MONASH University

DEPARTMENT OF MATERIALS ENGINEERING

Seminar

NANOPATTERNED GRAPHENE: A NEW PARADIGM FOR NANOELECTRONICS AND SPINTRONICS

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USA

14th October 2009, Wednesday
4:00 p.m. – 5:00 p.m
Science Lecture Theatre S2

Nanopatterned graphene constitutes a new class of graphene-based nanostructures (GBNs), ranging from zero-dimensional (0D) nanodots, 1D nanoribbons to 2D nanohole superlattices. They exhibit many interesting electronic and transport properties showing great promise to open a new paradigm for future nanoelectronics and spintronics. In this talk, I will discuss our recent studies in using GBNs as building blocks to design novel electronic/spintronic materials and device architectures. These include “electron beam manipulators”, “quantum cellular automata”, and “spin semiconductors” with fully spin-polarized carriers. In addition, I will address briefly the issue of graphene edge stability presenting interesting quantum manifestations of graphene edge stress and warping instability.

Visitors are most welcome: Please note the parking arrangements. There is a designated Visitors Car Park (N1) clearly ground-marked by white paint and tickets, at a cost of $3/day, are available from a dispensing machine. (‘Blue’ permit designated areas are for Monash members only.). It is also possible to park at other designated Visitors Car Parks (E1, S1 and S2) on the Clayton Campus, but tickets are $1.4/hour.

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