

Supplementary Information (SI)

Ag nanoparticles anchored reduced graphene oxide catalyst for oxygen electrode reaction in aqueous electrolytes and also a non-aqueous electrolyte for Li-O₂ cells

Surender Kumar^a, C. Selvaraj^a, L. G. Scanlon^b and N. Munichandraiah^{*a}

^a*Department of Inorganic and Physical Chemistry, Indian Institute of Science – 560012*

^b*Air Force Research Laboratory, Electrical Systems Branch, Wright-Patterson Air Force Base, Ohio 45433, USA*

*Email: muni@ipc.iisc.ernet.in (corresponding author)

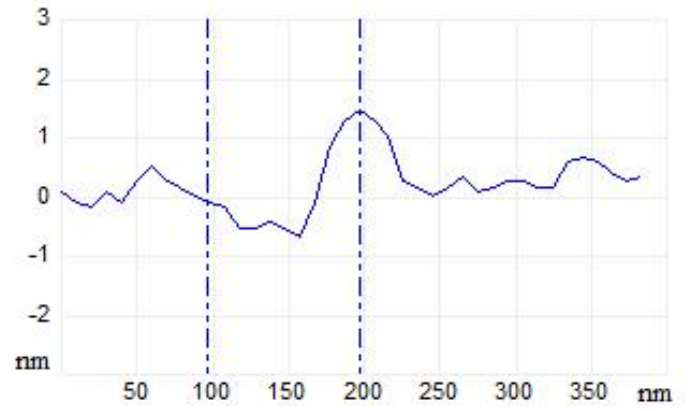
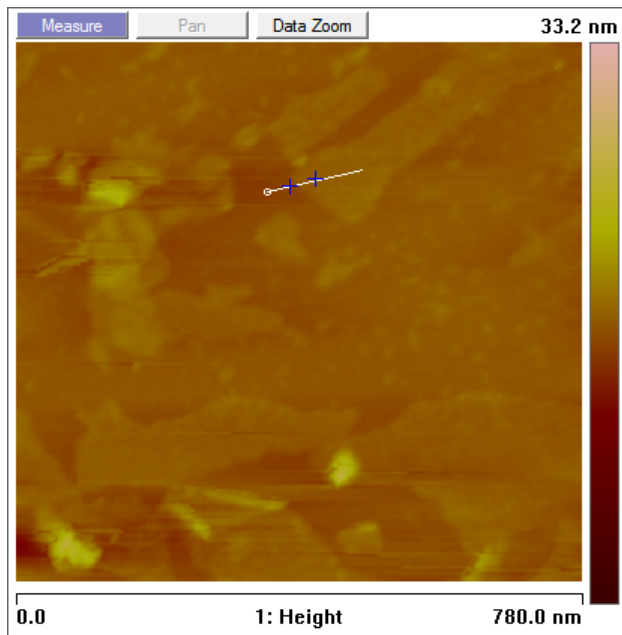


Fig. SI 1(a). AFM image of the RGO.

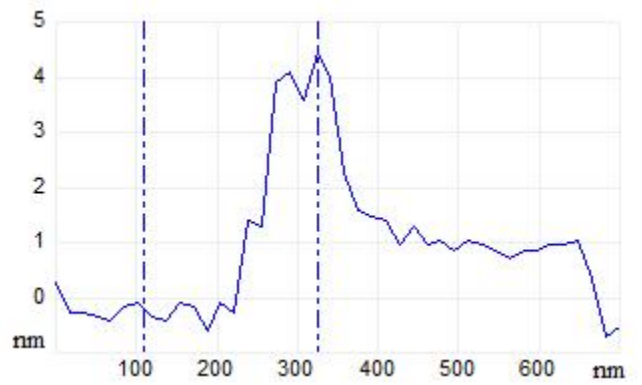
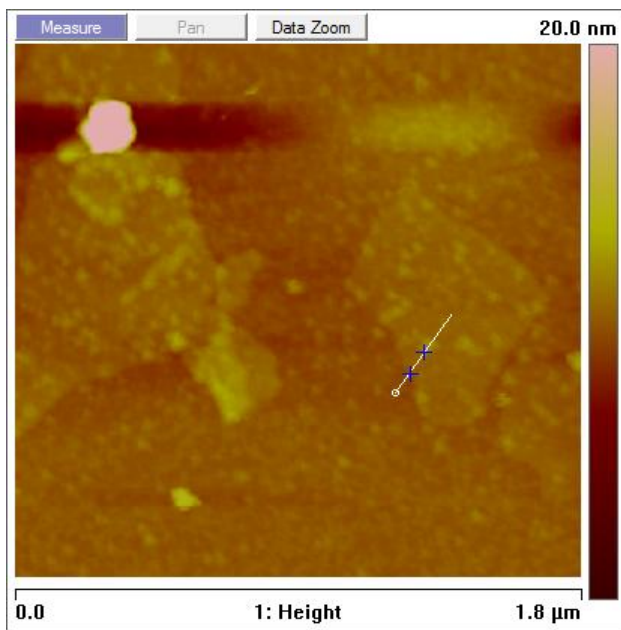


