

SCHOOL OF ELECTRONIC ENGINEERING

A dynamic and friendly research environment in both established and groundbreaking areas of electronic, information and communications technology research.

The School of Electronic Engineering at DCU has over 70 postgraduate research students working in modern well-equipped key technology laboratories. Much of the research involves wide-ranging national and international collaboration. Since its foundation in 1980, the School has been successful in attracting national and international funding for its work. Typical funding sources are: private industry; Enterprise Ireland; Health Research Board (HRB); charitable foundations; EU programmes; Programmes of Advanced Technology (PAT); Science Foundation Ireland (SFI); Irish Research Council for Science, Engineering & Technology (IRCSET); National Rehabilitation Board (NRB) and the Higher Education Authority's Programme for Research in Third Level Institutions (PRTLII).



Postgraduate Research Opportunities

The advanced degrees awarded to graduates of the School are Master of Engineering (M.Eng.) by research and Doctor of Philosophy (PhD.). In practice, completion of the M.Eng. takes at least two years and the PhD. at least three. Candidates admitted to the School for these degrees carry out research on a topic of direct interest to at least one member of the academic staff.



Student Support

Most postgraduate students are supported by research studentships. Typically, a studentship pays the full tuition fee and provides a tax-free monthly stipend for the tenure of the appointment. Studentships are offered by the recruiting laboratory/group on a competitive basis, when available. Some interviews and student visits may be arranged to determine the level of shared interest between the student and the group. International students are offered twelve-month appointments wherever possible to meet visa requirements. Responsibility for securing a research studentship remains with the student. Alternatively, students may apply directly for an IRCSET studentship (www.ircset.ie). Before making the application, any applicants eligible for IRCSET awards should seek guidance from the School staff member with whom he/she wishes to work.

Next Step

Apply

Send CV and letter of application to:

Research Convenor
School of Electronic Engineering
Dublin City University
Dublin 9 Ireland

T: +353 (0) 1 700 5131

F: +353 (0) 1 700 5508

E: ee_research@eeng.dcu.ie

W: www.dcu.ie/electronics

Admission to DCU

For more information contact:

The Registry
Dublin City University
Dublin 9 Ireland

T: +353 (0) 1 700 5338

F: +353 (0) 1 700 5504

E: registry@dcu.ie

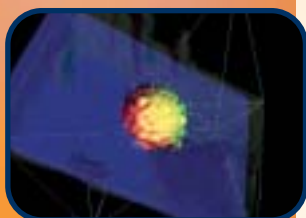
W: www.dcu.ie/prospective/postgraduate_research.shtml

Research Activities

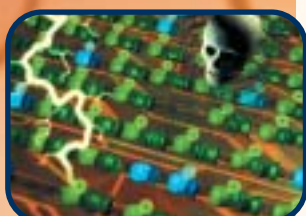
The School focuses its research activities into four main areas. For additional information and to find out about current available research opportunities, please refer to the specific research group's website or email address.



Atomic force microscope image of cuprous chloride thin film.



Computer aided diagnosis for cancer detection.



The Digital Environment: Self-replicating computer programmes (coloured geometric objects) occupy the RAM memory of the computer (orange background). Mutations (lightning) cause random changes in the code. Death (the skull) eliminates old or defective programmes. (Photo: Anti-Gravity Workshop.)



Experimental set-up carried out in the RF and Optics lab.

1. Microelectronics and Materials

- Development of thin film materials, material deposition techniques and plasma process control.
- Growth and development of novel photonic structures for Si technology platforms. Advanced nanocharacterisation technology: micro-Raman spectroscopy, deep level transient spectroscopy, x-ray topography. Photoacoustic spectroscopy.
- High-level synthesis, Hardware description languages.

Hardware Description Language
implementation laboratory (HDL)

xiaojun.wang@dcu.ie

Microelectronics Research Laboratory (MRL)

www.eeng.dcu.ie/~mcnallyp/mrlhome.html

Thin Film Materials Research Laboratory (TFMRL)

stephen.daniels@eeng.dcu.ie

2. Signal and Image Processing

- Computer vision and medical imaging: image processing and analysis for industrial, robotic, computer-aided detection and diagnostic biomedical applications. Visual biometrics, virtual reality and image visualisation.
- Object-based image and video analysis; multimedia semantic scene analysis; multispectral, 3-D video and audio scene analysis; multimedia content linking for personalised retrieval; low power hardware acceleration for MPEG-4 algorithms on mobile devices.
- Speech synthesis and speech recognition.

Speech Processing Group (SPG)

scaifer@eeng.dcu.ie

Vision Systems Group (VSG)

www.eeng.dcu.ie/~vsl

Visual Media Processing Group (VMPG)

www.eeng.dcu.ie/~vmpg

Centre for Digital Video Processing (CDVP)

www.cdvp.dcu.ie

3. Systems and Control

- Realise 'lifelike' phenomena in artificial media (especially computers) to improve our understanding of natural living systems and to open new technological opportunities for engineering artificial 'living' systems.
- Instrumentation; H infinity control system design; time series modelling; intelligent systems; control of electrical machines.
- Virtual community projects; eAccessibility

Artificial life group

www.eeng.dcu.ie/~alife

Control Systems Group (CSG)

jim.dowling@dcu.ie

PEI Technologies

jim.dowling@dcu.ie

Virtual Communities Group (VCG)

<http://vcg.rince.ie>

4. Telecommunications

- Systems and software issues; communications protocols and their performance; switching and transmission over copper; optical and wireless links.
- Modelling of: high-speed electronic circuits; electromagnetic wave scattering and propagation.
- Wireless sensor networks.

Performance Engineering Laboratory (PEL)

www.eeng.dcu.ie/~pel

Radio & Optical communications laboratory (R&O)

www.eeng.dcu.ie/~opticlub

Research Institute in Networks & Communications Engineering (RINCE)

www.rince.ie

RF Modelling and Simulation group (RFMODSIM)

www.eeng.dcu.ie/~rfmodsim

Switching & Systems Laboratory (SSL)

www.eeng.dcu.ie/~bssl