

Supporting information

Nanostructured, metal-free electrodes for the oxygen reduction reaction containing nitrogen-doped carbon quantum dots and a hydroxide ion-conducting ionomer

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Capacitance measurements

The cyclovoltammograms in the non-Faradaic region are reported for various electrodes in Figures S1-S3.

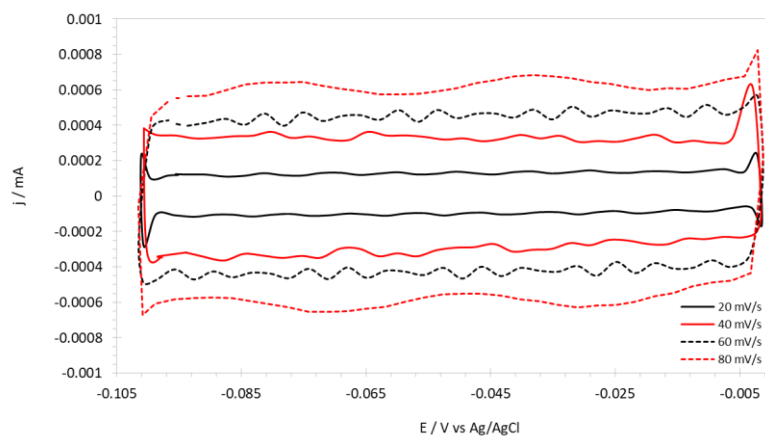


Figure S1. Carbon paper

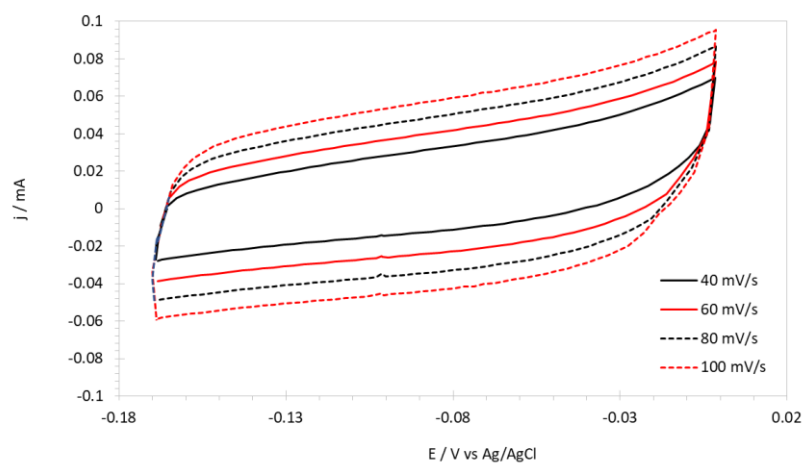


Figure S2. PSU-TMA+PANI+GAH

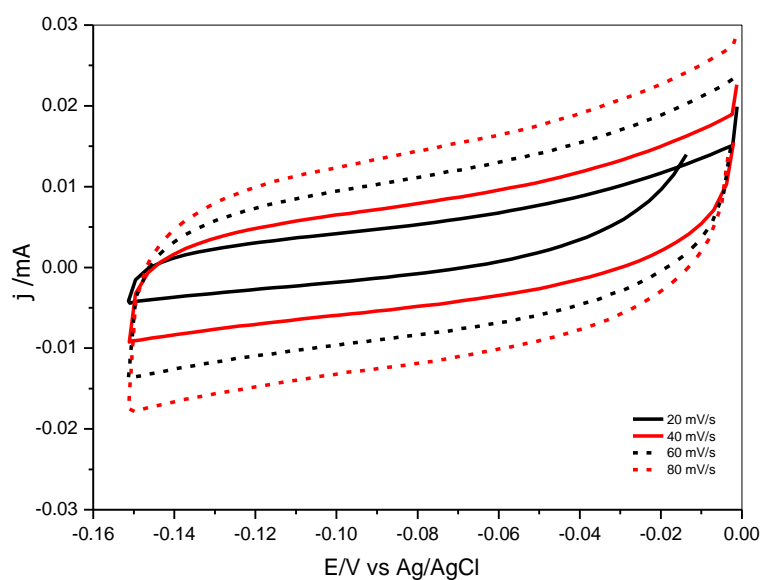


Figure S3. PSU-TMA+PANI+GAH-Oct

Linear sweep voltammetry

Linear scan voltammograms (20 mV/s) are reported in Fig. S4-S7 for various electrodes in O₂-saturated 1 M KOH solution with various rotating rates.