Fig. SI 1 (b). AFM image of the Ag-RGO composite.

Wave number (cm^{-1})	Bond
1029	C-O
1222	C-OH
1580	C=C
1729	C=O
3260	O-H

Table SI 1. IR band positions and the corresponding assignment.

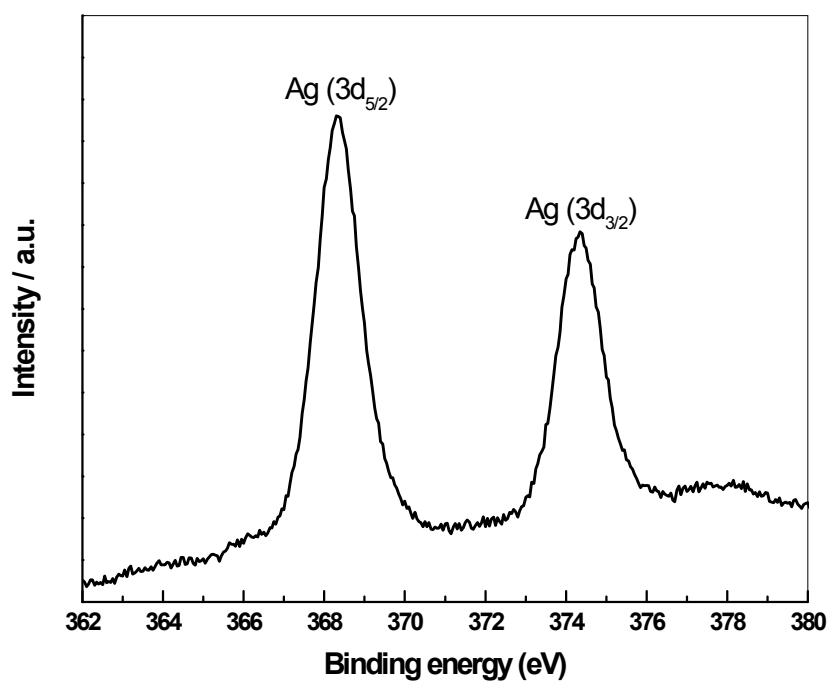


Fig. SI 2. XPS spectra of Ag-RGO (Ag 3d region)

