

Electronic Supporting Information

Highly Sensitive Enzymeless Glucose Sensor Based on 3D Graphene-Cu Hybrid Electrodes

Sajjad Hussain^{a,b}, Kamran Akbar^c, Dhanasekaran Vikraman^{a,b}, Dong-Chul Choi^{a,b}, Seong Jun Kim^d, Ki-Seok An^d, Seunho Jung^c, and Jongwan Jung^{*a,b},

^a *Graphene Research Institute, Sejong University, Seoul 143-747, Republic of Korea.*

^b *Institute of Nano and Advanced Materials Engineering, Sejong University, Seoul 143-747, Republic of Korea.*

^c *Center for Biotechnology Research in UBITA (CBRU), Dept. of Bioscience and Biotechnology, Konkuk University, Seoul 143-701, Republic of Korea.*

^d *Thin Film Materials Research Center, Korea Research Institute of Chemical Technology, Daejeon 305-600, Korea*

*Corresponding author E-mail: jwjung@sejong.ac.kr (Prof. Jongwan Jung)

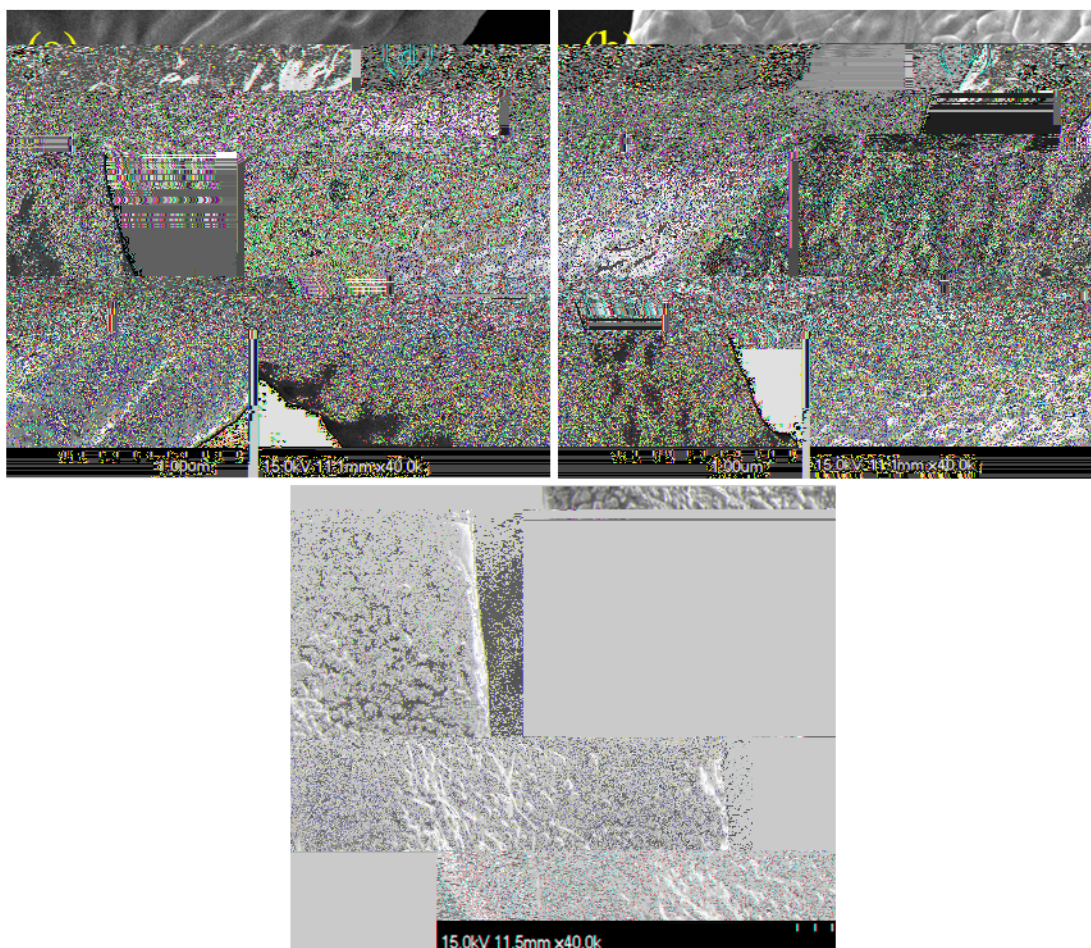


Fig. S1. Higher magnification FESEM micrographs for (a) Ni foam substrate, (b) 3D graphene/Ni foam and (c) Cu/3D graphene surface.