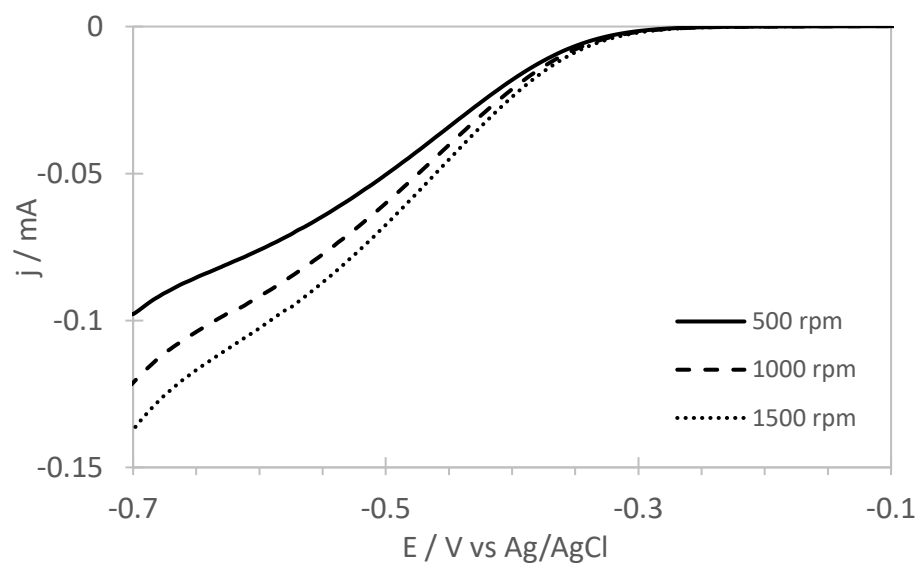


Figure S4. Carbon paper

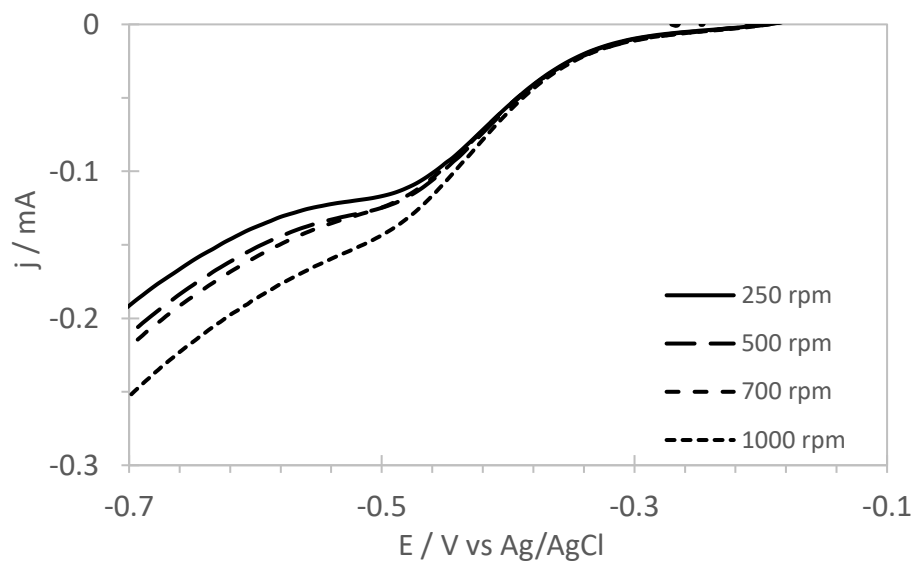


Figure S5. PANI+GAH-Oct

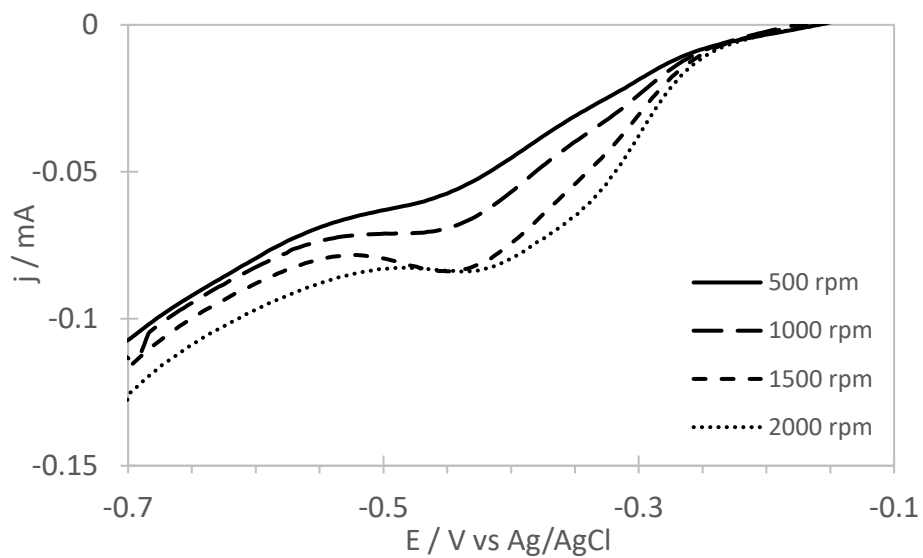


Figure S6. PSU-TMA+PANI+GAH

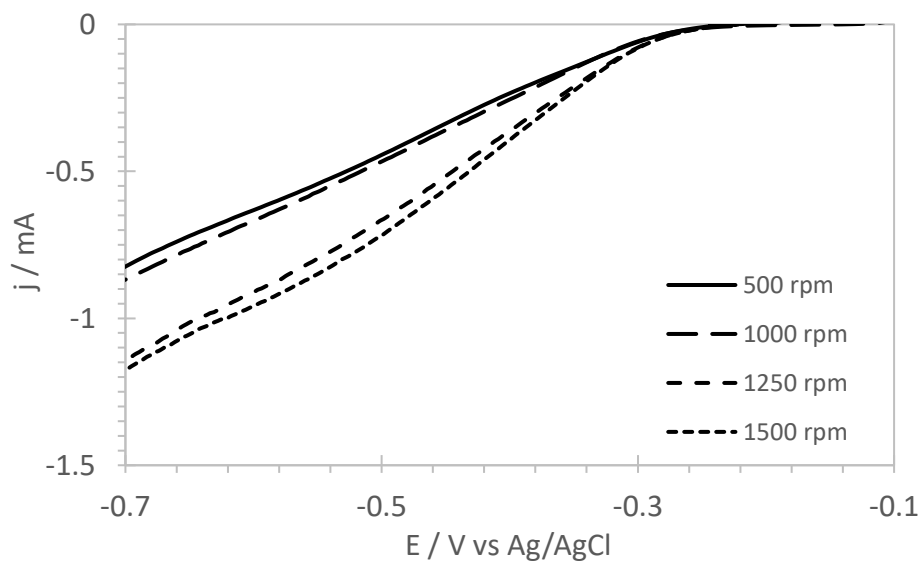


Figure S7. PSU-TMA+PANI+GAH-Oct fibres.

FTIR spectra

