

NEXGENNA International Symposium on Sodium-Ion Battery Technology



Wednesday 12th February
09.15 – 16.00

Lancaster University

Lancaster Conference Centre, Lancaster, Lancashire, LA1 4YX

Venue Information:

<https://bit.ly/2SimUUm>

Look for “LCC” above “SOUTH WEST CAMPUS”

Leave the M6 motorway at Junction 33 and take the A6 north towards Lancaster.

For Lancaster University main campus - turn right at the third set of junction traffic lights on the A6 into the University main drive.

For Lancaster Conference Centre Turn right at the roundabout at the top of the main University driveway. Follow the road down to by the netball courts and Management School.

We recommend that delegates use Visitor Car Parking Zones H, G or F when visiting the Conference Centre. Car Parking permits can be collected from the reception desk at the conference centre.

Please note that we politely ask delegates to refrain from parking within the grounds of Lancaster House Hotel.

Car parking can be very busy on campus, so we advise delegates to arrive in good time to find a space. There are usually spaces available in Visitor Car Parks K and J - these are both a 5 minute walk from the Conference Centre.

NEXGENNA – Delivering a revolution in cost-competitive battery technologies

Most current rechargeable batteries for transportation are based on the use of lithium. However, the relatively high cost, the somewhat limited global abundance of lithium, and environmental concerns around the sourcing of lithium mean that there is a demand for a lower-cost alternative that would increase the uptake of energy storage technologies in a number of sectors. Sodium-based batteries could be such an option, particularly for static storage, where cost is a more important factor than weight or performance.

This project will accelerate the development of sodium-ion battery technology by taking a multi-disciplinary approach incorporating fundamental chemistry right through to scale-up and cell manufacturing. Its aim is to put on the path to commercialisation a sodium-ion battery with high performance, low cost, that has a long cycle life and is safe.

Many models of future grid networks based on renewable energy incorporate storage on a local or domestic level. Its inclusion increases network resilience and ensures the efficiency of small-scale renewable sources. The widespread use of commercial Na-ion batteries, that this project will facilitate, would aid the realisation of these models, and fulfil the need for low-cost electric transport options in the highly polluted and densely populated conurbations in developing economies.

Project Innovations:

This project benefits from strong academic-industrial links across the value chain. Industry partners bring strengths in terms of materials, cell fabrication and electrode manufacturing. By working closely with these partners, the project team will ensure the cutting-edge science is readily exploited and successfully deployed, making the UK a leader in this technology for stationary and low-cost transportation applications.

List of partners:

- University of St Andrews
- University of Cambridge
- University College London
- Lancaster University
- University of Sheffield
- Science and Technology Facilities Council
- Diamond Light Source
- Three industrial collaborators
- And five leading overseas research institutes

Meeting Schedule

- 09.00 Coffee and Registration
- 09.15 **Welcome**
Dr Nuria Tapia Ruiz – Lancaster
- Session 1 – Chair: Dr Rob Armstrong**
- 09.25 [Prof Marek Marcinek – Warsaw University of Technology](#)
Compatibility studies of Huckel salt-based electrolytes with new sodium electrode materials
- 09.50 [Dr Laurence Croguennec - ICMCB, Bordeaux](#)
Polyanionic Materials at the Positive of Na-ion Batteries
- 10.15 [Dr Laure Monconduit - Institut Charles Gerhardt Montpellier](#)
Negative electrodes for Na-ion batteries based on alloys and beyond
- 10.40 [Prof Lorenzo Stievano - Institut Charles Gerhardt Montpellier](#)
The sodiation-desodiation mechanism of Sb-based electrode materials revealed by operando spectroscopy assisted by chemometric data analysis
- 11.05 [Dr Nuria Tapia Ruiz – Lancaster](#)
Layered transition metal oxides as electrode materials used in Sodium-ion batteries.
- 11.30 **Refreshment Break**
- Session 2 – Chair: Dr Nuria Tapia Ruiz**
- 11.55 [Dr Alexandre Ponrouch - ICMAB, Barcelona](#)
Reliable electrochemical setup for Post Li battery testing
- 12.20 [Dr Reza Younesi - Uppsala University](#)
Towards stable interfacial reactions in sodium-ion batteries

- 12.45 [Dr Jerry Barker - Faradion](#)
High Performance Na-ion Batteries: from Lab to Commercial Scale
- 13.10 **Lunch and Networking**
Session 3 – Chair: Prof John Irvine
- 14.10 [Dr Montse Galceran - CIC](#)
Green, low-cost and scalable synthesis of Triphylite-NaFePO₄ as positive electrode for sodium-ion batteries
- 14.35 [Prof Clare Grey - Cambridge](#)
A Title
- 15.00 [Dr Eddie Cussen - Sheffield](#)
Sodium Ion mobility in Disordered Perovskites and Implications for Battery Materials
- 15.25 [Dr Robert Armstrong - St Andrews](#)
Layered Sodium Manganese Oxides for Na-ion Batteries
- 15.50 **Closing remarks**
Prof John Irvine, St Andrews
- 16.00 **Close**

Anton Paar was founded in 1922 and is a global manufacturer for specialised laboratory instrumentation. With over 20 years' experience in the UK market for synthesis research, we offer products that assist with the efficiency of manufacturing bespoke materials including advanced battery technology.

Please feel free to visit the stand in **Syndicate Room 2A** to discuss your requirements and view the instruments on display.

You can find online resources for reading material linked to Anton Paar products in the links below;

<http://www.kip.uni-heidelberg.de/cmm/equipment/hydrothermal>

<https://iopscience.iop.org/article/10.1149/2.1721713jes>

<https://pubs.rsc.org/en/content/articlelanding/2019/ra/c9ra02257k#!divAbstract>