

Supplementary Information

Modeling Graphene with Nanoholes: Structure and Characterization by Raman Spectroscopy with Consideration for Electron Transport

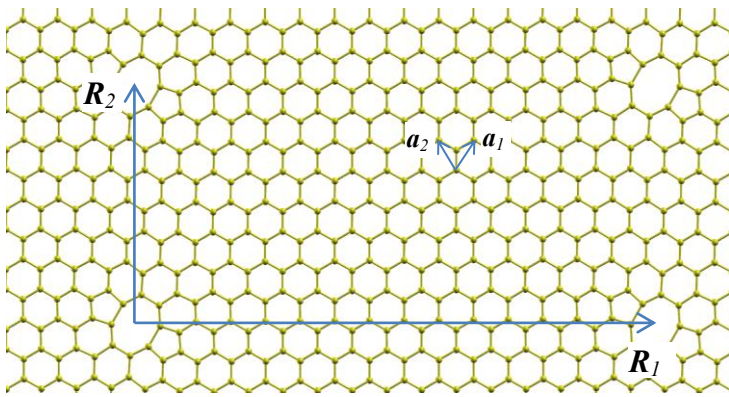
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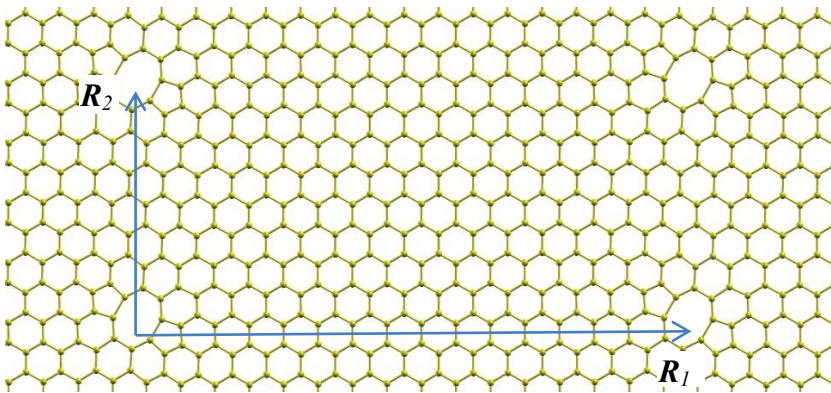
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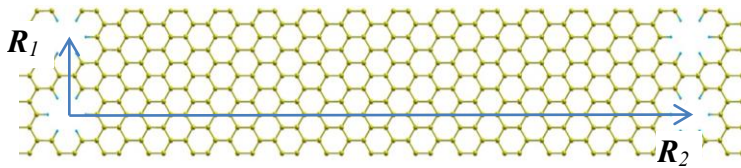
(a)



(b)



(c)



(d)

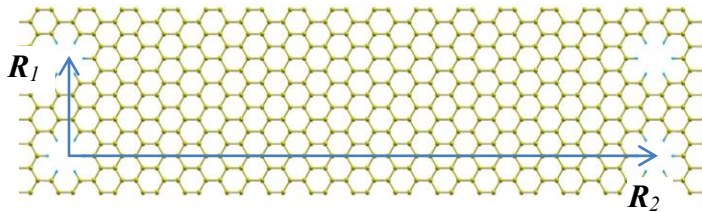


Figure S1. Supercell and lattice vectors of (a) (15,-15,4,4), (b) (16,-16,4,4), (c) (3,-3,14,14), and (d) (4,-4,14,14) patterned graphene nanostructures. Dimensions are given in the Methods section.

