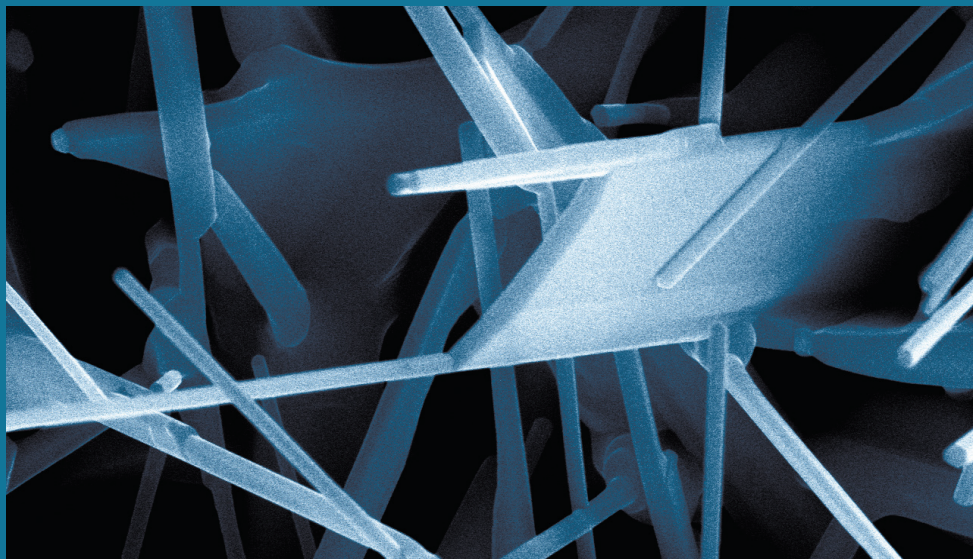


The Physics of Innovation



Ollscoil Chathair Bhaile Átha Cliath
Dublin City University



Contact Us

Contact the School of Physical Sciences at DCU, in order to:

- Enhance your company's R&D efforts
- Tap into specific research expertise
- Access the next generation of talented scientists
- Access specialist facilities

Please contact our dedicated Enterprise Engagement Coordinator:

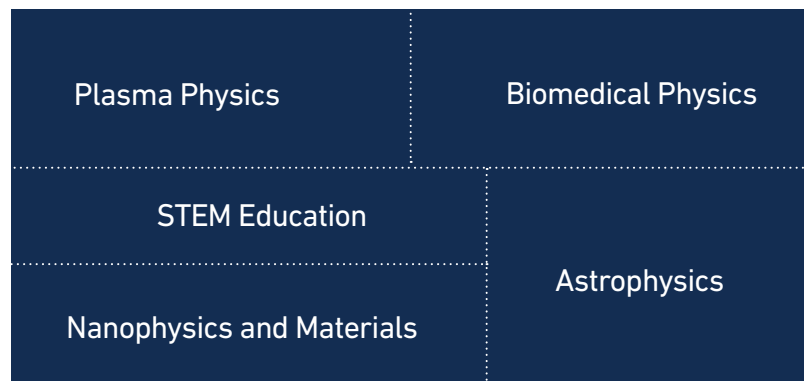
greg.hughes@dcu.ie

Making Connections

Physics underpins a wide range of technologies and industry sectors, from ICT, semiconductors, smart materials, medical technologies, energy and finance. For example, new devices and emerging technologies require the use of advanced materials and an understanding of physics plays a key role in providing these important advances and innovations.

At Dublin City University (DCU), our excellent undergraduate and postgraduate physics programmes are underpinned by world class physics research activities. Our current research focus includes solving real world problems in materials science, nanotechnology and biomedicine, as well as modelling complex systems to answer fundamental questions relevant to future energy sources, such as fusion and future IT solutions such as quantum computing.

