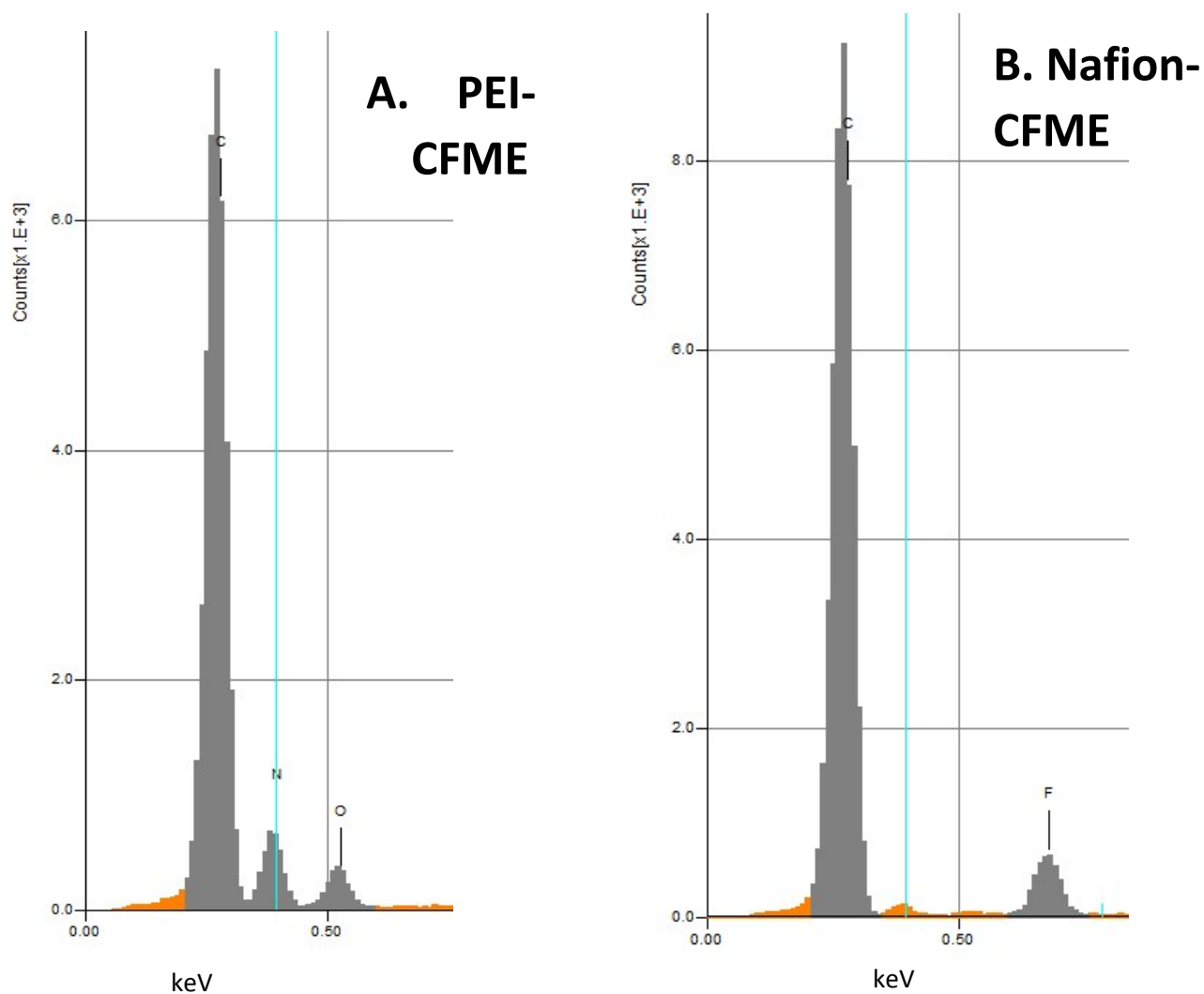
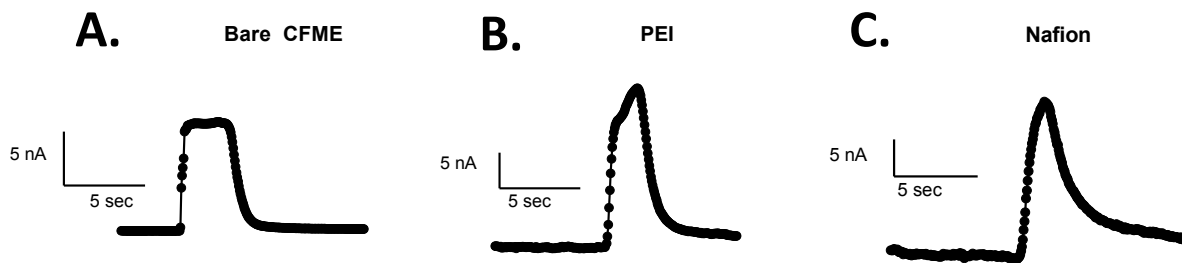


Electronic Supplementary Information



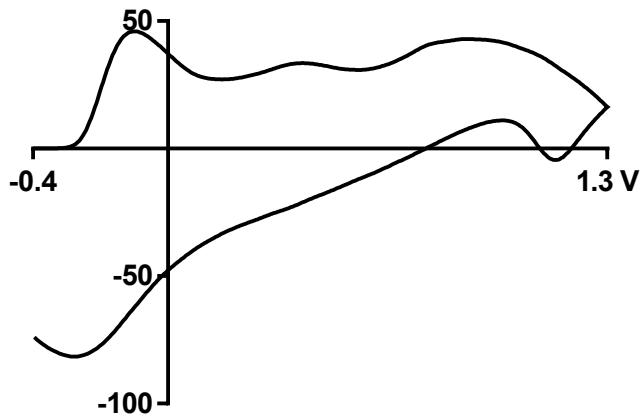
Supplementary Information Figure 1: EDS Spectra of polymer coated carbon fibers

Figure 1a: EDS Spectra of PEI Coated Carbon Fiber. The presence of carbon, nitrogen, and oxygen denote the coating of the PEI polymer. **Figure 1b:** EDS Spectra of Nafion Coated Carbon Fiber. The presence of carbon and fluorine are indicative of the Nafion coating.



Supplementary Information Figure 2: Time response of bare and polymer coated CFMEs. The time responses of bare and polymer coated CFMEs were compared in a flow injection analysis (flow cell) experiment. 5 μM DOPAC is injected into the flow cell after approximately 5 sec. **Figure 2A.** displays a square current vs. time trace of the uncoated bare CFME. **Figure 2B.** The current vs. time trace of the PEI coated CFME. **Figure 2C.** The current vs. time trace of the Nafion coated CFME. Polymer coatings markedly affect the time response of CFMEs as noted by the deviation from the square current vs. time trace of the uncoated electrode.

Injection of perchloric acid



Supplementary Information Figure 3: Injection of perchloric acid in buffer. A control experiment was performed to test for the presence of a pH shift in 1.25 mM PBS buffer. A comparable volume of . 1 M perchloric acid was injected into the flow cell in place of the neurotransmitter stock solution. The peak at approximately -0.1 V indicates the presence of a pH shift.