

Decoration of Boron Nanoparticles on Graphene Sheet for Ammonia Production from Nitrate

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Figure S1

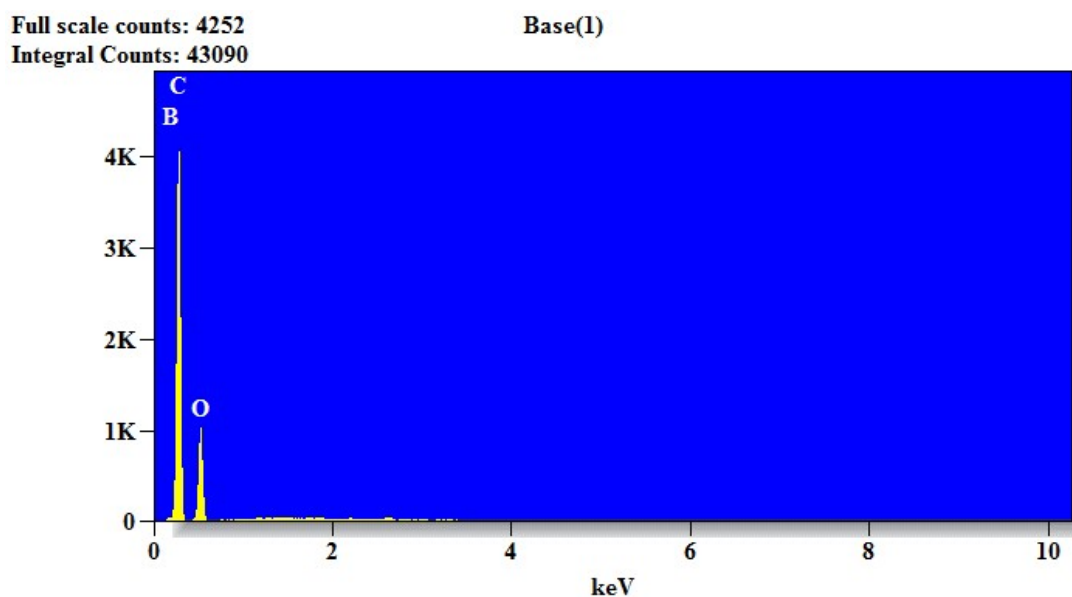


Figure S1: EDX of B@GO composite

Figure S2

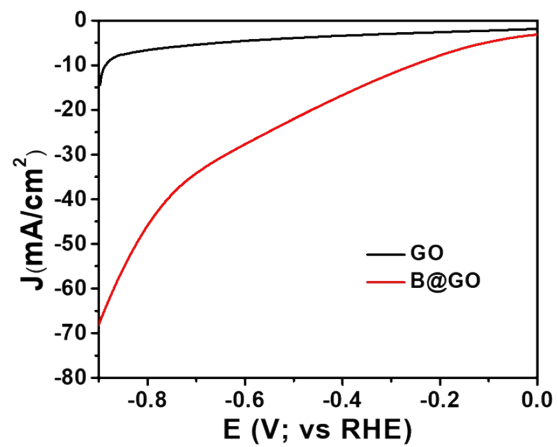


Figure S2: LSVs curve for GO and B@GO at 10 mV s⁻¹ in 0.1 M K₂SO₄ and 0.5 M KNO₃ electrolyte.

