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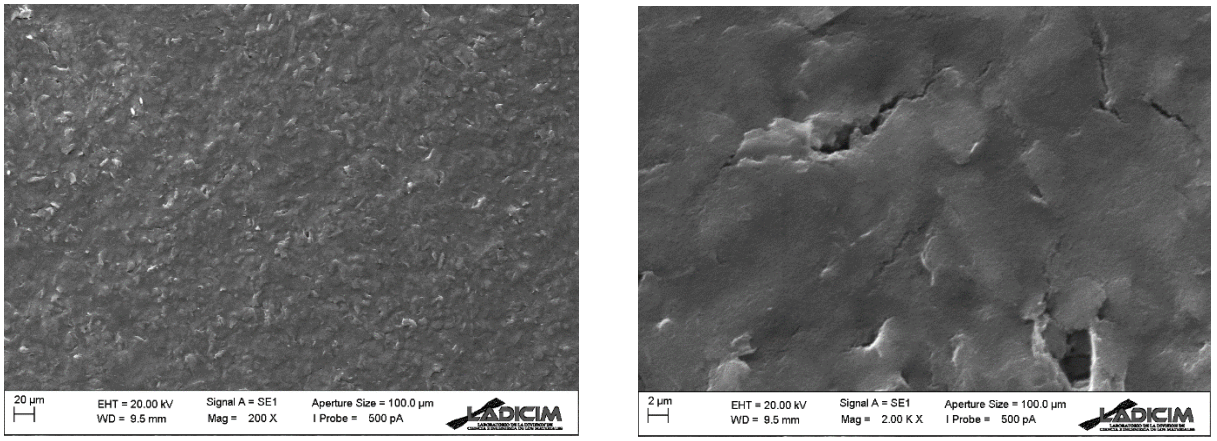
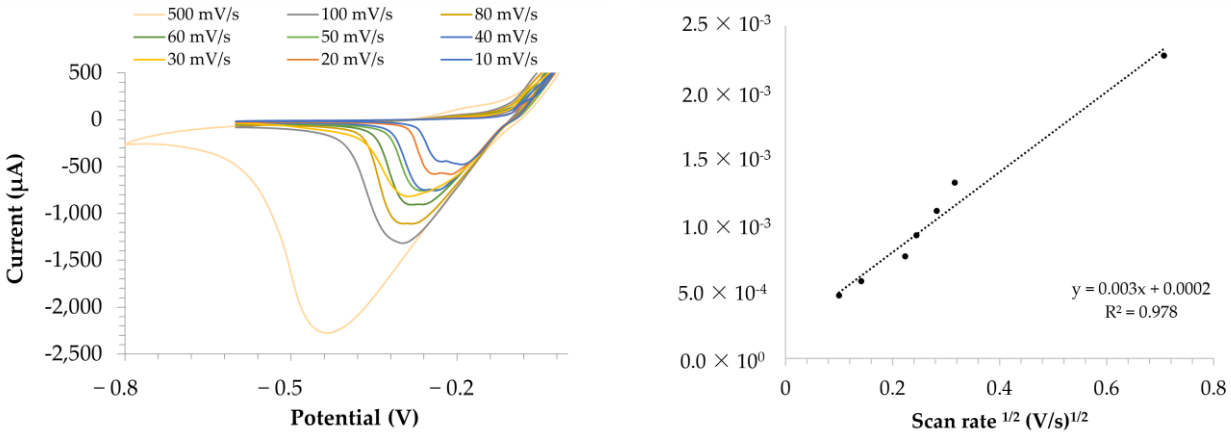
Supplementary materials



