

## Supplementary Data

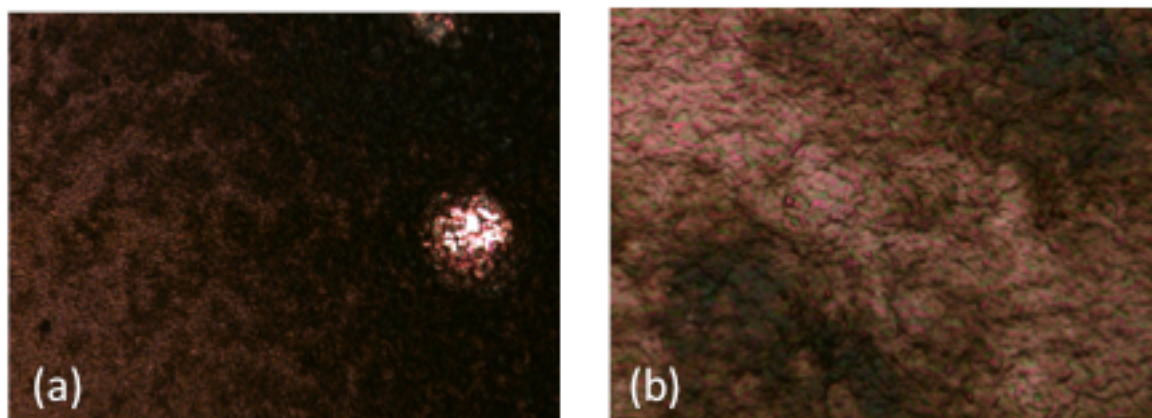


Figure S1: Micrographs of graphene deposited for 30 minutes from an aqueous graphene oxide suspension (1 mg/mL) applying -1.2 V: (a) = 5x magnification, (b) = 50x magnification

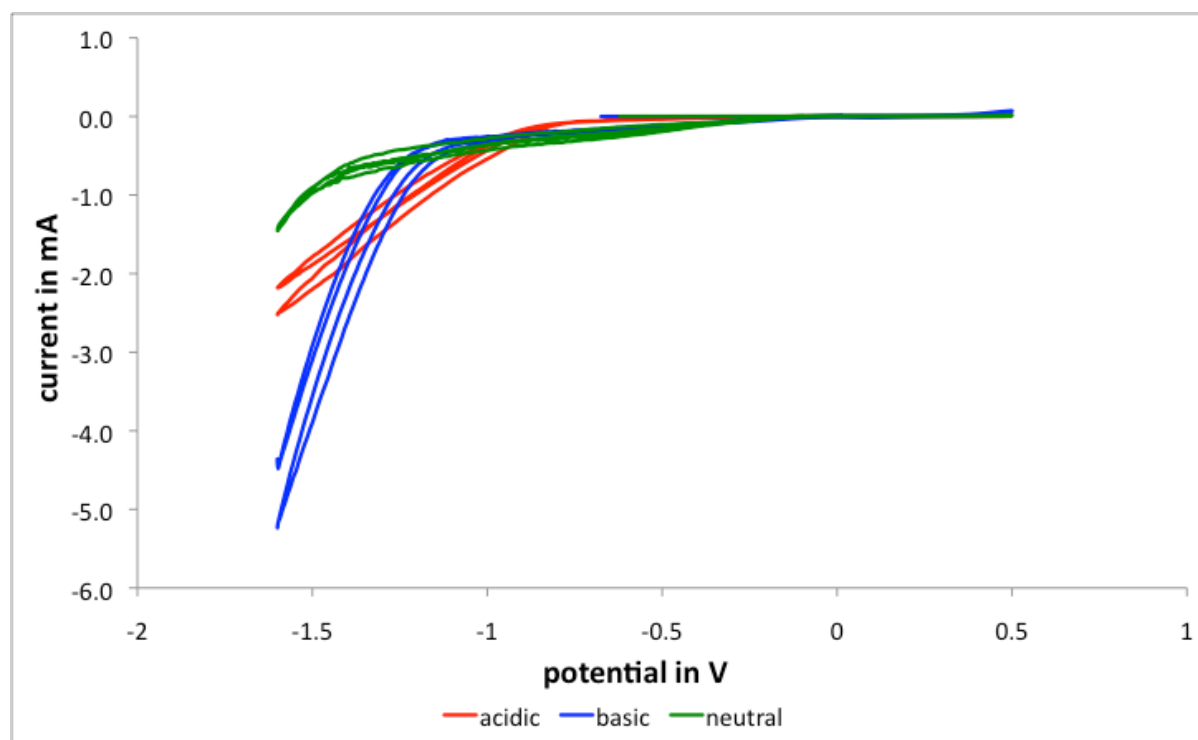


Figure S2: Cyclic voltammograms of  $\text{GO}_{0.5 \text{ mg/mL}}/\text{NaCl}_{0.25 \text{ M}}$  suspensions at different pH.

