

# Euro-TMCS II: Theory, Modelling and Computational Methods for Semiconductors

Wednesday 7<sup>th</sup> to Friday 9<sup>th</sup> December 2016

Tyndall National Institute and University College Cork, Ireland

## Third 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 now allows the widespread use of accurate methods for calculating the structural, thermodynamic, vibrational, electronic and optical properties of semiconductors and their heterostructures. This workshop will run for three days, with the objective of bringing together leading experts in the field of theory of group IV, III-V and wider semiconductors together with postdocs and students in their early stages who will benefit from an introduction to a very vast field at this influential point in their careers. **The introductory day (7<sup>th</sup> December) is a training event intended specifically for PhD students at the beginning of their studies, with high level lectures on the most used methodologies in the field.**

**Thanks to sponsorship from the EU MultiscaleSolar COST Action, €500 bursaries will be available for 12 PhD students who submit abstracts to the meeting and participate in the introductory day training event.**

### List of tutors:

- **Matt Probert** (University of York) “Plane-Wave DFT and LDA”
- **Ben Hourahine** (University of Strathclyde) “DFT-Tight-Binding Theory”
- **Jacky Even** (CNRS) “Modelling of halide perovskites”
- **Fabio Sacconi** (TiberCAD) “Device Simulations”
- **Stefano Sanvito** (Trinity College Dublin) “Non-equilibrium Green’s Function Methods”



Abstract submission can be made at <http://www.tmcuk.org/conferences/Euro-TMCSII/?page=submission>, with **an abstract submission deadline of 16<sup>th</sup> September 2016.**

### Topics of the meeting include but are not limited to:

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

### Invited speakers:

- **Thierry Amand** (INSA Toulouse) “Exciton dynamics & spin-orbit effects in atomically thin TMDC & their alloys”
- **Shelly Moram** (Imperial College) “Development of new multifunctional materials”
- **Patrick Rinke** (Aalto University) “Charge transfer at oxide/organic interfaces”
- **Mark van Schilfgaarde** (King’s College London) “Hybrid Perovskites”
- **Yuh-Renn Wu** (National Taiwan University) “Challenges in Optoelectronic Device Simulation”

In addition to the technical programme there will be ample opportunity to see Cork and its surroundings. We look forward to welcoming you to Cork.

Eoin O’Reilly   Stefan Schulz   Stanko Tomic   (Conference Co-Chairs)

For any further information please contact Janine Galvin ([janine.galvin@tyndall.ie](mailto:janine.galvin@tyndall.ie))

