Newcastle University PhD Studentship award

Title
Exploiting Chirality in the Design of Energy Materials

Value of award
100% of International tuition fees paid

Number of awards
1

Start date and duration
September 2019 for 3 years

Application closing date
8th February 2019

Overview
During the design of new materials, researchers often look towards nature for inspiration. Indeed, bio-inspired design has long been a fashionable and successful approach in the research and development of new materials. However, despite a significant biological precedent, chirality has not generally been a key design feature for the development of new materials for mainstream technological applications, such as organic light emitting diodes (OLEDs). Many factors may have contributed to the neglect of chirality as a design criterion; however a major contributor has definitely been a lack of understanding of its effect.

In this project, we will apply combine quantum chemistry, molecular and quantum dynamics to deliver a detailed understanding on how chirality affects important properties in organic electronics. The initial focus of this work will be the role of chirality in circularly polarized light and charge (electron and hole) transport properties.

Sponsor
Faculty of Science Agriculture and Engineering and Chinese Scholarship Council (CSC)

Name of supervisor(s)
Dr Thomas Penfold: tom.penfold@ncl.ac.uk
Dr Elizabeth Gibson: elizabeth.gibson@ncl.ac.uk

Eligibility Criteria
You must be a citizen and permanent resident of the People's Republic of China at the time of application. Applicants should have a background in chemistry or physics, with strong interest in materials science. Previous experience in with computational chemistry or molecular dynamics is not a requirement, but is desirable.

How to apply
You must apply through the University’s online postgraduate application system. Apply here. To do this please ‘Create a new account’. All relevant fields marked with a red asterisk must to be completed.
The following information will help us to process your application. You will need to:
• Insert the programme code **8100F** in the programme of study section
• Select **PhD Chemistry (full time) - Chemistry** as the programme of study
• Insert the studentship code **CSC1816** in the studentship/partnership reference field
• Attach a covering letter and CV. The covering letter must state the title of the studentship, quote reference code **CSC1816** and state how your interests and experience relate to the project
• Attach degree transcripts and certificates and, if English is not your first language, a copy of your English language qualifications

**Contact**
Dr Thomas Penfold: tom.penfold@ncl.ac.uk
Dr Elizabeth Gibson: elizabeth.gibson@ncl.ac.uk