
University of
Strathclyde
Science

Study at Strathclyde

The Physics Department is in the centre of Glasgow, the largest and liveliest city in Scotland, a country of outstanding scientific traditions and natural beauty. We are one of the most successful Departments of Physics in the UK at attracting funds for research and one of the largest in Scotland. Our students enjoy friendly teaching, great sport and recreation facilities and (for those whose first language is not English) a boost to their language skills. A number of undergraduate and postgraduate studentships are available for the most qualified applicants.

International students can choose from three types of degree, depending on their qualifications:

- **BSc/MPhys** - Students without a recognised University degree who want to study in Scotland (2 to 5 years depending on previous studies)
- **MSc** - Students with a recognised University degree who want to improve their skills and job prospects specialising in an advanced topic and studying in Scotland (1 year)
- **PhD** - Students with a recognized University degree who want to become researchers in Academia or Industry (3 to 4 years). See http://www.strath.ac.uk/physics/postgraduatestudents/availablephdprojects/ for currently available PhD projects

A Physics degree from Strathclyde University is an excellent qualification and provides many excellent opportunities to further your career.

Scholarships

Specific scholarships for international students on taught Masters courses include:

- Faculty of Science International Excellence Scholarships - http://www.strath.ac.uk/science/scholarships/
- International Postgraduate Scholarships - http://www.strath.ac.uk/rio/postgraduatescholarships/award_27684_en.html
- Scotland's Saltire Scholarships - http://www.strath.ac.uk/rio/postgraduatescholarships/award_29429_en.html
- Santander Scholarships - http://www.strath.ac.uk/rio/postgraduatescholarships/award_598238_en.html
- Students from Brazil are eligible to apply for Brazil Science without Borders 'sandwich' and full PhD scholarships - http://www.strath.ac.uk/rio/sciencewithoutborders/

Search the complete list of Scholarships at: http://www.strath.ac.uk/search/scholarships/index.jsp

Language Requirements

In all cases, applicants, whose first language is not English, are required to demonstrate an appropriate level of competence in the English language. For the Department of Physics this is deemed to be IELTS (academic) at 6.0. To satisfy United Kingdom Borders Agency requirements no element of IELTS should be below 5.5. If you require information about other English language qualifications then please contact the Department.

The University's English Language Teaching department offers pre-entry and pre-sessional courses for new international students from January each year, for IELTS score from 4.0 upwards. See http://www.strath.ac.uk/elt/courses/englishforpostgraduatestudycourse/ for further details. Full fee paying students are entitled to one month of pre-sessional English course free of charge.