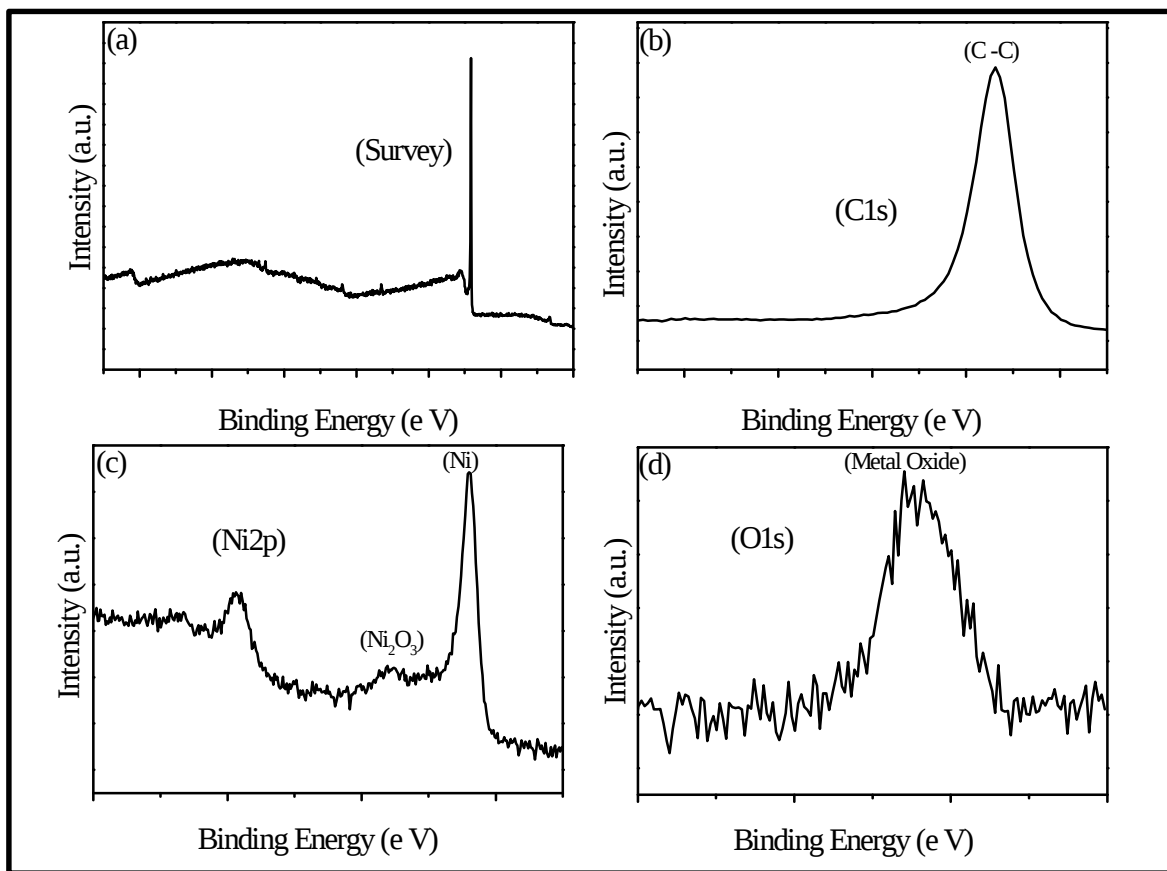


Fig. S2. XPS of CVD prepared graphene on Ni Foam (a) complete survey. (b) High-resolution XPS scan for the C1s core level peak. (c) XPS peak for Ni_{2p} peak from the substrate. (d) High-resolution XPS scan for the O1s core level peak.

