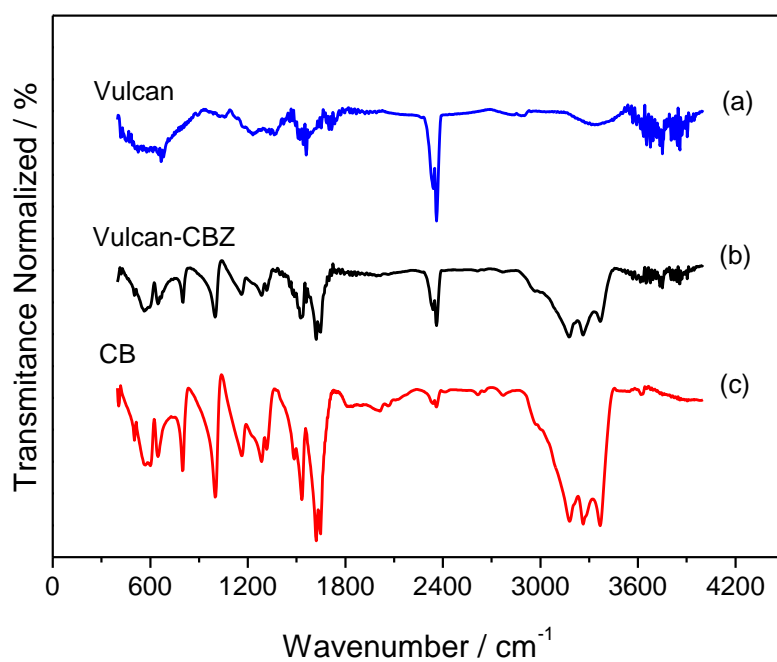


## Supplementary Information

### Development of a Novel and Simple Electroanalytical Procedure for the Determination of Copper in Biofuel Employing a Sensor Based on Vulcan Functionalized with Carbazone

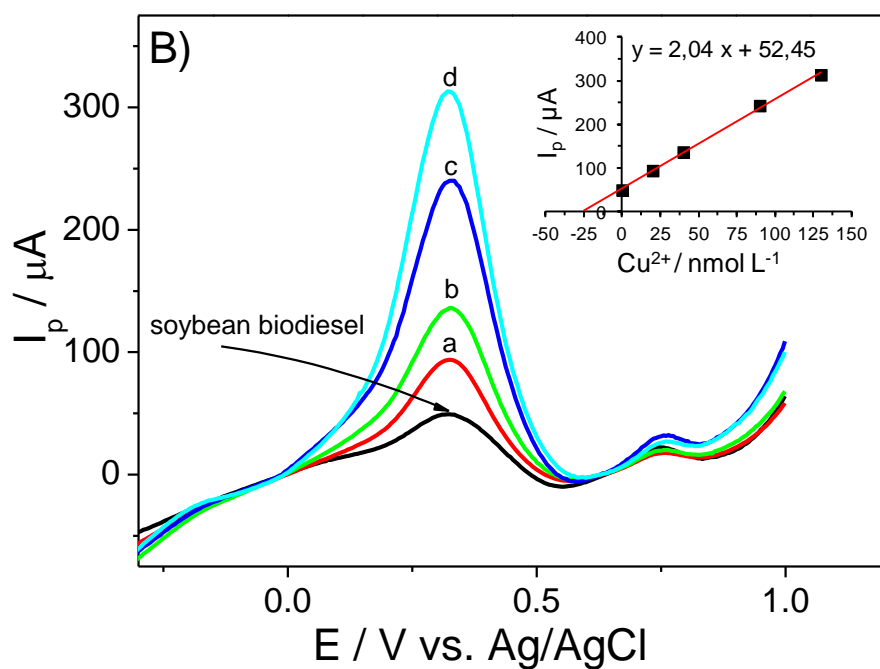
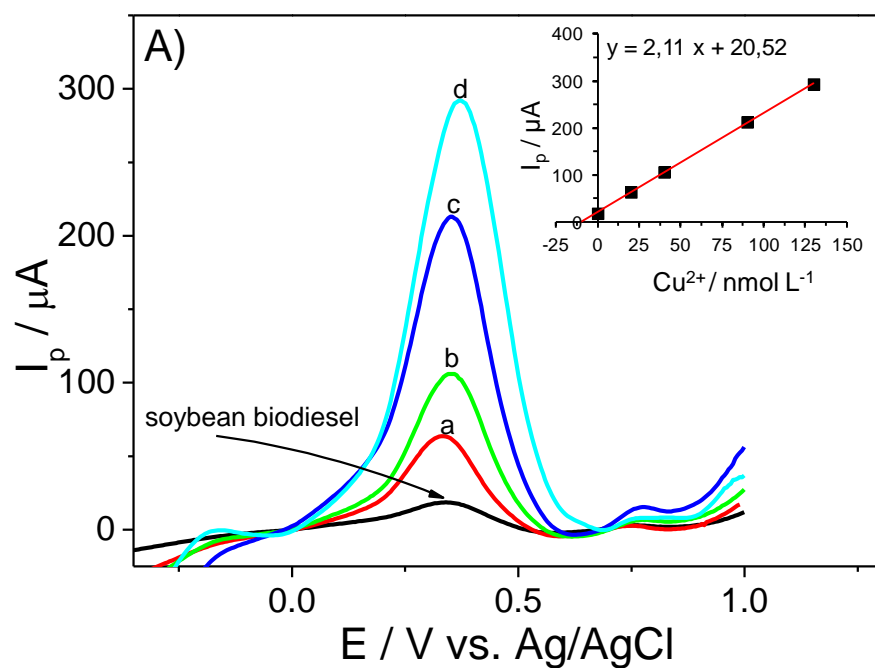
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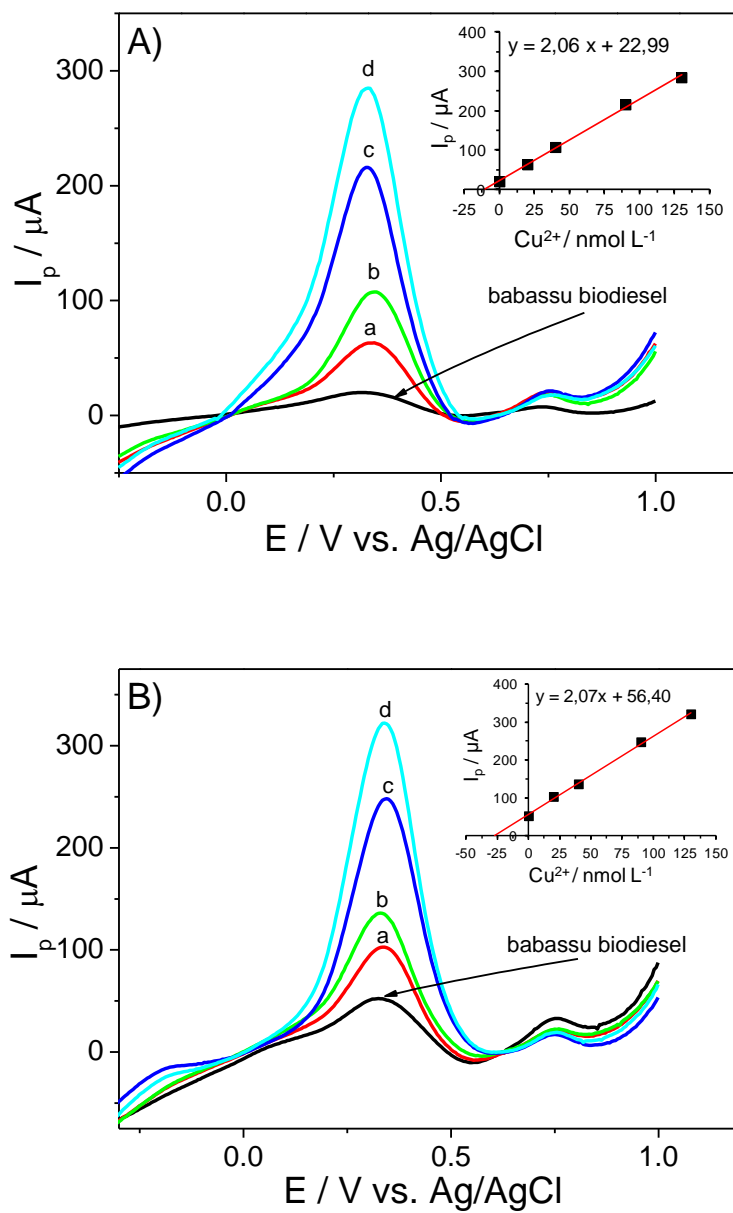


