

Supporting information

Enhancing the inter-grain connectivity of CVD grown graphene by promoter caps

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1. Optical Micrographs of oxidation tests

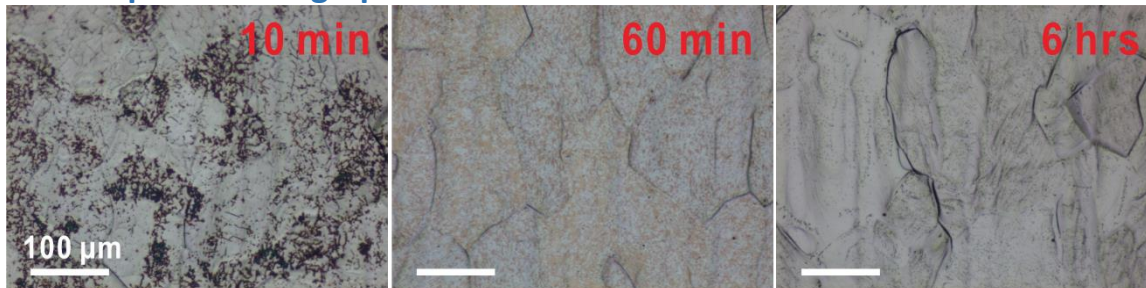


Figure S1: OM images of oxidized graphene for 10 min, 60 min and 6 hrs.

2. High resolution characterization of graphene

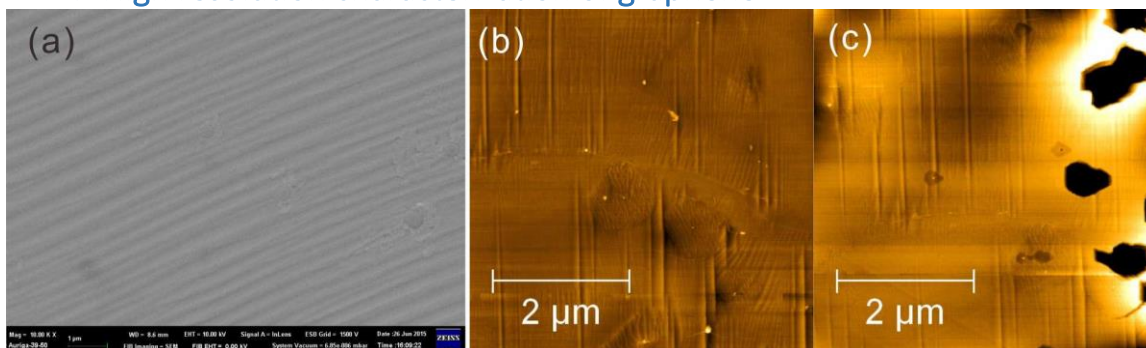


Figure S2: (a) SEM image of grown graphene, (b) AFM image of grown graphene, (c) identical area to (b) after FIFE

3. Comparison of different characterization methods

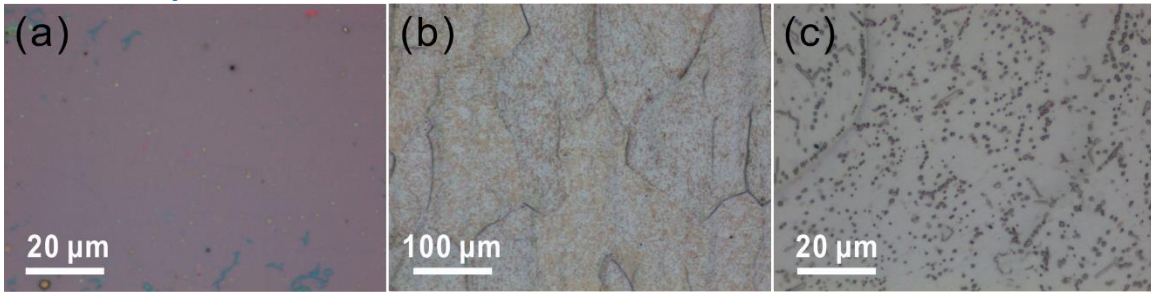


Figure S3: Characterization after 60 mins of growth (a) OM transferred, (b) air oxidized (c) APS etching.

4. Extended characterization of graphene

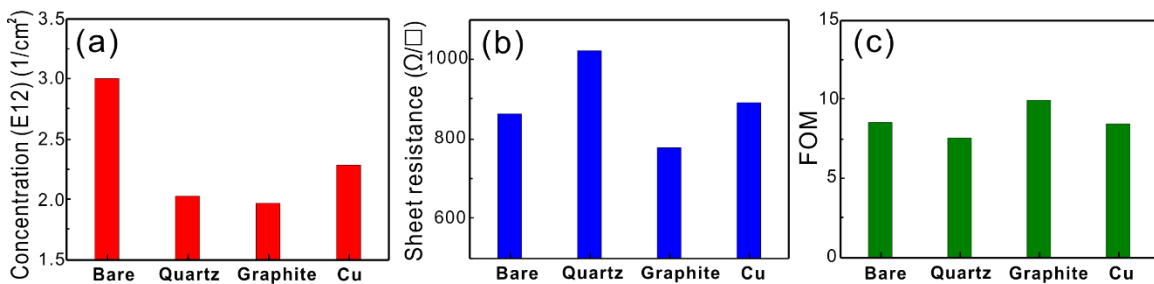


Figure S4: (a) Carrier concentration, (b) sheet resistance and its (c) figure of merit as transparent optical conductor of the as grown graphene under different capping materials.