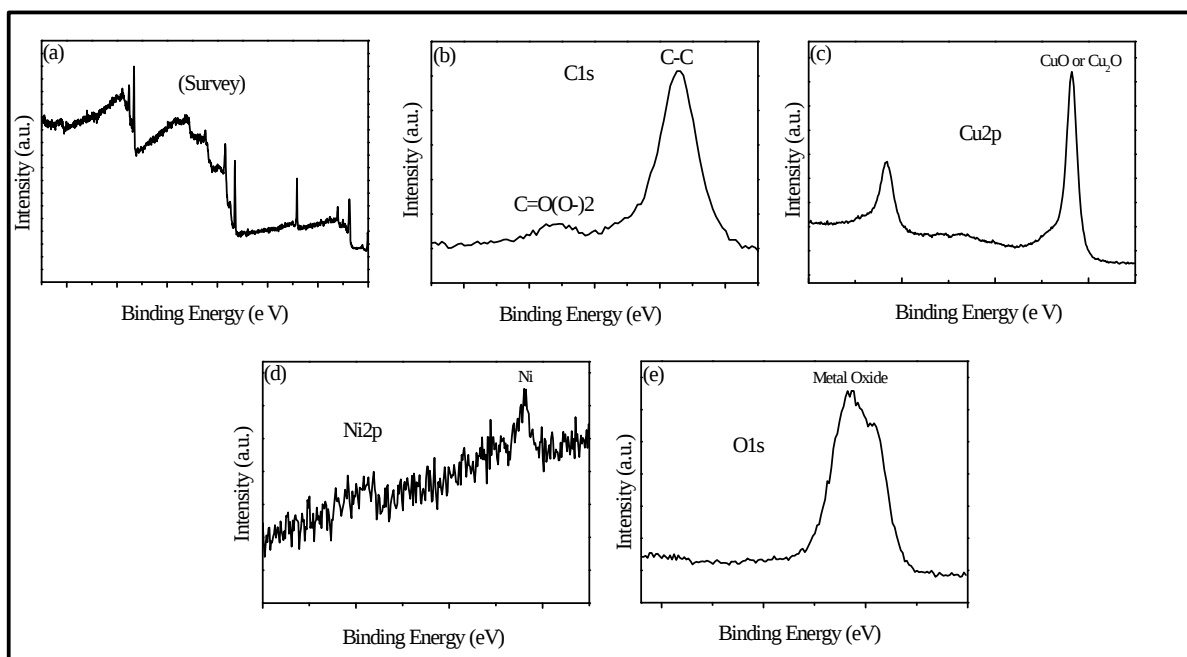


Fig. S3. XPS for Cu/3D graphene/Ni foam (a) General survey. (b) High-resolution XPS scan for the C 1s core level peak of Cu/3D graphene/Ni. (c) High-resolution XPS scan for Cu 2p core level peak which is originated from the Cu layer. (d) XPS Ni_{2p} core level peak originated from substrate. (e) XPS scan for the O1s core level peak.

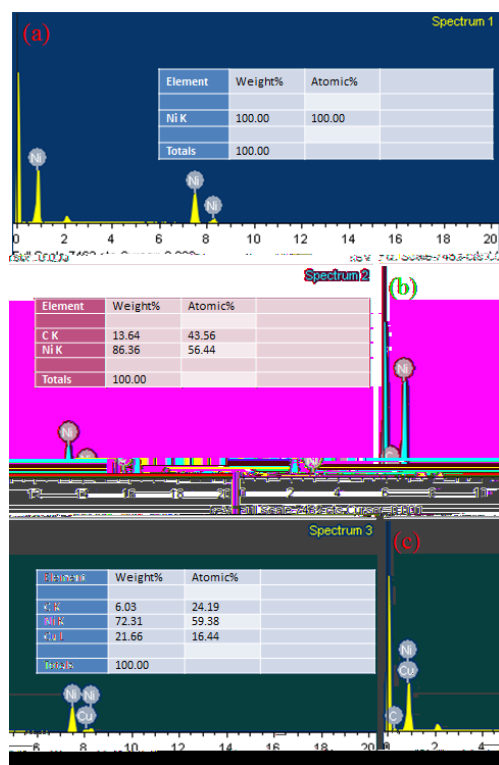


Fig. S4. EDX analysis spectra for (a) Ni foam substrate (b) 3D Graphene deposited Ni foam and (c) Cu/3D graphene surface.