The FTIR spectra for various electrodes are reported in Fig. S8-S10 before and after the ORR in alkaline solution.

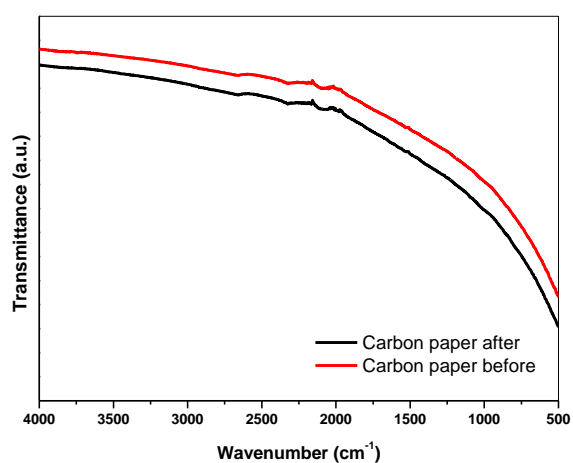


Figure S8. Carbon paper

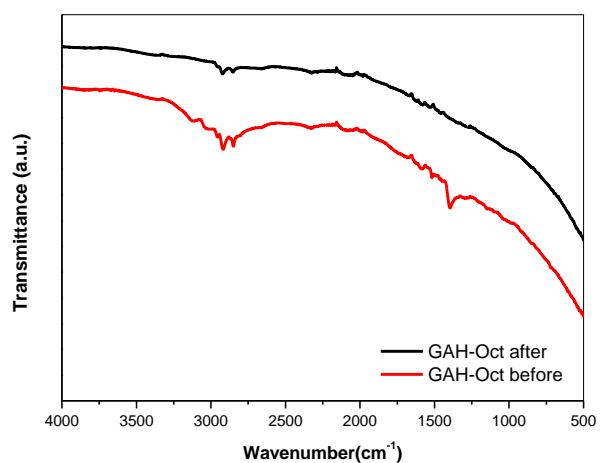


Figure S9. GAH-Oct

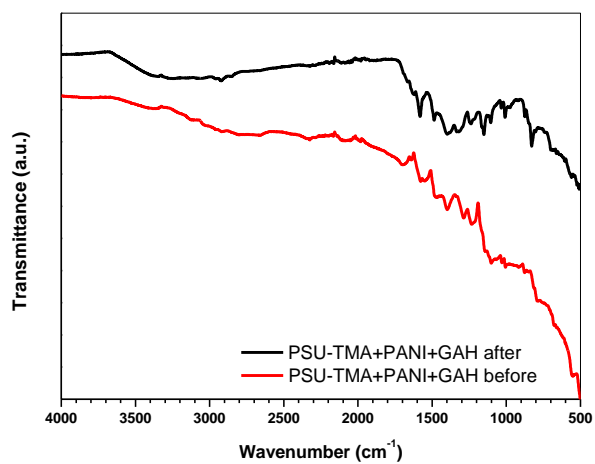


Figure S10. PSU-TMA+PANI+GAH