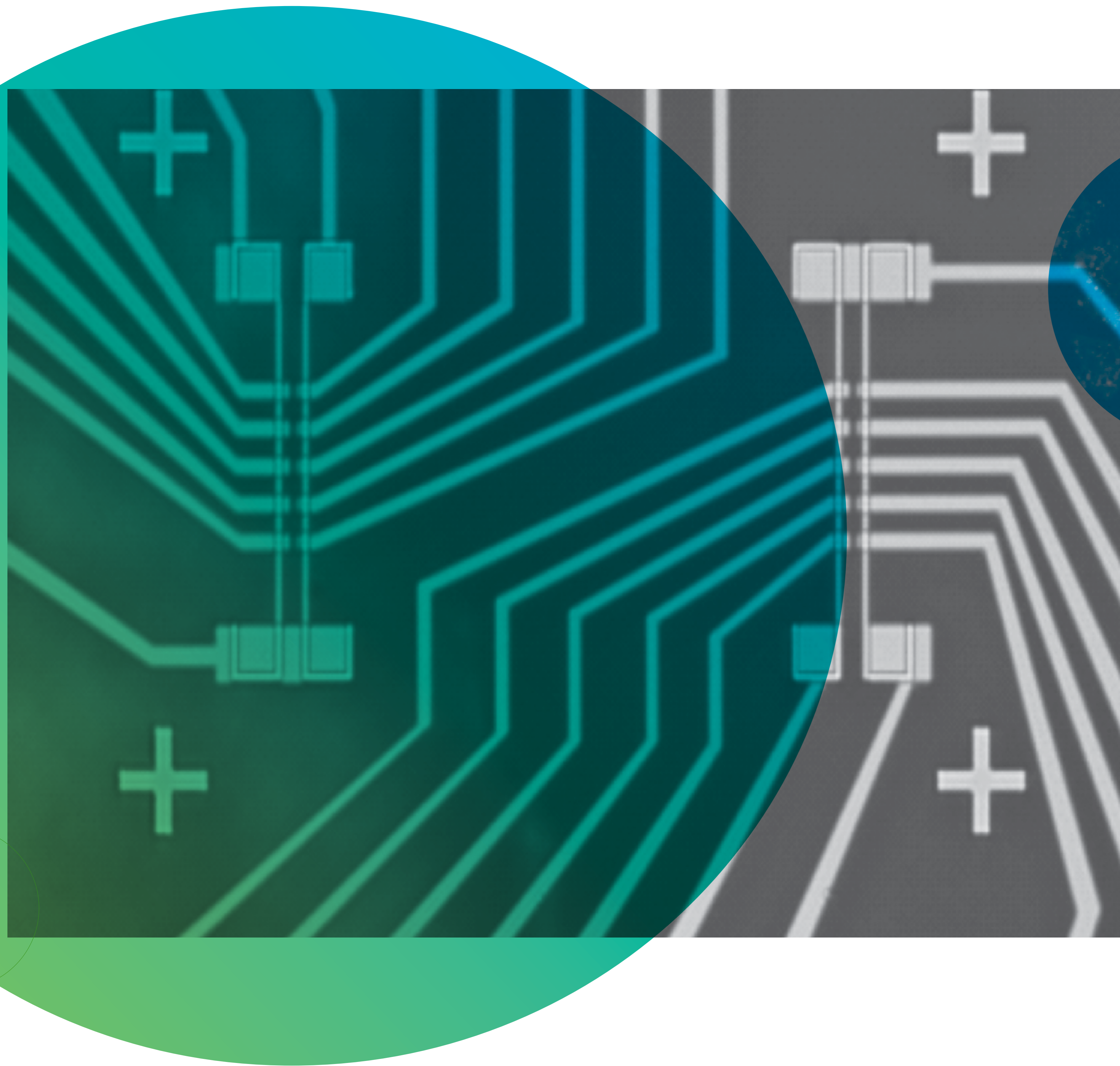


# DELIVERING FOR INDUSTRY CELLIX



## INDUSTRY PROBLEM STATEMENT

Cellix develops and commercialises instrumentation in the area of microfluidics for cell-based assays. The development of novel early diagnostics platforms, using microfluidic technology for reliable, high-sensitivity screening and detection of small amounts of informative biomarker molecules of human diseases, has strong commercial benefits.

## CRANN VALUE ADD

Nanotechnology plays a prominent role in the development of new materials and methods for the early diagnosis and treatment of inflammatory conditions, infectious diseases and cancer. Researchers in CRANN used magnetic barcode systems for enhanced molecular detection. This technology is a novel recognition system for identifying biomolecules in a liquid environment (e.g. blood or serum samples). This work has resulted in the development of patentable technologies.

CRANN adopted a multi-disciplinary approach with several parallel research trends working in close coordination: nanowire production, the generation of a prototype microfluidics system, the functionalisation of magnetic nanoparticles with antibodies and the design of prototype magnetic sensor arrays for incorporating into the microfluidics device.

This approach aims to deliver a custom designed library of antibodies, each recognising and tagging a required molecule with a specific barcode signature. Analysis can be performed in real time with single moiety sensitivity which means a very high throughput, cost effective, targeted diagnostic assay system.

## CRITICAL CRANN ENABLERS

- Multi-disciplined approach to problem solving.
- Access to Type II biological laboratory, cleanroom and materials deposition and processing toolsets.
- Nanoparticle synthesis and segmented magnetic nanowires development.
- Biocompatibility and toxicology analysis.
- Size selective labelling – nanoparticles ingested by cells.
- Advanced high content screening analysis.
- Fundamental understanding of the design and modification of bio-interfaces.
- The design and integration of a prototype magnetic sensor system.
- IP Protection of a platform technology with multi-sector applications (Health, Food and Security).

## INNOVATING NANOSCIENCE

