ANISOTROPY OF CONDUCTIVITY IN BILAYER GRAPHENE WITH RELATIVELY SHIFTED LAYERS

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S u m m a r y

A transformation of the band structure in bilayer graphene (BLG) with relatively shifted layers has been studied in the framework of the tight-binding model. BLG is demonstrated to remain a zero-gap material in the whole range of experimentally attainable shifts, but the positions of contact points between the conduction and valence bands depend substantially on the shift direction. The shift results in a considerable anisotropy of the band spectrum, which is, in turn, responsible for a substantial (10–20%) anisotropy of the conductivity in BLG. A possibility of using this anisotropy in high-sensitive sensors of a mechanical tension and for the generation of a purely valley current in multivalley anisotropic BLG in the case where both the average spin and the average current of electrons are equal to zero is discussed.