

Supplementary Materials

α -synuclein oligomer detection with aptamer switch on reduced graphene oxide electrode

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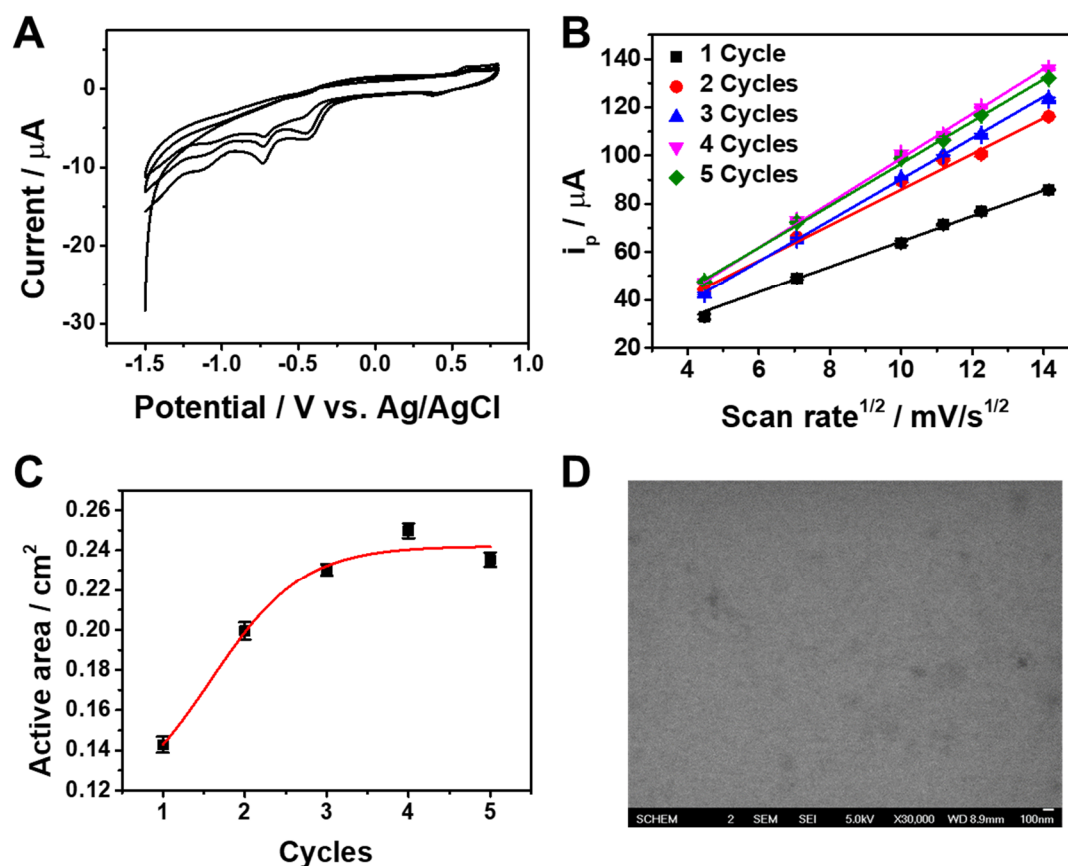


Figure S1. A. CV curves recorded at GCE in 10 mM PBS buffer solution (pH 7.4) containing 0.3 mg mL^{-1} GO at a scan rate of 10 mV for 3 cycles of CV. B. Relationship between peak current and square root of scan rate for oxidation of ERGO-GCEs with different number of CV cycles (1, 2, 3, 4, 5) in 0.1 M KCl containing 5 mM $[\text{Fe}(\text{CN})_6]^{3-}$. C. Plot of active surface areas of ERGO-GCEs with different number of CV cycles (1, 2, 3, 4, 5) in 0.1 M KCl containing 5 mM $[\text{Fe}(\text{CN})_6]^{3-}$. D. SEM image of bare GCE.

