

Overview

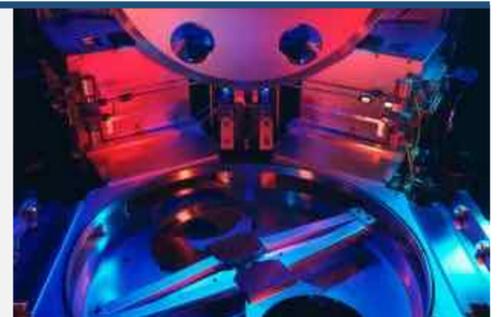
The **National Centre for Plasma Science and Technology** (NCPST) is an internationally recognised multidisciplinary centre which brings together DCU scientists and engineers to address both fundamental and applied questions relating to the advancement and development of plasma related research for the benefit of industry and society. NCPST is renowned for its contribution to solving current and future challenges faced in nanomanufacturing and for its influence on the successful adoption of plasma as a disruptive technology in new segments of our economy including medical devices and food processing.

The centre conducts both basic and applied research, and it has a strong track record of major projects with many established industry sectors, and an equally vigorous history of creating high tech start-ups.

Research Areas

Research in NCPST is divided into five key areas:

- Future and emerging plasma technologies in areas such as biomedicine, agriculture, food and sustainable energy
- Nanoscience & photonics
- Plasma modelling/high performance computation
- Sources, diagnostics & measurement
- Astrophysics



The NCPST portfolio of competences is distinctive in Ireland and internationally. With experts in key fields within plasma such as plasma physics, plasma processing, plasma diagnostics and controls, electronic engineering, surface engineering and materials metrology, the NCPST works with companies to understand the basic science, measure the key plasma parameters and implement controls. Likely to be increasingly important in future are links to areas not usually connected with plasma science such as biological, medical and food sciences.

Why work with us?

When it comes to plasma, the NCPST is one of the leading institutes in the world and it has worked with many industry partners in applying plasma technology to provide solutions in the many areas including: advanced semiconductor and nanomanufacturing, surface engineering of mechanical components and medical devices. The centre is well known internationally through its collaboration with companies from Intel to NASA.

Because it uniquely combines scientific and engineering skills to exploit plasmas in practical applications, NCPST is well known for translating its research into products and processes that work for industry. Expertise also extends to sectors such as agri-food, healthcare, environment and energy. Many companies are working with NCPST to solve technical problems, get access to new innovations, or avail of expert training for their people through the NCPST training centre. Companies are also employing highly trained innovative graduates in plasma science and engineering from DCU.

Senior Centre Members



Prof. Miles Turner

Miles graduated from Imperial College London with a BSc in Physics. He received his PhD from St Andrews University, Scotland. Following his post-doctoral appointment in St Andrews, he joined DCU in 1991 as a lecturer in the School of Physical Sciences. He became senior lecturer in 2001 and associate professor in 2003. He was appointed Director of NCPST in 2004.



Dr. Stephen Daniels

Stephen is currently the Director of the Sustainable Economies and Societies Research and Enterprise Hub. His primary scientific competence is in the area of integrated circuit manufacturing processes and novel thin film deposition techniques. He also has extensive experience in product design and development.



Prof. John Costello

John Costello has been Executive Dean for Science and Health since 2011. He was Head of the School of Physical Sciences from 2004 to 2009. His research interests include Fast and Ultra Fast Laser Matter Interaction, Optical Plasma Diagnostics and Vis/ UV, Extreme-UV and Soft x-ray imaging and Spectroscopy.



Prof. Turlough Downes

Turlough Downes is a Professor of Mathematical Sciences. His research interests include Astrophysics: Star Formations, High Energy Astrophysics and Computational Fluid Dynamics.