Abstract Submitted
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Electronic structures and magnetism of hydrogenated and fluorinated graphene with vacancies[1] BI-RU WU, Center for General Education, Chang Gung University, Kueishan, Taiwan, CHIH-KAI YANG, Graduate Institute of Applied Physics, National Chengchi University, Taipei 11605, Taiwan — Graphene is a gapless semiconductor. As graphene is covered with one layer of hydrogen or fluorine, it becomes a wide band gap insulator. However, vacancies are easily found during the hydrogenated or fluorinated processes. We investigate the electronic structure and magnetism of the hydrogenated and fluorinated graphene with a variety of configuration of vacancies. We found that a continuous zigzag chain distribution of vacancies will result linear energy dispersion both in the hydrogenated and fluorinated graphene. This finding should be very useful for the design of graphene based electronic devices.

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