

## **Wet Spun Graphene Fibers With Silver Nanoparticles For Flexible Electronic Applications**

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**Abstract :** Wet spinning provides a facile and economic route to fabricate graphene nanofibers (GFs) on mass scale. Nevertheless, the pristine GFs exhibit significantly low electrical and mechanical properties owing to stacked graphene sheets and weak inter-atomic bonding. In this report, we present highly conductive Ag-decorated-GFs (Ag/GFs). The SEM micrographs show Ag nanoparticles (NPs) (dia ~10 nm) are homogeneously distributed throughout the cross-section of the fiber. The Ag NPs provide a conductive network for the electrons flow raising the conductivity to  $1.8(10^4)$  S/m which is 4 times higher than the pristine GFs. Our results surpass the conductivities of graphene fibers doped with CNTs, Nanocarbon, fullerene, and Cu. The chemical and structural attributes of Ag/GFs are further elucidated through XPS, AFM and Raman spectroscopy.

**Keywords :** Ag nanoparticles, Conductive fibers, Graphene, Wet spinning

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