

Low temperature growth of fully covered single-layer graphene using CoCu catalyst

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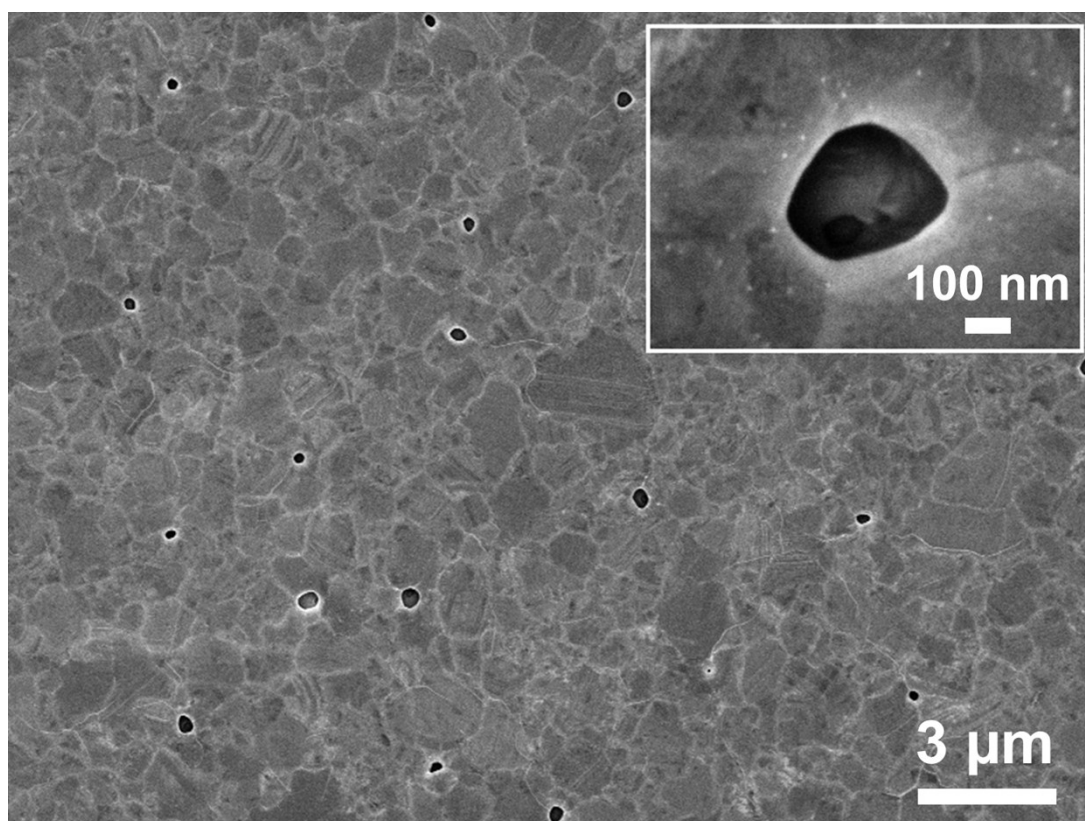


Fig. S1 A SEM image of the as-grown graphene on the Cu(6 nm)/Co(500 nm)/SiO₂(90 nm)/Si sample (without Ti adhesion layer below Co). The growth process is carried out at 750 °C for 3 min with CH₄ (60 sccm) and Ar (240 sccm) at 50 mbar (standard condition).

