Electronic Supplementary Material (ESI) for RSC Advances.

Electrochemical biosensor based on cellulose nanofibers/graphene oxide and acetylcholinesterase for the detection of chlorpyrifos pesticide in water and fruit juice

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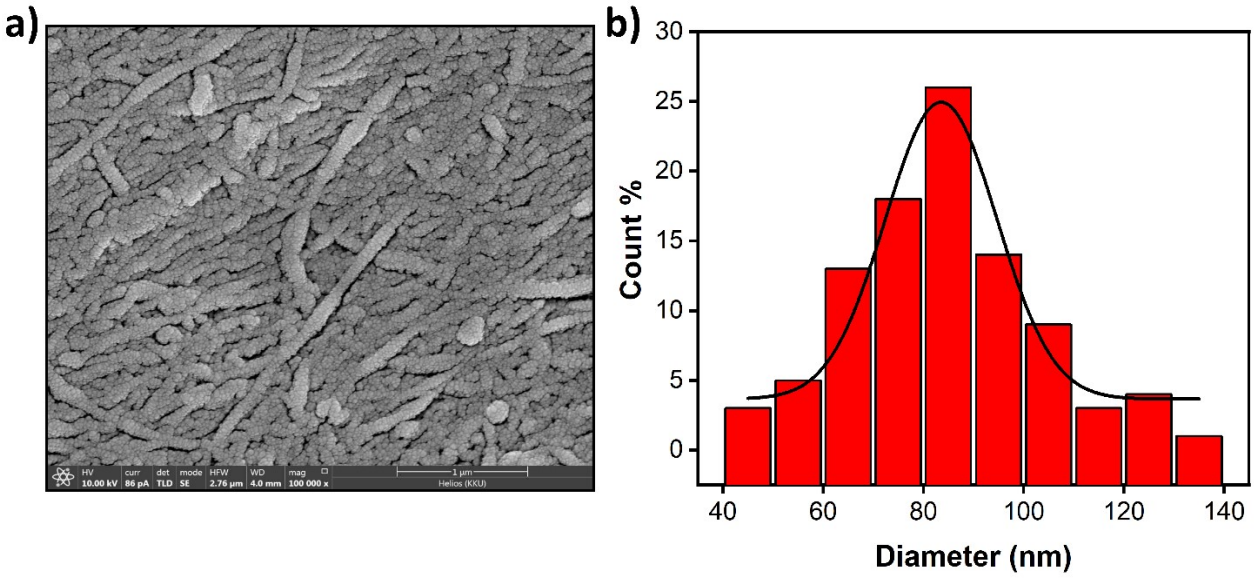

Figure S1.a) FE-SEM image of synthesized cellulose nanofibers (CNFs) from sugarcane bagasse and size distribution plot of the average diameter of CNFs from FE-SEM image (83.55±1.326 nm, n=106).

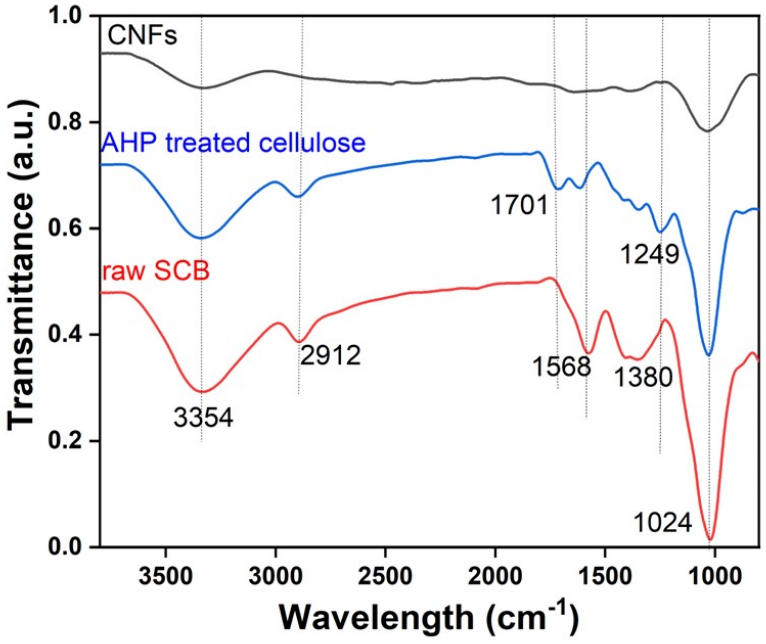

Figure S2**.** FTIR spectra of raw sugarcane bagasse (SCB), AHP hydrolyzed cellulose, and cellulose nanofibers (CNFs)