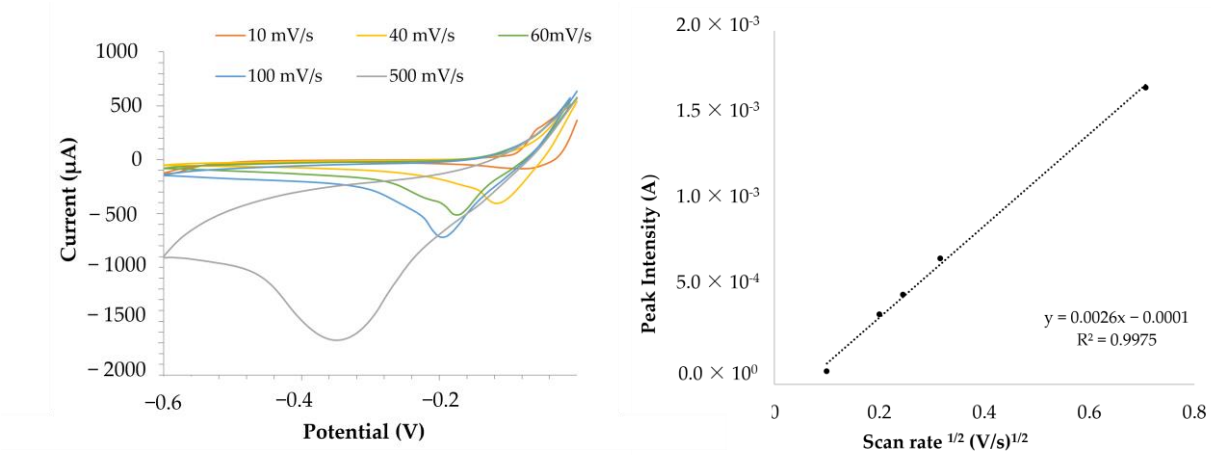
(a) (**b**)

Figure S1. SEM image of carbon screen printed microelectrodes. (a) 200x. (b) 2000x



(a) (b)

Figure S2. Active area calculation for copper based electrode (a) Cyclic voltammetry with 5 mM $Cl_3[Ru(NH_3)_6]$ in 0.1 M KCl with a scan rate from 500 to 10 mV s^{-1}. (b) Randles-Equation linear regression.



(a) (b)

Figure S3. Active area calculation for copper oxide based electrode (a) Cyclic voltammetry with 5 mM $Cl_3[Ru(NH_3)_6]$ in 0.1 M KCl with a scan rate from 500 to 10 mV s^{-1}. (b) Randles-Equation linear regression.

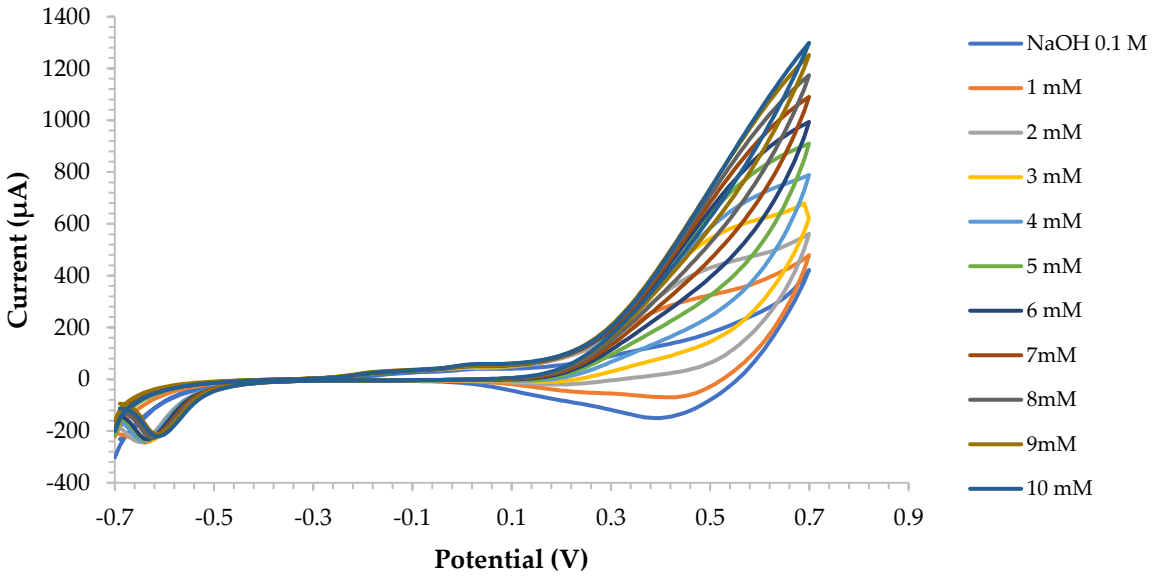


Figure S4. Copper oxide electrode cyclic voltammetry curves (1 cycle, -0.7 to +0.7 V vs Ag/AgCl) with different glucose concentrations in 0.1M NaOH.