Accelerate Your R&D with the AI-Discovery Engine

The AI-Discovery Engine offers Australian industry a unique opportunity to accelerate R&D, de-risk innovation, and develop a future-ready workforce. By partnering with us, you gain access to a \$2.7M national facility and world-leading AI expertise to solve your most pressing chemical challenges—from sustainable materials to next-generation pharmaceuticals—at a fraction of the in-house cost.

The Platform Behind the Discovery Engine

The AI-Discovery Engine is a unique, end-to-end chemical optimization solution. It provides an unparalleled advantage by integrating two powerful assets:

- The Predictive Core at UNE: The Discovery Engine is guided by a powerful High-Performance Computing (HPC) facility and state-of-the-art AI, located at the University of New England. This allows us to design, screen, and optimize experiments virtually before they ever reach a lab.
- The AI-Chem Experimental Network: The AI-Chem Experimental Network: These computational designs are then deployed for validation across the network's national the AI-Chem Automation Network-a national \$2.7M ARC-funded robotic platform operated by the consortium of partner universities (UOW, UNSW, UON, and UNE).



Your Strategic Advantage

A partnership with us provides a decisive advantage, enabling you to:

- Accelerate Your R&D Pipeline: Dramatically shorten development timelines by using predictive simulation to identify the most promising pathways before they reach the lab.
- **De-Risk Innovation and Lower Costs:** Save significant time and capital by eliminating unpromising candidates early. Our engine focuses your experimental efforts only on the most viable options.
- **Discover Untapped Solutions:** Our integrated AI and simulation approach uncovers non-intuitive pathways and identifies optimal conditions that traditional R&D methods cannot see, allowing you to leapfrog competitors.

• Access World-Leading Expertise: Our multidisciplinary team sits at the nexus of quantum chemistry, artificial intelligence, and robotic automation. A partnership embeds this unique expertise directly into your R&D process.

How It Works: The Discovery Loop

Our process is a continuous, self-improving cycle. Predictive simulations generate hypotheses, which are tested via high-throughput robotic validation. The experimental data is then fed back into our AI models, making the next cycle of predictions even more accurate and efficient.

Target Applications & Industries

We are actively seeking collaborations with industry leaders to solve challenges in:

- Advanced Manufacturing & Materials
- Sustainable Agrochemicals & Fertilizers
- Renewable Energy & Low-Emissions Technology
- Recycling & Waste-to-Value Transformation
- Next-Generation Pharmaceuticals

A Partnership Model Built for Industry

Leverage your R&D budget through collaborative projects co-funded by the Australian Research Council (ARC).

- Maximized Investment: Your contribution (cash or in-kind) is more than matched by the ARC, directing significant resources to your project while giving you access to the entire \$2.7M platform.
- Clear Commercial Path: Our flexible IP management framework is designed to align with corporate expectations, ensuring a clear path to commercialization.
- Future-Ready Workforce: Projects include dedicated PhD students and postdoctoral researchers, creating a pipeline of highly trained talent for your organization.

Contact Us to Begin

Let's discuss how the AI-Discovery Engine can solve your most complex challenges:

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