DCU Physics researchers are actively engaged in many of DCU's research centres and key research is concentrated in the areas of:



DCU is also at the forefront of physics education research in Ireland, and through the CASTel research centre, we lead a number of EU funded research projects in physics/science education which informs our world class undergraduate and postgraduate teaching and learning.

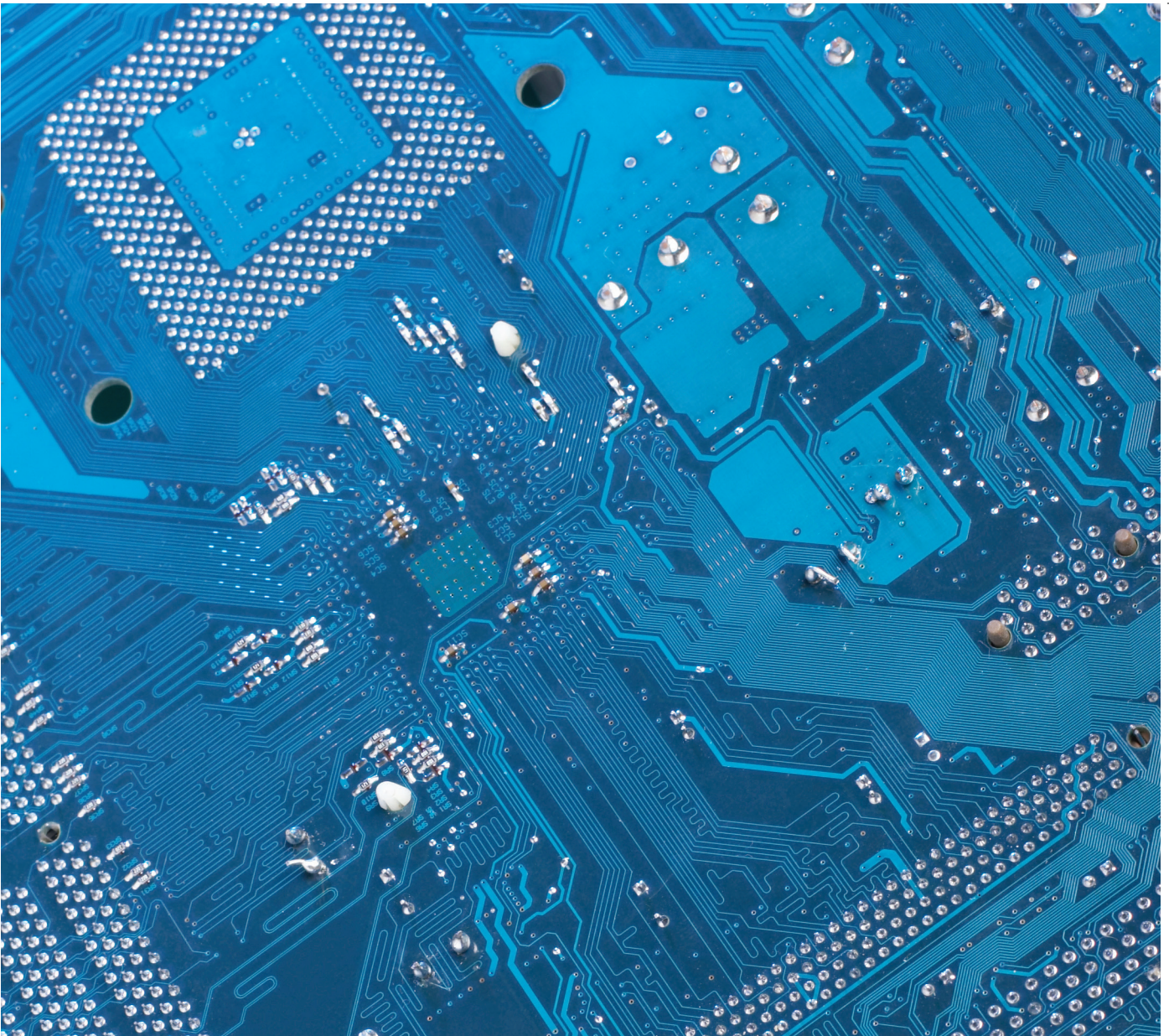
Working with Industry

As Ireland's University of Enterprise, DCU is recognised for its engagement across all industry sectors. We are consistently a top performing educational institution in commercial engagement. We actively collaborate with industry and have established a leading position nationally, in terms of licences, options and assignments. We understand the challenges of industry and, through a close alignment between our researchers and business development professionals, we can promptly deliver collaborative R&D programmes customised to industry needs and priorities.

The university has undergone meaningful engagement with over 400 companies since 2008. The School of Physical Sciences, in particular, have partnered with many companies and organisations through collaborative projects funded by European Union (EU), Enterprise Ireland (EI) and Science Foundation Ireland (SFI). Researchers in the School have also engaged in contract research and consultancy in order to address the needs of individual companies.

In relation to undergraduate programmes, many companies have engaged with the School through the INTRA programme, where students are placed with companies during their studies, and also through final year projects where the student carries out the project in a university-enterprise collaboration. Through these activities, our students have provided many innovative insights for companies over the years and, in turn, they themselves have benefited greatly from this engagement. Many of our graduates have subsequently been employed by our industry partners. Innovative companies have also funded both DCU PhD students and their own employees to conduct their PhD on research targeted to the company's requirements through Irish Research Council (IRC) - funded programmes .

