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SYDNEY



Electrolytes and Thin Films for Solid State Batteries

Battery safety is a key challenge, as is the practical implementation of batteries over a wide range of temperatures without additional heating or cooling. Solid state batteries present a solution to these challenges, providing inherently safe batteries that are stable over applicable temperature ranges.

Competitive advantage

- Expertise in materials development
- Analysis of conductivity and diffusion at bulk and atomic scales
- Spectroscopic and crystallographic methods for characterising materials
- Working towards development of all-solid-state thin film batteries

Impact

- Understanding the role of grains and grain boundaries on bulk diffusion
- Evaluating the type of atomic-scale diffusion
- Linking structure to local and long-range diffusion
- Using in situ methods to elucidate phase evolution

Successful applications

- Developed a testing apparatus for the operando study of thin film batteries using synchrotron X-ray diffraction during operation.

Capabilities and facilities

- Materials synthesis
- Pulse laser deposition growth of certain electrodes
- Access to key analytical techniques such as solid-state NMR, surface analysis and electron microscopy
- Use of unconventional techniques such as quasi-elastic and inelastic neutron scattering

Our partners

- CEA

More Information

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