

Supplementary Materials: Chemical Vapor Deposition of Graphene on Cu-Ni Alloys: The Impact of Carbon Solubility

Samir H. Al-Hilfi ^{1,2,*}, Ian A. Kinloch ³ and Brian Derby ²

¹ School of Applied Sciences, University of Technology, Baghdad 964, Iraq

² Department of Materials, The University of Manchester, Oxford Road, Manchester M13 9PL, UK; Brian.Derby@manchester.ac.uk

³ National Graphene Institute, Henry Royce Institute and Department of Materials, The University of Manchester, Oxford Road, Manchester M13 9PL, UK; Ian.Kinloch@manchester.ac.uk

* Correspondence: 100119@uotechnology.edu.iq

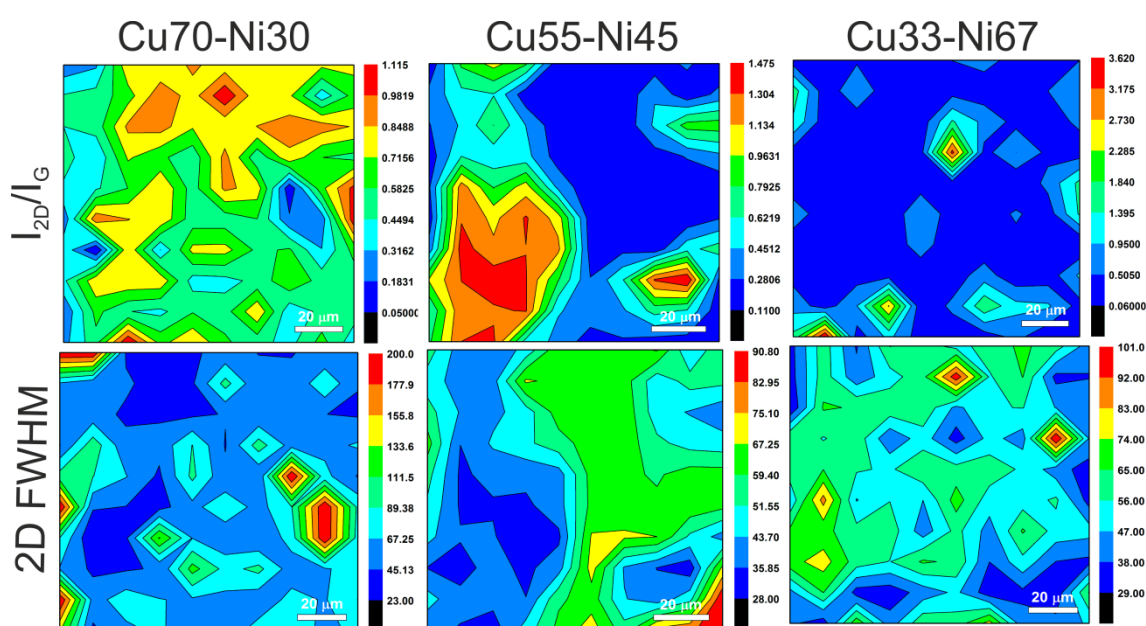


Figure S1. Raman I_{2D}/I_G and 2D band FWHM Cu-Ni alloys. Growth conditions were 1000 °C growth temperature, 0.65 mbar growth pressure, and fast cooling rate.

