

Supplementary materials

Sensitive Detection of Industrial Pollutants Using Modified Electrochemical Platforms

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S1 - FT-IR characterization of Graphene Nanoplatelets

The FT-IR characterization of the GNP produced for this work is provided in Fig.S1. This characterization is usually used to observe the functionalization on GNP due to the fact that GNP does not have distinctive peaks due to the IR selection rules. The analysis confirmed the Raman results: the MW irradiation did not oxidized the GNP. The spectrum, acquired after 30 s of irradiation (that exceed the time of expansion process, about 10 s) does not show peak nor in the region of carbonyl and carboxyl groups (about 1600cm⁻¹) neither in the region of hydroxyl group (about 3000cm⁻¹). The absent of functional groups and consequently low intensity of signals highlight the background and in particular the signals of sample holder, the cell in diamond used for the ATR technique.

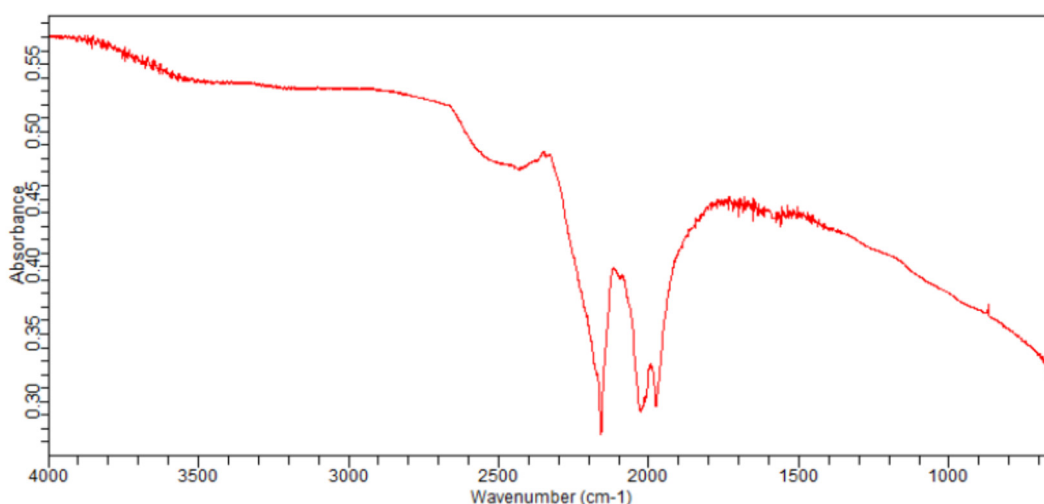


Figure S1. Infrared spectrum of GNP after MW irradiation. As it is possible to observe, the main feature of oxidation, such as carbonyl, hydroxyl and carboxylic groups, are absent. In the region 2600-1900 cm^{-1} , the peaks are ascribed to the sample holder, a diamond cell. The spectrum (128 scans, resolution: 2 cm^{-1}) was acquired with the attenuated total reflection technique using a Cary 630 spectrometer (Agilent) endowed with a diamond cell.

S2. Dose-response voltammograms

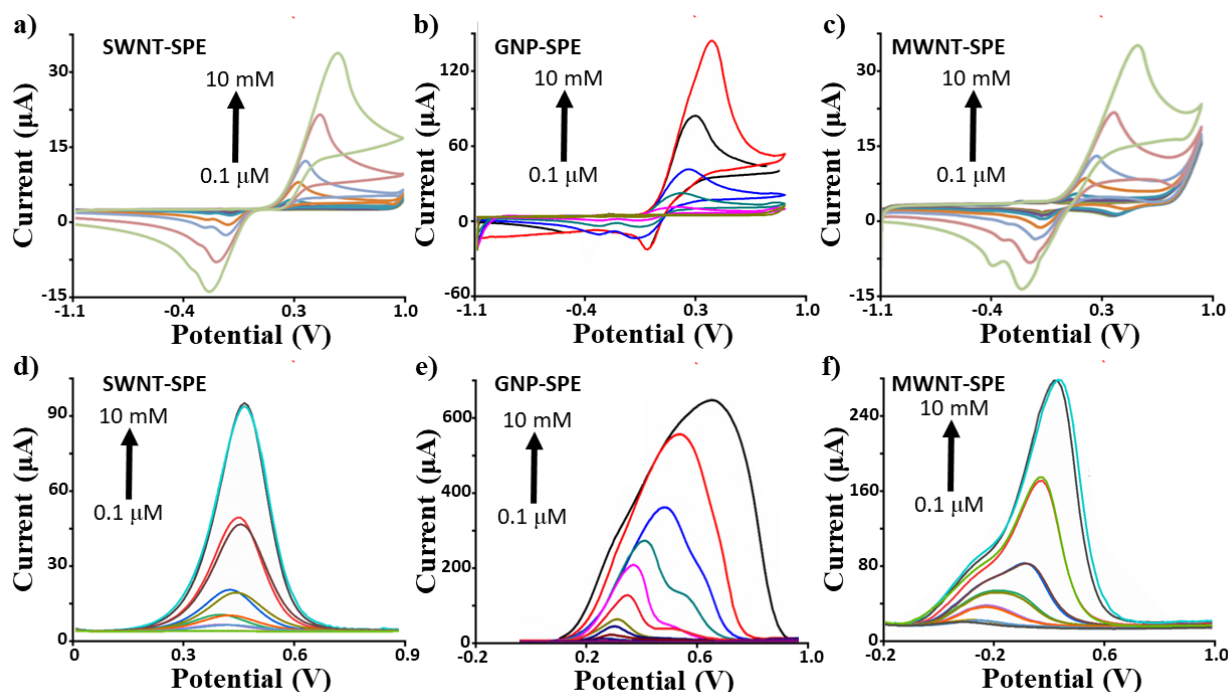


Figure S2. Dose-response voltammograms. (a–f) Comparison of the CVs and SWVs for different platforms (SWNT, MWNT, GNP and bare SPE) at several HQ concentrations (from 0.1 to 1 μM) in water. Curves of one representative CNMs-modified SPE sensor of at least 6 analyzed platforms are presented.