

Magnetoresistance of bilayer graphene at low magnetic field

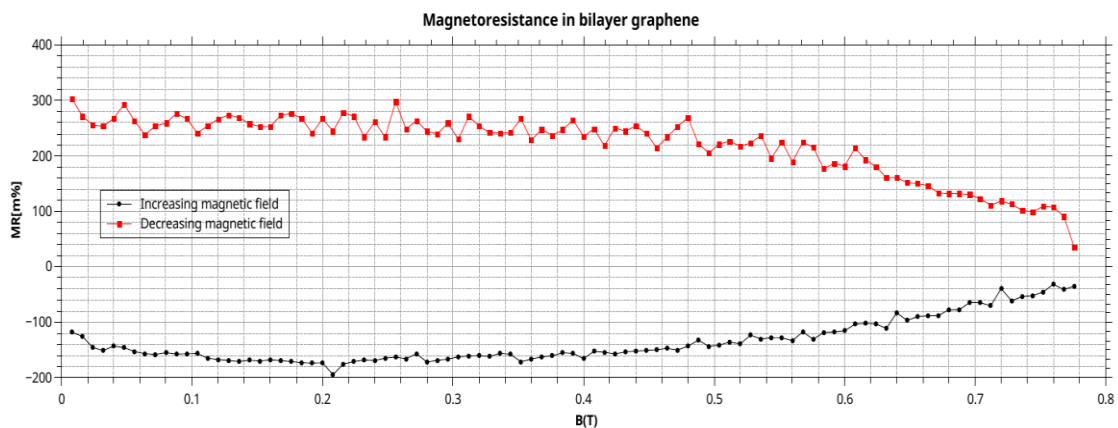
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For more than decade research of graphene create a huge interest due to its electronic, optical, magnetic and other properties [1]. Besides interest of fundamental science, graphene is a candidate for future electronics devices. Due to demand of high speed, low dimension and energy consumption of such devices leads to developing spintronic transistors, which use electron spin instead of electron charge to transform digital information.

Magnetoresistance, which reflects magnetic dependence of material resistivity, is one of essential effects for manipulating spintronic devices. Magnetoresistance in graphene is usually having very low values in room temperature and low magnetic field. In most experiments magnetoresistance in graphene was shown in the scale of high magnetic field and/or very low temperature [2]. We demonstrate magnetoresistance in room temperature and low magnetic field on mechanically exfoliated bilayer graphene deposited on hexagonal boron nitride. We propose explanation for our results.



[1] Geim, Andre K., and Konstantin S. Novoselov. "The rise of graphene." *Nature materials* 6.3 (2007): 183-191.

[2] Gopinadhan, Kalon, et al. "Extremely large magnetoresistance in few-layer graphene/boron-nitride heterostructures." *Nature communications* 6 (2015): 1-7