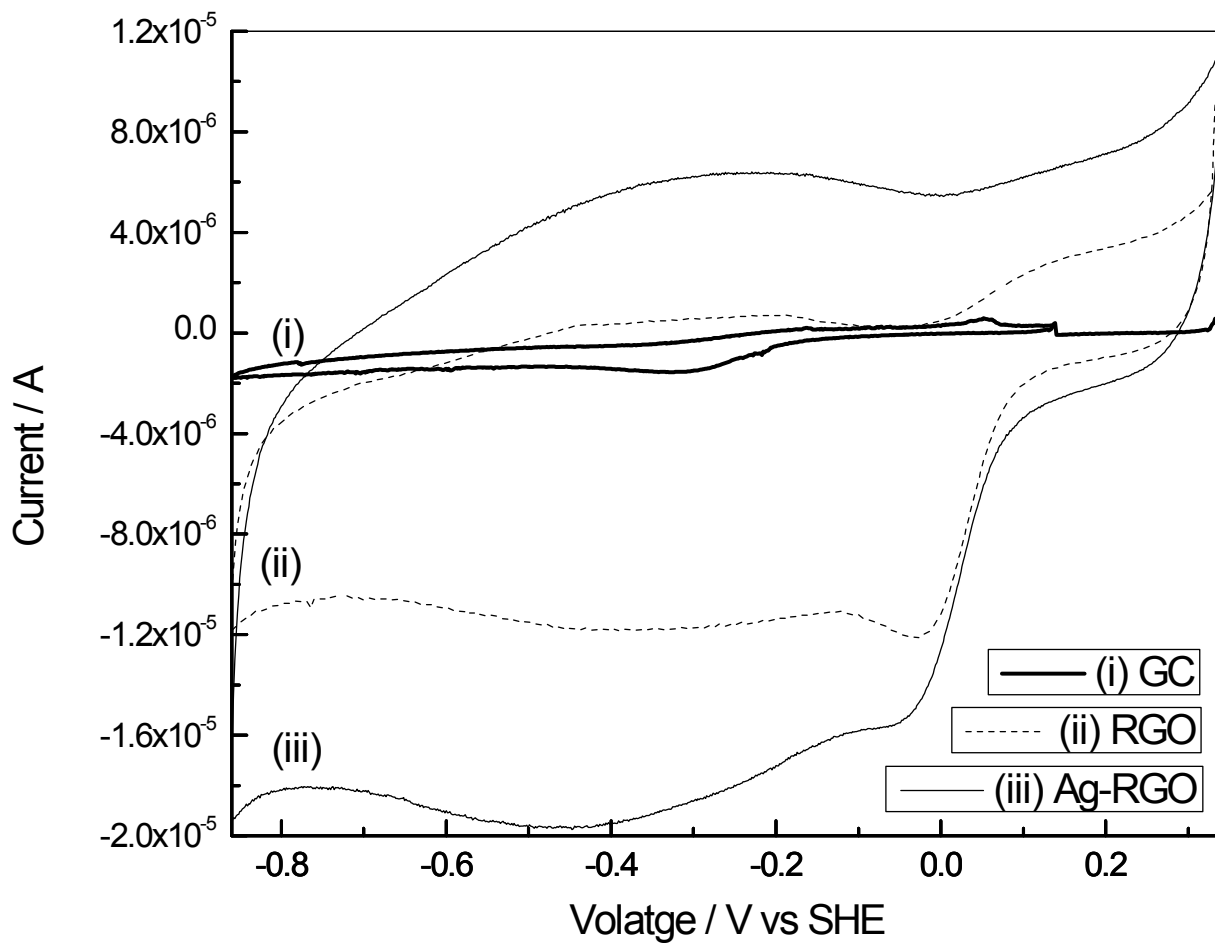


Fig. SI 3. Cyclic voltammograms of ORR on GC, RGO and Ag-RGO at 10 mV s⁻¹ in 1M KOH saturated with O₂.