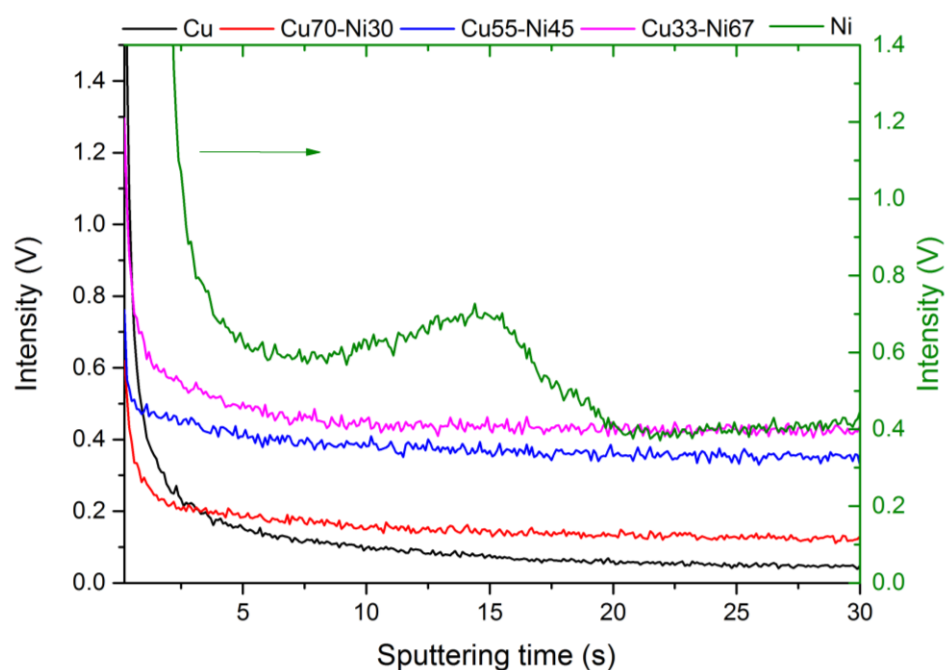


Figure S2. The GDOES C intensity vs sputtering time for the Cu-Ni alloys. Growth conditions are 1000 °C growth temperature, 0.1 mbar growth pressure, fast cooling rate and growth time as stated in Figure 5.

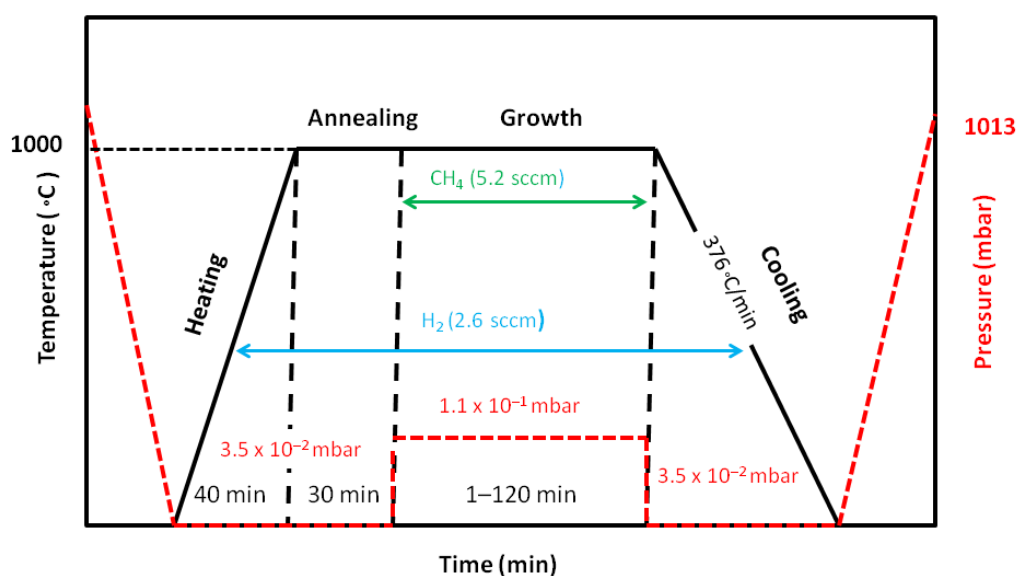


Figure S3. Schematic illustrating the experimental procedure used for the CVD growth process.

Table S1. Substrate specifications used in this work.

Substrate	Purity	Typical Analysis (ppm)	Supplier	Note
Nickel	99.98%	Co 8, Cr 8, Cu 10, Fe 10, Mg 10, Mn 10, Si 8, Ti 10, C 70, S 10	Goodfellow	Annealed
Copper	99.99%	Ag 70, Al 1, Bi 1, Ca 1, Cr <1, Fe 2, Mg 1, Mn <1, Na <1, Ni 2, Pb 2, Si 2, Sn 1	Goodfellow	As rolled
Cu70/Ni30	-	Cu 67.3%, Ni 31.0%, Mn 1.0%, Fe 0.7%.	Goodfellow	As rolled

Cu55/Ni45	-	Fe 2500, Mn 7500, Ni 45%, Cu balance	Goodfellow	As rolled
Cu33/Ni67	-	-	Alfa Aesar	-
