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The influence of proton irradiation on I-V characteristics of LPE graphene

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Due to their outstanding physical properties, graphene and related materials have a huge potential for applications in electronic devices such as FETs with graphene channels and graphene-based sensors. So, one of the most important characteristics of graphene film is the I-V characteristics. In this research the authors discuss the I-V characteristics of few-layer graphene obtained by liquid phase exfoliation (LPE) method. The current- voltage characteristics of graphene deposited on sapphire substrate are measured and studied using data acquisition devices and LabVIEW programing. Firstly, they are affected by doping effect due to functionalization of graphene.
The synthesized graphene layers are deposited on sapphire substrate and irradiated with a beam of accelerated protons. Studies after irradiation show that LPE graphene layers are not only stable (do not disintegrate), but also have improved the I-V characteristics.

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