

CRANN OPENS IRELAND'S MOST ADVANCED NANO RESEARCH FACILITY

LAB IS CRITICAL PART OF INFRASTRUCTURE TO HELP IRELAND COMPETE GLOBALLY FOR FUNDING AND JOBS

Dublin 27th April 2010 - CRANN, the TCD and UCC based nanoscience research institute, today opened its TCD based, €12 million Advanced Microscopy Laboratory (AML), a world class nanoscience research facility, which features some of the world's most powerful microscopes, allowing material to be viewed at the atomic scale. The CRANN AML will allow Ireland to compete globally to win new research funding and foreign direct investment that previously would have been beyond our capability. Importantly, the facility will also provide direct value to indigenous companies working in the medical device, ICT and pharmaceutical sectors. The CRANN AML, which was funded by the Higher Education Authority and Science Foundation Ireland (SFI), was officially opened by the Minister for Labour Affairs, and Public Service Transformation, Mr Dara Calleary, TD.

Minister Dara Calleary said: "The CRANN AML is a national asset driving competitiveness for Irish academia and industry enabling Ireland to leapfrog other countries, moving up the international league tables to attract research, jobs and funding we would have missed out on previously without the appropriate infrastructure. Of €150 billion in goods and services exported by Ireland in 2008, it is estimated 10% were enabled by nanoscience and related nanotechnologies. By focusing on the area of nanotechnology there is the potential to grow this figure to 20% allowing Ireland to take a significant share of an estimated global market of €3 trillion in 2015. The CRANN AML is a critical piece of the infrastructure that will help us achieve that goal".

"The vision and joined up thinking by the HEA and SFI in coming together to fund the CRANN AML is to be commended," the Minister added. "It is an excellent example of how Ireland's smart economy is enabled through high quality research programmes, state-of-the-art infrastructure and highly trained, technically skilled personnel. In addition it is an example of how appropriate joined up thinking at Government level can enable economic benefits."

The CRANN AML facility is a national shared access facility open to all researchers from academia and industry. The facility provides these researchers with access to unique state-of-the-art infrastructure which significantly enhances Ireland's international competitiveness in delivering research firsts and providing added value to industry. The facility will also ensure that every year hundreds of Ireland's brightest young researchers will be trained on world leading tools, providing a sustainable platform for our smart economy.

The microscopes at the AML are amongst the most powerful visualisation tools available anywhere in the world. They allow researchers to see and manipulate materials at the atomic scale – the very building blocks of nature. For example, the CRANN AML houses a Helium Ion microscope which has enabled CRANN researchers to obtain a unique insight into how blood platelets and cancer cells interact, which leads to the spread of cancer throughout the body. This work will help the medical community understand how cancer spreads, ultimately leading to improved treatments. Multinational technology company HP has also been working with the CRANN AML to develop flexible displays– next generation screens that have the performance of traditional screens but have the look and feel of paper.

Prof. John Boland, Director of CRANN at TCD, noted: “The value of the CRANN AML facility is that it can deliver short, medium and long term impacts. In the short term we are working with industry, particularly indigenous companies, to improve existing products that are coming to market; in the medium term, working with companies like HP and Intel we will develop next generation products; and in the longer term we are carrying out fundamental research which will lead to improved technologies, electronic and medical devices and potential new patient treatments.

“This focus on collaboration with industry is critical to deriving value from this investment and we look forward to using it as a magnet both to attract FDI as well as supporting indigenous companies who are developing new products for global export.”

The CRANN AML was jointly funded by the HEA and SFI. It comprises a custom refurbished, state of the art 6,000 square foot facility in the Trinity Technology and Enterprise Campus, which was funded by the HEA; this building is located in the new vibrant commercial and cultural development in the heart of Dublin's Docklands. Key instrumentation in the AML including the Helium Ion Microscope, the Scanning Electron Microscopes and the Focused Ion Beam were funded by SFI. The Transmission Electron Microscope was funded by the HEA through PRLT14 funding awarded to the INSPIRE consortium.

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About the CRANN AML

- The CRANN (Centre for Research on Adaptive Nanostructures and Nanodevices) AML is a world-class nanoscience research facility which houses a critical mass of high end scanning and imaging electron and ion beam microscopes.
- This national asset is an open-access facility allowing researchers from academia and industry in Ireland to compete internationally for the first time in terms of microscopy capability.
- It provides researchers a competitive advantage in imaging, measuring, characterising and developing nanomaterials and devices with improved mechanical, magnetic, electrical or optical properties.
- These materials and devices will be the building blocks for the next generation of electronic devices, medical devices and drug delivery systems, solar cells and smart clothing.
- The range of industries that are already working with the AML or who could benefit from this facility is vast, from integrated circuit ("chip") manufacturers to medical devices and pharmaceuticals.
- The type of engagement with CRANN can be tailored to meet the company's technical requirements, ranging from short targeted projects, addressing an immediate production or product issue, to larger research programmes that integrate into the company's own product development roadmap.
- The facility enables researchers from academia and industry throughout Ireland to attract FDI and supports indigenous companies who are developing IP in the area for global export.
- The facility will further contribute to the success rate of Irish researchers in winning European research funding - from the beginning of the Seventh Framework Programme (FP7), the success rate amongst researchers from Irish companies and higher education institutions in securing funding is significantly above the European Member State average and ahead of National targets.

About CRANN:

- CRANN (The Centre for Research on Adaptive Nanostructures and Nanodevices), was established in 2003 as a nanoscience research institute through a Science Foundation Ireland Centres for Science Engineering & Technology (CSET) award.
- It is interdisciplinary working in partnership with the Schools of Physics, Chemistry, Pharmacy and Pharmaceutical Science based at Trinity College Dublin as well as the Department of Chemistry at University College Cork.
- CRANN has been funded predominately by Science Foundation Ireland, and has also obtained competitive funding from the Higher Education Authority, Enterprise Ireland, industry, the EU commission through FP6 and FP7 and philanthropic sources, notably Dr Martin Naughton.
- Internationally Ireland is ranked sixth globally for the quality of nanoscience research output; it is estimated that CRANN is contributing >70% of this output.
- CRANN is comprised of a team of over 200 researchers, led by 17 Principal Investigator (PIs), each of whom is an internationally recognised expert in their field of research.

- CRANN works at the frontiers of nanoscience developing new knowledge of nanoscale chemical and physical phenomena, with a particular focus on new device and sensor technologies.
- CRANN has two state-of-the art buildings both custom designed and constructed for the purpose of leading edge nanoscience research; the Naughton Institute is a 6000m² research facility on the campus of TCD and the CRANN AML.
- CRANN is involved in collaborative research projects or contract research with over thirty companies.
- CRANN researchers have generated 42 invention disclosures, 40 patent applications across international territories and 5 patents, with three licenses and with CRANN PIs spinning out three companies.
- CRANN has obtained €12M of industry committed funding in the last five years and has an annual recurrent research budget of ~ €6M.
- On a national basis CRANN leads the INSPIRE consortium (www.inspirenano.com) which comprises all of the foremost nanoscience researchers in Ireland based across eight leading academic institutions.
- CRANN, in partnership with the Tyndall National Institute, will also co-host the Competence Centre for Applied Nanotechnology. This is a new initiative to enable research provider organisations to partner on an industry defined research programme.
- For more information see www.crann.tcd.ie