

Supporting Information

Nonenzymatic Glucose Sensing Using Ni₆₀Nb₄₀ Nanoglass

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Supporting Information 1:

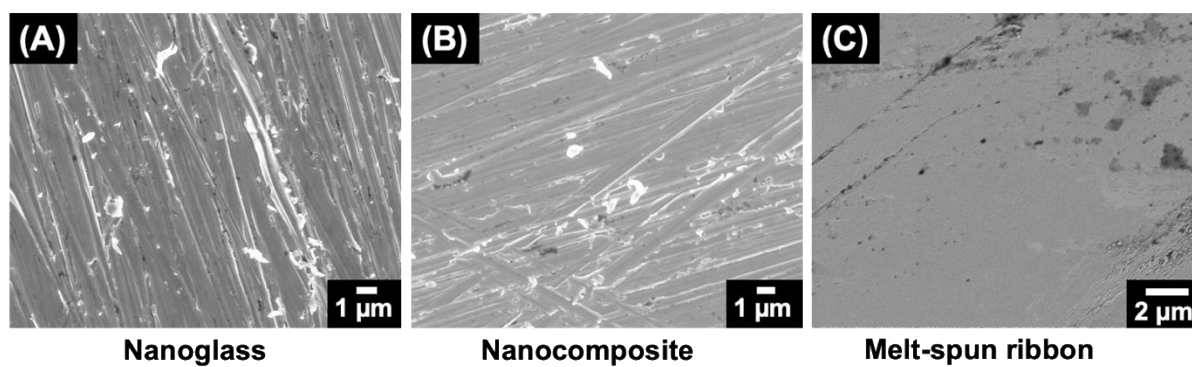


Figure S1. FESEM images of the (A) *nanoglass*, (B) *nanocomposite* and (C) *melt-spun ribbon* samples before the electrochemical experiments.

Supporting Information 2:

