

Abstract Submitted
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Tunable band gap in biased rhombohedral-stacked trilayer graphene H.B. MIHIRI SHASHIKALA, XIAO-QIAN WANG, Clark Atlanta University — We have employed dispersion-corrected density-functional calculations to investigate the electronic characteristics of Bernal-stacked trilayer (ABA) and rhombohedral-stacked (ABC) trilayer graphene. In contrast to semimetallic behavior for Bernal-stacked trilayer, rhombohedral-stacked trilayer leads to a band gap opening with the applications of a perpendicular electric bias. The induced gap is shown to be attributed to the avoiding of level crossing among even and odd parity states that depends on the stacking pattern. The tunable band gap suggests a sensitive and effective way to tailor properties of trilayer graphene for future applications in nanoscale devices.

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