

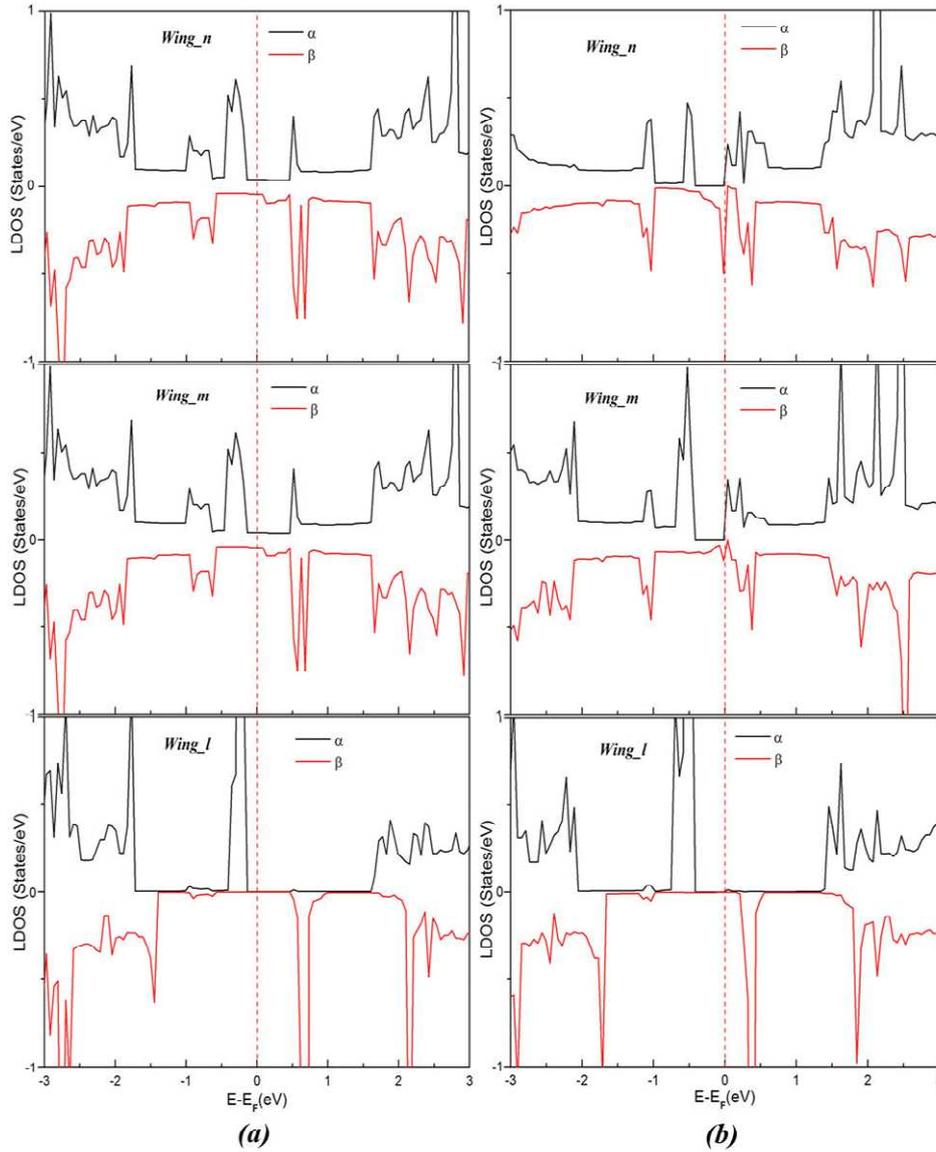
# Boron and Nitrogen Doping Induced Half-Metallicity in Zigzag Tri-wing Graphene Nanoribbons

