

We seek an Undergraduate (UG) student to conduct in-depth research

We pay up-top £2,990 for two months of work

AELIB- Preliminary excel-based model for assessing the environmental impacts of LIB recycling

The Recycling of Lithium-Ion Batteries (ReLiB) project (<http://relib.org.uk/>) seeks to fund a student to conduct in-depth research. for up to 2 months this summer. The aim AELIB is to understand the conditions required to ensure the sustainable management of LIBs when they reach EOL as recycling of LiBs and modelling its environmental impacts is limited i.e. EverBatt model. This model is a closed-loop battery recycling cost and environmental impacts model. However, the method is applicable for a few type of cell designs and a few geographical locations. Moreover, the data are generally based on engineering calculations or laboratory experiments. AELIB will use extracted and analysed life cycle inventories data from the literature and databases to provide a preliminary excel model with secondary data. The data could be substituted by primary data from the RELiB project in due course. Whilst the data could also be of use for WS3 and its life cycle inventories, other work streams (WS1-WS2) that work on technical issues of reuse or recycling rather than LCA and indeed other Faraday Institution Fast Starts can benefit from this work. The student will compile a set of comprehensive, useful and complete data sets. Data might come from reports, academic literature, databases, internal studies as well as industry data. The undergraduate studentship might has the following working steps:

1. Learn the EverBatt Model-1 week
2. Provide the first phase of model (pyrometallurgical processes)-2 weeks
3. Develop an excel based inventory and simple model architecture – 1 week
4. Provide second phase of model (Hydrometallurgical processes)-1 week
5. Add other phases to the model, robotic disassembly-physical processes- 1 week
6. Report writing- Finalizing the established model and final report- 1 week

The proposed start date is the 15th June with a potential end date mid-August, but there is flexibility and the exact dates can be agreed with the supervisory team. UG students from Civil Engineering, Chemical Engineering or Chemistry or any other related discipline are welcome to apply. Send us your CV and a statement why you are interested in conducting the UG Summer Experience by the 7th June 2020. Should you have questions do get in touch with us.

Faraday Undergraduate Summer Experiences (FUSE) 2020

Supervisor Team: Dr. Mohammad Ali Rajaeifar and Dr. Oliver Heidrich

School/University: School of Engineering, Environmental Engineering Group, Newcastle University

Should you have queries contact: oliver.heidrich@newcastle.ac.uk

Do you want to apply please complete this form by 7th June- <https://forms.ncl.ac.uk/view.php?id=8446481>