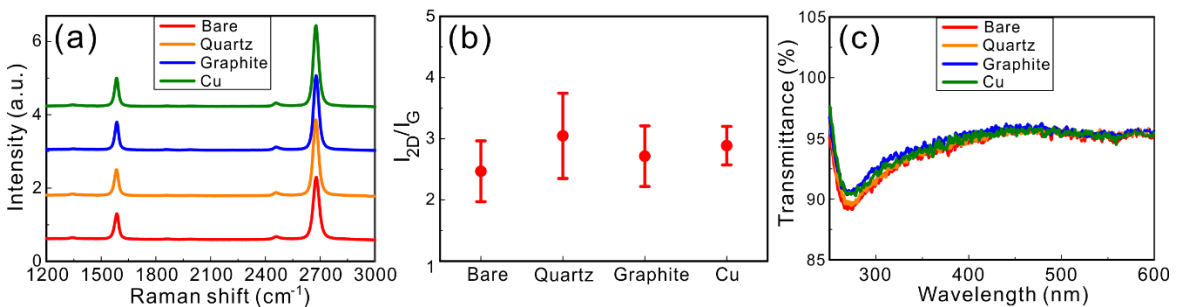


Figure S5: Raman spectrum and $I_{2D}/I_G > 2.5$ suggesting uniform single layer of graphene were synthesized with graphite promoter.

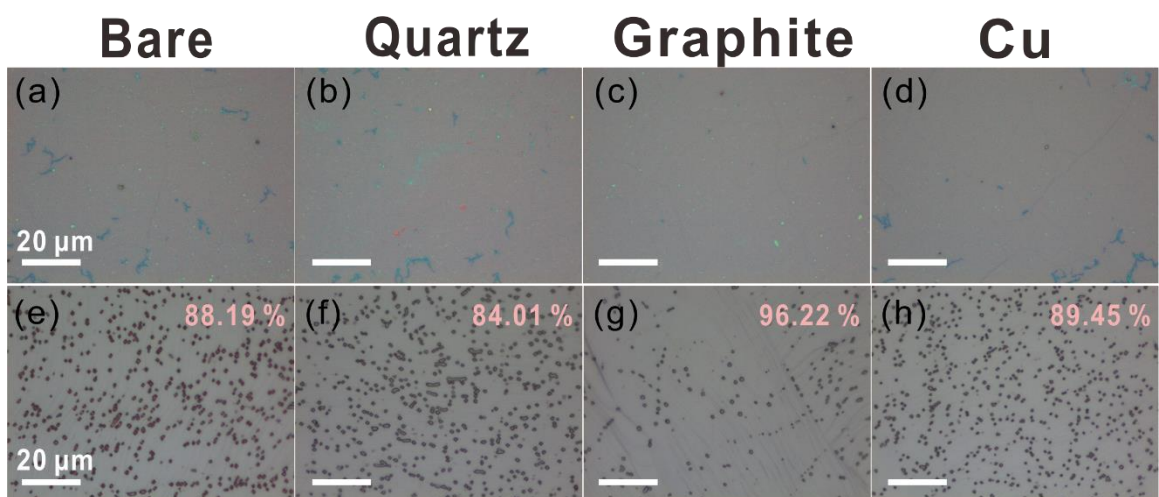


Figure S6: comparison of various cap (quartz, graphite and copper) and no cap (bare), (a-d) OM images after transfer on SiO_x showing uniformity of graphene and (e-h) after APS etching on graphene/Cu.

5. Large scale uniformity of graphene

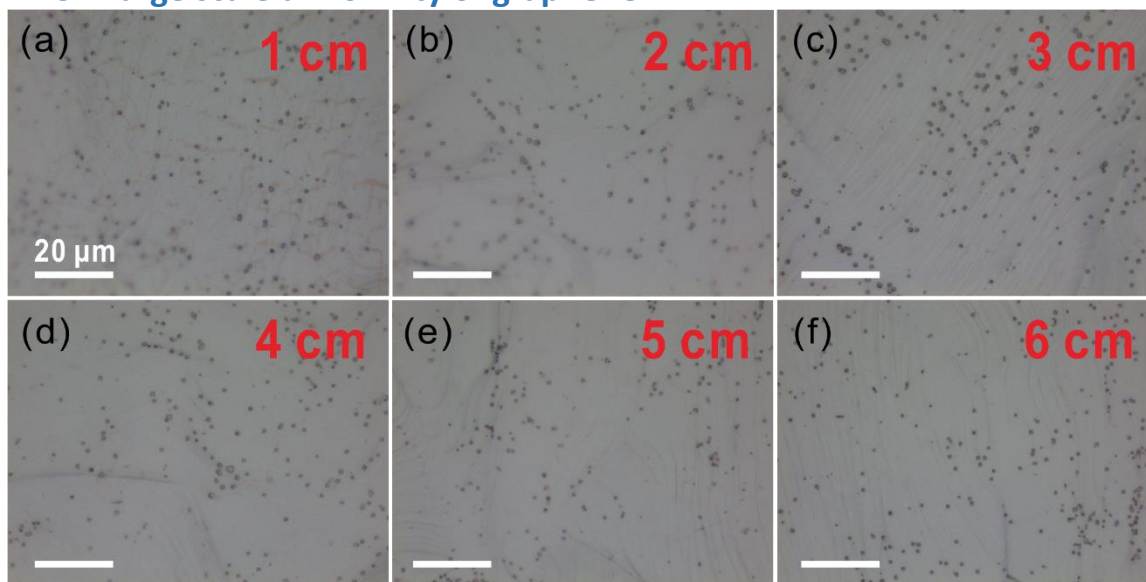


Figure S7: APS etching along x-direction after graphene growth with graphite promoter