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Application of an optimized electrochemical sensor in astaxanthin antioxidant properties monitoring against lipoperoxidation, during algae accumulation

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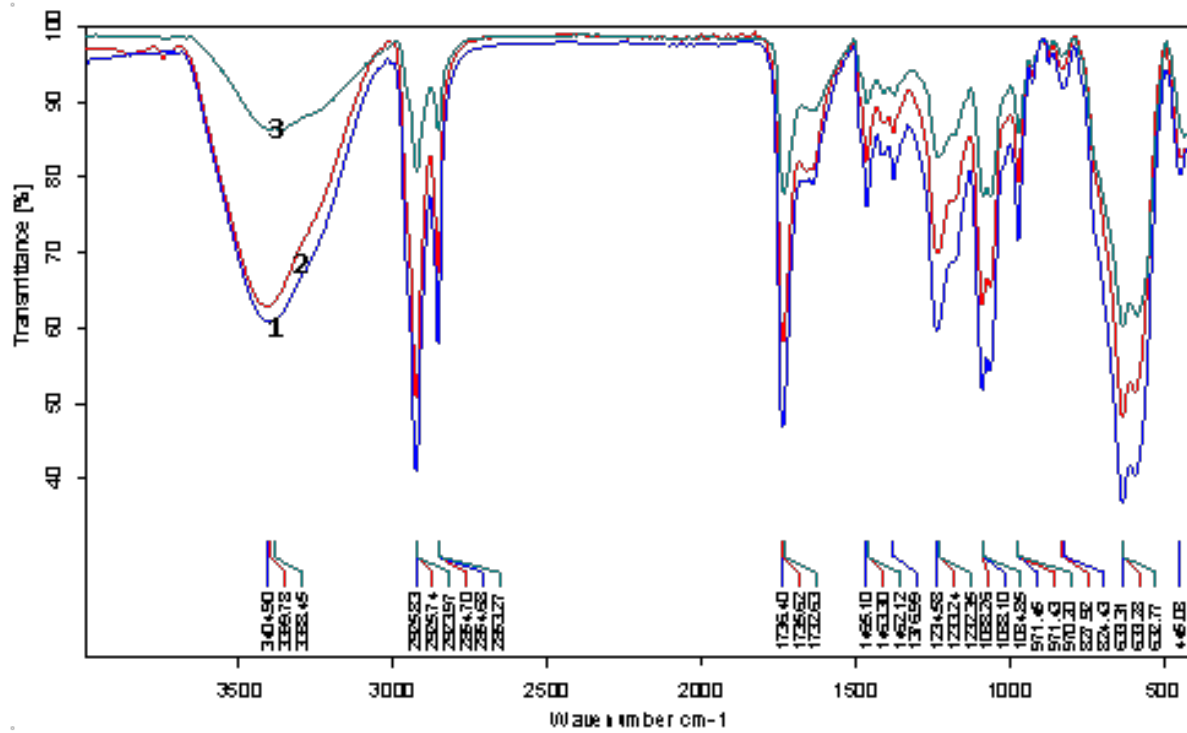


Fig. 1S. FTIR spectra of nanobeads PC-Fe₃O₄ stored at room temperature; (1) – initial characterization; (2) after 45 days; (3) after 75 days.

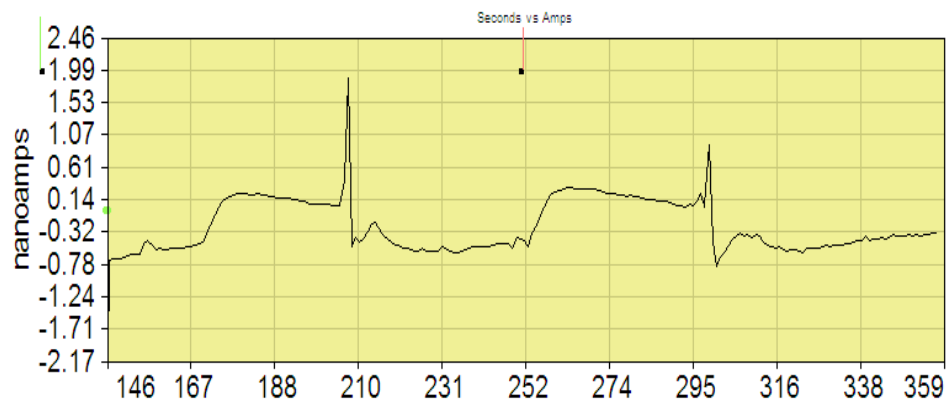


Fig 2S. Evaluation of the noise associated to the magnetic field application using chronoamperometry for the reduction of a ferricyanide solution, in flow system.