For More Information

International Student Blog: http://international.science.strath.ac.uk/

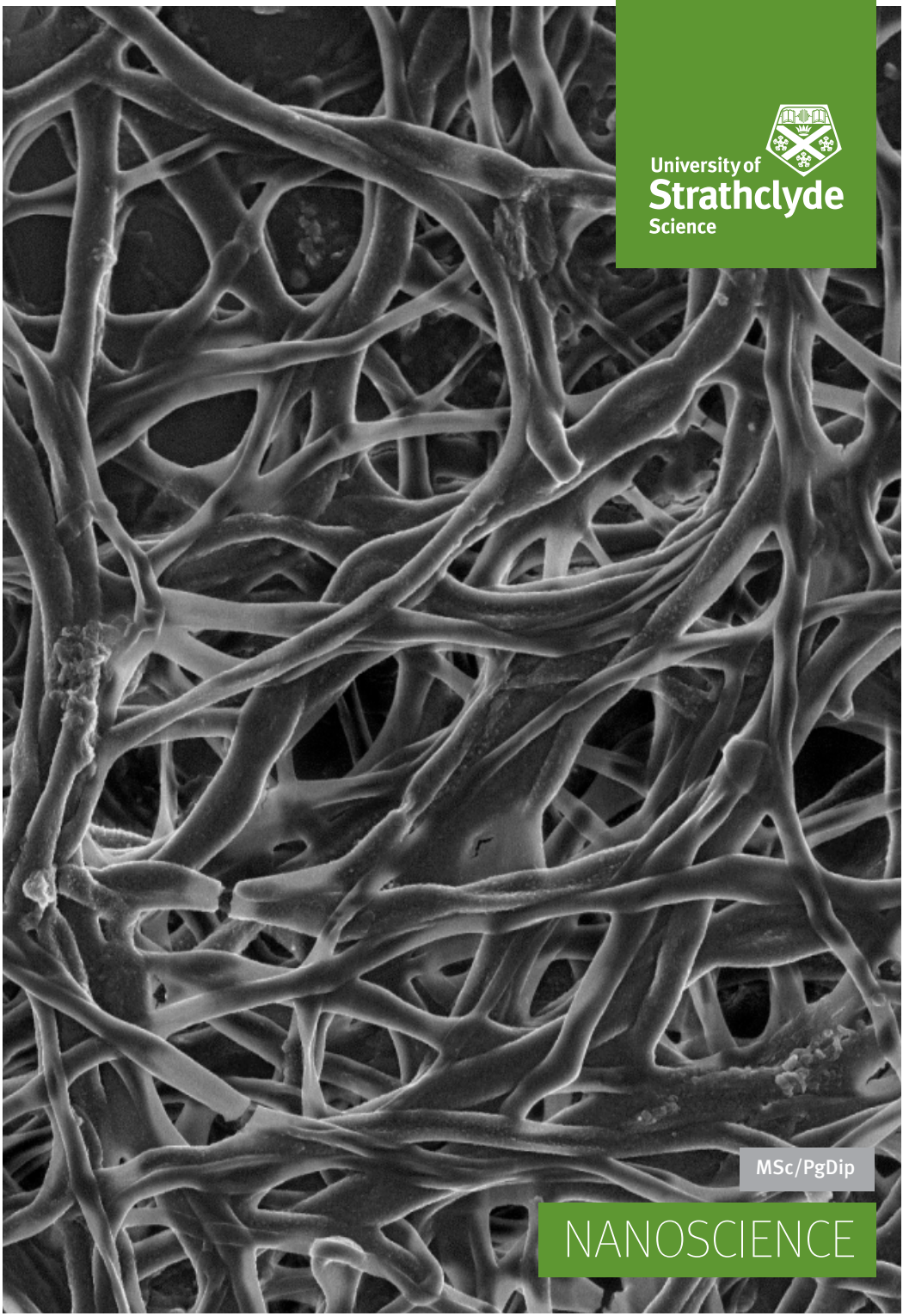
Speak to a Student: http://international.science.strath.ac.uk/speak-to-a-student/

Contact Us

Postgraduate Admissions
Department of Physics
Strathclyde University
John Anderson Building
107 Rottenrow
Glasgow G4 0NG

Tel: 0141 548 3362
Fax: 0141 552 2891

Undergraduate Enquiries: study@phys.strath.ac.uk
Postgraduate Taught Enquiries: pgt@phys.strath.ac.uk
Postgraduate Research Enquiries: pgstudies@phys.strath.ac.uk
http://www.strath.ac.uk/physics/
https://www.facebook.com/UniStrathPhysics



University of Strathclyde
Science

MSc/PgDip

NANOSCIENCE

MSc/PgDip
NANOSCIENCE

This taught MSc course offers a comprehensive overview of state-of-the-art research in Nanoscience and provides graduates with the opportunity to develop the skills necessary for this emerging interdisciplinary area. The course is primarily designed to equip graduates for a research-based career in industry, but it can also serve as a means of progression towards a PhD.

Who might be interested?

As both academic and industrial research in areas of nanoscience and nanotechnology have become increasingly multidisciplinary, this course will be of interest to physical science graduates looking to work in this emerging area. It is also expected to appeal to those with a primarily industrial background as a further training opportunity and a means of gaining insights into topics at the forefront of academic research.