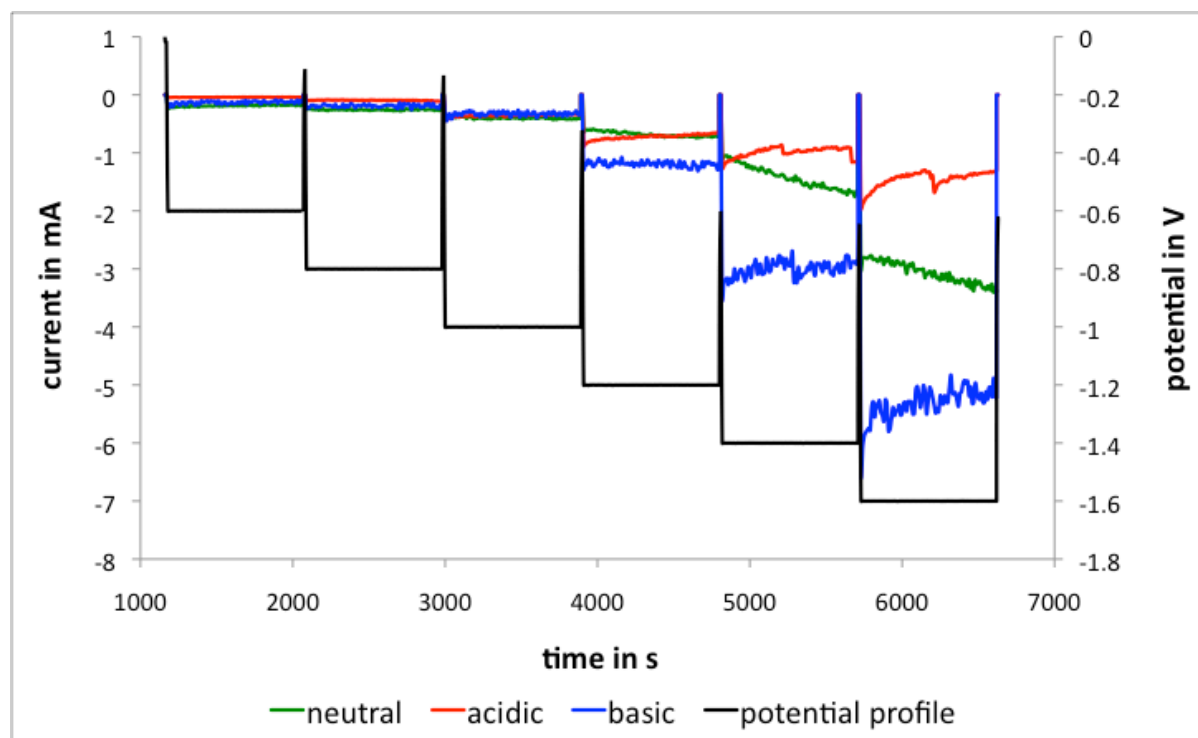


Figure S3: deposition current measured after applying increasing reduction potentials (-0.8V to -1.6V) of  $\text{GO}_{0.5\text{mg/mL}}/\text{NaCl}_{0.25\text{M}}$  suspensions at different pH. The current drop indicated graphene deposition which starts at -1.0V for acidic (pH = 4.5: red) and basic suspensions (pH = 9.5: blue) while neutral suspensions (green) show deposits at potentials exceeding -1.2V.