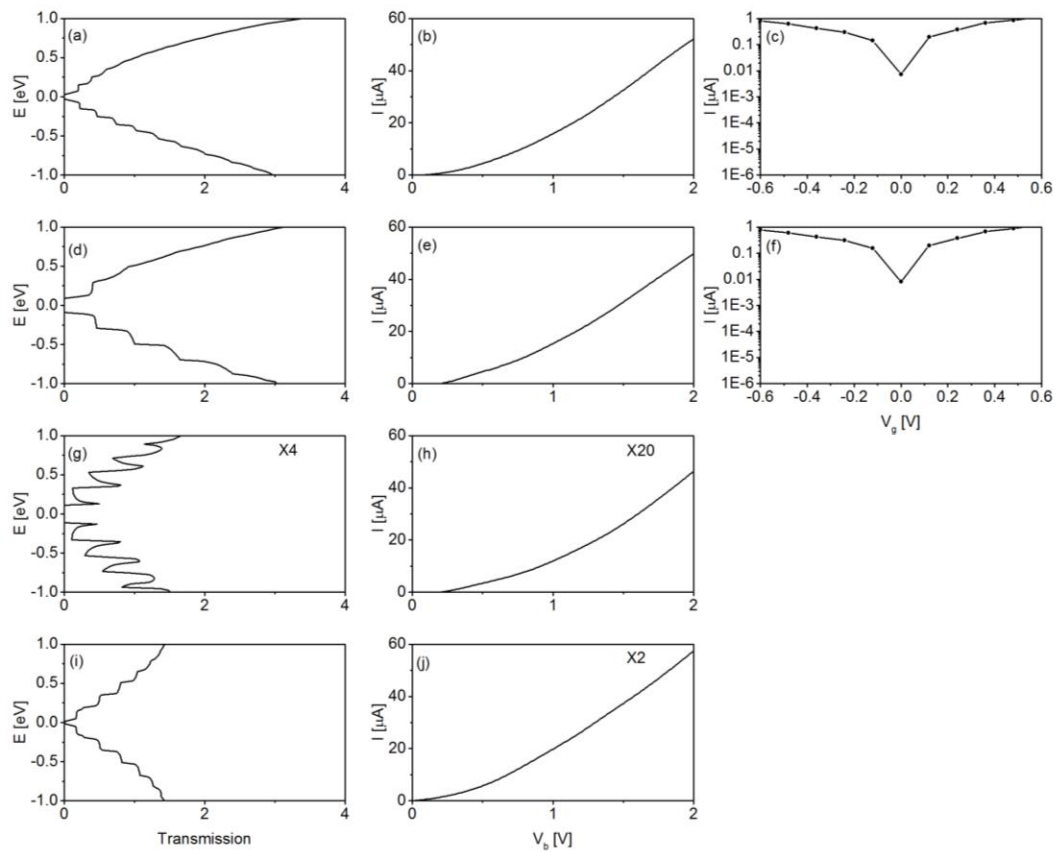


Figure S2. Transmission, I - V , and I - V_g curves: (a)-(c) (15,-15,4,4) and (d)-(f) (16,-16,4,4) patterned graphene nanostructure models with a $V_2(a)$ vacancy; (g)-(h) (3,-3,14,14) and (i)-(j) (4,-4,14,14) patterned graphene nanostructure H-passivated models with a $V_6(b)$ vacancy.

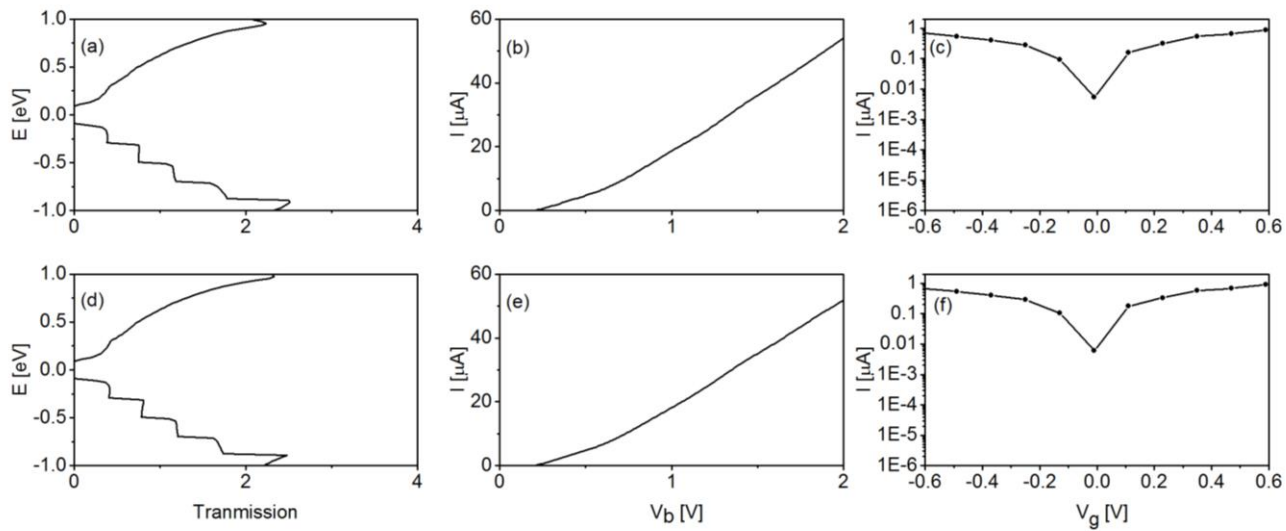


Figure S3. Transmission, I - V , and I - V_g curves: (a)-(c) (15,-15,4,4) and (d)-(f) (16,-16,4,4) patterned graphene nanostructure models with a $V_6(a)$ vacancy.