

TMCS VI: Theory, Modelling and Computational Methods for Semiconductors

University of Strathclyde, Glasgow, UK
Wednesday 11th to Friday 13th April 2018

First Announcement

Modelling, theory and the use of sophisticated computational tools can represent a substantial cost and time saving for R&D. The development of high speed computer architectures has enabled widespread use of accurate methods for calculating the structural, thermodynamic, vibrational, electronic and optical properties of semiconductors and their heterostructures. This workshop, sponsored by the Institute of Physics (London), the Scottish University Physics Alliance (SUPA), EPSRC (UK) and the Hartree CECAM node (UK), will run for three days, with the objective of bringing together leading experts in the field of the theory of group IV, III-V and wider semiconductors together with early stage researchers and students who are new to the area and can benefit from an introduction to a very vast field at this influential point in their careers. **The introductory day (11th April) is a training event intended specifically for PhD students and early career researchers, with high level lectures on the major methodologies in the field.**

Abstract submission will open via <http://www.tmcuk.org> in November, with **an abstract submission deadline of 31st January 2018.**

Topics will include but are not limited to:

Application of Density Functional Theory
Tight Binding, Pseudopotential and Effective Mass Models for Electronic Structure
Empirical Potential Methods for Calculation of Structural Properties
Multi-scale Approaches
Dilute Magnetic Semiconductors
2-D Semiconducting Systems
Photonic Structures and Open Systems
Optical and Transport Properties of Quantum Nanostructures including Colloids and Nanotubes
Plasmonics
Electronic and Photonic Devices
System demands and applications

A list of **confirmed invited tutors** includes:

Matt Probert (University of York, UK) “Efficient and Accurate Density Functional Theory”
Ben Hourahine (University of Strathclyde, UK) “Density Functional Tight Binding Method”
Feliciano Giustino (University of Oxford, UK) “Introduction to GW: beyond density functional theory”
Jacky Even (CNRS Rennes, France) “Theory of Semiconducting Halide Perovskites”
Urs Aeberhard (Forschungszentrum, Julich, Germany) “Theory of Non-Equilibrium Green's Functions and transport in semiconductor devices”

The IoP's Quantum Optics, Quantum Information and Quantum Control Group will organize the thematic session on the Quantum Information Processing with Semiconductor Devices. In addition to the technical programme there will be ample opportunity to see the city of Glasgow and its surroundings. We look forward to welcoming you to Glasgow.

Ben Hourahine, Matt Probert, Stanko Tomic (Conference Co-Chairs)
For any further information please contact Ben Hourahine (benjamin.hourahine@strath.ac.uk)

Sponsors:

Institute of Physics, London
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Hartree CECAM Node UK
SUPA