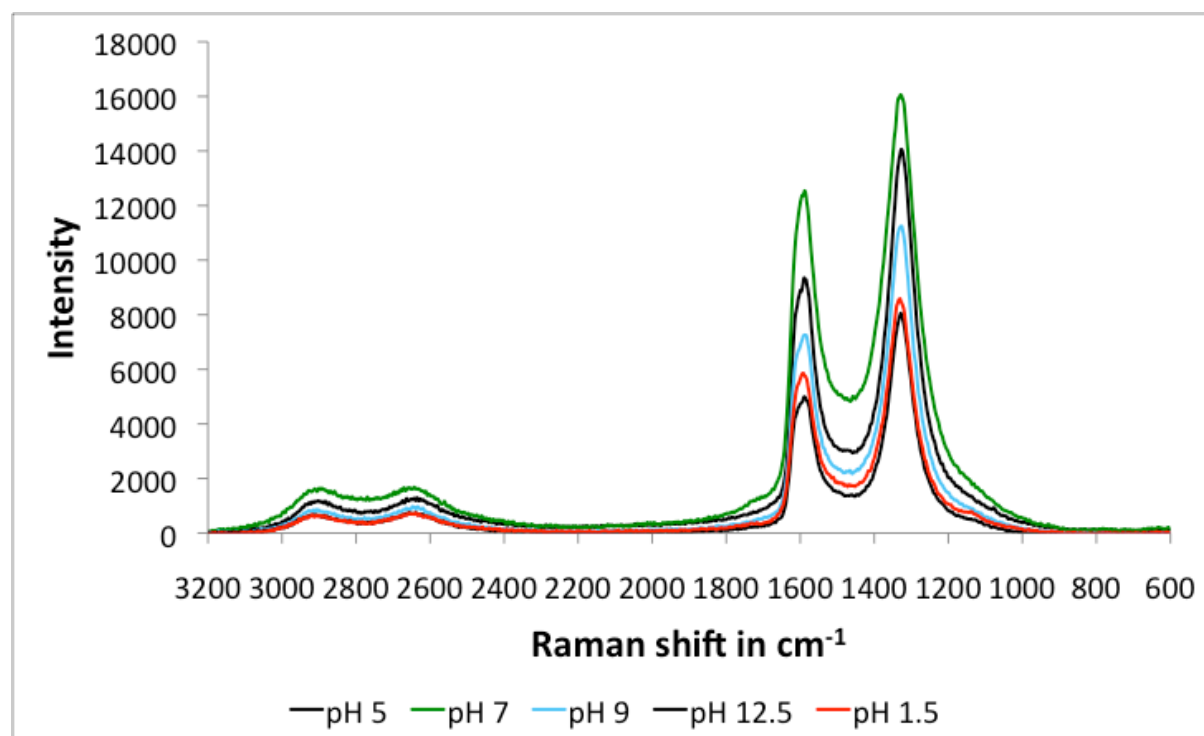


Figure S4: Raman spectra of graphene deposited from suspensions of various pH levels. The fact that the D band is more intense than the G band indicates that the deposits are a reduced form of graphene oxide (e.g. graphene) over all pH ranges.