We wish to continue and expand these enterprise engagement activities. If your company is interested in driving innovation, being at the forefront of new technology or sourcing new intelligence, then Physics at DCU is open to your collaboration.



Our research engagement with the School of Physical Sciences in DCU has greatly added to our fundamental understanding of material science issues in copper diffusion barrier layers.

Dr John Plombon, Engineer,
Intel Components Research Division, Oregon, USA

Working with DCU Physics

We have a strong motivation in engaging with you on your problem or topic of interest and we are experienced in moving beyond theory into practice, including field deployment of working prototypes. We work closely with our business development team in our Research and Enterprise Hubs to connect our expertise with suitable industry partners.

Offsetting Costs

We have extensive experience of various national and international schemes that part fund relevant research which can help companies to offset R&D costs. In each of the last five years DCU has executed the largest number of innovation partnership awards from Enterprise Ireland among Irish 3rd level institutions. (These awards can fund up to 80% of costs). Furthermore, through our extensive network and success in Europe to date, we can help companies secure European funding towards R&D activities.

Consultancy

Companies can tap into expertise at DCU Physics by engaging our staff members in a short-term consultancy project. Under our consultancy terms and conditions, all IP from the study will belong to the company. Our standard consultancy agreement which is available online can be used in this instance or companies can provide an alternative.

