

BATTERY INNOVATION CENTRE

PIONEERING THE BATTERY RESEARCH

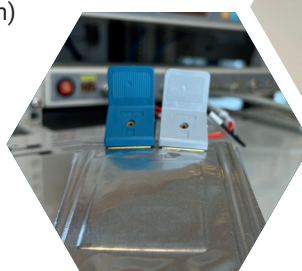
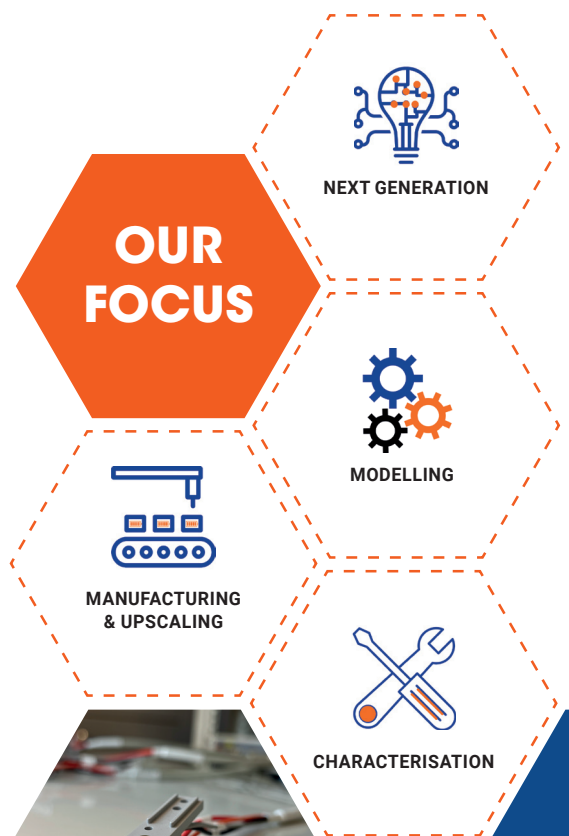
CHEMICAL LAB

WE PROVIDE

- Advanced Li-ion Battery Technologies
- Solid-State Battery Technologies
- Upscaling: From Coin cell to pouch cell
- Advanced Battery Manufacturing
 - Digitalisation and Optimisation
 - Self-Healing Functionalities
 - Sensor Implementation in the Cell
- Degradation Detection and Post-mortem
- Battery Parameterisation and Characterisation

EQUIPMENT

- Glovebox (Argon)
- Dryroom (-60°C DP)
- In-situ XRD (Cu K_α and Mo K_α radiation)
- Fumehoods
- Electrode Manufacturing & Cell Assembly
 - Mixers (Vacuum, Vortex)
 - Doctor Blade Coater
 - Hot Rolling Press
 - Hydraulic Die Cutter
 - CR2032 Cell Crimper
 - Tab Welding Machine
- Splittable Cells (Li-ion and Solid-State Battery Research)
- 150 Battery Cycler Channels (Bio-logic, Neware)
- 45+ Impedance Spectroscopy Channels (Bio-logic)
- Access to AFM, μ -CT, SEM etc.



Pouch cell



CR2032 Coin cell



In-Situ XRD



ELECTROMOBILITY RESEARCH CENTRE

BATTERY LAB

RESEARCH & DEVELOPMENT

- Modelling: Electrochemical - Thermal - Electrical - Lifetime
- Multi-scale digital twin models
- Smart Thermal Management, Cooling systems
- Smart State Estimations: State-of-X (SoC, SoH, etc.)
- Second life performance and modelling
- Standardisation of batteries and functionalities
- Digital Product Passport
- Battery digital twin development

EQUIPMENT

- 300+ cell-level channels
- 12 module-level channels
- 12 climate chambers including walk-in rooms
- 42 impedance spectroscopy channels
- Thermal imaging equipment
- Thermal test benches
- Hardware in the Loop and Cloud computing

OUR FOCUS



THERMAL MANAGEMENT & COOLING SYSTEMS



ADVANCED BATTERY MODELLING



VEHICLE TO GRID & GRID INTEGRATION



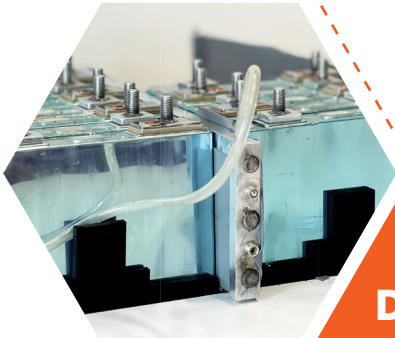
SECOND LIFE



BATTERY SIZING & AGEING



MANAGEMENT SYSTEMS



DIGITALISING BATTERY DEVELOPMENT



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