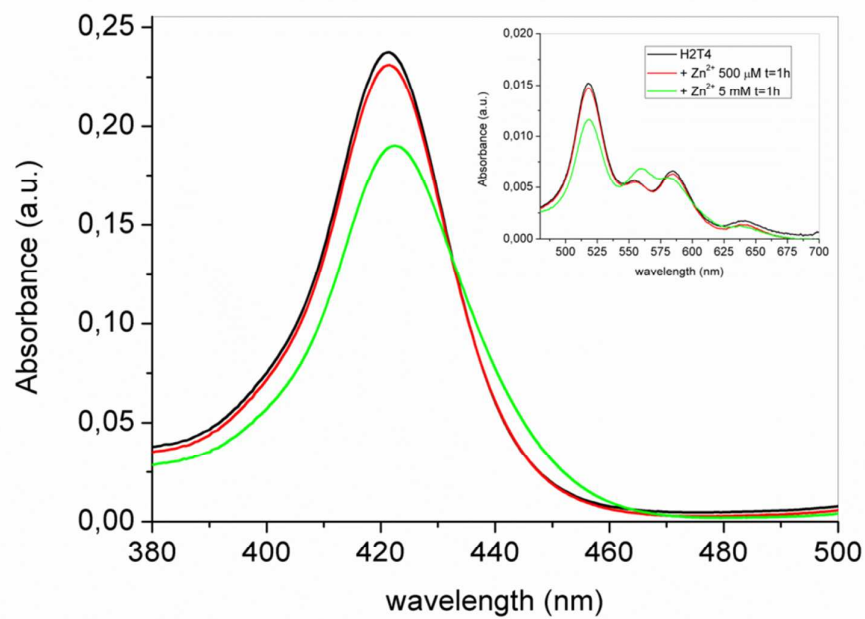


Figure S3

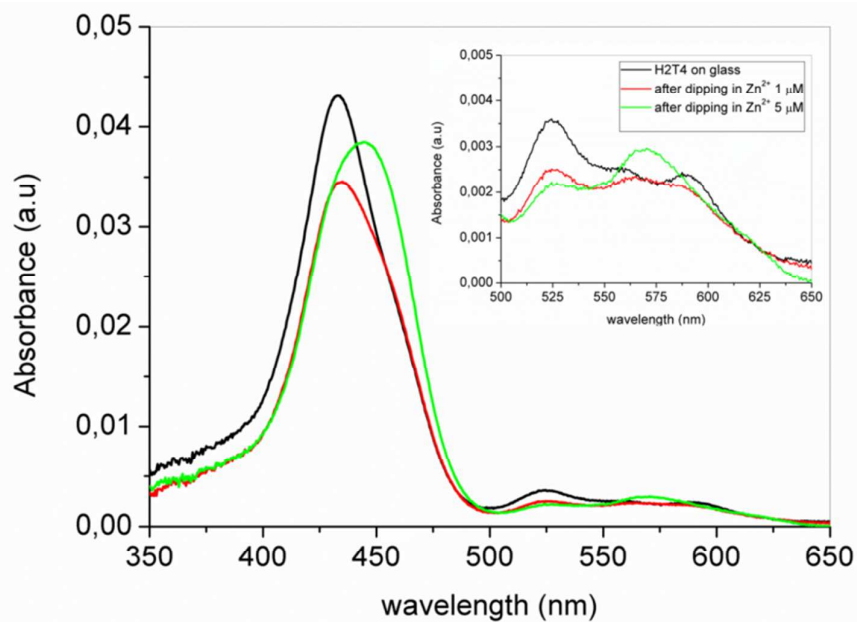


Figure S4