

A novel hybrid carbon materials-modified electrochemical sensor used for detection of gallic acid

Achour TERBOUCHE^{a,*}, Soumeya BOULAHIA^{a,b}, Sarah MECERLI^{a,b}, Chafia AIT-RAMDANE-TERBOUCHE^a, Hakim BELKHALFA^a, Djamila GUERNICHE^{a,c}, Moussa SEHAILIA^a, Khaldoun BACHARI^a, Djillali MEZAOUI^d, Didier HAUCHARD^e

^a*Centre de Recherche Scientifique et Technique en Analyses Physico-chimiques(CRAPC), BP384, Bou-Ismaïl, RP 42004, Tipasa, Algeria.*

^b*Faculté de Chimie, Université USTHB, 16111 Algiers, Algeria*

^c*Laboratoire d'Electrochimie-corrosion, Métallurgie et Chimie Minérale, Faculté de Chimie, Université USTHB, 16111 Algiers, Algeria*

^d*Laboratoire Sciences des Matériaux, Faculté de Chimie, Université USTHB, 16111 Algiers, Algeria*

^e*Univ Rennes, Ecole Nationale Supérieure de Chimie de Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes)-UMR 6226, F-35000 Rennes, France*

*Corresponding author: achour_t@yahoo.fr ; achour.terbouche@crapc.dz ; Tel.: +213.660 37 01 15, fax: +213.24.325.774

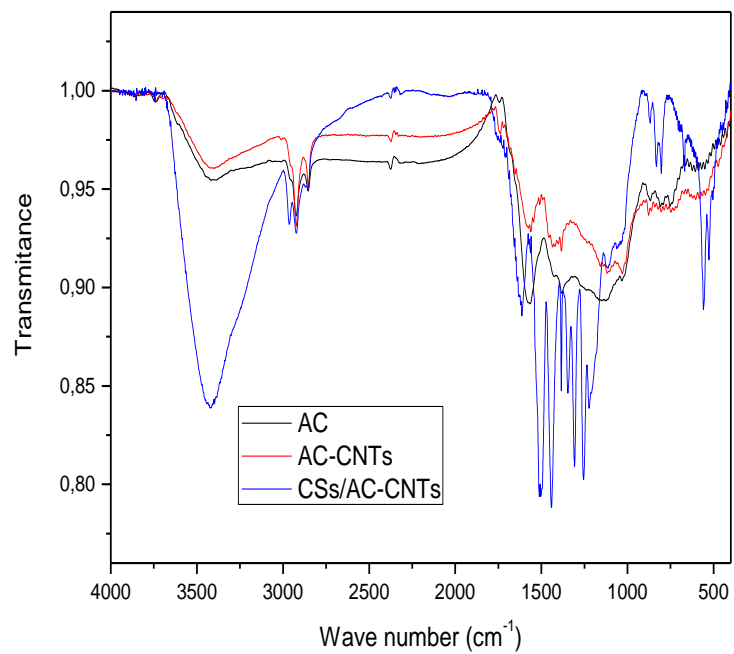


Fig. S1. FT-IR Spectra of AC, AC-CNTs and CSs/AC-CNTs.