The Course

This course explores the frontiers of science on the nano-scale. Many developing 21st-century technologies depend on expanding our understanding of properties, processes and behaviours of systems in this sub-micrometer-scale size domain.

The course provides a strong grounding in basic nanoscience before progressing to advanced topics. Taught classes have been developed from the many years of state-of-the-art nanoscience research at the University in areas such as nanoscale

imaging, nanoparticle fabrication and functionalisation, chemical physics and computational modelling of the nanoworld.

Curriculum

The course comprises a taught component featuring a conversion course to provide participants from differing backgrounds with a strong base from which to tackle the rest of the multidisciplinary syllabus.

This is followed by classes featuring elements of basic nanophysics and nanochemistry, and transferable research skills to prepare students for the research project.

Current topics in nanoscience research will be covered through classes such as:

- Imaging and Microscopy
- Solid State Nanoscience
- Chemical and Biomedical Nanoscience

Following the taught component, students undertake a research-intensive project in a relevant nanoscience topic.

Course Structure

Two semesters of formal teaching are followed by a four-month intensive project.

The projects take place primarily in research labs associated with nanoscience located in the University's physical science departments. Opportunities for relevant industrial placements may also exist.

The taught component comprises:

Part 1

- Conversion Course
- Introductory Nanoscience
- Transferable Skills Training

Part 2

- Advanced Nanoscience 1: Imaging and Microscopy – fluorescence methods, single molecule imaging and microscopic techniques as well as AFM, and electron microscopy
- Advanced Nanoscience 2: Solid State Nanoscience – solid state physics as applied to nanostructured materials as well as computational modelling of nanostructures
- Advanced Nanoscience 3: Chemical and Biomedical Nanoscience – aspects of chemical and biomedical nanoscience including nano-functionalisation and sensing and detection methods

Assessment

The final assessment will be based on performance in examinations, coursework, a research project and, if required, in an oral examination.

Duration of Course

12 months full-time or 24 months part-time

Entry Requirements

MSc: First- or second-class Honours degree in chemistry, physics or a related subject.
PgDip: Honours degree in physical science or a related subject.

Other qualifications and industrial experience may be considered.

English language: IELTS 6.0 (no individual score below 5.5) is required for all non-English speakers.

FACULTY OF SCIENCE

The Faculty investigates the challenges and possibilities of the natural and technological world, from drug discovery and public health to environmental concerns, tackling cybercrime and understanding space. High quality teaching is informed by innovative research and strong links with industry, the NHS and international partners.

Science staff are building on existing partnerships to develop photonics and sensors, nanoscience and health technologies as key components of the University's Technology and Innovation Centre.

The Faculty has more than £20 million of external research grant income each year, funding research activity which spans pure and applied sciences in areas such as the future of computation, materials, modeling the real world, health and photonics.

The Faculty is also involved in key collaborations across Scotland including WestCHEM (for Chemistry), the Scottish Universities Physics Alliance, the Scottish Universities Life Sciences Alliance, the Scottish Institute for Policing Research (which involves our Centre for Forensic Science) and the Scottish Informatics and Computer Science Alliance.

Cover Image

Scanning electron microscope image of Melanin Fibrils taken during research by our Photophysics research group

Fees and Funding

For information on current fee levels, see:
www.strath.ac.uk/tuitionfees

Scholarships may be available on a case-by-case basis; please contact the Department for details.