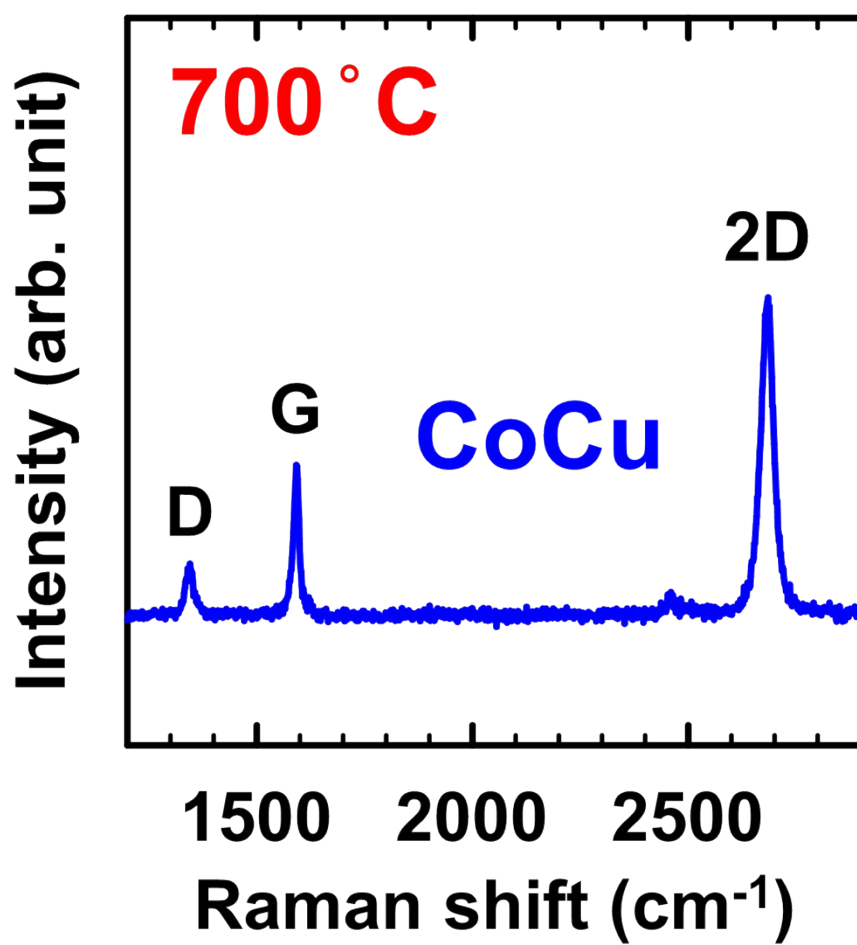


Fig. S2 Typical Raman spectra of the single layer graphene grown at 700 °C (50 °C lower than the standard condition) using CoCu [Cu: 6 nm on Co: 500 nm] catalyst.

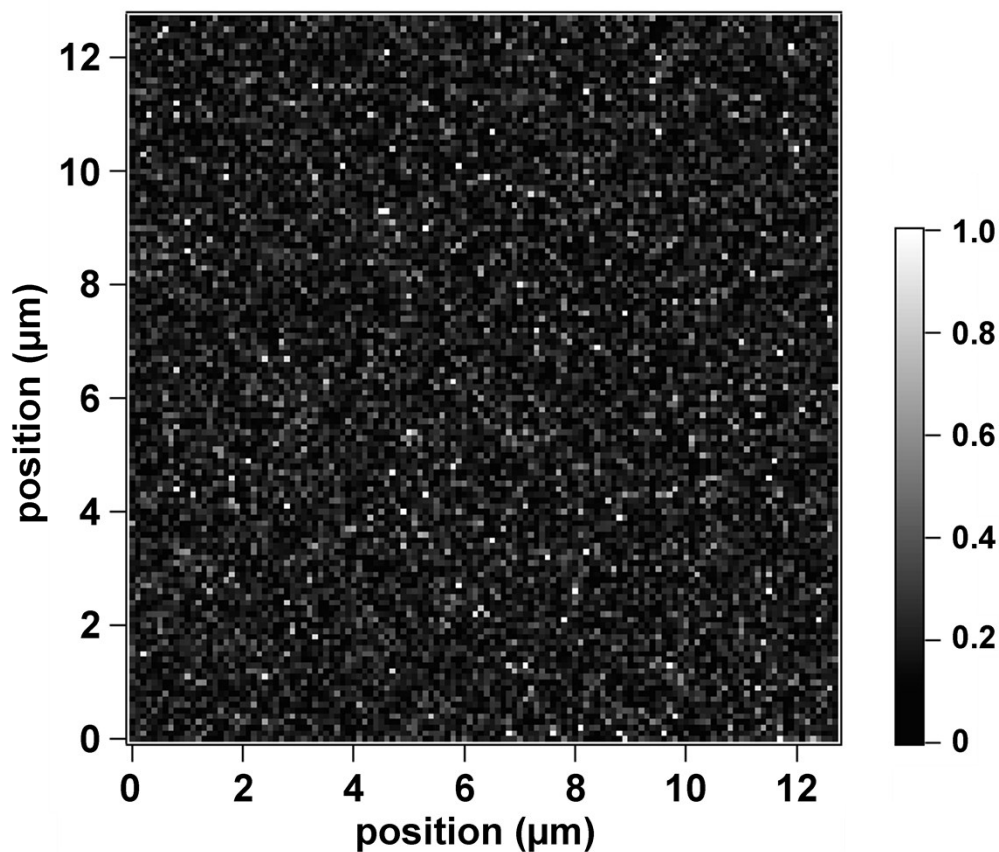


Fig. S3 The chemical map of Cu obtained by spatially resolving the XPS signal (100 nm resolution). The sample temperature is 550 °C. The intensity is the accumulation of counts of the Cu $2p_{3/2}$ peak in the range 931 to 934 eV, scaled to the brightest point. The spectra were first background corrected to remove the influence of the morphology. The single pixels are noisy as the spectra were not intense. No large scale inhomogeneities can be observed.