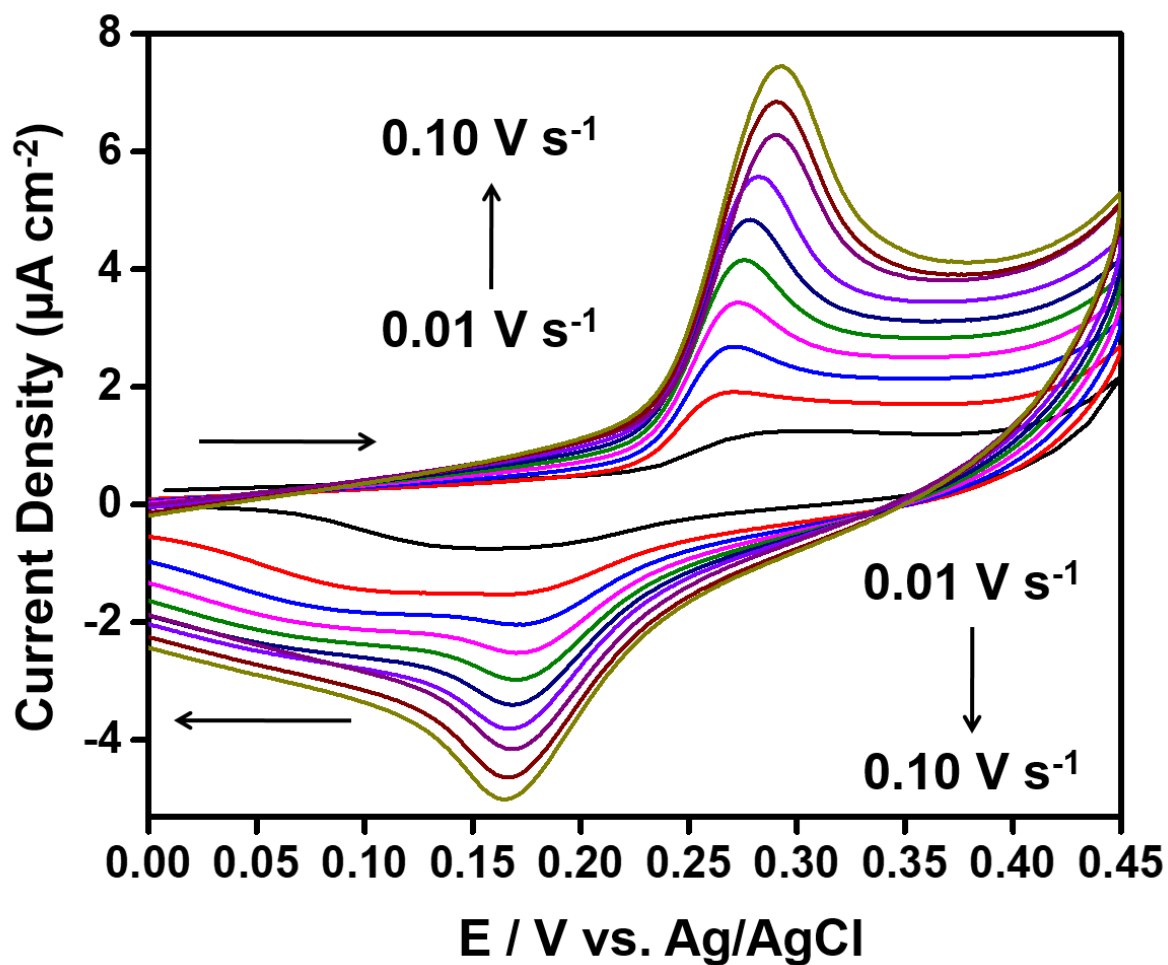


Figure S2. Performance of $\text{Ni}_{60}\text{Nb}_{40}$ *nanoglass* as working electrode (WE). Cyclic voltammograms in the potential window -0.1 to +0.45 V are conducted with scan rate from 10 to 100 mV s^{-1} in 0.1 M NaOH solution.

Supporting Information 3:

