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A study of epitaxial graphene/SiC(0001) functionalized by nitrogen doping[1] S. RAJPUT, Y. LIU, Department of Physics, University of Wisconsin, Milwaukee, WI 53211, H. YU, R. F. HICKS, Department of Chemical and Biomolecualr Engineering, University of California, Los Angeles, CA 90095, L. LI, Department of Physics, University of Wisconsin, Milwaukee, WI 53211 — In this work, we have carried out nitridation of epitaxial graphene/SiC(0001) using N_2 plasma. The effects of processing conditions on the structure of graphene have been investigated by x-ray photoemission spectroscopy and Raman spectroscopy, and changes in the electronic structures of the nitrogen-doped graphene have been studied using scanning tunneling microscopy. We find that the exposure of epitaxial graphene to nitrogen plasma not only leads to N incorporation, but also creates carbon vacancies, resulting in the formation of N-vacancy complexes.

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