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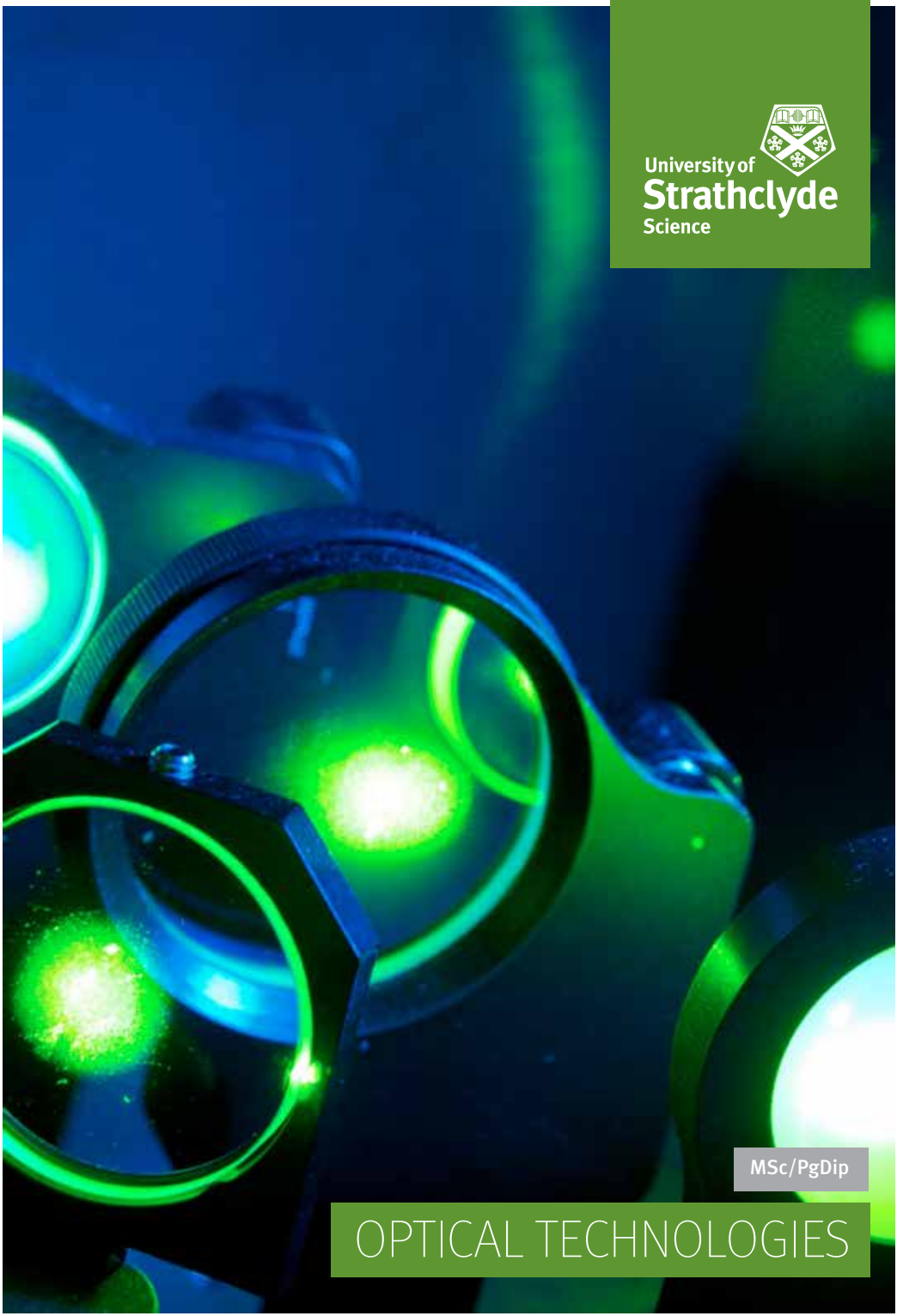

University of Strathclyde
Science

MSc/PgDip

OPTICAL TECHNOLOGIES

MSc/PgDip

OPTICAL TECHNOLOGIES

The versatile field of optical technologies underpins many aspects of modern society and is expected to be a key enabling technology of the 21st century.

This taught Masters course is based on the strong record of optical technologies across research divisions of the University's Department of Physics, Institute of Photonics (a commercially-oriented research unit at the interface between academia and industry), Centre for Biophotonics and Department of Electronic & Electrical Engineering.

Students can choose taught elements relevant to their career interests from a wide range of topics in photonics, nanosciences, optics at the physics-life sciences interface, information technology, quantum optics and quantum information technologies. The knowledge gained in the taught components is then put to use in a cutting-edge research project.