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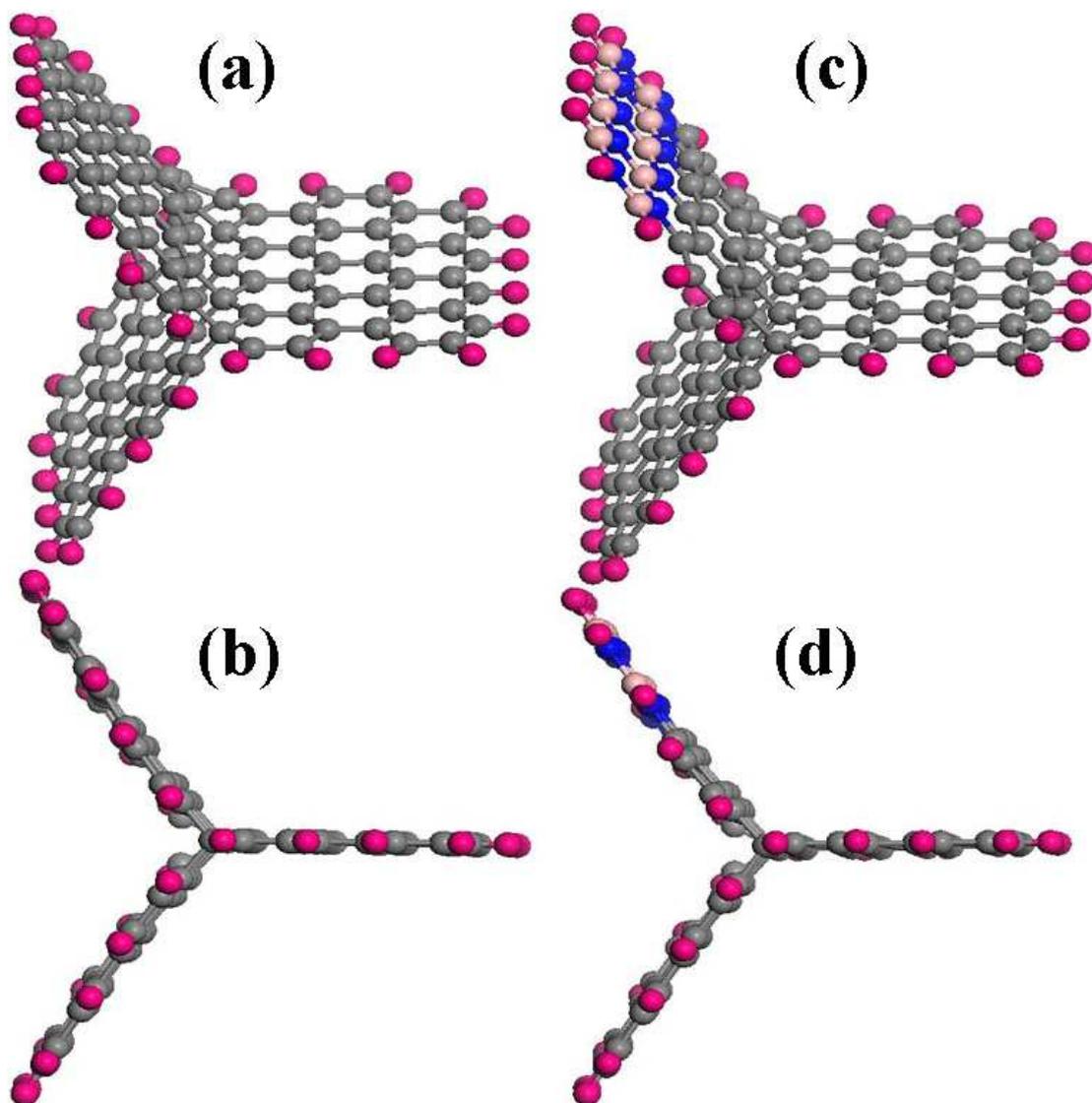
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## Supporting Information



**Figure S1.** Local densities of state (LDOS) of each wing of undoped ZZ-TWG (**4, 4, 4**) (a) and BN doped ZZ-TWG (**4-2, 4, 4**) (b). The label  $\alpha$  and  $\beta$  represent spin up and spin down channels respectively.



**Figure S2.** Optimized structures of undoped ZZ-TWG (4, 4, 4) (a) and (b); BN doped ZZ-TWG (4-2, 4, 4) (c) and (d) with finite length.