

Supporting information

Novel Composite Electrode of the Reduced Graphene Oxide Nanosheets with Gold

Nanoparticles Modified by Glucose Oxidase for Electrochemical Reactions

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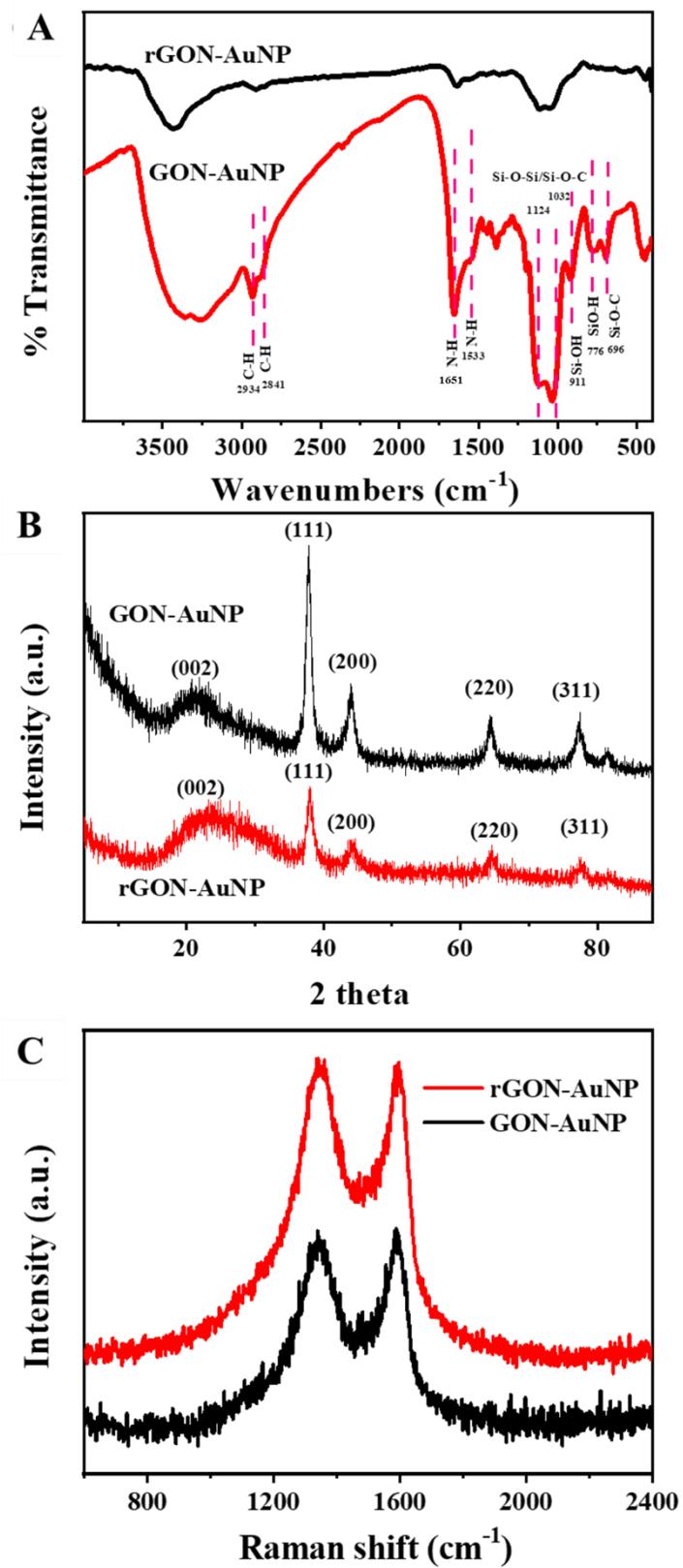


Figure S1. (A) FTIR spectra, (B) XRD patterns and (C) Raman spectra of GON-AuNP and rGON-AuNP.