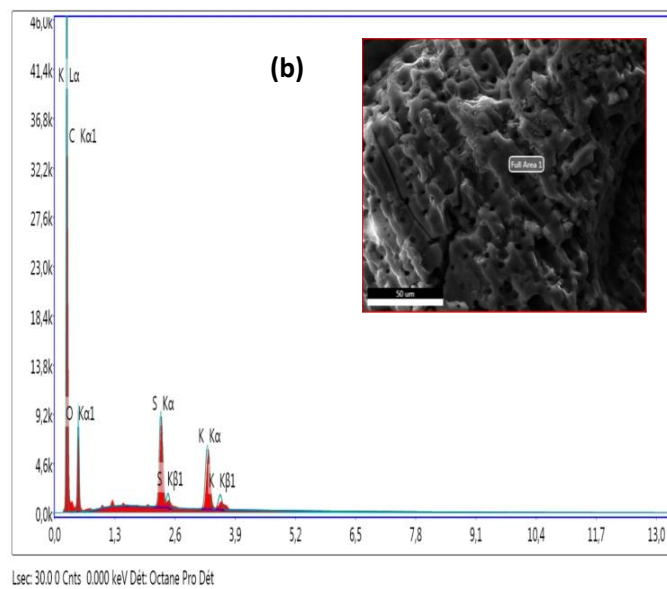
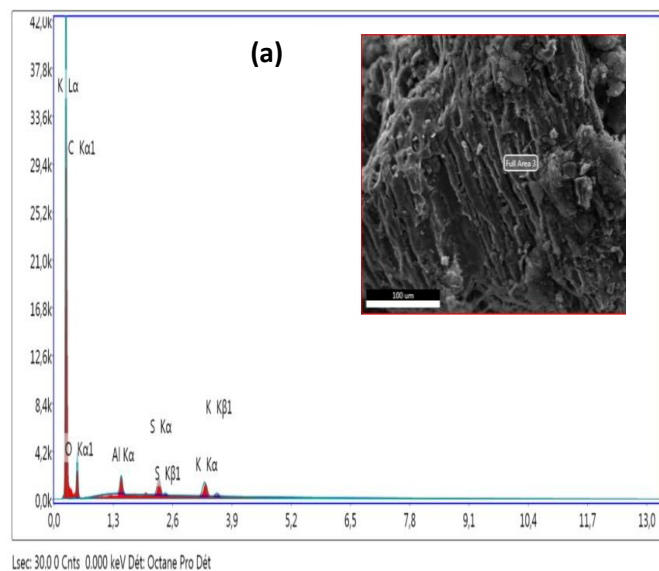


Fig. S2. EDX analysis of : (a) AC-CNTs ; (b) CSs/ AC-CNTs.