The course will give participants the opportunity to explore and master a larger breadth of optical technologies and enable them to put devices in the context of an optical system and/or application.

Who might be interested?

The course is suitable for those with a science or engineering background who want to underpin their future career by a vocational degree which includes hands-on experimental research experience on modern instrumentation or the theoretical/computational equivalent.

Course Structure

The course comprises two semesters of taught classes followed by a four-month research project. Compulsory components are, in semester 1, transferable skills training (Research Skills and Managing Technological Innovation) and in semester 2, a Literature Survey preparing for the project.

A group of our students taken during one of the Physics Department International Student Lunches – November 2013

In addition, students can choose from a list of classes which includes:

- Photonics and Ultrafast Physics
- Nanoscience and Imaging
- Material Sciences
- Optical Design
- Optical Communication Networks
- Quantum Optics
- Quantum Information Technologies

Assessment

The final assessment will be based on performance in examinations, coursework, a research project and, if required, in an oral examination.

Duration of Course

12 months full-time or 24 months part-time

Entry Requirements

MSc: First- or second-class Honours degree in physics or a related subject.
PgDip: Honours degree in physical science or a related subject.

Other qualifications may be considered.

English language: IELTS 6.0 (no individual score lower than 5.5) is required for all non-English speakers.

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Cover Image
Laser Steering Optics in our Ultrafast Physics Laboratory

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Information current at February 2014. Please consult the University website for the most up-to-date information. The University of Strathclyde is a charitable body, registered in Scotland, with registration number SC015263

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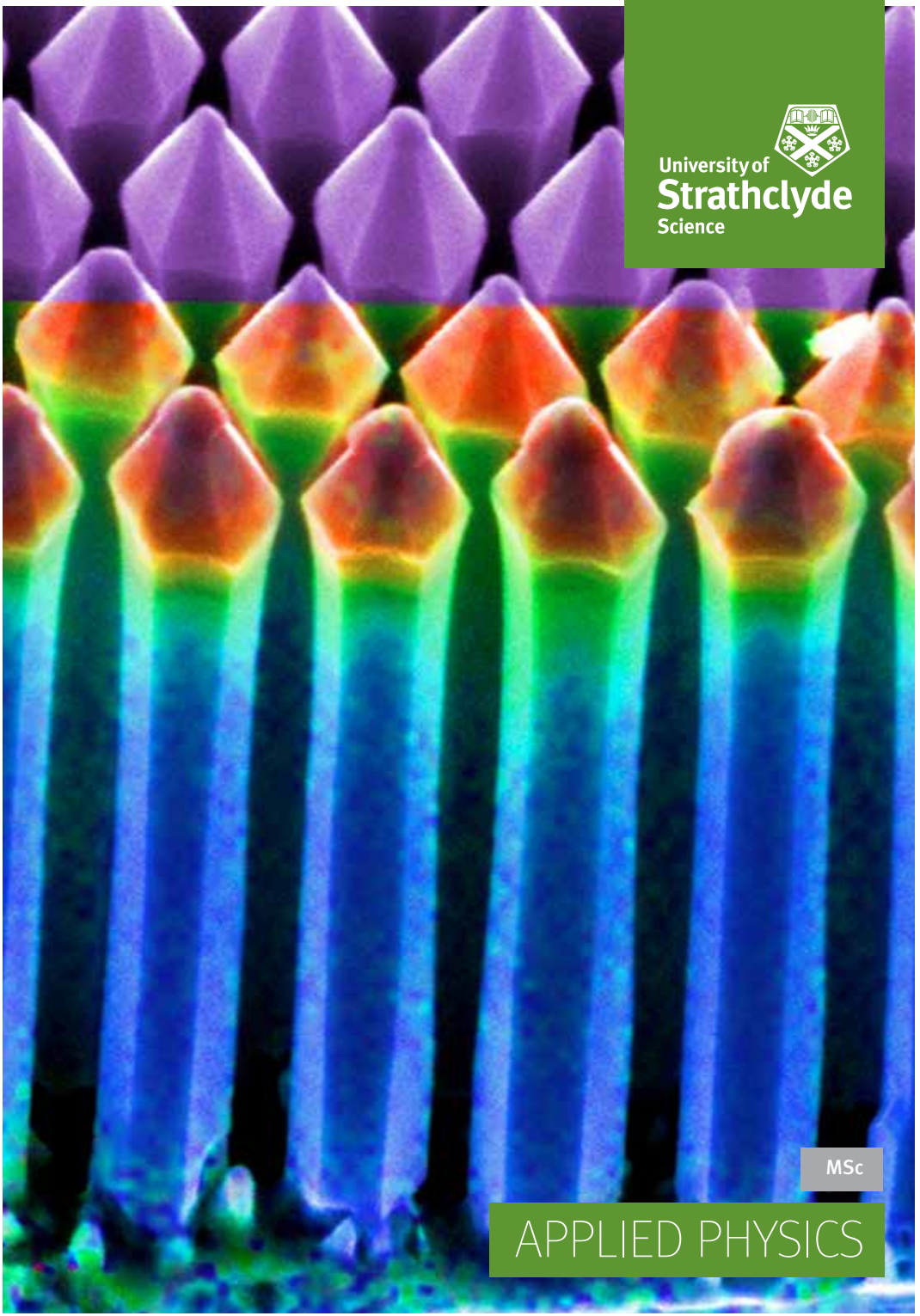


