

Electronic Supplementary Information (ESI)

CVD Growth of Large Area and Uniform Graphene On Tilted Copper Foil for High Performance Flexible Transparent Conductive Film

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Preparation of graphene microbelts for devices

A 100 nm thick polymethylmethacrylate (PMMA) film was spin coated on the as-grown graphene on the SiO₂/Si substrate. a PDMS stamp was pressed onto the PMMA film at 100 °C with a pressure of 0.2 N being used to ensure intimate contact between the PDMS stamp and the graphene film coated substrate; after 30 min, the PDMS stamp was lifted carefully from the substrate, leaving the PMMA patterns on the graphene film intact; an O₂ plasma was used to etch the graphene films uncovered with PMMA to obtain graphene microbelts (Shown in Fig. S4). The uniform microbelts have a width of ~20 μm and lengths of up to 5 cm.

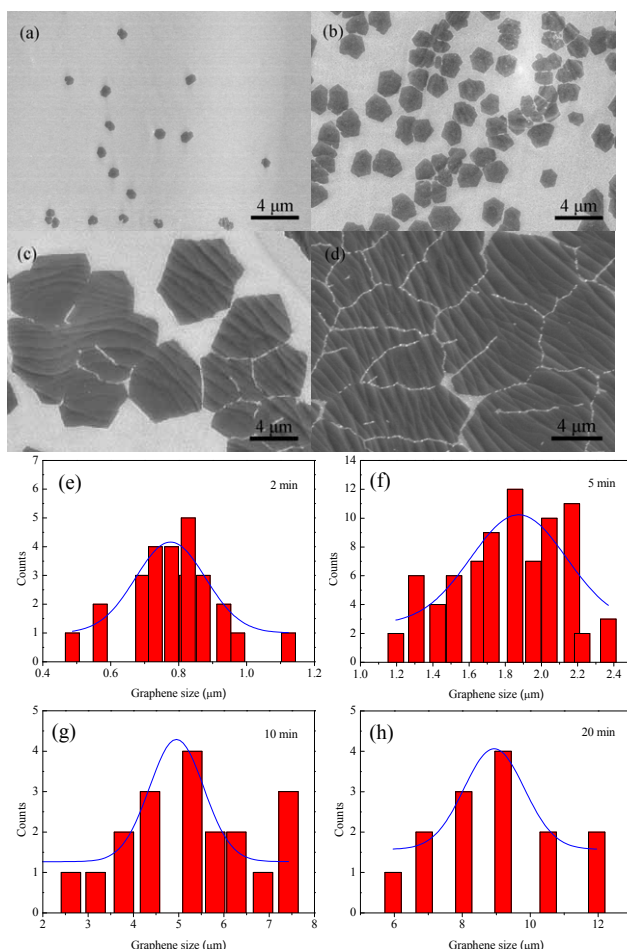


Fig. S1. The size of graphene domain with respect to growth time at 1000 °C: (a) 2 min, (b) 5 min, (c) 10 min, (d) 20 min. Domain size distributions for (e) 2 min, (f) 5 min, (g) 10 min, (h) 20 min growth times at 1000 °C and 0.2 % methane. A Gaussian distribution (blue line) is fitted to the distribution to extract the mean size.

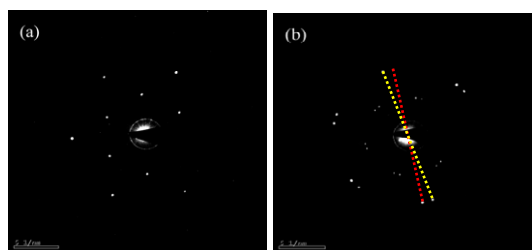


Fig. S2. SAED patterns of graphene collected from different areas.

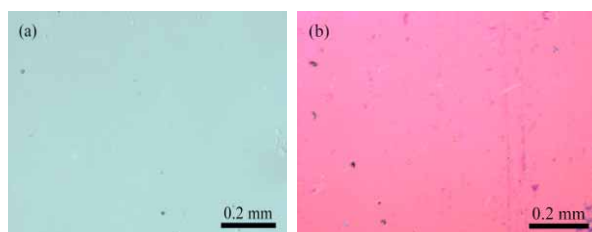


Fig. S3. Optical images of typical graphene films grown at 1000 °C (a) and 1035 °C (b).

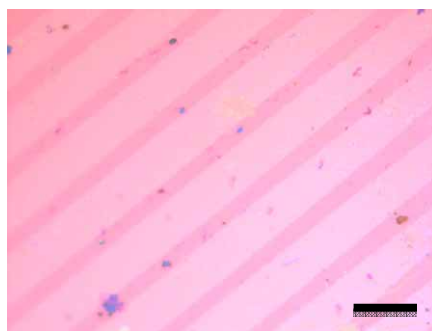


Fig. S4: Optical images of graphene belts. The bar is 40 μm .