SACLAY

DIRECTION DES SCIENCES DE LA MATIERE,
DEPARTEMENT DE RECHERCHE SUR L'ETAT CONDENSE,
LES ATOMES ET LES MOLECULES,
SERVICE DE PHYSIQUE ET DE CHIMIE DES SURFACES ET DES INTERFACES

SEMINAIRE

Mardi 8 Avril 2008 à 11h00

Bâtiment 466, salle 111 - CEA Saclay, 91191, Gif sur Yvette

A Comparative Look at Epitaxial Graphene: Synthesis and Structure

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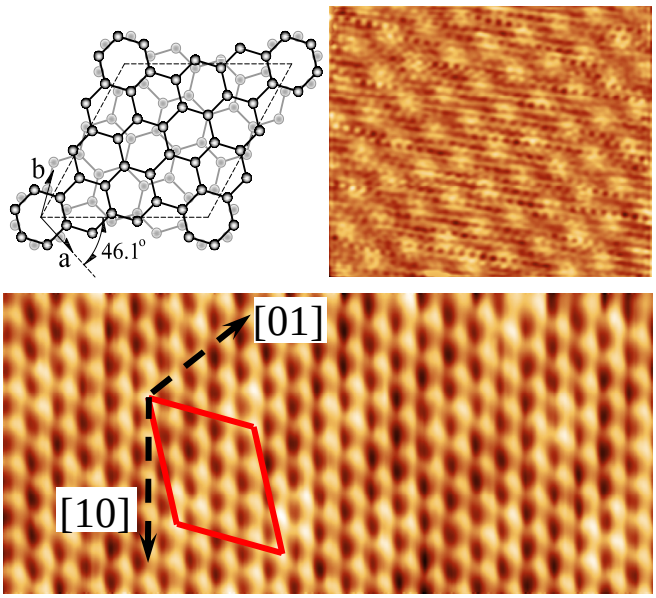
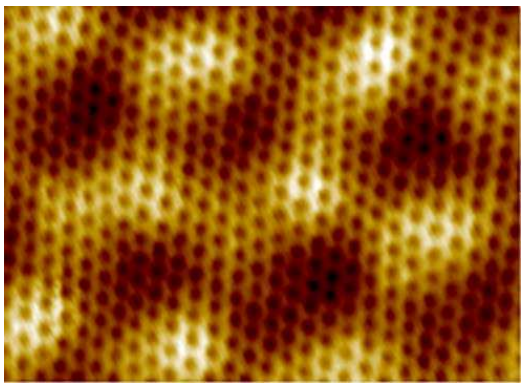
Invité par P. Soukiassian

Résumé:

Epitaxial graphene is a serious contender for post Si based CMOS materials. While a number of unique properties of an isolated single graphene sheet make it an ideal candidate, real devices will not be made from such an idealized material. An actual candidate for graphene based electronics is epitaxial graphene grown directly on an insolating substrate. At first glance, both substrate/graphene interactions and multiple layer stacking should break the unique symmetry of an isolated graphene sheet. As I will show, nature has disguised the sensitivity of changes in the electronic structure due to interplaner interactions. I will review what is know about the production of graphene on hexagonal SiC, the structure of the graphene/SiC surface and how graphene is stacked. The substrate interaction is mitigated by a buffer layer on both polar faces of SiC so that graphene layers grown on this layer behave electronically like isolated sheets. On the SiC(000-1) surface a unique rotational stacking, driven by the SiC substrate, causes multilayer sheets to decouple and again preserve the symmetry of an isolated graphene sheet.





* SERA PRECEDE D'UNE PAUSE CAFE A PARTIR DE 10H30

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