The Institute for Superconducting and Electronic Materials (ISEM) at the University of Wollongong (UOW) is seeking three high-calibre candidates to undertake PhDs in cutting-edge research and development of sodium-ion batteries. This research is part of a 4 year, $10.5m project to develop and demonstrate sodium-ion batteries in residential and utility settings.

The ISEM is a world-leading materials research group, conducting research in a wide range of fields including superconductors, electronic materials, energy materials and management systems, thin film technology, and nano-/bio-materials. The ISEM is housed within the Australian Institute for Innovative Materials (AIIM) which provides an outstanding, world-class research infrastructure environment located on the $200m Innovation Campus in Wollongong, Australia. The ISEM has been successful in obtaining a large number of competitive research grants through ARC and other funding agencies. It hosts more than 120 PhD students and staff members and has close to 40 specialist laboratories. The ISEM contributes more than 35% citations at UOW, a consistently has close to 50% of top 10 most cited publications within UOW every year. The ISEM has a long history of successful PhD completions, with 105 PhD graduates spread over 5 continents.

The three PhD candidates will each focus on separate areas of sodium-ion battery development:

- Cathode materials development – primarily focusing on Prussian Blue-based materials
- Anode materials development – primarily focusing on hard carbon materials
- Electrolyte development and optimisation

The PhD candidates will work closely with the world-renowned researchers at the ISEM, and also with the industry partners involved in the project. The candidates will play a key role in developing materials that meet the requirements of the project, and will get to see their work demonstrated in real-world sodium-ion battery packs.

Successful applicants will have a bachelor degree in materials science, materials engineering, chemistry or related disciplines. Experience in battery materials fabrication, characterisation and development would be extremely beneficial, and will be highly valued during the selection process. The successful candidate will be expected to clearly and concisely report on their research and findings to a number of different audiences, and excellent communication skills are essential.

Applicants must address the selection criteria listed below, provide a CV, and include a brief cover letter outlining their research interests. For further technical information about the project and PhD positions, please contact Prof. Shi Xue Dou (shi@uow.edu.au), or for details on the scholarship and application process contact Jon Knott (jknott@uow.edu.au).

**Key Details**

**Stipend:**
$26,500 per annum, tax free – 3.5 year term. Top-up scholarships may be available for exceptional candidates.

**Closing date for Applications:**
Sunday 26th June 2016

**Applications:**
Applications must address the selection criteria outlined below, and should be sent to:

Prof. Shi Xue Dou (shi@uow.edu.au)
Dr. Shulei Chou (shulei@uow.edu.au)

cc: Jonathan Knott (jknott@uow.edu.au)
Selection Criteria:

Essential:

- Bachelor degree in materials science, materials engineering, physics or chemistry or related discipline
- Knowledge of electrochemical processes and principles of battery operation
- Demonstrated experience in battery research – sodium-ion battery experience highly desired
- Demonstrated experience in battery materials processing and characterisation
- Demonstrated experience in battery cell fabrication
- Ability to work independently as well as in a team environment
- Demonstrated excellent communication skills
- English language proficiency: IELTS > 6.5

- Applicants for the cathode materials scholarship should have experience in working with Prussian Blue or layered oxides
- Applicants for the anode materials scholarship should have experience working with hard carbon, or Sn- or P-based materials
- Applicants for the electrolyte scholarship should have experience working with electrolytes, additives and binders. Applicants with organic chemistry or electrochemistry backgrounds are preferred.