Contract Research

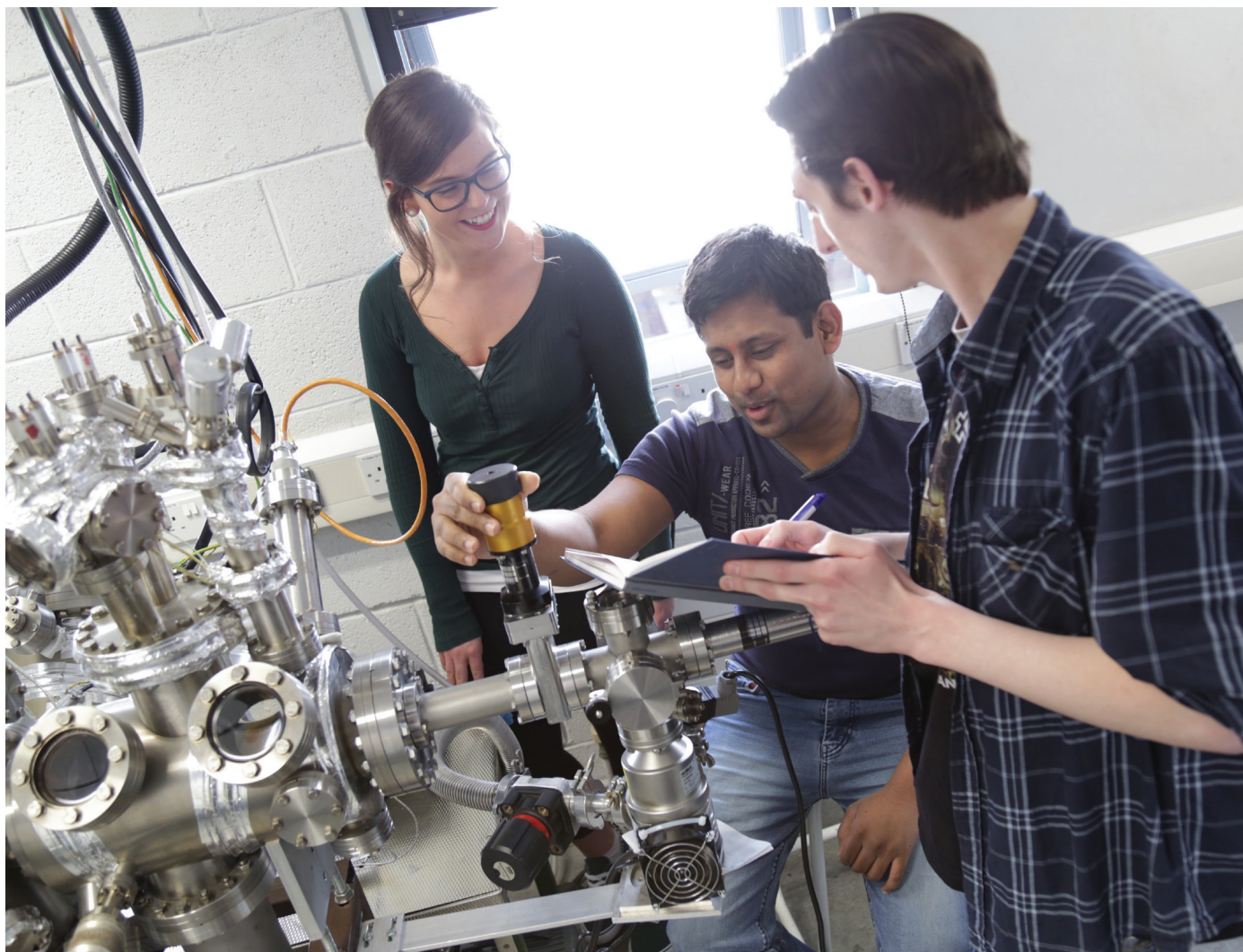
Through access to specialised expertise and equipment, we can help solve your research problems. In relation to contract research, we agree the specifications of the work and the price. We then carry out the work and deliver the appropriate report and other outputs. You will own any IP that is created.

Collaborations

We can collaborate with your staff on a defined topic and we are very flexible in our approach. For projects that are co-funded through national or international supports we can help you to meet the right researchers and make it a rewarding process for all involved.

Current research collaborations include


Intel (Ireland and Global) in the research and development of semiconductor devices as well as the use of digital technologies for innovation in education; Korean-based Souon in plasma aided manufacturing, and US-based Beckton-Dickinson in flow cytometry.



The quality and experience of my INTRA work placement with Ocean Optics went far beyond my expectations. I feel privileged that I was involved in cutting edge research and development of a product that was subsequently brought forward to market availability, all within my 8 month placement. I feel I was exposed to a wealth of business management situations that will stand as great benefit to me in my future career. As a highly motivated student who is keen to work in research and development, a placement with Ocean Optics was a favourable option."

