

Access provider – Tyndall

Select access type - Energy Storage

Energy Storage - Access description

Access to nano-characterisation lab facilities for assessment of solid-state capacitor and battery materials.



Technical offering

- Variable-temperature (4.2 K to 475 K) , wafer-level I-V,CV measurements
- Surface topography, roughness, step height of solid state battery materials via AFM
- Top down and cross-sectional SEM of solid state battery materials.

Main equipment

- TTPX cryogenic probe station.
- Dimension 3100 AFM .
- JSM-7500F Field Emission Scanning Electron Microscope.

Typical applications

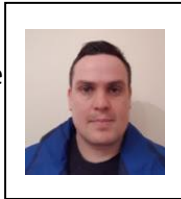
Advanced process development and/or reverse engineering of solid state battery/supercapacitor materials and stacks for next generation IOT applications.



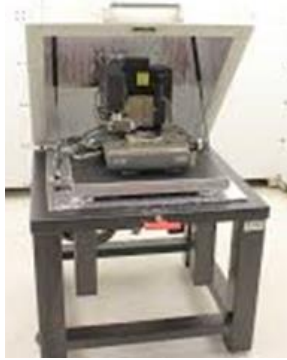
Case study

An SME or research team are developing new materials for a smart battery/supercapacitor but they need access to characterisation equipment to optimise this. EnABLES will provide access to the facilities required. A typical project will offer 10 days access to the Tyndall researchers and equipment required.

Responsible

Dr Micheal Burke



 A black, heavy-duty cryogenic probe station with a complex mechanical structure and a vertical probe arm.	 A white scanning electron microscope with a large base, a vertical column, and a computer monitor displaying an image.	 A grey atomic force microscope with a large, open protective hood and a sample stage.
<p>Lakeshore Cryogenic Probe Station/ Model TTPX</p>	<p>JSM-7500F Field Emission Scanning Electron Microscope</p>	<p>Dimension 3100 AFM</p>
<p>Keys specifications</p>		
<ul style="list-style-type: none">• Accommodates up to 51 mm (2 in) diameter wafers• Operation from 4.2 K to 475 K• IV, CV measurements	<ul style="list-style-type: none">• Resolution 1nm• Magnification $\times 25$ to $\times 1,000,000$• Accelerating voltage 0.1kV to 30kV	<ul style="list-style-type: none">• X-Y Scan Range $\sim 90\mu\text{m}$ square• Z Range $\leq 4.6\mu\text{m}$• Sample Size $\leq 150\text{mm}$