



香港浸會大學

HONG KONG BAPTIST UNIVERSITY

FACULTY OF SCIENCE

REVISED

Department of Physics & Institute of Computational and Theoretical Studies

JOINT COLLOQUIUM

Modeling of Nanoscale Electronics

By

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Wednesday May 14, 2014

2:30pm – 3:30pm (Tea will be served)

T909 Science Tower, HK Baptist University

Abstract

Physics and theoretical modeling of nanoscale electronic devices such as single-electron transistors (SETs), single-photon generators (SPGs), quantum-dot infrared detectors (QDIPs), solar cells, and nanoscale quantum-state memory will be discussed. Various theoretical methods for modeling of low dimensional systems and nanostructures will be presented. The theoretical methods include density-functional theory within linear augmented Slater-type orbitals (LASTO), efficient semi-empirical model calculations based on k.p and effective bond-orbital model (EBOM), as well as transport calculations based on non-equilibrium Green's function method. Physical phenomena such as electron tunneling, Coulomb blockade, optical excitation, and photo-assisted transport in these devices will be explored.

All Interested Are Welcome!