

Cardiff University
Physical Sciences & Engineering



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Sciences & Engineering



The College of Physical Sciences and Engineering is a vibrant and international community, committed to tackling global challenges and providing an enriching student experience.

We're part of an ambitious and innovative university with a bold strategic vision, based in a beautiful and thriving capital city.

Spanning 7 Academic Schools, we're internationally renowned for research and teaching excellence, innovation and industrial engagement.

Our world-leading research was ranked **5th** amongst UK universities in the 2014 Research Excellence Framework for quality and **2nd** for impact.

We're committed to supporting fundamental science and investing in multidisciplinary research to pursue new scientific approaches to some of the world's most pressing concerns.

Our strong industrial partnerships allow us to find sustainable solutions to real-world problems and help to maximise the impact of our research.

We provide our students with opportunities to learn from, and engage with, inspirational academic scholars and researchers and be part of an internationally inclusive and diverse student experience.

We're proud of our record of educating talented, highly skilled individuals and of the contribution our graduates are making throughout the world.

卡迪夫大学自然科学与工程学部是一个充满活力的国际化团体, 致力于解决全球挑战, 并提供丰富的学生体验。

坐落于英国威尔士首府城市卡迪夫, 卡迪夫大学是一所充满雄心壮志和创新能力的大学, 拥有大胆的战略视角。卡迪夫是一座美丽而繁荣的城市, 也是目前欧洲发展最快的首府城市。

自然科学与工程学部共有7个学院, 优秀的教学和研究水平, 创新能力以及紧密的业界合作关系使得每个学院都拥有杰出的国际声誉。

在2014年英国卓越研究框架REF排名中, 卡迪夫大学的综合研究质量在全英排名第5, 研究影响力排名第2。在充分支持基础科学的发展基础上, 我们也通过各类跨学科的研究寻找新的科学途径来解决目前世界面临的紧迫挑战。

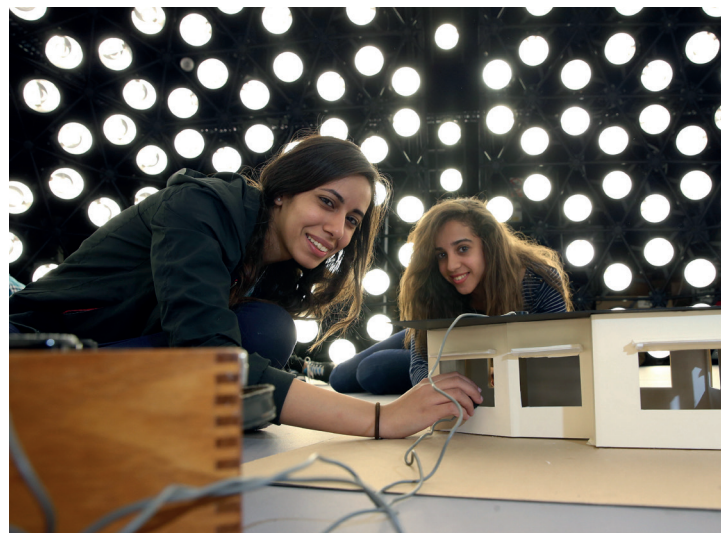
紧密的业界合作关系使我们可以致力于寻找现实世界问题的可持续解决方案, 并且也可以最大化我们研究成果的影响力。

我们为学生在校期间提供了各种不同的机遇, 并鼓励他们学习并参与到这些世界一流的学者和研究人员中成为团队的一部分。

我们为能够拥有这些充满才华和高技能的学生和学者, 以及在世界各地作出杰出贡献的毕业生们感到骄傲。

Architecture

www.cardiff.ac.uk/archi



The Welsh School of Architecture is one of the UK's most distinguished centres for the study of the built environment, where world-leading academics are using their expertise to shape the buildings, cities and communities of the future.

The School's educational experience focuses on the studio project, with a one-to-one approach to design teaching and support from the finest computer modelling, design tools and research facilities available.

The School's worldwide reputation makes talented WSA graduates sought after by leading employers in the architectural and construction industries. Admission, however, is highly selective and most programmes will require applicants to show a strong design portfolio in addition to a good academic record.

