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Supporting Information

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How Low Nucleation Density of Graphene on CuNi Alloy is Achieved

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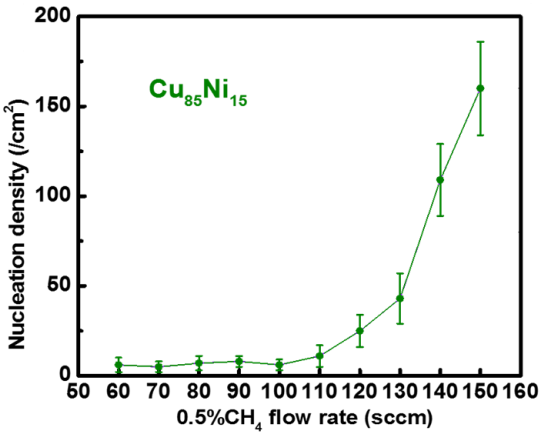
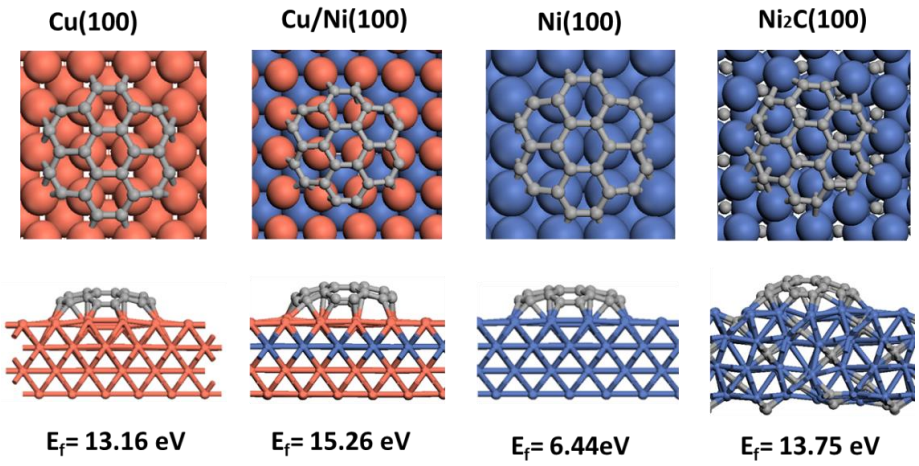
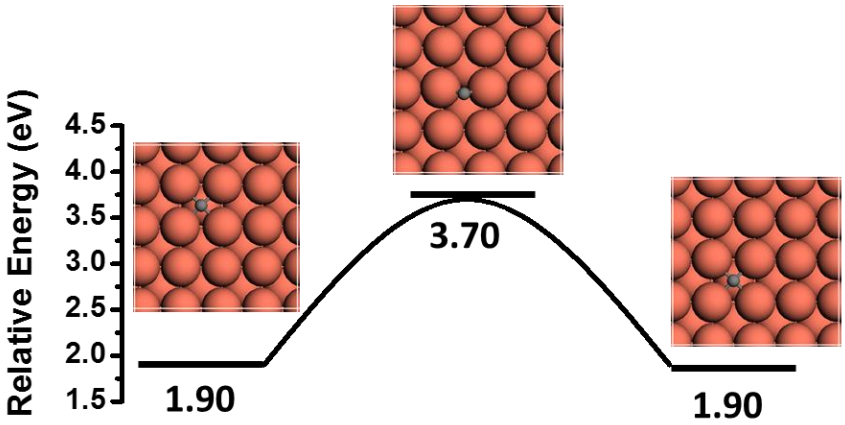


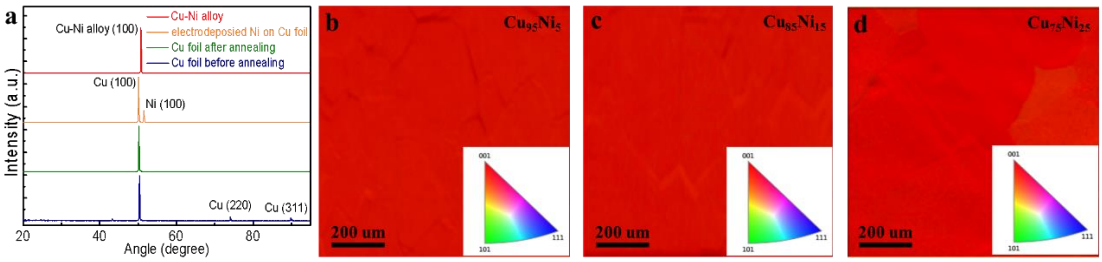
Supplementary Figure 1 Graphene nucleation density as a function of carbon precursor flow rate on $Cu_{85}Ni_{15}$ under the growth temperature of 1050 ^{o}C.



Supplementary Figure 2 The formation energies of C_{24} on Cu(100), Cu/Ni(100), Ni(100) and Ni_2C(100) surfaces.



Supplementary Figure 3 The energy curve of C diffusion on Cu(100) surface.



Supplementary Figure 4 a) XRD spectra of Cu and Cu-Ni bilayer before and after the annealing process. **b-d)** EBSD image of $Cu_{95}Ni_5$, $Cu_{85}Ni_{15}$ and $Cu_{75}Ni_{25}$ grains after high temperature annealing