

## Overview

The NCSR focuses on the science and applications of chemical sensors and biosensors. We use life sciences, physical sciences, engineering, computational science and medicine for new scientific discovery and solving problems in healthcare, the environment and industry. Established in 1999, the Centre has a membership of over 150, including 20 Principal Investigators. Our research programme includes both fundamental and applied projects and is focused on developing future sensing for economic and societal benefit. The Centre is deeply engaged with local, national and international industry supporting day-to-day production, developing new materials and devices and driving new products through licensing of its IP portfolio.

## Research Areas

### Environmental Technologies

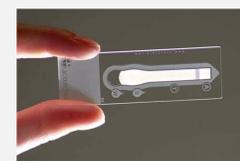
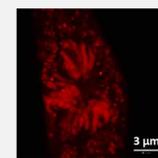
- Development of new platforms, materials and detection systems that will provide enhanced functionality for environmental monitoring systems
- Provision of flexible access to the information generated from these systems in real life deployments
- Development of self sustaining autonomous sensor networks that can be embedded and dispersed in the environment

### Nanomedicine

- Nanotechnology-based Ultrasensitive Diagnostics
- Targeted Drug Delivery and Release
- Sub-wavelength resolution fluorescence imaging

### Fundamental Materials Science

- Smart, multifunction materials whose properties can be chemically, electrochemically or optically switched
- Molecular deposition and immobilisation
- Low power approaches to liquid transport on surfaces or within microchannels
- Materials for energy scavenging and storage leading to self sufficient platforms
- Nanostructures and nanomaterials such as conducting polymers



## Why work with us?

**Expertise:** The NCSR has distinctive expertise that cuts across several industrial sectors including biomedical devices, biopharma, polymers and environment. This expertise includes:

- |                                     |                  |
|-------------------------------------|------------------|
| - Functional & Switchable Materials | - Photocatalysis |
| - Biomolecular Recognition          | - Nanomaterials  |
| - Separations Science               | - Photonics      |
| - Surface & Interface Science       | - Microsystems   |
| - Electrochemical Sensors           | - Biosensors     |

**Facilities:** The NCSR is fully equipped with advanced facilities and instrumentation to support cutting edge, multidisciplinary sensor research. The equipment and facilities of the associated Schools (Biotechnology, Chemistry and Physics) also contribute to the research programmes.

Specialist facilities include: microfabrication facilities; constant temperature rooms; biohazard containment units and laser laboratories, all housed within a single location to enhance cross-disciplinary interactions.

We welcome external researchers, commercial partners and other customers from all disciplines wishing to use the laboratories, specialised research equipment and facilities.

### Key Advantages:

- New concepts and approaches that combine shorter term 'evolutionary' incremental advances with longer term 'revolutionary' disruptive advances (i.e. ability to manage and mitigate risk).
- Integration across a range of key technologies necessary for sample-to-answer devices.
- Proven track record for excellence and delivery of outputs for industry partners.
- Strong synergies and alignments between 'informed' fundamental research and shorter term applied research that responds to a specific need or challenge.



## Next Steps

**RESEARCH FUNDING OPPORTUNITIES:** The NCSR can address the key analytical and measurement needs of Irish and European industry. We are open to a range of interactions from one off measurements on specialised instruments to more strategic long term partnerships that address key bottlenecks in your company's critical path. The Centre has a long track record of securing funding from the European Union, Enterprise Ireland and Science Foundation Ireland to jointly fund this research.



### CONTACT DETAILS

Prof. Robert Forster, Director, National Centre for Sensor Research, Dublin City University.  
Tel 353 1 7005943  
Email: Robert.Forster@dcu.ie