Top 10 Architecture (Ranking by The Guardian 2015)

1. Cambridge
2. UCL
3. Bath
4. > **Cardiff University**
5. Queen's Belfast
6. Northumbria
7. Sheffield
8. Manchester School of Architecture
9. Newcastle
10. Edinburgh

Other Rankings:

1st for research impact, 90% ranked as 'outstanding' in REF 2014
4th — The Times Good University Guide 2014

Graduate Destinations

ARUP / Foster + Partners / Rogers Stirk Harbour + Partners / Scott Brownrigg / Wilkinson Eyre Architects

Undergraduate Courses:

BSc / MArch Architecture

Postgraduate Courses:

Diploma/MA Architecture: Professional Studies
Environmental Design of Buildings MSc
Environmental Design of Buildings (Distance Learning) MSc
Theory & Practice of Sustainable Design MSc
Sustainable Mega-Buildings MSc
Sustainable Building Conservation MSc
Urban Design MA

PhD/MPhil Research Areas

Architectural History and Theory
Architectural Design and Practice
Architectural Science

Research

Research in the Welsh School of Architecture spans the physical sciences, social sciences, humanities and design to foster excellence in key areas of architecture and the built environment.

The School's rich interdisciplinary research environment focuses on low carbon and sustainability, future cities, history and theory of architecture and the creation of places that enhance people's enjoyment of the built environment.

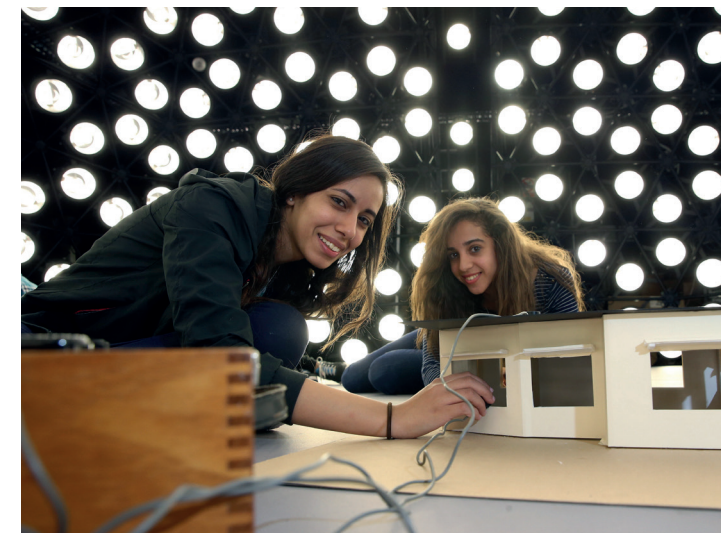
The School is home to the £34M Low Carbon Research Centre, which creates innovation in energy systems and building fabric, along with the social changes that are required to realise a low carbon future.

Research underpins the BSc and MArch degree programmes as well as the specialisms taught through advanced Masters programmes that cater to graduates across the broad spectrum of built environment professions, embracing environmental and sustainable design, conservation, energy modelling, urban design and professional studies.

In the 2014 Research Excellence Framework 90% of the School's research was deemed 'outstanding' for its impact, ranking it top in the UK.

建筑学院

www.cardiff.ac.uk/archi



威尔士建筑学院是英国最优秀的建筑学院之一，拥有世界一流的学者，用他们的专业知识来规划未来的建筑，城市以及社区。

建筑学院的教学方式侧重于工作室形式，可以为学生一对一的量身制定教学计划，并配备了最顶级的计算机建模软件，设计工具以及研究设施。

建筑学院优秀的国际声誉使其毕业生成为建筑设计和建造行业炙手可热的人才。因此，在招收学生时我们也一样采用了高标准，大多数课程申请者在拥有优秀的学术水平的同时还需要提供一份强有力的作品集来支持其申请。

排名

英国前10的建筑类课程

1. 剑桥大学
2. 伦敦大学学院
3. 巴斯大学
4. > **卡迪夫大学**
5. 贝尔法斯特女王大学
6. 诺森比亚大学
7. 谢菲尔德大学
8. 曼彻斯特建筑学院
9. 纽卡斯尔大学
10. 爱丁堡大学