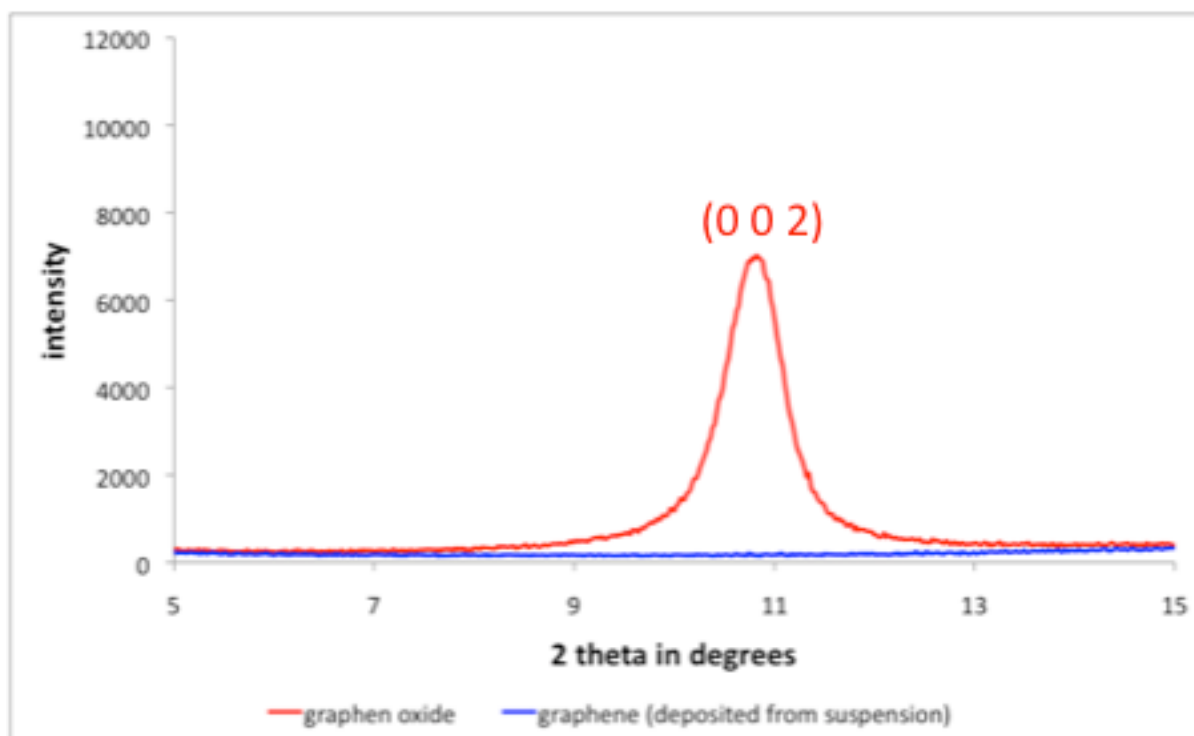


Figure S5: XRD of of graphene oxide and graphene deposited at pH 7.0 applying -1.2V. The disappearance of the (0 0 2) diffraction indicates the successful reduction of graphene oxide.

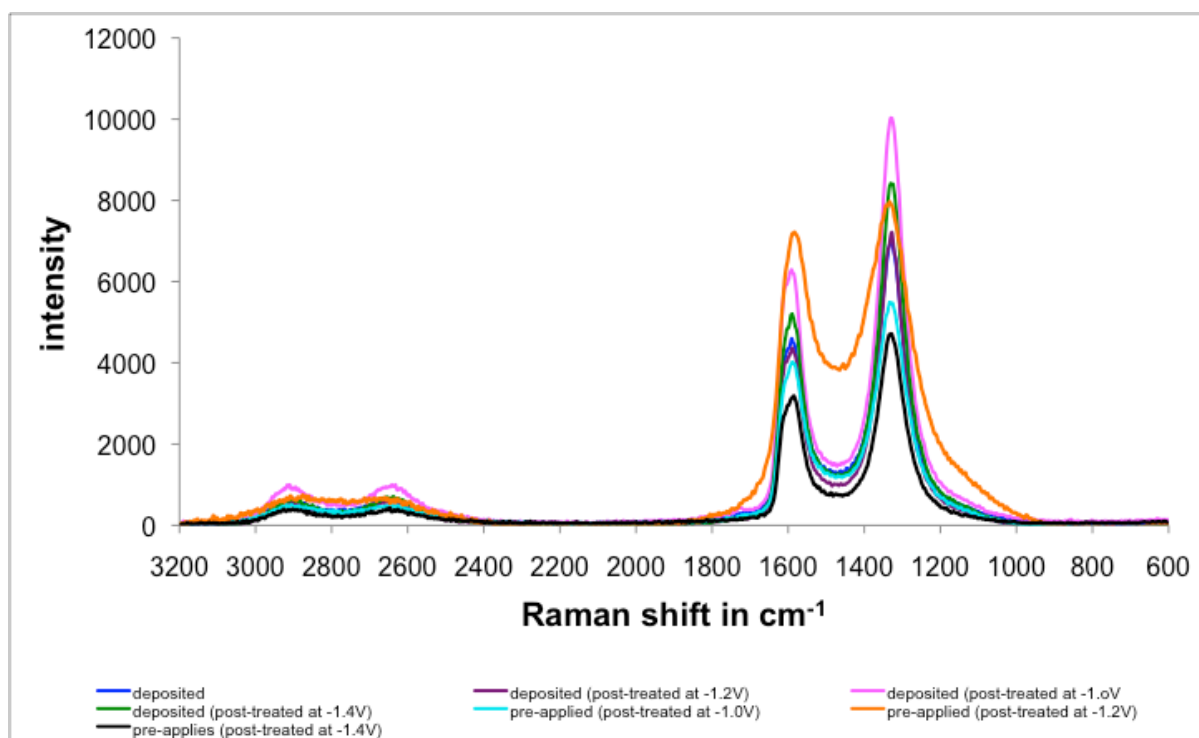


Figure S6: Raman spectra of graphene deposited from suspensions and then post-reduced as discussed in the text. The same protocol was applied to electrodes which were precoated with GO and then post-reduced. Again the intensity of the D dominates over the G band indicating the presence of graphene