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Large Area CVD Graphene for Photovoltaic Applications: Synthesis, Transfer and Characterisation.

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Abstract content
   (Max 300 words)

Graphene, a two-dimensional allotrope of carbon comprising a single sheet of hexagonally packed carbon atoms has attracted immense research attention due to their interesting and potentially important properties. It is a prospective candidate for applications in liquid crystal displays, photovoltaics, super capacitors and field effect transistors.
Several methods of producing graphene thin films include mechanical exfoliation, decomposition of SiC and chemical vapour deposition (CVD). Chemical vapour deposition is one of the most promising and relatively inexpensive approaches to grow reasonably high quality graphene films on transition metal catalysts like Pd, Ni, Ru or Cu which gives room for fundamental property studies and applications.
In this work, we present studies on catalytic chemical vapour deposition synthesis on polycrystalline copper, transfer and characterisation of large area Graphene films for use as transparent conductive electrodes solar cell applications. The graphene films (few layers to multilayers) have been characterised by Optical Microscopy, Atomic Force Microscopy, UV-Vis spectroscopy, Scanning Tunnelling Microscopy, Raman spectroscopy and Raman imaging.

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