Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

The Initiation of Graphene Growth on SiC(0001)-6H JAMES HANNON, RUDOLF TROMP, IBM Research Division — We have studied the evolution of surface morphology on SiC(0001)-6H during annealing at temperatures up to 1250 C using low-energy electron microscopy (LEEM). Surface roughness is dominated by the formation of deep pits or canyons. We show that the canyons form because of the stability of the $6\sqrt{3} \times 6\sqrt{3}$ phase, which pins atomic steps during the decomposition of SiC. The density of pits is ultimately determined by how the $6\sqrt{3}$ phase nucleates. Graphene forms preferentially in these pits, where the step density is highest.

James Hannon
IBM Research Division

Date submitted: 27 Nov 2007 Electronic form version 1.4