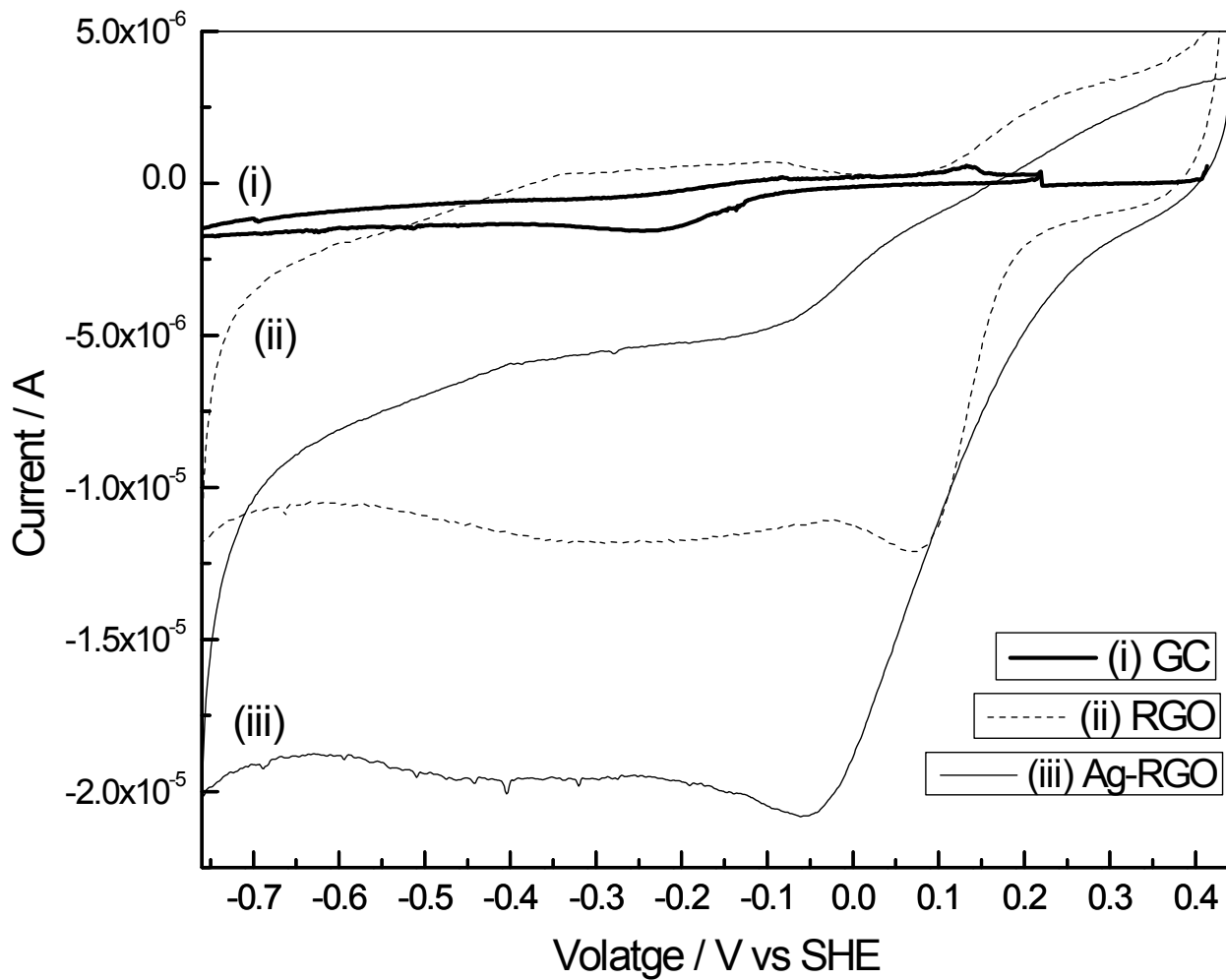


Fig. SI 4. Cyclic voltammograms of ORR on GC, RGO and Ag-RGO at 10 mV s^{-1} in $0.1 \text{ M K}_2\text{SO}_4$ saturated with O_2 .

