Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Porous graphene wrapped CoO nanoparticles for highly efficient oxygen evolution

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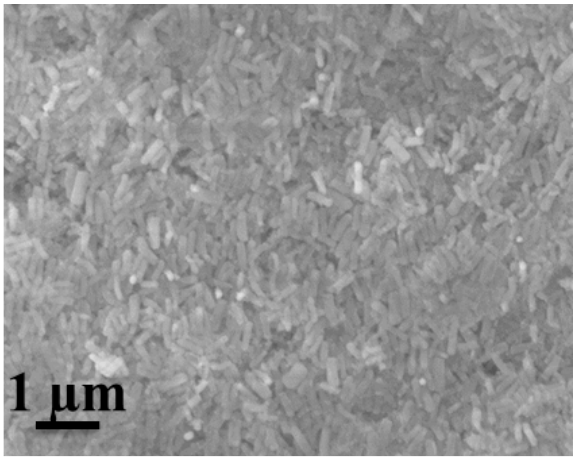

Figure S1 SEM image of silica nanorod templates for the synthesis of PGE.

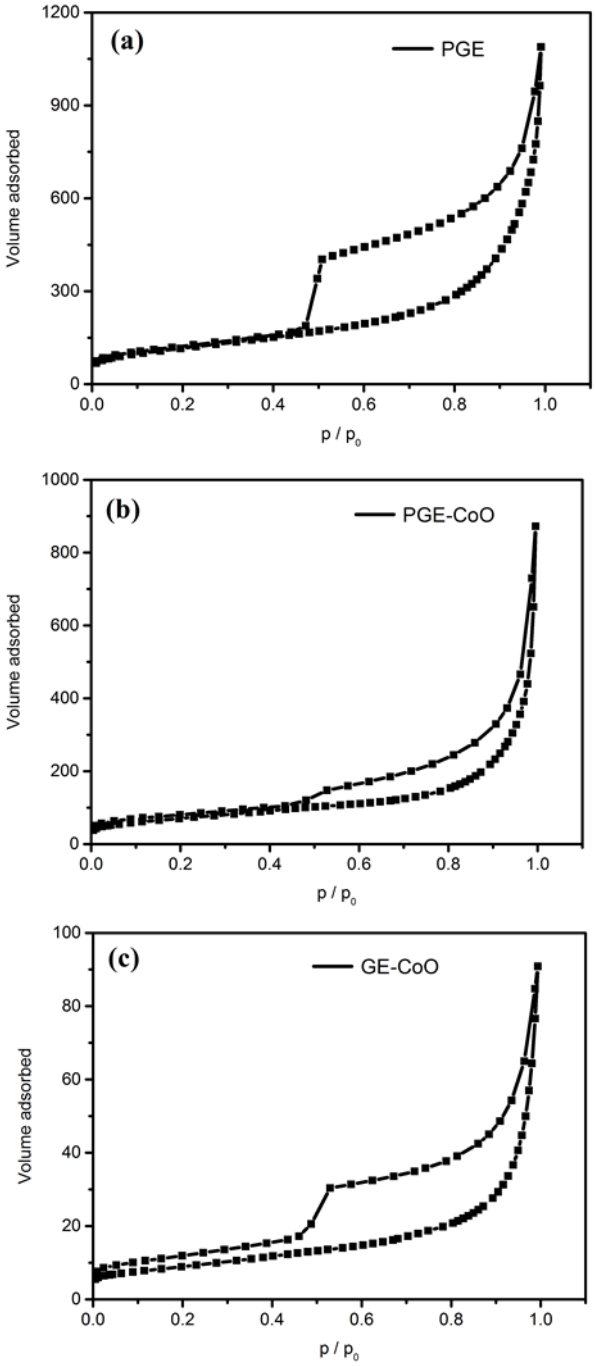

Figure S2 Nitrogen adsorption/desorption isotherm of (a) PGE, (b) PGE-CoO and (c) GE-CoO.

