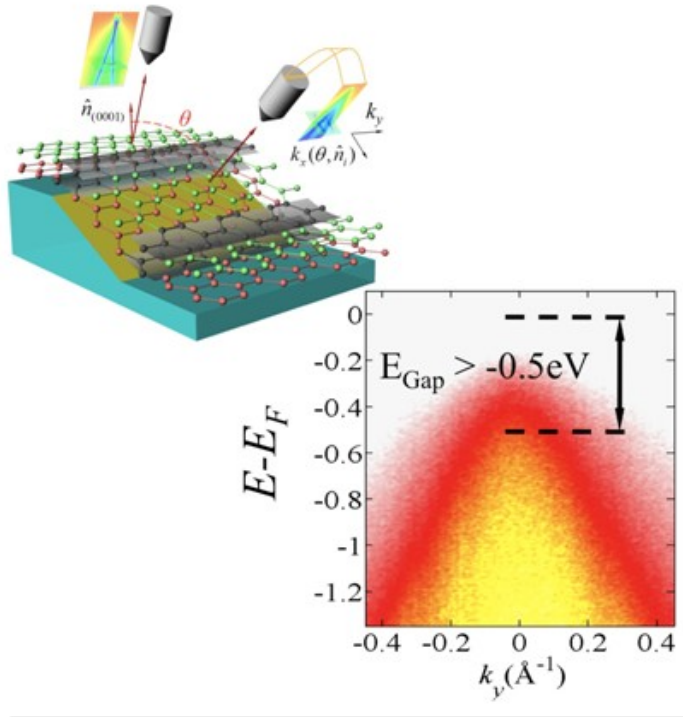
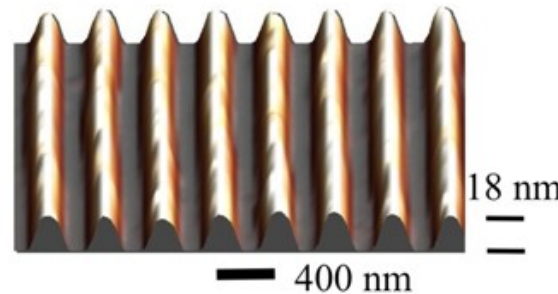


Researchers discover the Grail of Graphene Electronics: Semiconducting graphene

J. Hicks, M. Nevious, C. Berger, W.A. de Heer and E.H. Conrad
School of Physics, Georgia Tech



A semiconducting graphene Dirac cone from the grey bent graphene in the upper left schematic shows a band gap of at least 0.5 eV.



An array of SiC steps with a single atomic layer of graphene grown on the sides of the trenches. Each ribbon is 3000 times smaller than the width of a human hair.

The stumbling block to developing graphene electronics has been the inability to produce a semiconducting form of graphene. Researchers at the Georgia Tech MRSEC have finally found a solution to this illusive goal, graphene bent over SiC steps. This semiconducting graphene can operate at temperatures above 200 C and is easily scalable to industrial fabrication.