以上排名信息由英国卫报2015大学排名提供

其他排名信息:

在2014年英国卓越研究框架REF排名中，研究影响力排名第1名，其中90%的研究项目被评为极其优秀
在2014年英国泰晤士大学排名第4名

毕业生去向

奥雅纳工程顾问公司 ARUP
福斯特建筑事务所 Foster + Partners
罗杰斯建筑事务所 Rogers Stirk Harbour + Partners
Scott Brownrigg 事务所 Scott Brownrigg
威尔金森·艾尔建筑事务所 Wilkinson Eyre Architects

本科课程

BSc 建筑学

授课型研究生课程

PG Diploma 建筑职业教育
MA 建筑职业教育
MA 城市规划
MSc 建筑环境设计
MSc 建筑环境设计 (远程教育)
MSc 可持续设计理论与实践
MSc 可持续建筑保护

研究型研究生课题PhD/MPhil

建筑历史与理论
建筑设计与实践
建筑科学

研究领域

建筑学院的研究涉及到许多学科领域，包括物理科学，社会科学，人文及设计学科等。综合性的跨学科研究确保了建筑学院在建筑及建造环境等关键研究领域的优秀表现。

建筑学院丰富的跨学科研究课题多数集中在低碳与可持续，未来城市，建筑历史与理论，以及构建愉悦的建造环境等方面。

建筑学院低碳研究中心共投资3千4百万英镑建立，旨在进行能源系统和建筑结构方面的创新研究，以期可以实现更加低碳的未来。

学院的研究不仅带来了各类创新的研究成果，同时也巩固了本科及研究生阶段的教学，为学生直接接触相关领域最新的研究成果提供了绝佳的机会。

在2014年英国卓越研究框架REF排名中，建筑学院90%的研究项目被认为拥有极其重要的影响力，位居英国第1名

Chemistry

www.cardiff.ac.uk/chemistry



The School of Chemistry provides an outstanding and stimulating environment for chemical research and education. The School's excellent reputation in modern chemical science attracts over 250 students from around the world every year.

Collaborations with international companies help the School's research achieve global impact and create industrial opportunities for its students.

With an investment of over £14 million in recent years, The School's state-of-the-art facilities enable research in all branches of core and interdisciplinary chemistry. The School is home to the recently established Cardiff Catalysis Institute (CCI), a University-supported initiative to establish an internationally leading centre of excellence for catalysis.

Top 10 Chemistry

1. Cambridge
2. Liverpool
3. Oxford
4. Bristol
5. Durham
6. Imperial College
6. University College London
6. Warwick
9. > **Cardiff University**
10. University of East Anglia

REF ranking by Grade Point Average – www.cardiff.ac.uk/REF

Graduate destinations

3M / Cadburys / GlaxoSmithKline /
Intellectual Patent Office / Solutia

Undergraduate courses

Chemistry BSc/MChem
Chemistry with Industrial Experience BSc
Chemistry with a Year in Industry MChem
Chemistry with a Year Abroad MChem
Chemistry with a Preliminary Year

Postgraduate courses

Catalysis MSc
Chemical Biology MSc
Physical Organic Chemistry MSc
Medical Chemistry MSc (pending University approval)

PhD/MPhil Research areas

Advanced Spectroscopy and Dynamics
Biological Chemistry
Catalysis and Interfacial Science
Materials and Energy
Molecular Synthesis

Research

The School's internationally leading research is focused on tackling the important scientific challenges of the 21st century.

In the 2014 Research Excellence Framework the School was ranked 9th in the UK and all of its research outputs rated at least internationally recognised, with more than 95% ranked internationally excellent or world-leading.

Research activity is focused on the following key themes, which are aligned with research council priorities and help the School's research deliver global impact:

- Biological chemistry
- Energy
- Physical Organic Chemistry
- Synthetic Chemistry
- Catalysis
- Imaging
- Materials

These themes also help foster research collaboration on an international scale, from expertise across research groups to partnerships with global industry leaders.

A further cross-cutting structure, fully embedded within the School, is the Cardiff Catalysis Institute (CCI), led by Professor G J Hutchings FRS. It was established in 2008 as a focus for research across catalytic sciences (heterogeneous, homogeneous and biological catalysis). Members of the CCI are drawn from all research sections.