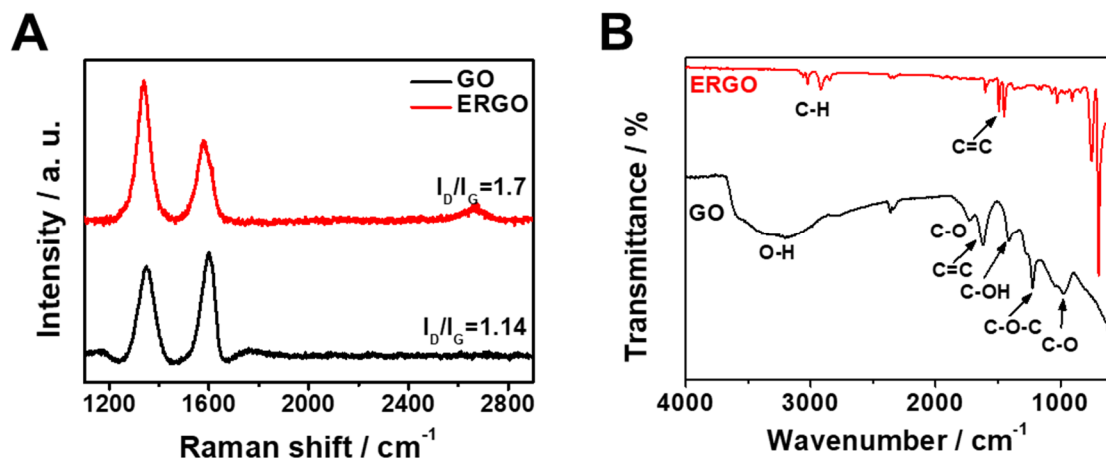


Figure S2. A. Raman spectra of GO and ERGO. B. FT-IR spectra of GO and ERGO.

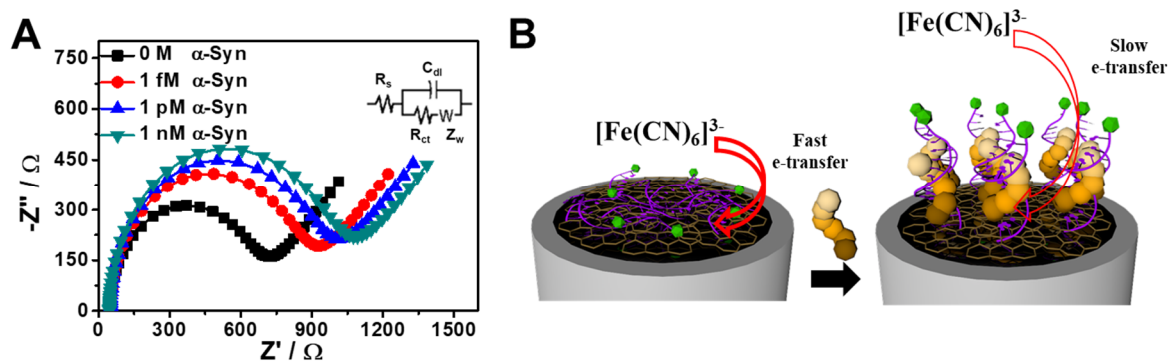


Figure S3. A. Nyquist plots for the Apt/ERGO-GCE in different concentrations of α -syn oligomer (0 M, 1 fM, 1 pM, and 1 nM) in 0.1 M TBS buffer containing 5.0 mM $[\text{Fe}(\text{CN})_6]^{3-}$. B. Plausible sensing mechanism of Apt/ERGO-GCE for detection of α -syn oligomer.

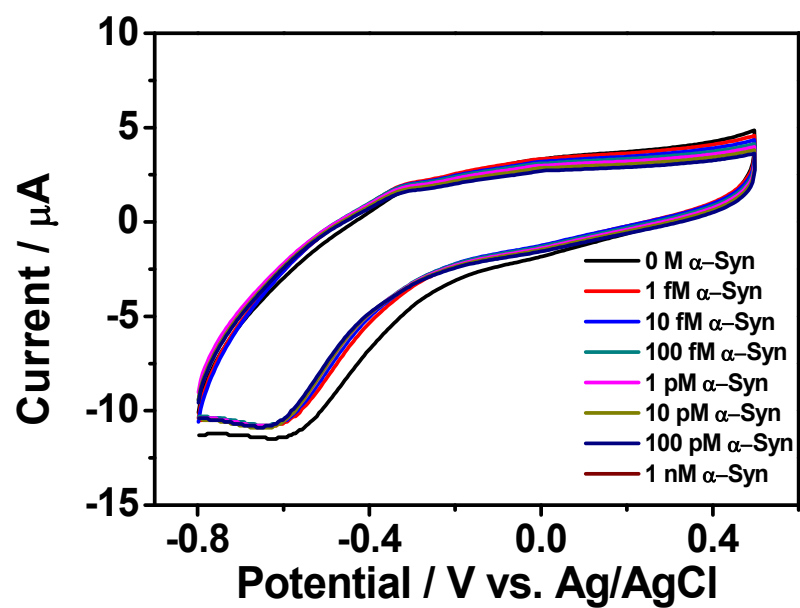


Figure S4. CV curves of Apt/ERGO-GCE at a scan rate of 50 mV s^{-1} upon the addition of different concentrations of α -Syn oligomer (0 – 1 nM) in 0.1 M TBS buffer.