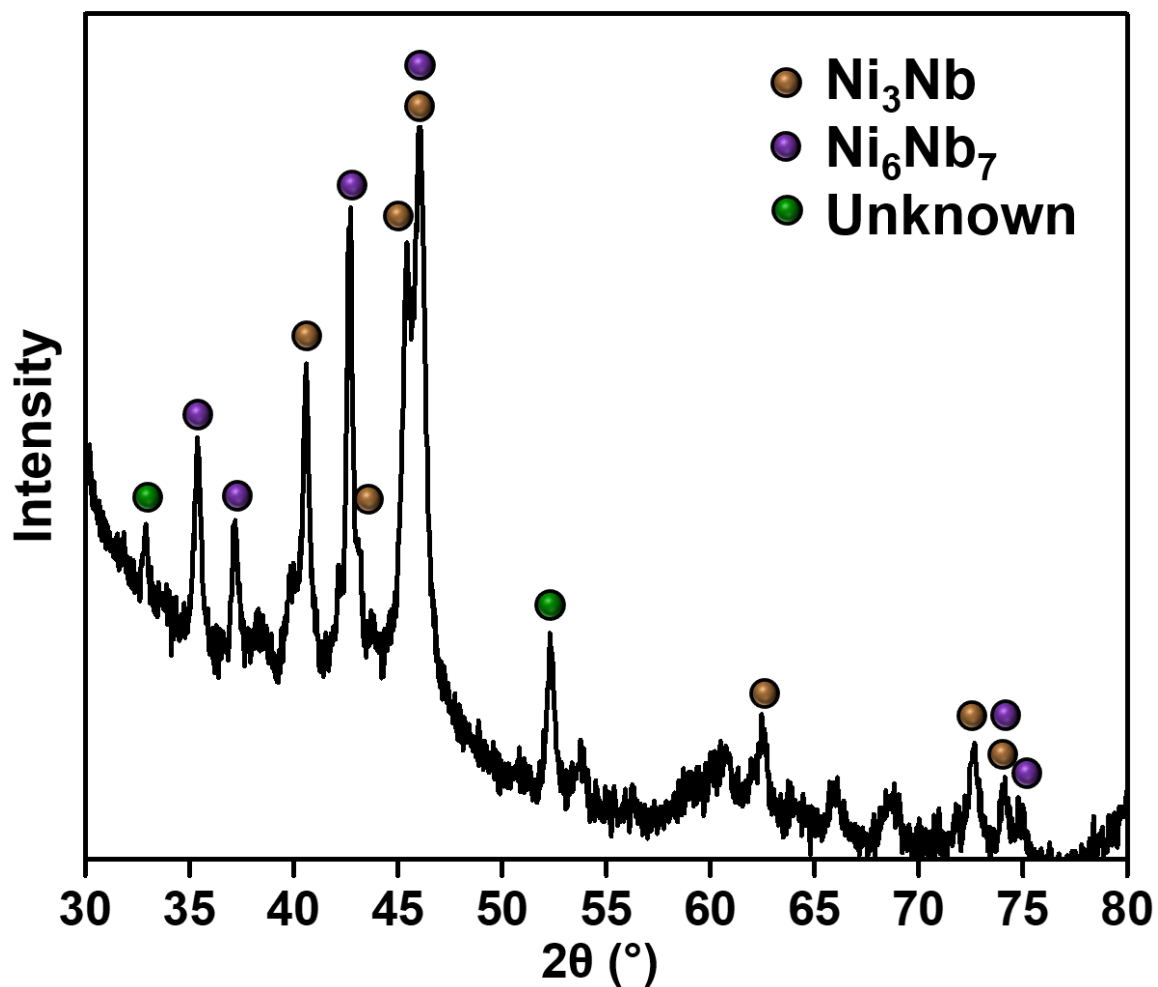


Figure S3. Cu-XRD patterns of annealed *nanoglass* sample. Mixtures of different intermetallic compounds (Ni₃Nb, Ni₆Nb₇) are identified in the annealed sample.

Supporting Information 4:

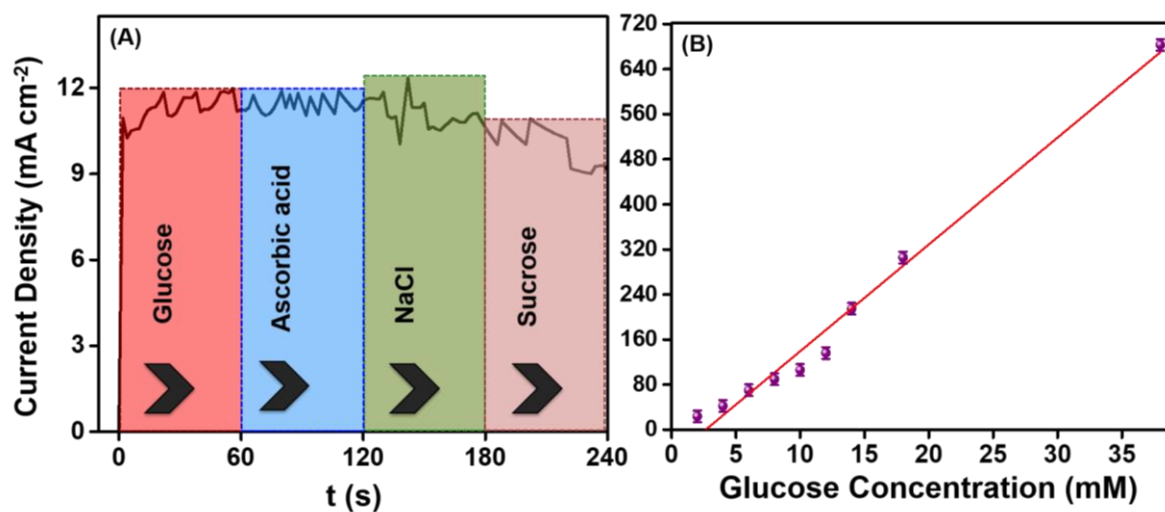


Figure S4. (A) Stable chronoamperometric current response are identified with infusion of 0.25 mM ascorbic acid, NaCl and sucrose solutions in succession into 0.25 mM glucose solution prepared in 0.1 M NaOH solution. (B) Linear increase in current density is found chronoamperometrically as glucose concentration enhanced from 2 mM to 38 mM.