Multidisciplinary research is at the heart of the School's activities with academic staff working with other Schools across the University including Pharmacy and Pharmaceutical Sciences, Biosciences, Physics and Astronomy, Medicine and Engineering.

Collaborations with other leading UK and international universities are also key, as are the School's strong collaborations with UK and global businesses.

化学学院

www.cardiff.ac.uk/chemistry



卡迪夫大学化学学院为化学教育及研究提供了杰出的环境。化学学院在现代化学学科的优秀声誉每年吸引超过250名学生从世界各地前来卡迪夫学习。

通过与行业领先的国际知名企业的合作,化学学院的研究项目拥有显著的国际影响力,学生也可以获得近距离接触实际产业的机会。

近年来,化学学院在研究方面共投资超过1千4百万英镑,确保了在核心化学研究及跨学科化学研究方面都拥有世界一流的研究设施。由卡迪夫大学支持成立的卡迪夫催化研究所(CCI)为英国的催化研究提供了一个世界一流的研究中心。

排名

英国前10的化学类课程

1. 剑桥大学
2. 利物浦大学
3. 牛津大学
4. 布里斯托大学
5. 杜伦大学
6. 帝国理工大学
7. 伦敦大学学院
8. 华威大学
9. > **卡迪夫大学**
10. 东安格利亚大学

以上排名信息由2014年英国卓越研究框架REF排名提供,采用平均绩点方式计算 www.cardiff.ac.uk/REF

毕业生去向

3M
吉百利史威士股份有限公司 Cadburys
葛兰素史克股份有限公司 GlaxoSmithKline
英国知识产权局 Intellectual Patent Office
首诺公司 Solutia

本科课程

BSc 化学
BSc 化学(含一年工作体验)
BSc 化学(含一年预备课程)
MChem 化学
MChem 化学(含一年实习)

授课型研究生课程

MSc 催化化学
MSc 化学生物学
MSc 物理有机化学
MSc 医用化学(筹建中)

研究型研究生课题PhD/MPhil

高级光谱与动力学
生物化学
催化与界面科学
材料与能源
分子合成

研究领域

化学学院拥有世界一流的研究水平,研究方向集中在解决21世纪的科学挑战方面。

在2014年英国卓越研究框架REF排名中,化学学院的综合研究质量在全英排名第9,并且所有的研究成果都被认为具有国际水平,其中超过95%的研究成果被认为是国际领先水平。

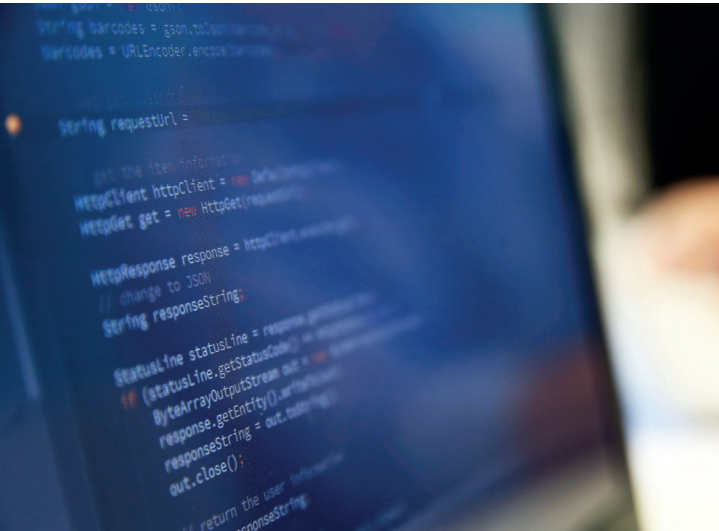
化学学院的研究课题主要集中在生物化学,催化化学,能源,化学成像,材料,物理有机化学和合成化学等方面。这些研究课题同样也是英国研究委员会目前优先考虑的研究方向。通过这些研究,学院在学术界和业界都建立了紧密的合作关系,这也使得我们的研究可以获得更强的国际影响力。

