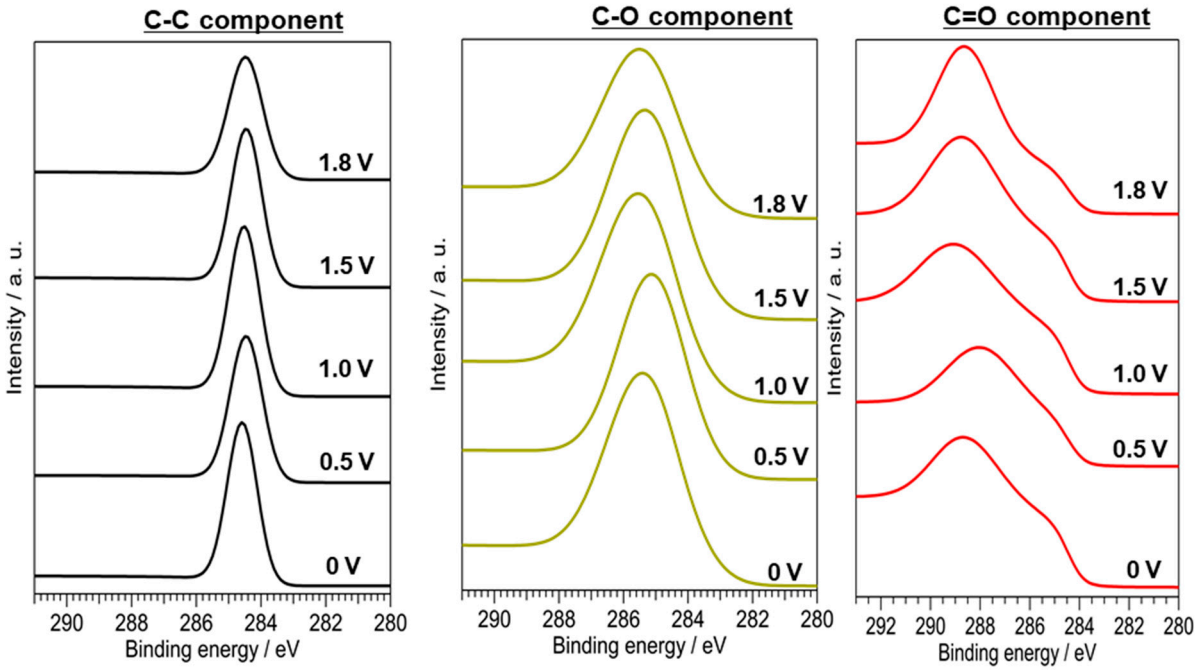
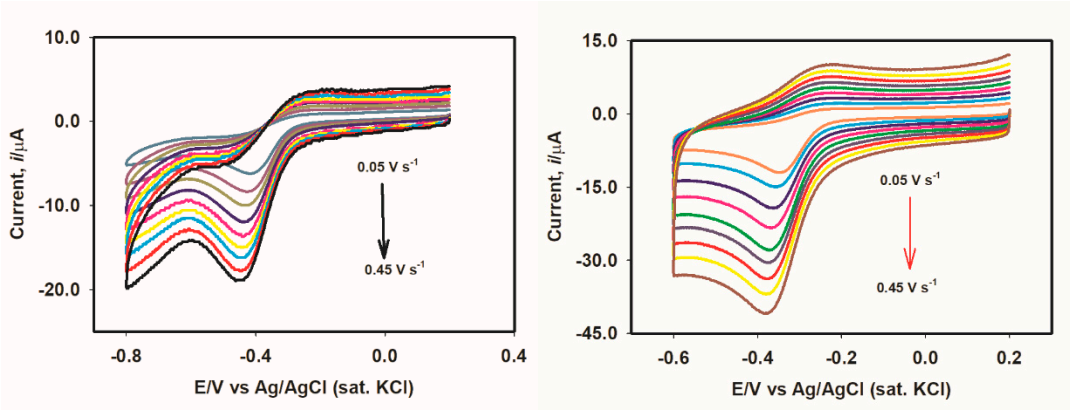


Figure S1. XPS spectra (C 1s) of GC electrode to show the growth of C=O, C-O, and C-C bonds after activating GC at 0 V(pristine), 0.5 V, 1.0 V, 1.5 V, and 1.8 V.

Roughness Factor:



A **B**

Figure S2: (A) CVs of ORR by (A) pristine GC, (B) activated GC (activated up to +1.8 V) were recorded in 0.1 M NaOH solution at varying scan rate (0.05, 0.1, 0.15, 0.2, 0.25, 0.3, 0.35, 0.4 and 0.45 Vs^{-1}).

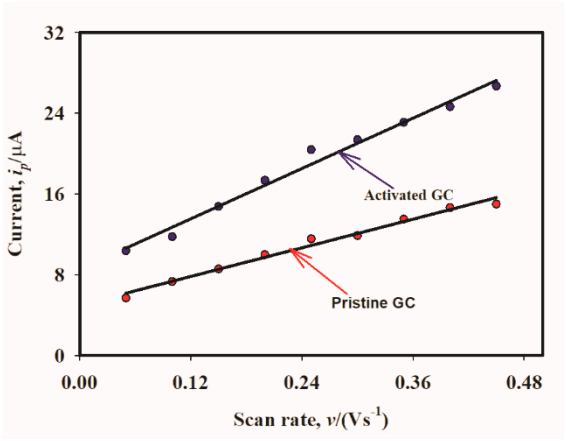


Figure S3. i_p vs scan rate plot (Data were derived from S2)