Figure S3

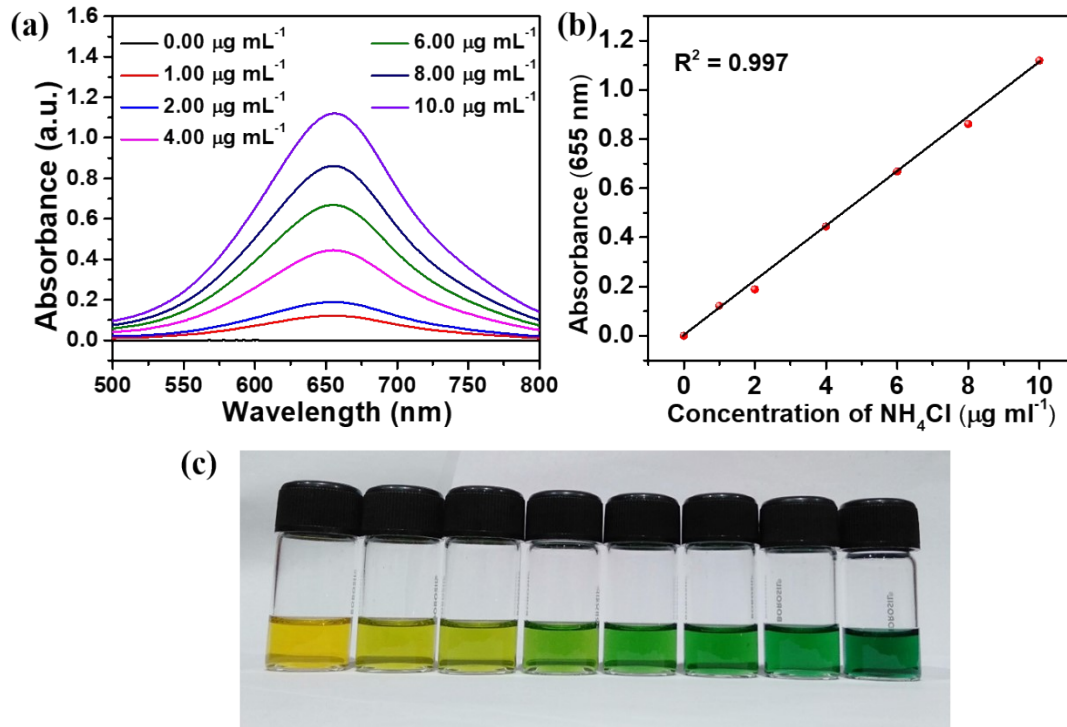


Figure S3: (a) UV-Vis spectra for indo-phenol determination of different known concentrations of NH_4^+ standards. (b) Calibration curve obtained from linear fit. (c) photograph of standard NH_4^+ solution.

Figure S4

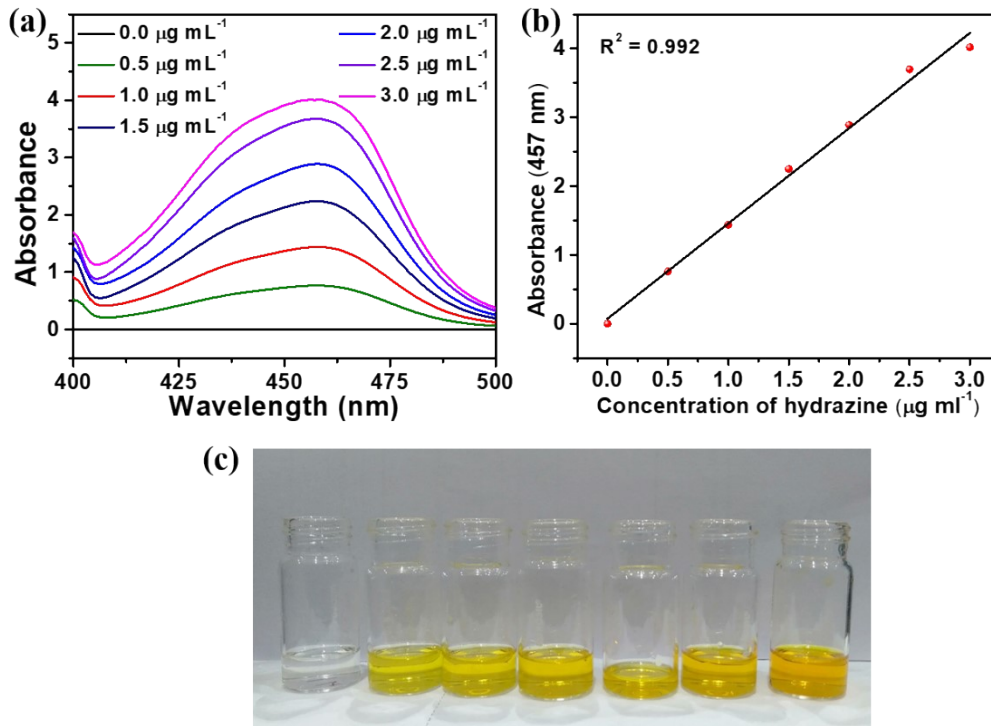


Figure S4: (a) UV-Vis spectra for Watt and Chrisp determination of different known concentrations of hydrazine standards. (b) Calibration curve obtained from linear fit. (c) Photograph of standard hydrazine solution.