由英国皇家学会会员Hutchings教授领导的卡迪夫催化研究所CCI于2008年在化学学院成立。CCI拥有来自化学学院不同研究领域的专家,共同进行催化科学的研究,主要研究领域包括同相与异相催化以及生物催化等。

化学学院一直视跨学科研究为核心方向,并保持了与卡迪夫大学其他学院的紧密联系,包括药剂与制药科学学院,生物科学学院,物理与天文学院,医学以及工程学院。在保持与校内各学院的合作的同时,学院也与许多英国以及世界领先的高校和企业保持了紧密的联系。

Computer Science & Informatics

www.cardiff.ac.uk/comsc



The School of Computer Science & Informatics aims to educate and inspire the next generation of international leaders in the discipline.

Housed in the multi-million pound Queen's Building complex, the School has a reputation for excellent teaching and internationally accomplished research activities.

The School's multidisciplinary research shapes its degree programmes, making them relevant to today's employers and well placed to take advantage of tomorrow's developments.

All of the School's degrees are regularly reviewed and professionally accredited by BCS, The Chartered Institute for IT.

Graduate Destinations

Microsoft / BAE Systems / Fujitsu / IBM / Thomson Reuters

Undergraduate Courses

Business Information Systems BSc*
Computer Science BSc*
Computer Science with High Performance Computing BSc*
Computer Science with Security and Forensics BSc*
Computer Science with Visual Computing BSc*
Software Engineering BSc*
Applied Software Engineering BSc* taught at the University's National Software Academy

*Available as a 3 or 4 year programme. The 4 year programme includes a year in industry between year's 2 and 3 where the School supports students in finding a year-long, paid placement in the UK or overseas

National Software Academy

The National Software Academy is a new partnership between Cardiff University, Welsh Government and industry leaders, which aims to address the global shortage of qualified, industry-ready software engineers.

It will produce sought after graduates with industrial experience who will be recognised as leaders in their field.

Combining teaching and training in a bespoke commercial/IT environment, the National Software Academy will provide students with academic experience of relevant and leading-edge technologies delivered within an industrial framework, utilising industry-proven tools and techniques to facilitate transition into the job market.

Postgraduate Courses

Advanced Computer Science MSc
Computational Journalism MSc
Computing MSc+
Computing & IT Management MSc+
Information Security & Privacy MSc
Information Systems MRes

+ Available as a 1 or 2 year programme. The 2 year programme includes a professional work placement between the taught elements of the course and your final dissertation where the School supports students in finding a 7-10 month paid placement in the UK or overseas.

PhD/MPhil Research Areas

Distributed and Scientific Computing
Informatics
Visual Computing

Research

The School has a long-standing, strong and dynamic research culture, which underpins its international reputation for world-class research in the areas of data science and visual computing. The School's multidisciplinary research continues to have a positive impact in areas as diverse as healthcare, security, social computing, manufacturing and the environment.

Research in the School is organised into research groups which reflect areas of expertise. The groups provide a 'home' for researchers, allowing them to exchange ideas, get support, and often collaborate on projects.

计算机科学与信息工程学院

www.cardiff.ac.uk/comsc



计算机科学与信息工程学院致力于教育并激励下一代的业界领导人才。

坐落于价值数百万的女王综合楼中, 计算机科学与信息工程学院在教学与研究方面都享有杰出的国际声誉。

学院把教学与研究相结合, 通过跨学科的研究, 结合业界需求以及未来发展方向同时塑造了相对应的学位课程。所有的学位课程设置都会定期进行评估, 并且都拥有英国电脑学会BCS认证。

毕业生去向

微软 Microsoft
英国宇航系统公司 BAE Systems
富士通 Fujitsu
IBM
汤森路透 Thomson Reuters

本科课程

BSc商业信息系统
BSc 计算机科学
BSc 计算机科学 (高性能计算方向)
BSc 计算机科学 (安全与取证方向)
BSc 计算机科学 (视觉计算方向)
BSc 软件工程
BSc 应用软件工程 (英国国家软件学会教学)

