

Fully funded PhD studentships - HeatToPower: A new generation of sustainable thermoelectric materials and devices

The EPSRC and SFI Centre for Doctoral Training (CDT) in Sustainable Chemistry: Atoms-2-Products is offering 48-month PhD studentships associated with materials synthesis and characterisation in its thematic area “HeatToPower: A new generation of sustainable thermoelectric materials and devices”.

Thermoelectric materials are capable of converting wasted heat into useful electrical energy and offer new sustainable energy solutions for the climate emergency. The attainment of exceptional efficiency thermoelectric technologies is a truly multidisciplinary endeavour, with synthetic chemistry and characterisation at its core. Our posts need highly motivated organic, inorganic or physical chemists to take on the challenge of preparing new and exciting molecular thermoelectrics.

We will provide research training in synthetic or theoretical skills leading to a core PhD in chemistry but will also afford opportunities to work across disciplinary boundaries with physics and engineering co-investigators to optimise, characterise and exploit these materials’ thermoelectric performance as part of a multidisciplinary team. These posts would ideally suit those with a strong interest in sustainability and in the search for scientific and technical solutions to global energy issues.

Examples of potential projects in the HeatToPower theme include:

- Synthesis of charge transfer based organic conductors (e.g. acene-derived small molecules) and their use
- Synthesis of polymeric conductors, especially sustainable routes to EDOT/PEDOT and their analogues
- Development and synthesis of new, sustainable n-type conductors
- Synthesis and structural optimisation of hybrid organic/inorganic nanocomposites, e.g. colloidal nanocrystal quantum dots

The first year of this PhD opportunity involves a student-focused and individually tailored programme of technical and laboratory training courses and workshops, designed to provide the students with the skills and confidence required for a successful PhD project. With the support of their academic mentors, the students are also provided with a unique opportunity to design and develop their research projects.

For more information about the research topic, please contact Dr Michael Weir (michael.weir@nottingham.ac.uk) or Dr Miriam O’Duill (Miriam.oduill@nottingham.ac.uk)

For more information about the programme and how to apply, please visit:

<https://suschem-nottingham-cdt.ac.uk/index.php/apply>

Fully funded scholarships cover tuition fees, laboratory consumables and stipend and are open to home and international students.

Application deadline: 25 February 2022.