Figure S5

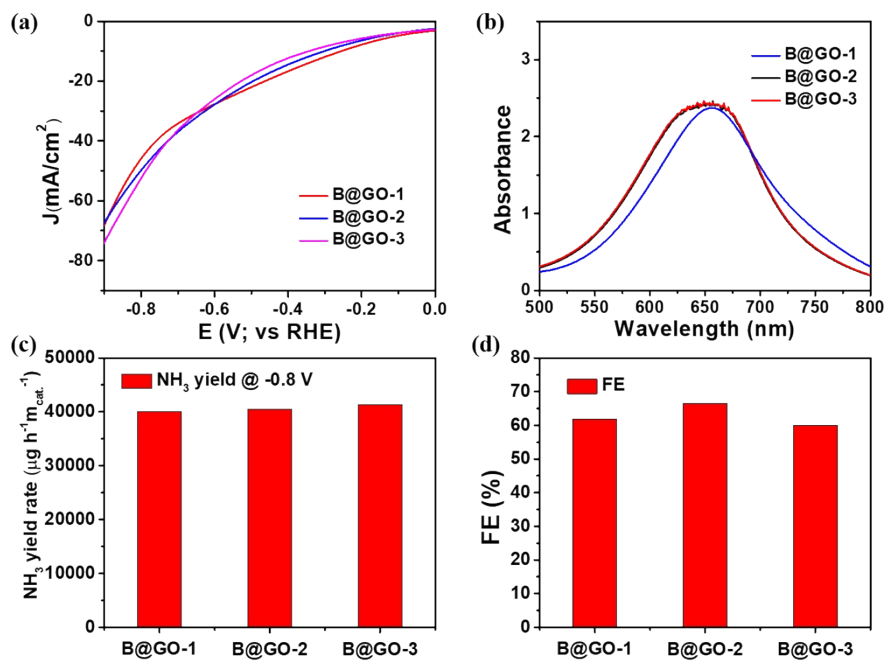


Figure S5: (a) Comparative LSVs curve of repeated experiments at 10 mV s^{-1} in $0.1 \text{ M K}_2\text{SO}_4$ and 0.5 M KNO_3 electrolyte. Comparison (b) absorbance spectra (c) NH_3 yield and (d) Faradaic efficiency for NH_3 production of B@GO-1, B@GO-2 and B@GO-3 catalysts at 0.8 V vs RHE.

Figure S6

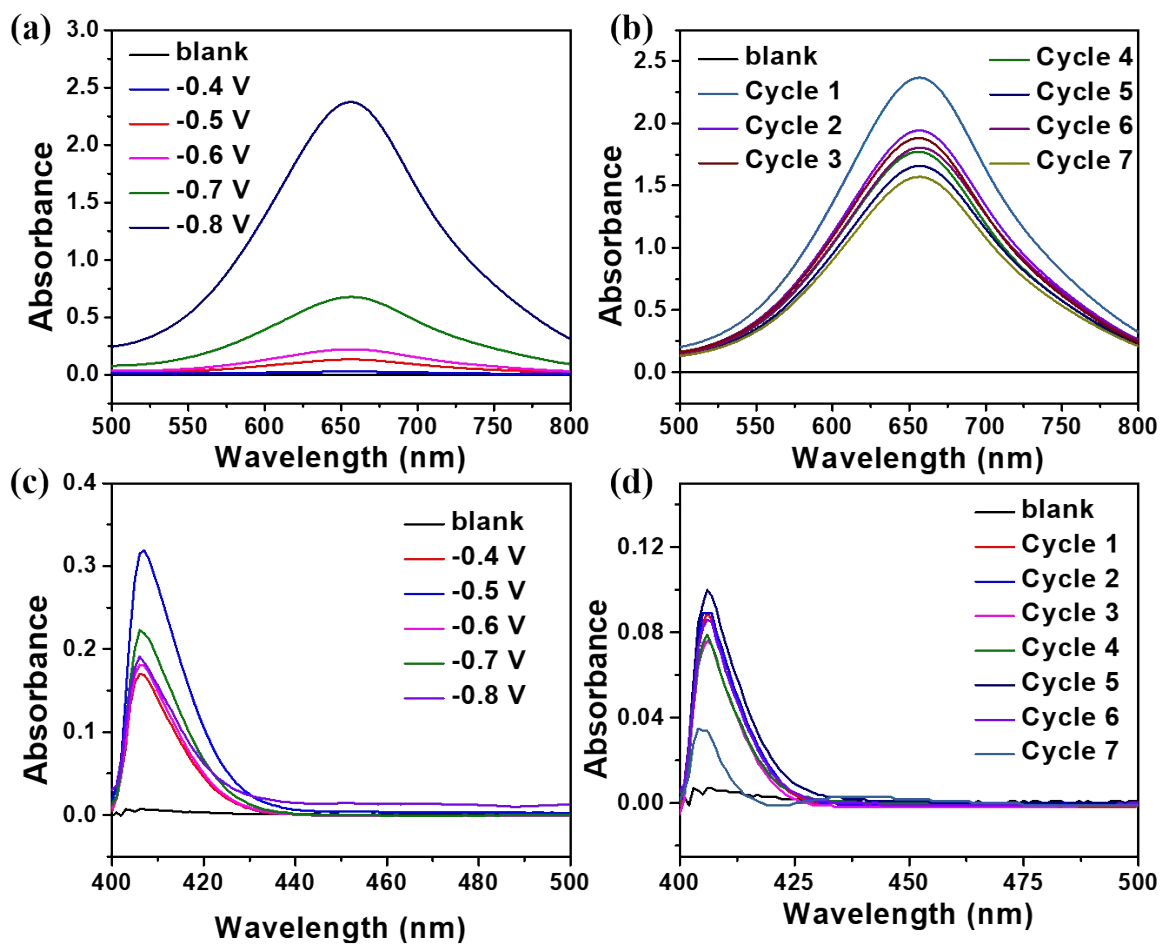


Figure S6: (a-b) UV-Vis spectra for indo-phenol determination of ammonia in electrolytes obtained from electrocatalytic *i-t* experiments at various applied potentials and at -0.8 V vs RHE respectively; (c-d) UV-Vis spectra for Watt and Chrisp determination of hydrazine in electrolytes obtained from electrocatalytic CA experiments at different applied potentials and -0.8 V vs RHE.