Supporting Information 5:

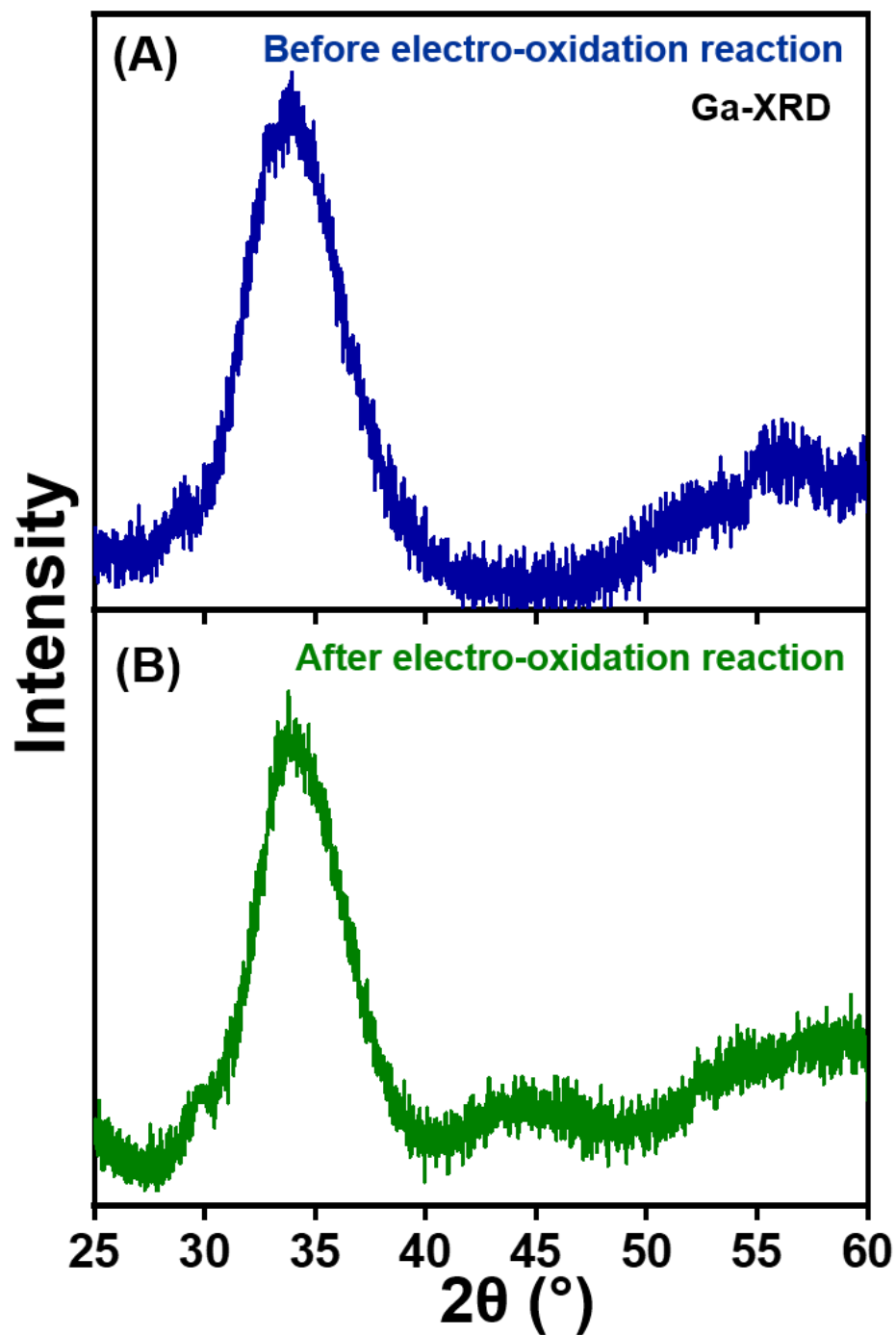


Figure S5. Structural analysis of the $\text{Ni}_{60}\text{Nb}_{40}$ nanoglass electrode before and after sensing experiments. Ga-XRD confirms amorphous phase in the material before sensing experiments given in (A), which remains indistinguishable after the experiment as shown in (B).