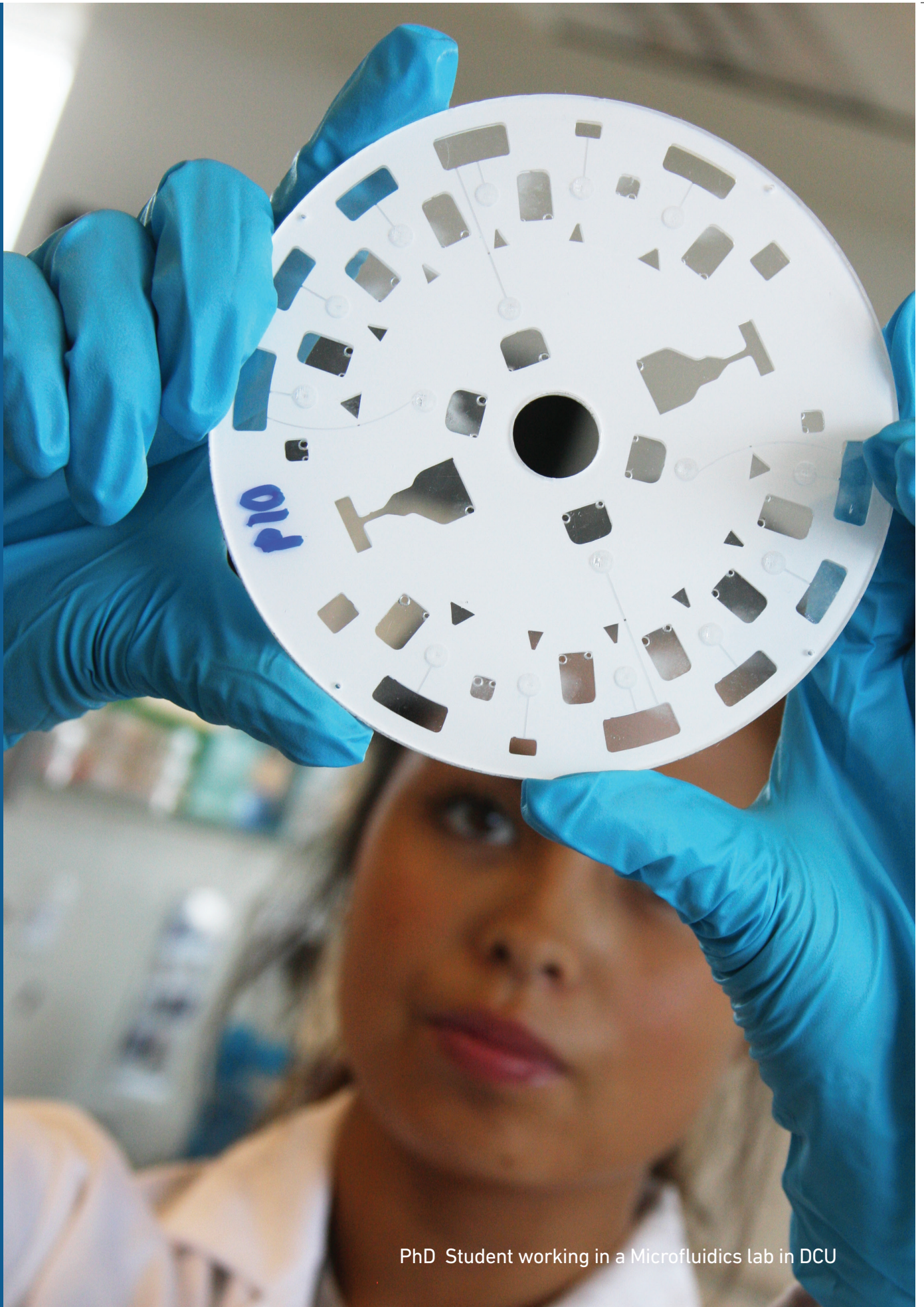
Cleo Harvey,
DCU PhD Student

2015 Winner of the DCU Fryar Medal, the Institute of Physics in Ireland Earnshaw Medal and an international Undergraduate Award in the Mathematics & Physics category for her final year project, conducted in collaboration with an industrial partner.