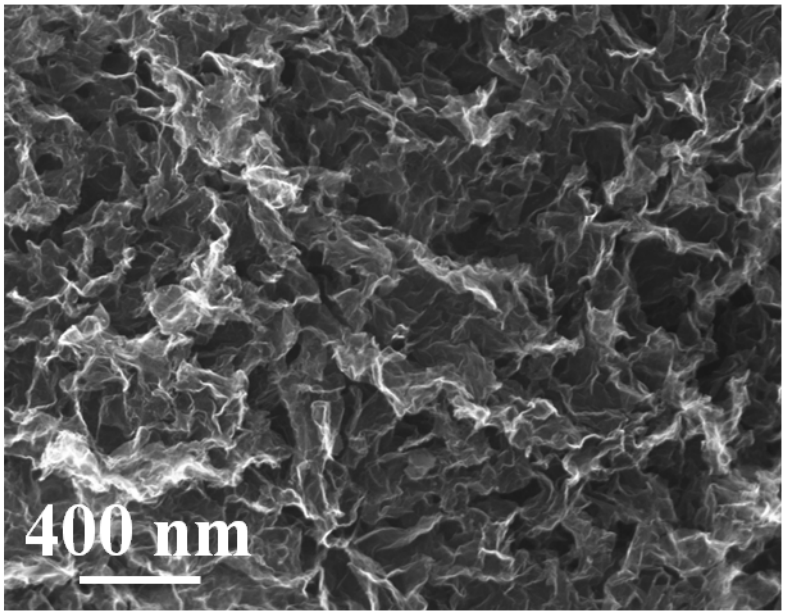

Figure S3 Low magnification SEM image of PGE-CoO.

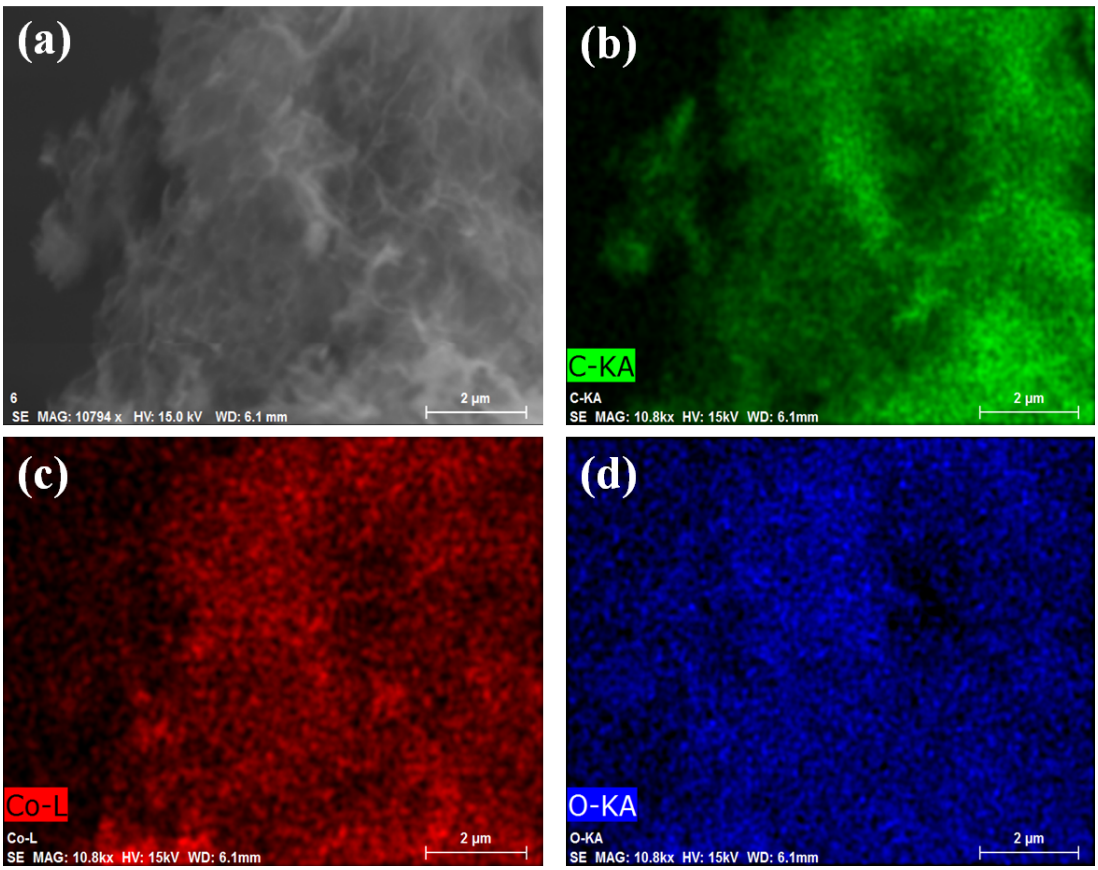

Figure S4 Element mapping of PGE-CoO.

