

METHODS OF GROWING UNIFORM, LARGE-SCALE, MULTILAYER GRAPHENE FILMS

ABSTRACT

Methods of growing a multilayer graphene film (10) include flowing a weak oxidizing vapor (OV) and a gaseous carbon source (CS) over a surface (SGC) of a carbonizing catalyst (GC) in a CVD reaction chamber (2). Carbon atoms (C) deposit on the carbonizing catalyst surface to form sheets of single-layer graphene (12) upon cooling. The method generates a substantially uniform stacking of graphene layers to form the multilayer graphene film. The multilayer graphene film is substantially uniform and has a relatively large scale as compared to graphene films formed by prior-art methods.

(FIG. 1)