

# CONNECT

Centre for Future Networks

<b>Position Title</b>	PhD Studentship in Computational Design of Efficient Thermoelectric Bi <sub>2</sub> Te <sub>3</sub> Thin Films
<b>Project Abstract</b>	<p>One PhD position is available in the Materials Theory Group at the Tyndall National Institute, University College Cork, Ireland, under the supervision of Dr. Ivana Savic (<a href="https://www.ivanasavic.science/">https://www.ivanasavic.science/</a>). The position is fully funded for up to 4 years, and it is available immediately.</p> <p>The goal of this project is to develop computational methods to model thermoelectric transport in nanostructured materials, and apply them to understand and design thermoelectric properties of Bi<sub>2</sub>Te<sub>3</sub>-based materials. This will involve state-of-the-art electronic structure methods to describe electronic and vibrational degrees of freedom and their interactions. Thermoelectric transport processes will be simulated using the combination of Green's function and Boltzmann transport approaches.</p> <p>This project will be a part of the larger effort undertaken within the Science Foundation Ireland Research Centre for Future Networks and Communications CONNECT (<a href="https://connectcentre.ie/">https://connectcentre.ie/</a>) to develop efficient devices for powering the Internet of Things. It will involve collaboration with Dr. Eamonn Murray, Imperial College London (theory and simulation), and Dr. Kafil Razeeb, Tyndall National Institute (Bi<sub>2</sub>Te<sub>3</sub> material synthesis and characterisation). The PhD student will also benefit from CONNECT's training programme on career development and leadership skills.</p>
<b>Location</b>	Tyndall National Institute
<b>Experience</b>	PhD applicants must hold a first class honours degree or Masters in Physics or a related discipline before the start of the studentship. A strong background in quantum mechanics, statistical physics and/or solid state physics and interest in materials modelling and computer simulation are required, as well as proficiency in English.
<b>Funding / Stipend</b>	The PhD position is funded for 4 years, including a monthly stipend and a travel budget to present at international conferences. The studentship will cover fees up to 5,500k pa and a stipend of 18,500k pa.
<b>Closing Date</b>	Friday 15 <sup>th</sup> June 2018
<b>Contact</b>	Dr. Ivana Savic ( <a href="mailto:ivana.savic@tyndall.ie">ivana.savic@tyndall.ie</a> )

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Application Process / Additional Information	<p>Early applications are encouraged. Applications should include: 1) a cover letter (1 page) explaining their interest in the project topic and mentioning any relevant background and/or experience; 2) a Curriculum Vitae. Academic transcripts and two academic references will be required after a shortlisting process takes place.</p> <p>Informal enquiries concerning this position, accompanied with CV and motivation letter, can be made to Dr. Ivana Savic (<a href="mailto:ivana.savic@tyndall.ie">ivana.savic@tyndall.ie</a>) and Dr. Eamonn Murray (<a href="mailto:eamonn.murray@imperial.ac.uk">eamonn.murray@imperial.ac.uk</a>). Details of the official application process will be communicated to the candidates on return.</p>
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