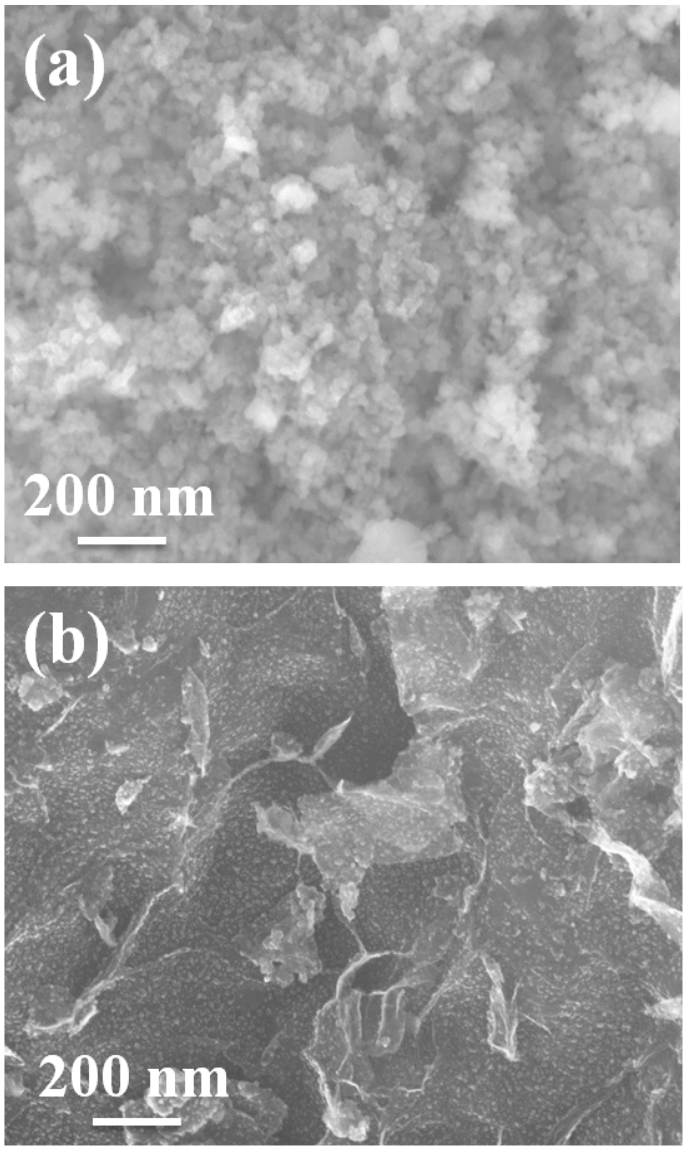

Figure S5 SEM images of pure CoO and GE-CoO.

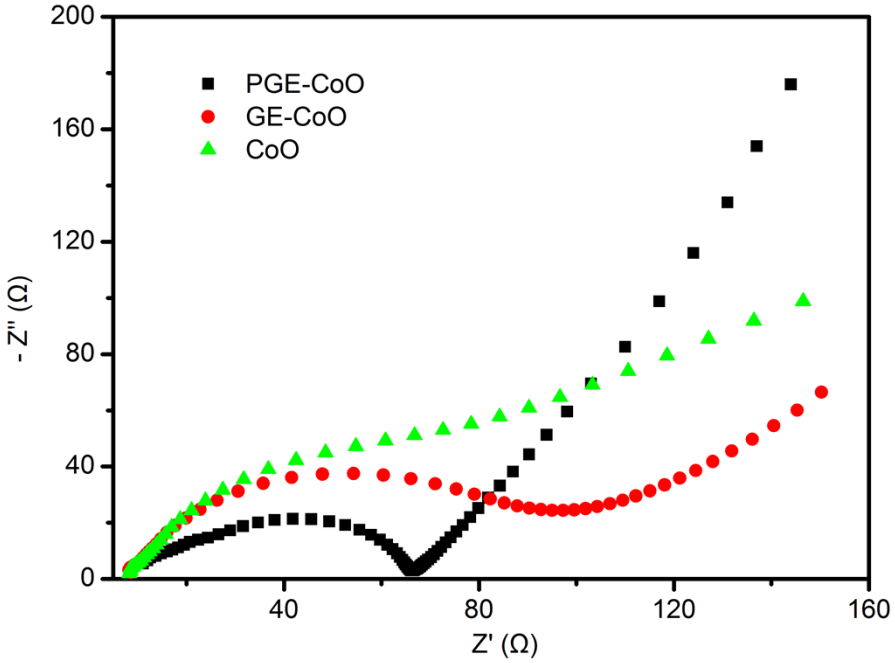

Figure S6 Nyquist plots of the PGE-CoO, GE-CoO and CoO modified electrodes in 0.1 M KOH solution.

