Abstract Submitted
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Scanning tunneling microscopy/spectroscopy study of hydrogen intercalated epitaxial graphene on SiC(0001)[1] S. RAJPUT, Y. Y. LI, M. WEINERT, L. LI, University of Wisconsin, Milwaukee — In this work, we studied the atomic structures and electronic properties of hydrogen intercalated epitaxial graphene on Si-face SiC(0001) using scanning tunneling microscopy/spectroscopy and density functional theory (DFT) calculations. Hydrogen intercalation was achieved by either annealing graphene/SiC(0001) in hydrogen gas at atmospheric pressure or in hydrogen plasma in ultrahigh vacuum. We found that while the as-grown graphene is n-type, the H-intercalated graphene is p-type, which can be attributed to the saturation of the Si dangling bonds at the interface by hydrogen atoms. These results and the origin of the p-type doping in hydrogen intercalated epitaxial graphene on SiC(0001) will be discussed at the meeting.

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