以上所有课程均可提供3年制或4年制的选择。4年制课程将包括在第3年由学院帮助学生寻找的一年英国或海外带薪实习项目。

英国国家软件学会

英国国家软件学会是卡迪夫大学, 威尔士政府以及业界企业共同参与的合作项目。该合作项目意在解决全球软件产业的软件工程师短缺问题。该项目将帮助学生通过实际的项目经历, 成为业界认可的顶尖人才。

英国国家软件学会的教学与培训将为学生提供特定的业界学习工作环境, 在业界培训框架下使用现实的应用工具和技能来帮助学生更好地把握学习到的知识向求职市场的转型。

授课型研究生课程

MSc高级计算机科学
MSc 计算新闻学
MSc 计算机*
MSc 计算机与信息技术管理*
MSc 信息安全与隐私
MRes 信息系统

*可选1年制或2年制课程。2年制课程包括在授课课程后与毕业论文开始前之间由学院帮助学生寻找的7到10个月的英国或海外带薪实习。

研究型研究生课题PhD/MPhil

分布式科学计算
信息科学
视觉计算

研究领域

计算机科学与信息工程学院一直保持着浓厚而有活力的研究氛围, 确保了在数据科学与视觉计算方面世界领先的学术声望。学院的跨学科研究在医疗健康, 社交计算, 制造以及环境科学等领域中一直有着积极的影响。

学院的研究人员按照研究方向的不同分为了三个研究小组, 分布式科学计算小组, 信息科学小组, 以及视觉计算小组。研究小组的设置为组内的研究人员提供了交换想法, 获取支持, 以及合作项目的良好氛围。

Earth & Ocean Sciences

www.cardiff.ac.uk/earth



The School of Earth and Ocean Sciences is committed to achieving the highest standards in research and education and to providing a rich and varied research-led environment, where all staff and students can achieve their full potential to the benefit of society.

All students benefit from the practical experience of fieldwork and Cardiff is fortunate to be surrounded by the spectacular and accessible South Wales geology, which is used as a foundation for teaching.

All of the School's courses are accredited by the relevant professional bodies.

Graduate Destinations

BHP Billiton / Environment Agency / Geo Services International / Parsons Brinckerhoff / Titan Environmental Surveys

Undergraduate Courses

Environmental Geoscience BSc/MESci*
Exploration & Resource Geology BSc/MESci*
Geology BSc/MESci*
Marine Geography BSc/MESci*
Environmental Geography BSc/MESci*

*MESci available with a year at an overseas university

Postgraduate Courses

Applied Environmental Geology MSc

PhD/MPhil Research Areas

Mineral deposit formation processes
Ocean lithosphere processes
Microbial biogeochemistry
Geomicrobiology
Earth surface processes
Terrestrialization: early land ecosystems and floras
Life and environment through time
Micropalaeontology, evolution and stratigraphy
Palaeoclimate and climate systems

Research

The School's researchers are addressing some of the most significant research themes in the Earth sciences, including global change, biosphere-hydrosphere-geosphere interactions, physical landscape and environmental dynamics, natural resource exploration, the Anthropocene, and the long-term evolution of the Earth and its planetary systems.

The 2013 QS Worldwide University Rankings placed Cardiff's School of Earth and Ocean Sciences among the top 100 in the discipline.

The School comprises more than 30 research-active members of staff, including two Fellows of the Royal Society.

Collectively, the School's researchers have brought in over £12M of research income since 2008, publishing high-impact science in the world's best academic journals.

Committed to research projects with real societal impact, the School is also engaged in a number of large-scale, cross-institutional and interdisciplinary programmes, including the Climate Change Consortium of Wales (C3W), the Severn Estuary Gateway, the Great Western Four (GW4+) Doctoral Training Partnership, Cardiff's Sustainable Places Research Institute, and the new Africa Geoscience Initiative.