University of Strathclyde
Science

MSc

APPLIED PHYSICS

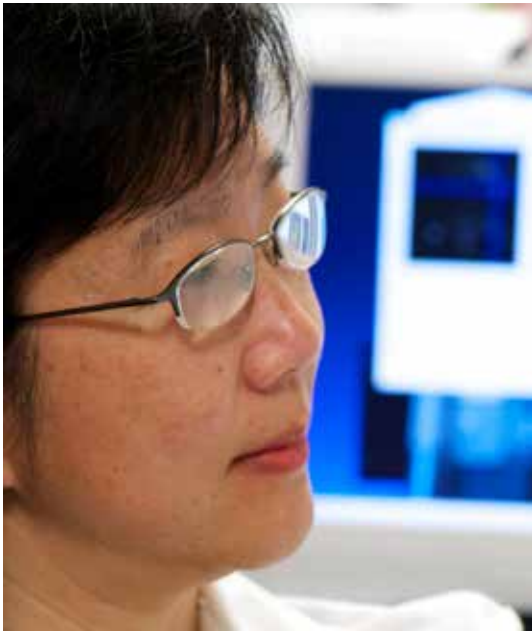
MSc
APPLIED PHYSICS

This taught Masters course is based on the strong research in Applied Physics in the University's Department of Physics. The department has an impressive track record of transferring research into commercial and technological applications and this knowledge will underpin teaching on this course.

The Department is made up of three divisions – Nanoscience, Optics and Plasmas – all of which will contribute research-based teaching expertise to this MSc course.

Students can choose taught elements relevant to their career interests from a wide range of topics, including photonics and quantum optics, Physics and the Life Sciences, and solid state physics. The knowledge gained in the taught components is then put to use in a cutting-edge research project designed to fit students' interests and career plans.

The course will give participants the opportunity to explore and master a greater breadth of Applied Physics skills and enable them to put this knowledge to use in the context of ongoing research or technological applications.



Who might be interested?

The course is suitable for those with a background in the physical sciences or engineering who want to enhance their future career options via a vocational degree in Physics, which includes hands-on experimental research experience on modern instrumentation or the theoretical/computational equivalent.

In addition to specific Applied Physics knowledge, this advanced degree also confers transferable, problem-solving and numeracy skills that are widely sought after across the commercial sector.

Course Structure

The course comprises two semesters of taught classes followed by a four-month research project.

Compulsory components are, in semester 1, transferable skills training (Research Skills and Managing Technological Innovation) and in semester 2, a Literature Survey preparing for the project.