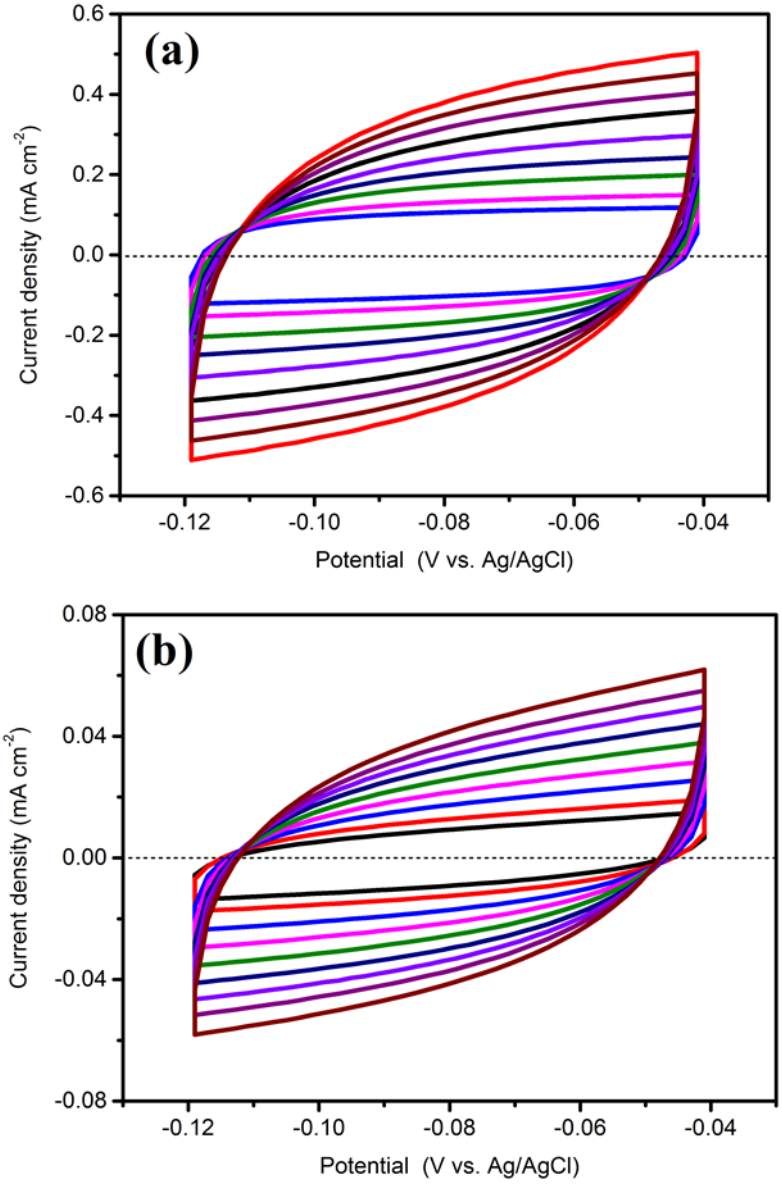

Figure S7 Electrochemical capacitance measurements: Cyclic voltammograms (CV) are performed in 0.1 M KOH solution in a potential window without faradaic processes, (a) PGE-CoO, (b) GE-CoO.