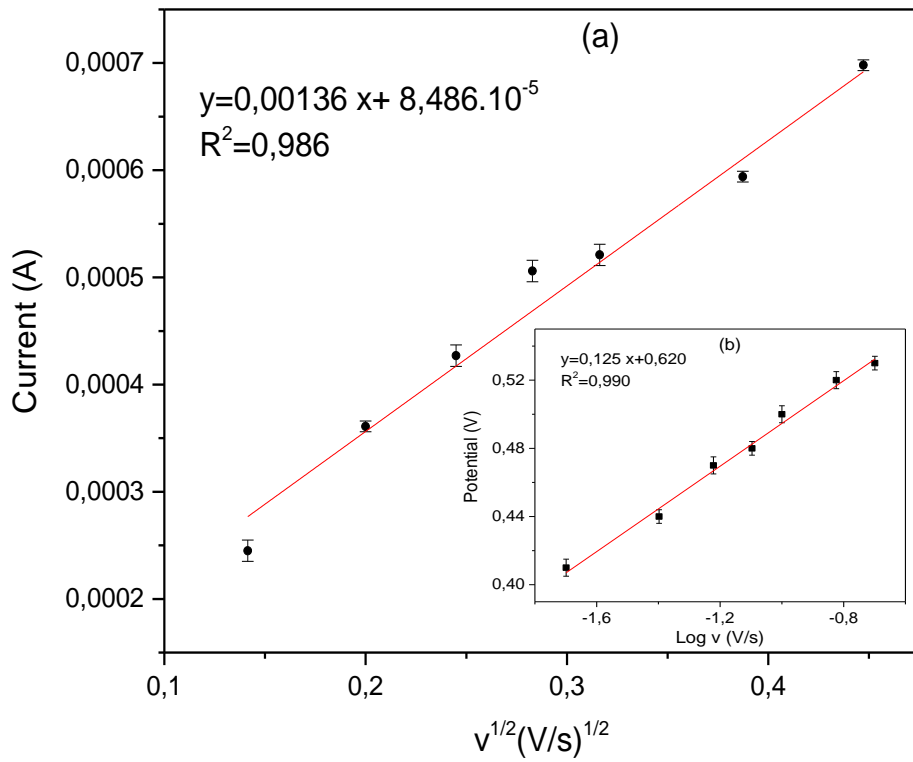


Fig. S3. Electrochemical study at different scan rate in $\text{NaH}_2\text{PO}_4/\text{Na}_2\text{HPO}_4$ (0.1M) ; KNO_3 (0.1M) ; concentration of GA 0.01M . (a) Current vs. square root of scan rate and (b) Potential vs. $\text{Log } v$ recorded with GC/AC-CNTs electrode.

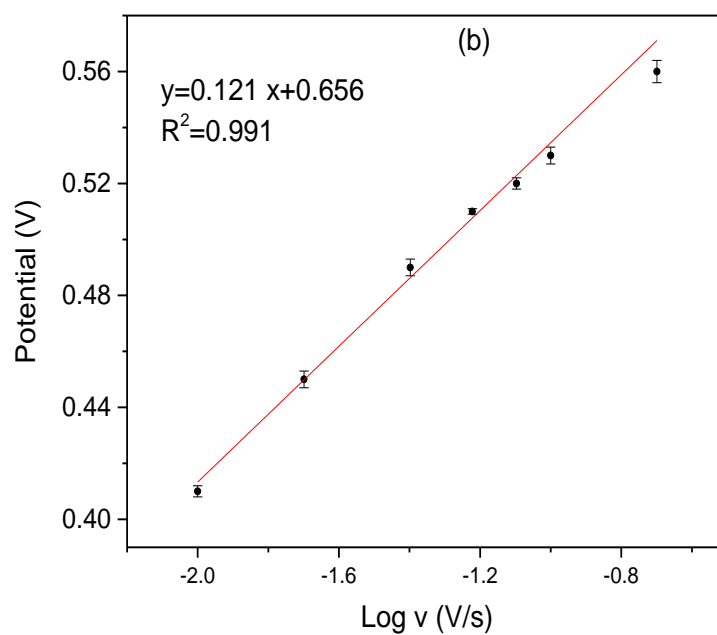


Fig. S4. Potential vs. Log v recorded with GC/AC electrode in $\text{NaH}_2\text{PO}_4/\text{Na}_2\text{HPO}_4$ (0.1M) ; KNO_3 (0.1M) ; concentration of GA 0.01M.

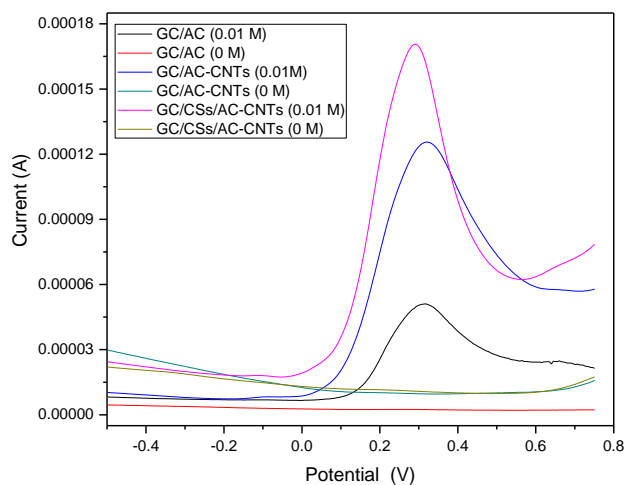


Fig. S5. Square wave voltamperograms recorded using carbon paste electrodes modified by the carbon materials in $\text{NaH}_2\text{PO}_4/\text{Na}_2\text{HPO}_4$ (0.1 M); KNO_3 (0.1M) in the absence (0 M) and the presence of GA (0.01 M).