

The Ideas to Industry Lab

Advancing Innovation and Applications in Industrial Testing

Testing and monitoring material and component integrity. Serving aerospace, hydrogen infrastructure, transport, energy, water infrastructure and composites sectors

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, ceramic excellence and non-destructive testing knowledge 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



Sensor ring for monitoring welds on offshore foundation structures. © 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.

Industrial Testing

Smart Testing for Safer Infrastructure

The Ideas to Industry Lab develops SHM and NDT technologies that detect faults, monitor performance, and optimise safety across sectors. The customer is supported from the selection of the appropriate measuring method through to the turnkey monitoring or NDT system.

Expertise:

- Ultrasonic and Acoustic Testing
- Eddy-Current and Robotic Inspection
- Optical Coherence Tomography
- Laser Speckle Photometry
- X-Ray Tomography and X-Ray Backscattering
- Digital Twins and AI Analytics

Impact: Serving aerospace, hydrogen infrastructure, transport, energy, water infrastructure and composites sectors.



Robot-assisted CFRP inspection with eddy current. © Fraunhofer IKTS



Department of
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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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