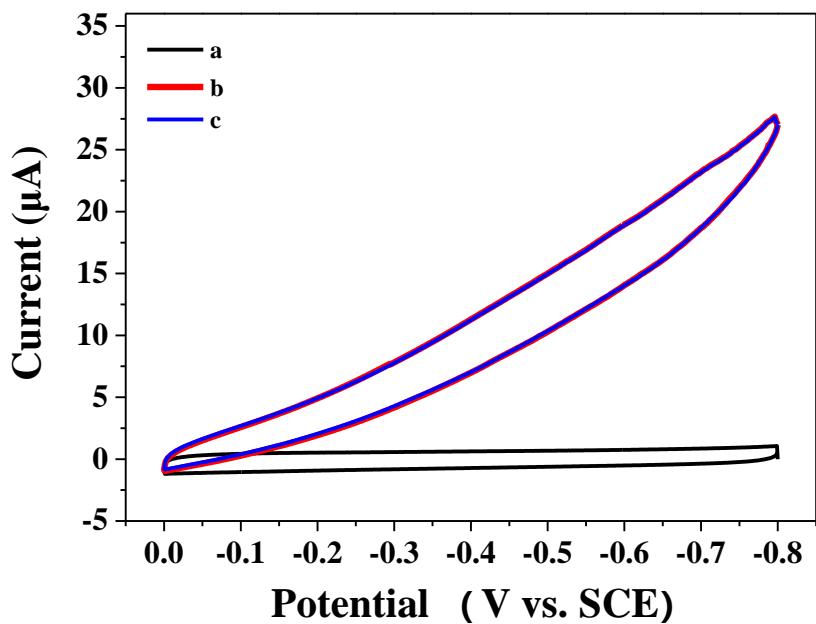


Figure S2. Cyclic voltammograms of rGON-AuNP/GC electrode in nitrogen-purged PBS (curve a), air-saturated PBS (curve b) and air-saturated PBS containing 5mM glucose.

The reduction peak current rGON-AuNP/GC electrode greatly increases in air-saturated PBS (curve b) due to the electrochemical reduction of oxygen. As there is no GOD adsorbed on rGON-AuNP/GC electrode, oxygen in solution cannot be consumed through glucose oxidation. Therefore, curve b shows almost no variation when 5mM glucose is added (curve c).

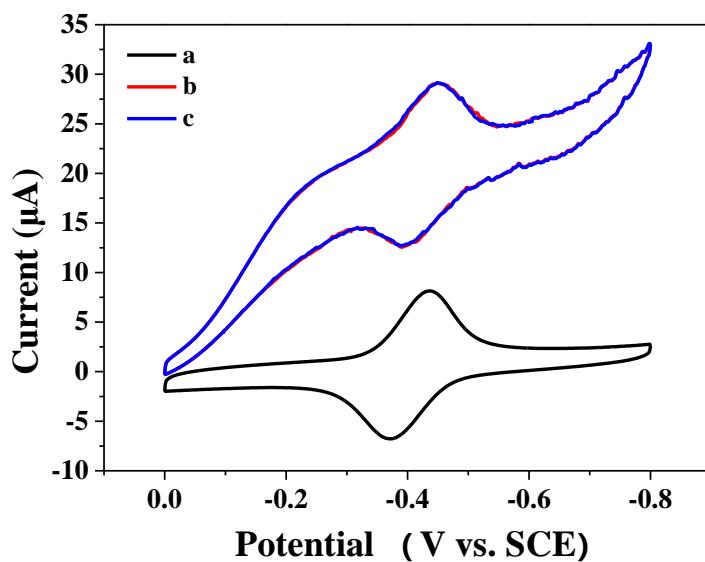


Figure S3. Cyclic voltammograms of FAD/rGON-AuNP/GC electrode in nitrogen-purged PBS (curve a), air-saturated PBS (curve b) and air-saturated PBS containing 5mM glucose.

A pair of redox peaks, assigned to the free FDA adsorbed on the electrode, is observed on curve a (curve a). The reduction peak current of FAD/rGON-AuNP/GC electrode greatly increases in air-saturated PBS (curve b) because the electrochemical reduction of oxygen on rGON-AuNPs/GC electrode. As free FAD cannot catalyze glucose oxidation, oxygen in solution will not be consumed through glucose oxidation. The CV of GOD/rGON-AuNP/GC electrode in air-saturated PBS almost has no variation when 5mM glucose is added (curve c).