

Access provider – CEA-LETI – RAPHAEL SALOT (CEA LETI)

Energy Storage - Access description

Access to capabilities for Material and Process evaluation of Thin Film Solid State rechargeable micro-batteries



Technical offering

- Use of a reference Thin film solid state Battery Architecture with dedicated set of masks (up to 200 mm substrates) and qualified performances to benchmark added value of new material and/or process
- Protocols and dedicated Test Vehicle to evaluate and characterize packaging solutions active battery material and processes performances
- Protocols and dedicated Test Vehicle to evaluate and characterize packaging solutions and thin film moisture barrier performances
- Stacking of existing standalone thin film batteries

Main equipment

- Sputtering PVD deposition tools (cluster type) allowing deposition with different targets sizes (from 2' to 13' diameter) allowing preliminary tests of new materials and qualification on more industrial materials
- PECVD, ALD and spin coater tools for barrier materials and processes
- Patterning processes and tools for actives battery layers: photolithography, laser
- Assessment of electrical performances in button cell configurations
- Ageing tools for barrier films

Typical applications

Commercialisation of electrical energy storage solutions to enable energy harvesters as an energy sources for IoT sensors, for example to overcome the intermittent nature of the harvesting source such as solar or vibrational energy.




Case study

An SME or research team are developing new materials or new manufacturing processes for a smart battery but they need access to optimise this and benchmark with state of the art material in a reference architecture. 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 Raphaël Salot



		
<p>ENDURA Cluster Tool</p>	<p>MBraun argon glove box</p>	<p>CORIAL 210 IL ICP-RIE etching tool</p>
<p>Keys specifications</p>		
<ul style="list-style-type: none">• 5 depositions chambers: DC, DC pulse, RF• Substrate up to 200 mm• Connected to an Argon glove box	<ul style="list-style-type: none">• Button cells manufacturing tools inside• Electrical feedthroughs included	<ul style="list-style-type: none">• Up to 200 mm substrate• high density plasma, helical antenna• 2 MHz ICP RF generator