When you study
physics, you
learn how to deal with
complexities, noise
and uncertainties....
A degree in Physics
makes you very broad
and adaptable.

Michael Idelchik,
VP, Advanced technologies,
GE Global Research



PhD Student working in a Microfluidics lab in DCU

Access to Our Talent

Undergraduate Study

DCU has produced over 800 physics graduates in the last thirty years and many of these have taken up key leadership roles in industry and academia. As our physics research is forming the basis of next generation technological advancements, we are producing employable graduates that are helping to drive innovation through the translation of basic scientific knowledge into the development of new technologies. There are many ways and stages for you to access our talented undergraduate and postgraduate students.

INTRA

INTRA (INtegrated TRAIning) is DCU's internship programme which has been at the heart of the DCU experience for over 25 years. Third year Physics students undertake a compulsory INTRA internship, for 6-9 months, as part of their programmes. This experience enables them to apply knowledge acquired in lectures to an industrial setting. The INTRA programme will offer you the opportunity to connect your business with our ambitious and energetic students who can bring their specialist skills, motivation, energy and new ideas into your organisation. It will also help you to assess and identify potential future talent.


Industry-focused Final Year Projects

In their fourth year all of our physics students undertake a major project, which, in many cases is of specific interest to industry, and often follows on from their INTRA experience. This ensures that they are not just graduating with experience in physics experiments and analysis, but are adept at planning the work, meeting deadlines, communicating outcomes and writing a report. This broad experience positions our graduates well for employment in industry.