In addition, students can choose from a list of classes which includes:

- Ultrafast Physics
- Nanoscience and Imaging
- Solid State Physics
- Photonics
- Theoretical Physics
- Quantum Optics
- Complex Systems

Assessment

The final assessment will be based on performance in examinations, coursework, a research project and, if required, in an oral examination.

Duration of Course

12 months full-time or 24 months part-time

Entry Requirements

MSc: First- or second-class Honours degree in physics or a related subject.
PgDip: Honours degree in physical science or a related subject.

Other qualifications may be considered.

English language: IELTS 6.0 (no individual score lower than 5.5) is required for all non-English speakers.

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Cover Image
False colour map of light emitted from 100 nanometer diameter rods of gallium nitride in an electron microscope from our Semiconductor Spectroscopy Group

Fees and Funding

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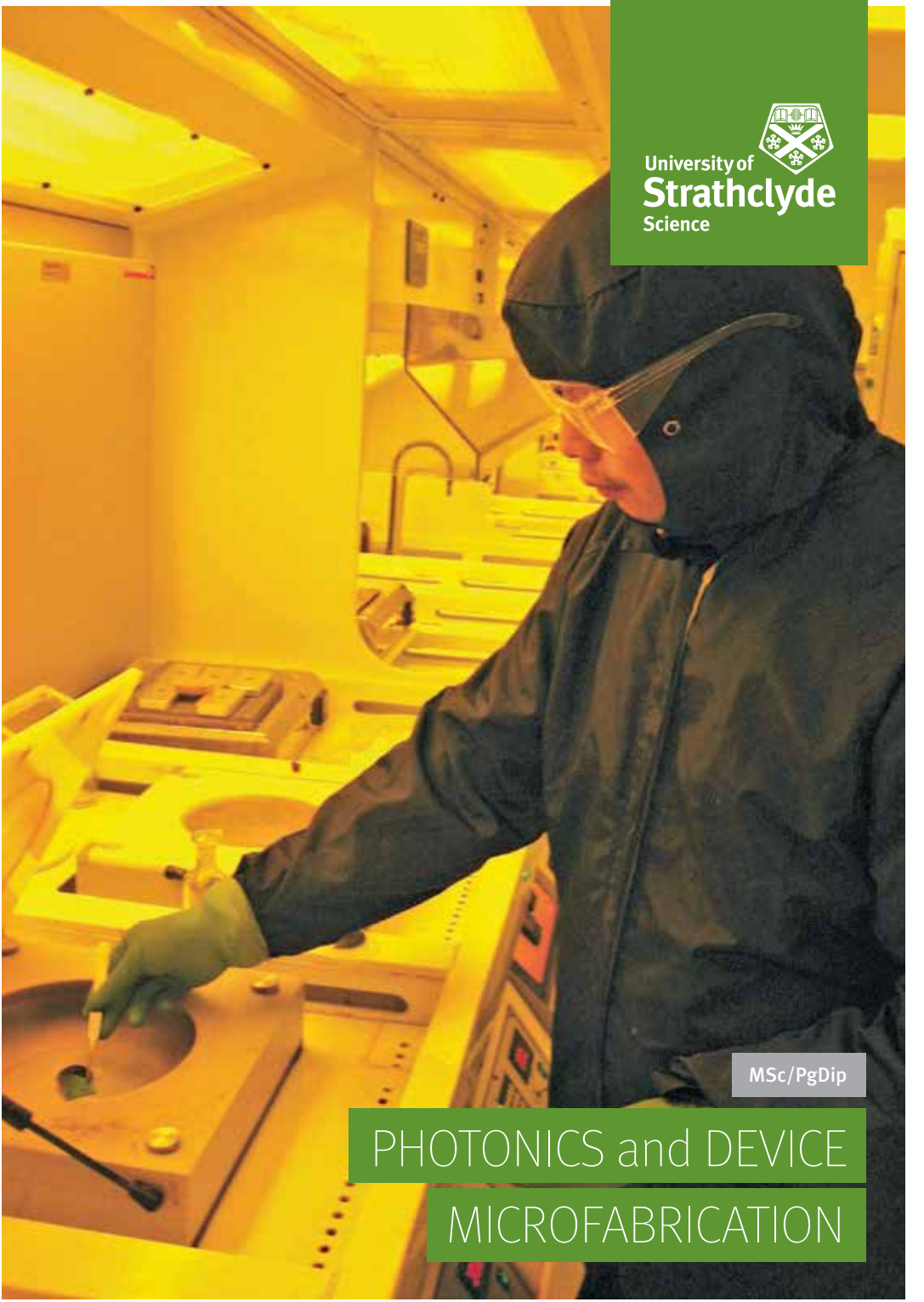