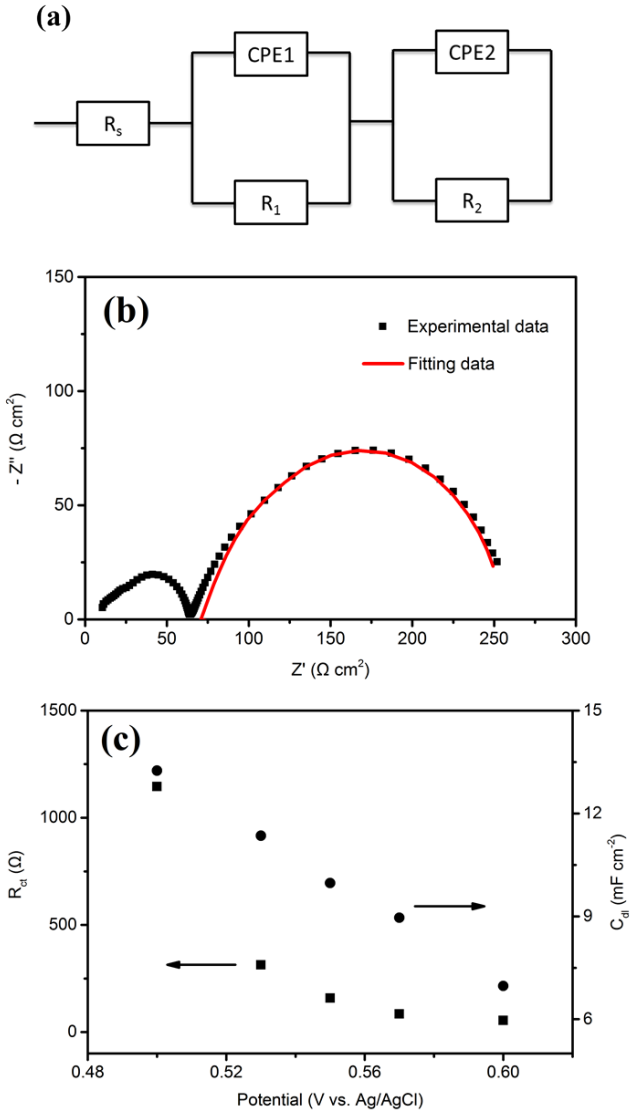

Figure S8 (a) Equivalent electrical circuit used to model the OER process on PGE-CoO-modified GC electrode at various overpotentials, (b) The square symbols are experimental data and the red solid line are modelled by (a), (c) the low-frequency charge transfer resistance (R_{ct}) and constant phase element (C_{dl}) as a function of the OER overpotentials for PGE-CoO-modified GC electrode in 0.1 M KOH.

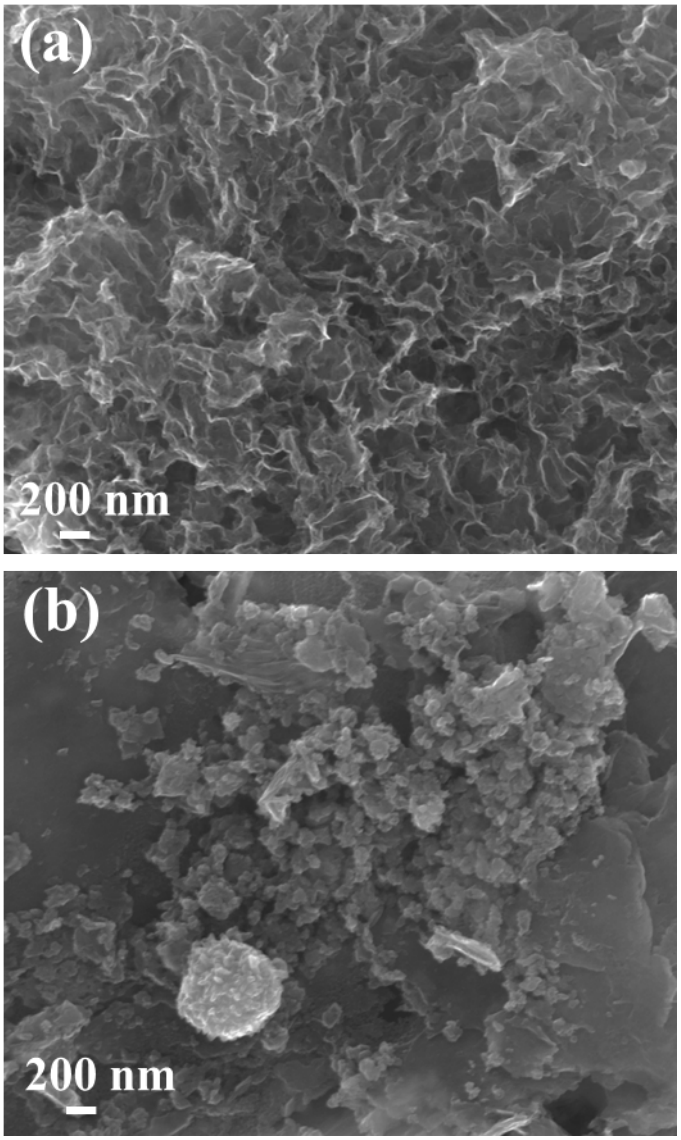

Figure S9 SEM images of PGE-CoO and GE-CoO after stability test.