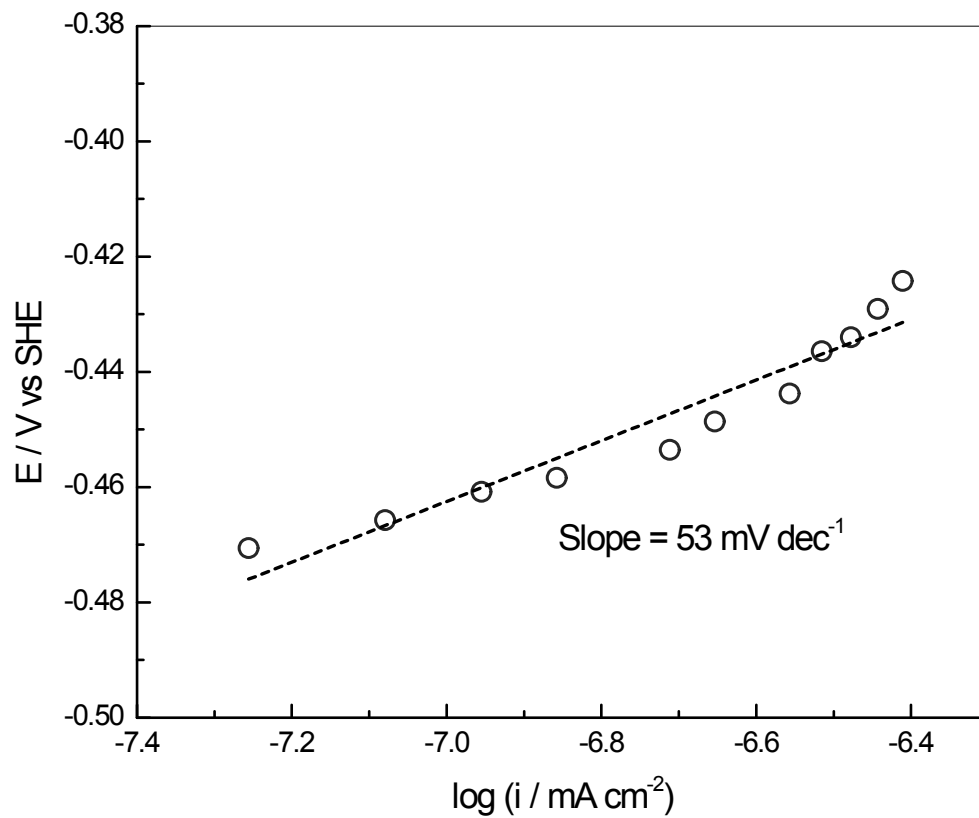


Fig. SI 5. Tafel plot for ORR in 1M TBAP-DMSO (Rotation = 200 rpm, scan rate 10 mV s⁻¹).

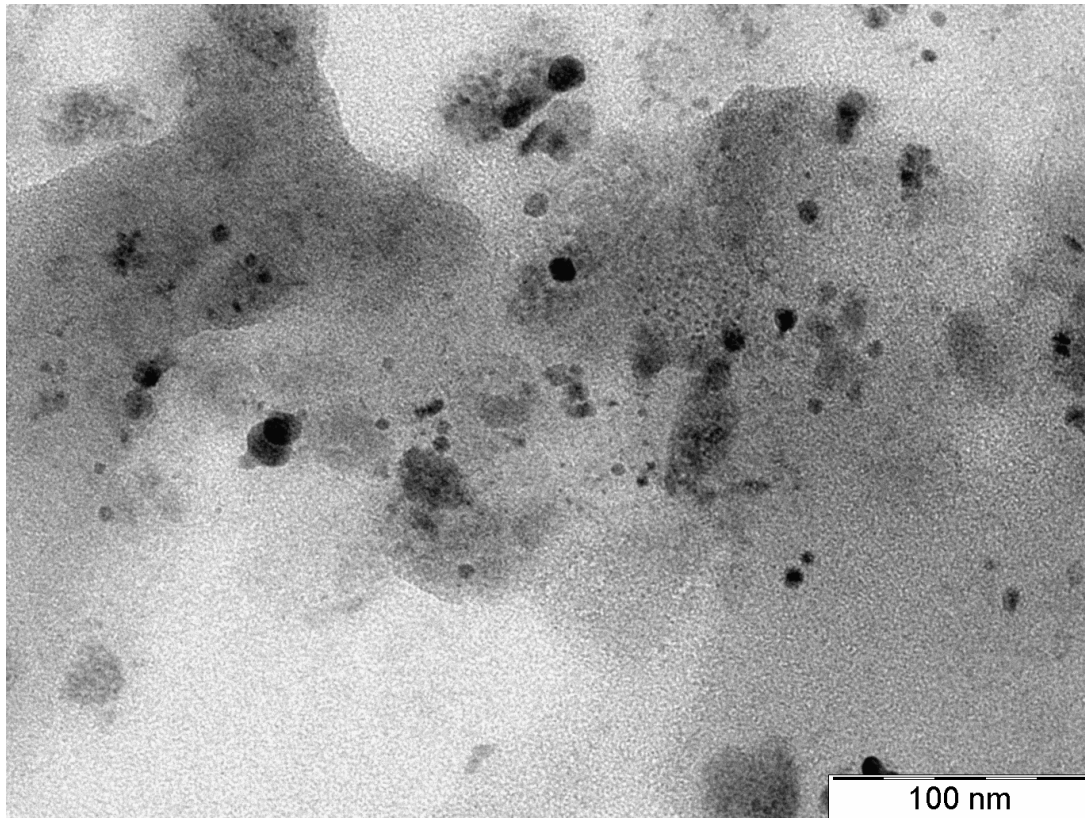


Fig. SI 6. TEM image of Ag-RGO after five charge-discharge cycles.