University of Strathclyde Science

MSc/PgDip

PHOTONICS and DEVICE MICROFABRICATION

MSc/PgDip

PHOTONICS and DEVICE MICROFABRICATION

This one-year full-time MSc covers the fundamental principles and technologies used to design, fabricate and analyse micro-/nano-scale photonic and optoelectronic devices, underpinned by transferrable skills in presentation and communication.

The course comprises both taught modules and a practical research project. Teaching methods include lectures and tutorials, as well as practical instruction on state-of-the-art device fabrication facilities.

The Institute of Photonics is a commercially-oriented research unit, within the Department of Physics, established in 1996. It is now one of the top research income earners in the University. Our key objective is to bridge the gap between academic research and industrial application and development in the area of photonics through excellence in commercially-relevant research and its exploitation.

The Institute provides a friendly and supportive environment for a large number of postgraduate students. We do not teach undergraduates, so our efforts are entirely focused on generating high-quality research and researchers. Postgraduate student training and development is recognised as a core part of this activity.

Who might be interested?

The course is open to UK and international students. It is suitable for graduates wishing to take up further training and for industrial staff seeking continuing professional development.

Optional language training modules will be provided for students, whose first language is not English, in order to enhance their language skills.

Course Structure

The course is designed to be modular, with students selecting baseline modules from a range of classes offered by the Department of Physics.

Specialist modules which are given by Institute of Photonics staff are specifically oriented towards state-of-the-art photonic device microfabrication technologies.

Example module titles include:

- Project Training (literature survey with written and oral presentations)
- Research Skills
- Research Project Preparation
- Device Microfabrication – principle and practice
- Photonic Materials and Devices
- Advanced Photonic Devices and Applications

Project

The course is completed by a practical project using dedicated equipment located at the microfabrication facility operated by the Institute of Photonics.

The project equips students with skills that are in demand in the semiconductor and optoelectronics industries and other high-technology manufacturing.

It also provides experience relevant to device-based academic research for students meeting the requirements for progression to PhD projects.

Assessment

The assessment will be based on the performance in the examinations and coursework. For MSc candidates, the project outcomes will be assessed and an oral examination will be held.

Duration of Course

12 months full-time

Entry Requirements

A first- or second-class Honours degree, or equivalent, in physical science or electrical/electronic engineering.

Other qualifications may be considered for the MSc, including industrial experience. Candidates may be invited for interview

English language: IELTS 6.0 (no individual score lower than 5.5) is required for all non-English speakers.

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Cover Image
Research in the clean room at the Institute of Photonics

Fees and Funding

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Scholarships may be available for a limited number of students. Please contact the Institute for details.

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The Student's View

"Everyone was very friendly and helpful. They have a great variety of optics research and so you have a lot of freedom to choose for your project. I am continuing now as a PhD student at Strathclyde in the project area I chose."

Thorben Wellbrock, MSc Optical Technologies student, 2012

Watch a video interview with a Masters student, Yuheng Li, from China (in Mandarin):

http://international.science.strath.ac.uk/2014/01/a-video-interview-with-a-student-from-china-in-mandarin/

Markéta Kubánková's blog entries about her time in the Photophysics group:

http://international.science.strath.ac.uk/author/marketa/