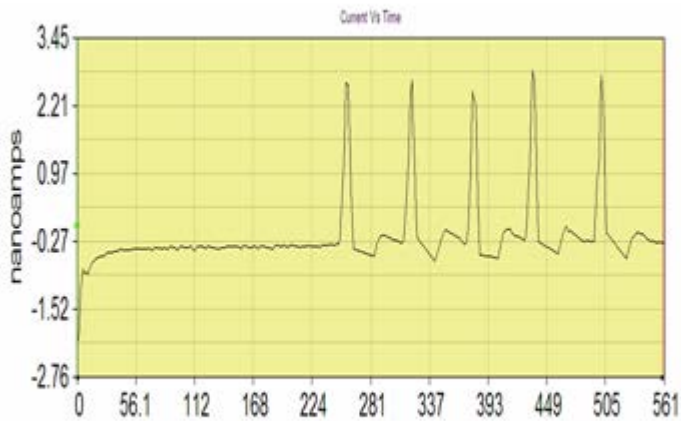


Fig. 3S. Chronoamperometric response of PC/Fe₃O₄ sensor (applied potential + 0.385 V vs. Ag/AgCl, flow rate 60 $\mu\text{L min}^{-1}$, successive injections)

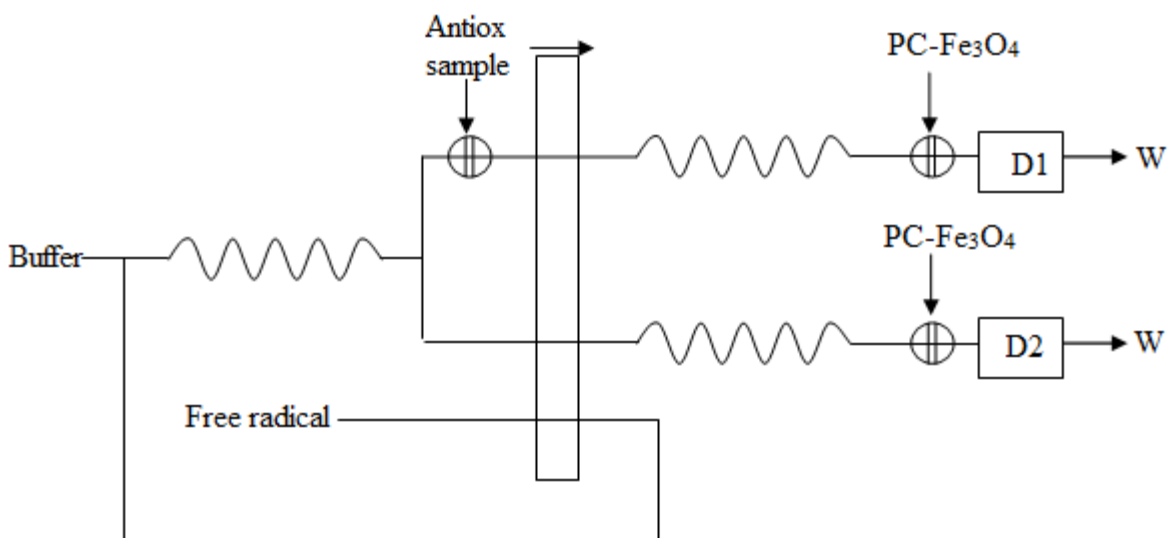


Fig. 4S. Scheme of flow system assembly to develop the PC-Fe₃O₄/Au sensor for assessing the astaxanthin antioxidant effect.

The scheme of used flow system is given below where buffer is 0.1 molL⁻¹KCl; free radical –solution of generated ROO[•] ; PC/Fe₃O₄ suspension of composite nanoparticles in KCl 0.1 molL⁻¹; Antiox sample-test solution (astaxanthin or other presumed antioxidants); D1, D2-detectors, electrochemical cells measuring in chronoamperometry; W-wastes