

Graphene, Advanced 2D Materials & Semiconductors**Diamond, Graphite & Carbon Materials**

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Synthesis of conductive graphene inks based on sonication assisted exfoliation technique**Amanpreet Kaur**

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Graphene inks synthesized from graphite have the perspective to transform the field of printed electronics by switching metallic inks, though at the same time reduces the chances of biological hazards and production costs. The electrical properties of carbon-based materials such as carbon nanotubes and graphene are predominantly promising,

which have been exploited in several applications from printed electronics comprising chemical and thermal sensors, thin-film transistors (TFTs) to supercapacitors, photovoltaics and many more. The notion of printing electronics on flexible substrates unlocks countless novel possibilities particularly cost-effective applications such as radio-frequency identification tags (RFID), sensors, wearable electronics, solar cells, fuel cells, batteries etc. Therefore, it is essential to develop a practice for synthesizing graphene inks for facilitating the advancement of future printed electronics. Processing difficulties exemplify

a bottleneck for those applications that demand well dispersed, concentrated and pristine graphene solutions. In view of that, there remains ongoing research for an improved approach to synthesize graphene solutions appropriate for inkjet printing and related applications. In light of foregoing, the objective of the present report is to present an economical, rapid and scalable methodology for the preparation of graphene dispersions using economical organic solvents for a wide range of applications in the field of printing technologies.

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