**Figure S1.** FTIR (KBr) spectra of the (a) Vulcan, (b) Vulcan-CBZ and (c) CB (free thiosemicarbazide).

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**Figure S2.** (A) SW anodic redissolution voltammogram for recovery of  $10 \text{ nmol L}^{-1} \text{ Cu}^{2+}$  in soybean biodiesel sample. Insert: analytical curve for copper recovery. (B) SW anodic redissolution voltammogram for recovery of  $25 \text{ nmol L}^{-1} \text{ Cu}^{2+}$  in soybean biodiesel sample. Insert: analytical curve for copper recovery. Experiments conducted in  $0.2 \text{ mol L}^{-1}$  solution  $(\text{NH}_4)_2\text{SO}_4$ , pH 3.5.  $E_{\text{dep}} = -0.5 \text{ V}$ ;  $t_{\text{dep}} = 120 \text{ s}$ ;  $f = 60 \text{ Hz}$ ;  $A_p = 0.025 \text{ V}$ ;  $t_{\text{eq}} = 15 \text{ s}$  and  $[\text{Cu}^{2+}] =$  (a) 20; (b) 40; (c) 90 and (d)  $130 \text{ nmol L}^{-1}$ .



**Figure S3.** (A) SW anodic redissolution voltammogram for recovery of  $10 \text{ nmol L}^{-1} \text{ Cu}^{2+}$  in babassu biodiesel sample. Insert: analytical curve for copper recovery. (B) SW anodic redissolution voltammogram for recovery of  $25 \text{ nmol L}^{-1} \text{ Cu}^{2+}$  in babassu biodiesel sample. Insert: analytical curve for copper recovery. Experiments conducted in  $0.2 \text{ mol L}^{-1}$  solution  $(\text{NH}_4)_2\text{SO}_4$ , pH 3.5.  $E_{\text{dep}} = -0.5 \text{ V}$ ;  $t_{\text{dep}} = 120 \text{ s}$ ;  $f = 60 \text{ Hz}$ ;  $A_p = 0.025 \text{ V}$ ;  $t_{\text{eq}} = 15 \text{ s}$  and  $[\text{Cu}^{2+}] = (\text{a}) 20; (\text{b}) 40; (\text{c}) 90$  and  $(\text{d}) 130 \text{ nmol L}^{-1}$ .