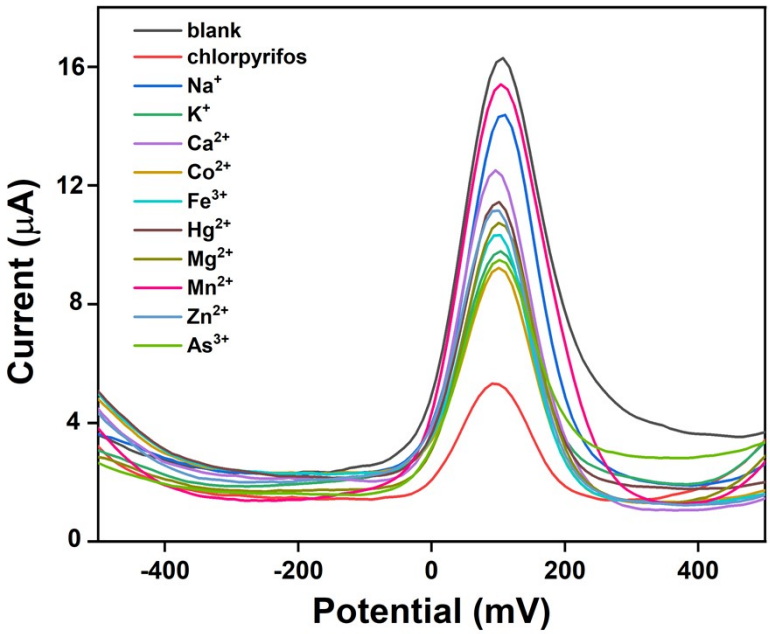

Figure S3. SWV performance of the modified AChE/CS-GO/GO/CNFs/ SPCEs in the presence of 0.5 μM of chlorpyrifos, Na^+, K^+, Ca^{2+}, Co^{2+}, Fe^{3+}, Hg^{2+}, Mg^{2+}, Mn^{2+}, Zn^{2+}, As^{3+}, respectively.

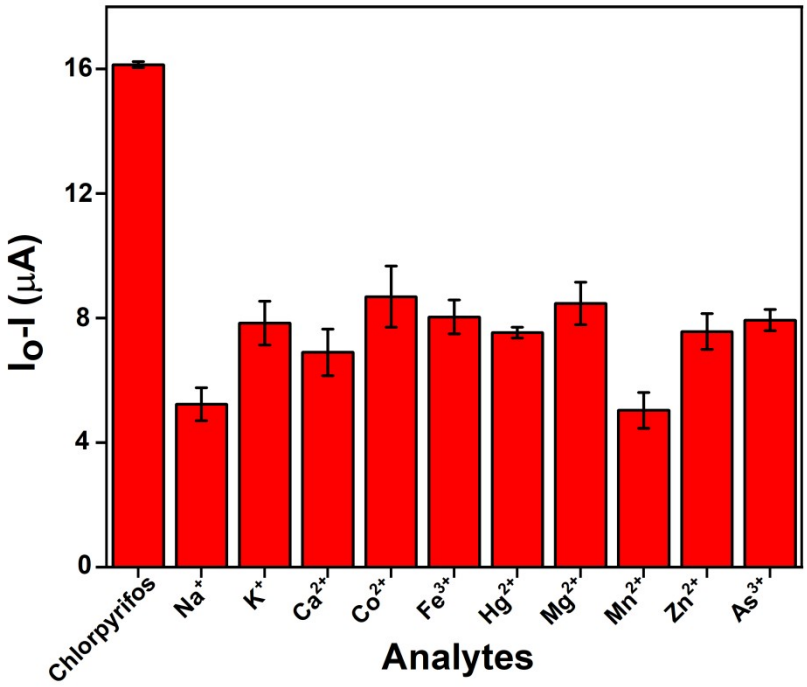

Figure S4. Histogram bar graph showing the currents (I_o-I) of chlorpyrifos and different analytes on the modified AChE/CS-GO/GO/CNFs/SPCEs where I_o and I were the currents of modified SPCEs in the absence and presence of chlorpyrifos and different analytes, respectively.

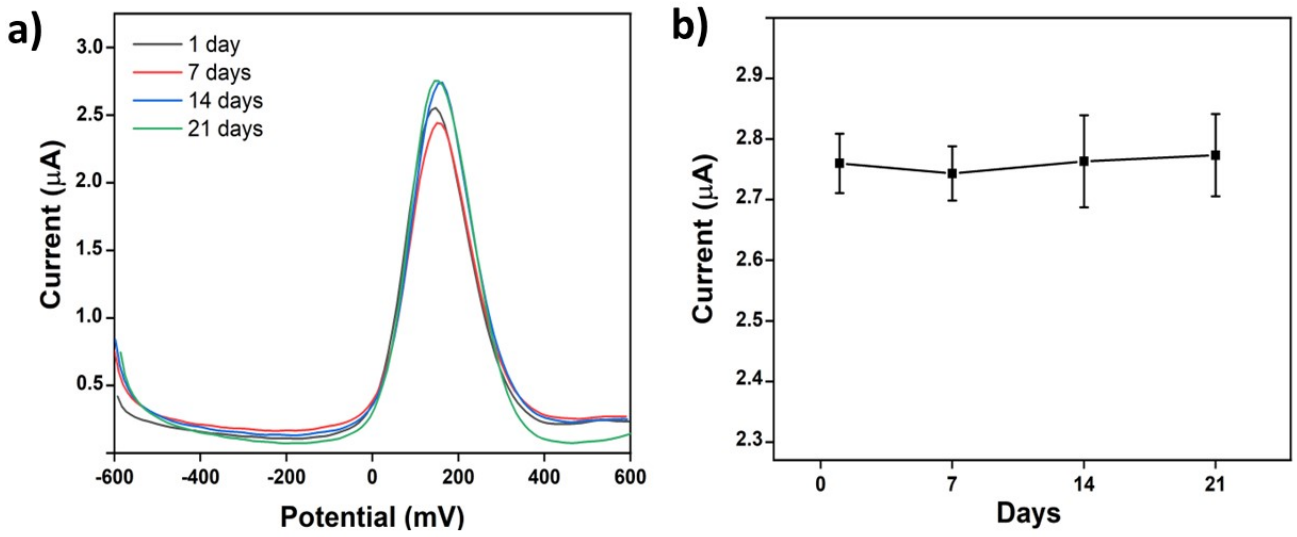

Figure S5. a) SWV performance of the modified AChE/CS-GO/GO/CNFs/ SPCEs with 0.5μM of chlorpyrifos at different days ranging among 1, 7, 14, and 21 days and b) the day-dependent currents of modified AChE/CS-GO/GO/CNFs/ SPCEs.