

The Ideas to Industry Lab

Na-NiCl₂ batteries as safe and environmentally friendly stationary battery storage

Development of safe and environmentally friendly ceramic Na-NiCl₂ battery cells, for the implementation in battery modules and testing of battery systems

The Vision

The Ideas to Industry Lab was established to create a bridge between world-class fundamental research and impactful, industry-ready solutions for some of the world's most urgent challenges. With a shared commitment to innovation, the partnership brings together German precision and ceramic excellence with Australian applied engineering and regional insight.

Our vision is to create a flagship international collaboration that:

- Develops integrated, scalable solutions in water treatment, electrolysis and fuel cells, industrial testing (NDT), advanced manufacturing, and energy storage systems
- Accelerates translation of research and industry-led pilot projects into commercial technologies, public infrastructure, and clean energy ecosystems
- Provides shared access to laboratories, testing facilities and IP
- Trains the next generation of engineers, researchers and technical specialists via joint R&D and PhD programs
- Demonstrates how globally distributed collaboration can drive sovereign capability and environmental resilience



Assembly of Na-NiCl₂ battery cells. © Fraunhofer IKTS

Why it Matters

From climate adaptation to critical minerals, industries and governments around the world face mounting pressure to transition to clean, intelligent and resilient systems.

Water scarcity, carbon emissions, and infrastructure degradation are not just technical challenges – they are global imperatives. By combining Fraunhofer IKTS's deep technology platforms with ECU's regionally relevant, industry-aligned research, The Ideas to Industry Lab delivers **Global Science with Local Solutions:**

- Practical, deployable innovations for Australian industries and communities
- High-tech exports of German–Australian IP to global markets
- Stronger economic and academic ties between Europe and the Asia-Pacific
- A collaborative blueprint for future international research alliances

This partnership is about more than research – it's about delivering impact that is local, sustainable and global.

Na-NiCl₂-Battery

Stationary energy storage systems are an essential component for a stable power supply from renewable energies. Storing renewable energy with sustainable, environmentally friendly salt batteries is the key to a reliable, clean future. The Ideas to Industry Lab applies Fraunhofer IKTS's world-leading ceramic technologies and ECU's applied engineering to transform storage systems.

Expertise:

- Synthesis of solid-state ion conductors and production of tubular solid electrolytes
- Cell development for Na-NiCl₂ including the production of prototypes
- Design, development and testing of Na-NiCl₂ battery modules
- Technology and process evaluation, cost calculation and market analyses

Impact: Efficient, cost-effective, and environmentally friendly innovative stationary battery systems for industries and communities.



Cerenergy 5 kWh battery module (with 20 cells, 100 Ah). © Fraunhofer IKTS



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Partner with us

The Ideas to Industry Lab is structured to foster deep, sustained, and outcome-driven collaboration with industry partners across Australia and internationally. It integrates ECU's strengths in systems engineering, clean energy and infrastructure with Fraunhofer IKTS's capabilities in ceramic systems, electrochemical technologies and material diagnostics.

Whether you're a start-up scaling clean-tech innovation or a large enterprise modernising your operations, The Ideas to Industry Lab offers structured pathways to research integration and technological advantage.

Let's build a future together

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