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(54) **COMPOSITE STRUCTURE OF GRAPHENE AND CARBON NANOTUBE AND METHOD OF MANUFACTURING THE SAME**

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See application file for complete search history.

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(57) **ABSTRACT**

The present invention discloses a composite structure of graphene and carbon nanotube and a method of manufacturing the same. The composite structure includes graphene platelets and carbon nanotubes, each carbon nanotube growing perpendicular to the planar surface of the graphene platelet. The method includes steps of graphene platelets preparation, chemical precipitation, chemical reduction and carbon nanotube growth. Metal particles are first formed on the graphene platelets through the steps of chemical precipitation and electrochemical reduction, and carbon nanotubes grow in the step of carbon nanotube growth through thermal treatment. Thus, the graphene platelets and the carbon nanotubes of the present invention form a three dimensional structure, and the carbon nanotubes are used as three dimensional spacers and configured between the graphene platelets, which are effectively separated and hard to aggregate or congregate together.

**6 Claims, 4 Drawing Sheets**