Lithographic processing for Large Area CVD Graphene

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We present a study on making devices from large area chemical vapour deposition graphene. Starting from controlled CVD growth of graphene on Cu films, the large area graphene was transferred on to insulating substrates. Optical lithography followed by lift off and etching is used to structure graphene devices. We discuss the problems faced in etching large area graphene using conventional processes used in microlithography. This work will be useful for high volume processing of graphene using these scaleable processes steps, yielding FET and sensor devices on large areas. We also present a study of the effects of processing on graphene by AFM, SEM, TEM and XPS. Electrical measurements performed indicate p-doping of graphene. Further measurements oriented towards sensor applications are also presented.