Supporting Information

Synthesis of NiCo$_2$O$_4$ Nanostructures and Their Electrochemical Properties for Glucose Detection

Kyu-bong Jang $^{1,†}$, Kyoung Ryeol Park $^{2,†}$, Kang Min Kim $^{3,†}$, Soong-keun Hyun $^1$, Jae-eun Jeon $^2$, Young Sik Song $^4$, Soo-keun Park $^4$, Kyoung-il Moon $^5$, Chisung Ahn $^4$, Sung-chul Lim $^4$, Jaewoong Lee $^4$, Jong Cheol Kim $^{5,*}$, HyukSu Han $^{6,*}$ and Sungwook Mhin $^{7,*}$

$^1$ School of Materials Science and Engineering, Inha University, 25 Younghyun-Dong, Incheon 22201, Korea; jkb0418@kitech.re.kr (K.-b.J.); skhyun@inha.ac.kr (S.-k.H.)
$^2$ Department of Materials Science and Engineering, Hanyang University, 222 Wangsimni-ro, Seoul 04763, Korea; nebula9938@kitech.re.kr (K.R.P.); jaeeun00@kitech.re.kr (J.-e.J.)
$^3$ Korea Institute of Industrial Technology, 137-41 Gwahakdanji-ro, Gangneung 25440, Korea; kmkim@kitech.re.kr (K.M.K)
$^4$ Korea Institute of Industrial Technology, 156 Gaetbeol-ro, Incheon 21999, Korea; yssong@kitech.re.kr (Y.S.S.); pskeun@kitech.re.kr (S.-k.P.); kimoon@kitech.re.kr (K.-i.M.); cahn@kitech.re.kr (C.A.);
lsc2001@kitech.re.kr (S.-c.L.); woong428@kitech.re.kr (J.-L.)
$^5$ Daegu Mechatronics & Materials Institute, Seongseogongdan-ro 11-gil, Dalseo-gu, Daegu 42714, Korea
$^6$ Department of Energy Engineering, Konkuk University, 120 Neungdong-ro, Seoul 05029, Korea
$^7$ Department of Advanced Materials Engineering, Kyonggi University, 154-42 Gwanggyosan-ro, Suwon 16227, Korea

* Correspondence: jckim@dmi.re.kr (J.C.K.); hhan@konkuk.ac.kr (H.H.); swmhin@kgu.ac.kr (S.M.)
† These authors contributed equally to this work.
Table 1. Sample notations of As-prepared and after annealing samples.

| Sample name                  | pH value |
|------------------------------|----------|
|                              |  8       | 11     | 12     | 13     | 14     |
| As-prepared (NCOBsb)         | NCO8B    | NCO11B | NCO12B | NCO13B | NCO14B |
| Annealing at 450 °C (NCOs)  | NCO8     | NCO11  | NCO12  | NCO13  | NCO14  |

Figure S1. CA response of NCO13 electrode upon addition of 1 mM glucose in 1m M NaOH solution at different applied potentials.
Figure S2. SEM-elemental mapping images of (a) NCOBs (8B, 11B, 12B, 13B, and 14B), and (b) NCOs (8, 11, 12, 13, and 14).
Figure S3. CV curves of (a) NCO8, (b) NCO11, (c) NCO12, (d) NCO13, and (e) NCO14 electrodes in the absence of glucose and with 5 mM concentration of glucose at a scan rate 50 mVs⁻¹.
Figure S4. CA response of (a) NCO8, (b) NCO11, (c) NCO12, (d) NCO13, and (e) NCO14 electrodes with the addition of 10 μM glucose in 0.1 M NaOH solution at 0.50 V. The LOD (Limit of detection) calculated by the formula in term of LOD = 3σ/b, where σ is the standard deviation of background which is obtained by measuring the current response of NCOs electrode in the 0.1M NaOH solution without glucose, and b is the sensitivity of the NCOs.
Figure S5. The XPS spectra of Ni2p and Co2p (NCO13).