

Abstract Submitted
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Defects in epitaxial graphene on SiC(0001) created by Ar plasma¹

YING LIU, LIAN LI, University of Wisconsin, Milwaukee, WI 53211 — Defects are created upon the exposure of epitaxial graphene on SiC(0001) to Ar plasma at room temperature. The atomic and electronic structures of these defects are studied by scanning tunneling microscopy (STM), which reveals two predominant types of structures for these defects. Their induced modulations on the local density of states are further studied by Fourier transform STM. The results suggest that vacancies are created, with Ar atoms nearby trapped between the graphene sheets and SiC substrate, forming Ar-vacancy complexes. Changes in the defect electronic structures during STM imaging can be attributed to the dissociation and recombination of these complexes.

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