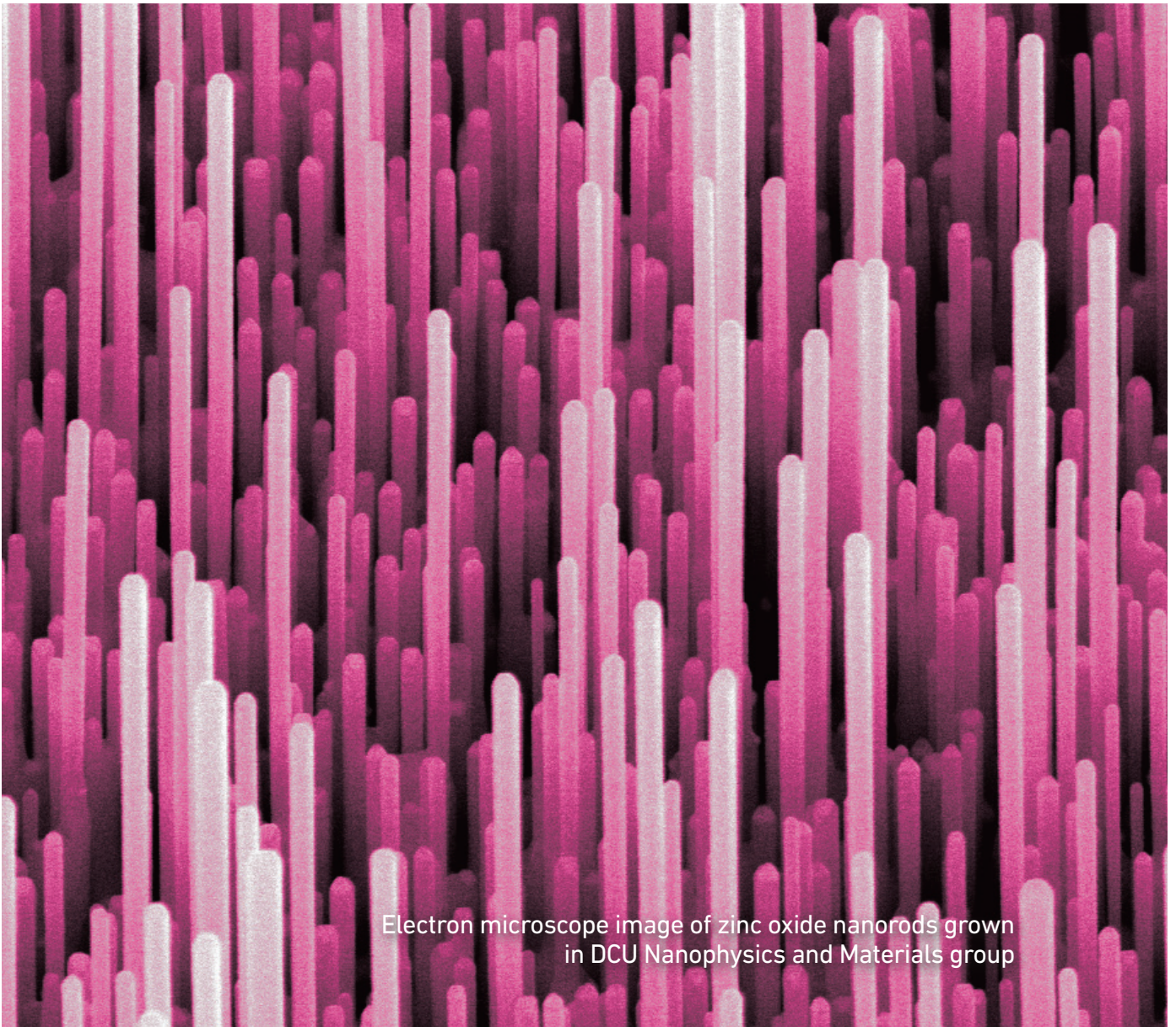


We have taken DCU Physics students under the DCU INTRA internship programme and our involvement in this programme has been very beneficial, allowing us to access talented and enthusiastic students. In addition we have followed on from the INTRA placement with a fourth year project placement, which allows us to continue the relationship and to pursue certain activities to a greater extent in a timely and cost-effective manner with students that are known to the company.

Dr. Doug Reid, Engineering Manager
Tomra, Sorting Solutions - Food

 We have seen huge benefits as a result of interacting with DCU and then being able to proliferate that knowledge into engineering throughout the factory. As a result of that we're able to make better processing recipes, better processors and more stable processes”.

Niall MacGearailt,
Process Control Systems Researcher, Intel Ireland



Electron microscope image of zinc oxide nanorods grown in DCU Nanophysics and Materials group





We successfully hired a new employee through the IRC Scholarship Programme. Working with DCU in this way really gives us a competitive edge in our market. The PhD focused on developing next generation plasma diagnostic instruments.

David Gahan
CTO, Impedans Diagnostics

Postgraduate Study

If you are looking to innovate by investing in R&D you can avail of funding from the Irish Research Council (IRC) to directly employ your own researchers or co-fund researchers based at DCU to undertake a PhD. This can be done in a number of ways:

Employment Based Postgraduate Scholarship Programme

This programme provides you with an ideal opportunity to employ additional R&D staff or fund an existing employee to undertake a PhD whilst working on a project of value to your business during a four year programme. The total cost to the company, including the employee basic salary is only €8,000 per annum (over 4 years).

Enterprise Partnership Postgraduate Scholarship Scheme

This option allows you to gain access to researchers based at DCU who are working in your particular field. This researcher works closely with your company whilst carrying out their scholarship programme including a work placement. The student benefits from an enhanced research experience as well as having the opportunity to learn key transferable skills relevant to their future career. You will have the opportunity to input to and steer their research as well as leverage the expertise and facilities provided by the University. For future recruitment you also have access to top class graduates trained in your specific field. The investment for companies in this programme amounts to only €8,000 per annum over 4 years and there are no employment contracts applicable.

DCU Centres



Sample Industry Partners