Supporting Information 6:

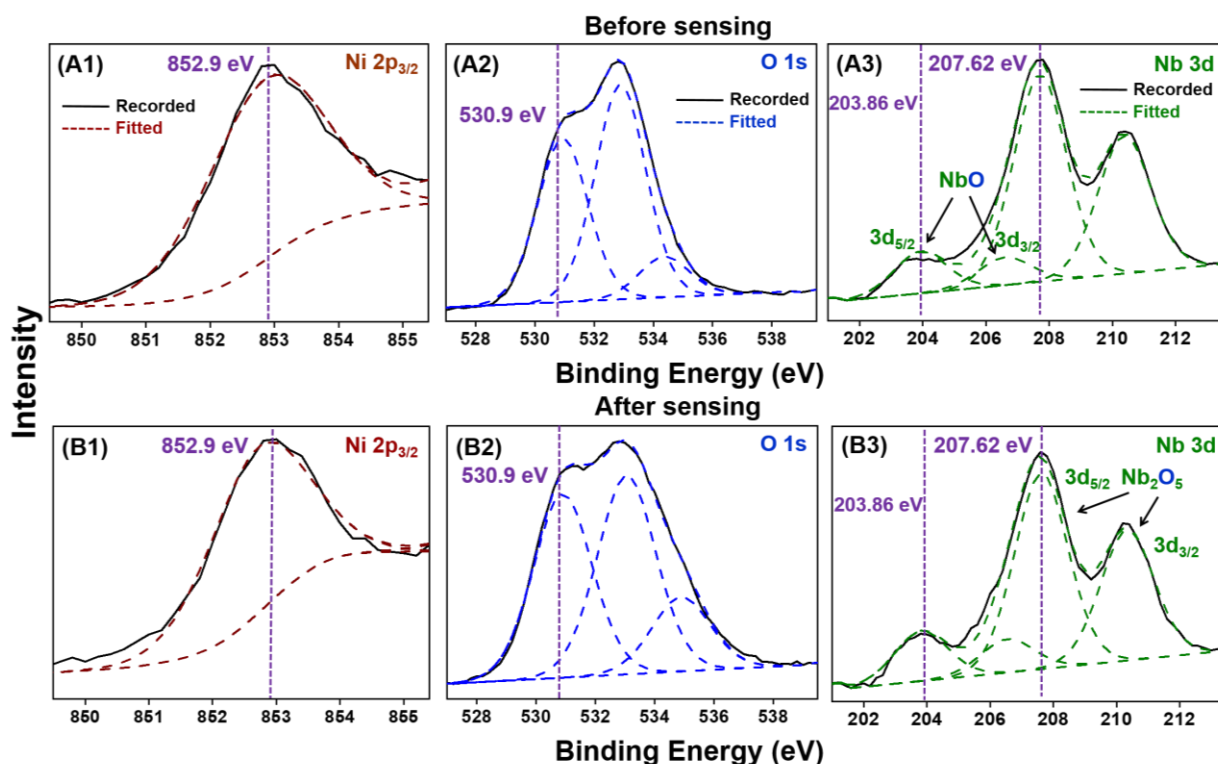


Figure S6. Photoelectron spectra (XPS) of the *nanoglass* sample before (A1 to A3) and after (B1 to B3) electrochemical studies. Ni (2p_{3/2}), O (1s) and Nb (3d) regions are highlighted for the current investigations. Nearly indistinguishable spectra of the sample before and after sensing experiments indicate unaltered surface of the *nanoglass* electrode. Fitted and deconvoluted spectra (dashed lines) points out different niobium oxides present at the surface (A3 and B3).