地球与海洋科学学院

www.cardiff.ac.uk/earth



地球与海洋科学学院致力于追求最高水平的教学与研究, 并为所有研究人员和学生提供一个以研究为中心的多样化学术环境, 以发掘他们的潜力。

所有学生都可以从实地考察中获得实用的经验。幸运的是, 卡迪夫周边有着非常壮观的南威尔士地质形态, 这一便利使得我们可以基于这些地质形态开展教学。所有地球与海洋科学学院的课程都拥有相关专业学会的认证。

毕业生去向

必和必拓 BHP Billiton
英国环境局 Environment Agency
国际地理服务 Geo Services International
柏诚 Parsons Brinckerhoff
泰坦环境调查 Titan Environmental Surveys

本科课程

BSc/MESci* 环境地球科学
BSc/MESci* 勘探与资源地质学
BSc/MESci* 地质学
BSc/MESci* 海洋地质学
BSc/MESci* 环境地质学
*MESci课程包括一年海外高校学习

授课型研究生课程

MSc 应用环境地质学

研究型研究生课题PhD/MPhil

矿藏形成过程
海洋岩石圈过程
微生物生物地球化学
地球微生物学
地表过程
生物登陆: 早期陆地生态环境与植物群
生命与环境的时间演变
微古生物学, 进化与地层学
史前气候与气候系统

研究领域

地球与海洋科学学院的研究课题包括一些非常典型的地球科学研究方向, 例如全球变化, 生物圈-水圈-岩石圈的相互作用, 物理景观与环境动力学, 自然资源勘探, 人类世, 地球的长期演变及其新型系统等。

2013年QS世界排名中, 卡迪夫大学地球与海洋科学学院位列世界百强。学院拥有超过30名活跃的研究人员, 其中包括两名皇家学会成员。

自2008年至今, 学院的研究人员共计为学院带来了超过1千2百万英镑的研究收入, 并在世界顶级学术杂志上发表了诸多高影响力的研究成果。

致力于有真正社会影响的研究, 学院也加入了许多大规模跨机构跨学科领域的合作项目, 包括威尔士气候变化联盟C3W, 塞文河口组织, 英国西部四校联盟GW4+博士培养合作项目, 卡迪夫可持续地区研究所, 以及最新的非洲地球科学计划。



Engineering

www.cardiff.ac.uk/engin



Cardiff School of Engineering is based in a modern, purpose-built building, housing some of the UK's most advanced facilities.

The School's research activity has a world-wide reputation (ranked 1st in the UK for the impact of its research in the latest research assessment) and has a record of collaboration with industrial partners such as Tata, Airbus, Laing O'Rourke, Halcrow, National Grid, Rolls Royce, NASA, Mott Macdonald, BP, RWE Npower, and Atkins.

The School's graduates are highly employable and provided with the opportunity to further enhance their prospects by spending a year in industry.

All of the School's courses provide accreditation from the relevant professional bodies.

Graduate destinations

Atkins / BAE Systems / Tata Steel/ Mott McDonald / Network Rail / Arup / National Grid / Renishaw / Ford / Airbus

Top 10 Civil Engineering

1. > **Cardiff University**
2. Imperial College
3. University of Dundee
4. Sheffield
5. Manchester
6. Newcastle
7. Leeds
8. Strathclyde
9. Birmingham

REF ranking by Grade Point Average – www.cardiff.ac.uk/REF

Top 10 General Engineering

1. Oxford
2. Cambridge
3. Sheffield
4. Imperial College
5. Kings College London
6. University College London
7. > **Cardiff University**
8. Dundee
9. Bristol
9. Heriot-Watt
9. Edinburgh

REF ranking by Grade Point Average – www.cardiff.ac.uk/REF

Top 10 Mechanical Engineering

1. Imperial
2. Southampton
3. Sheffield
4. > **Cardiff University**
5. Leeds
6. Bath
7. Nottingham
8. Lancaster
9. Loughborough
10. Dundee

Ranking by The Guardian 2015

Undergraduate courses

Architectural Engineering BEng/MEng
Civil Engineering BEng/MEng
Civil & Environmental Engineering BEng/MEng
Electrical & Electronic Engineering BEng/MEng
Integrated Engineering BEng/MEng
Mechanical Engineering BEng/MEng
Medical Engineering BEng/MEng

Note: all BEng/MEng courses offer an optional year in industry.

工程学院

www.cardiff.ac.uk/engin



卡迪夫大学工程学院大楼是一栋专门建造的现代化建筑,拥有部分英国最先进的设施。工程学院有着世界一流的研究声誉,研究影响力在最近的一次英国研究水平评估中位列榜首,同时还与众多业界领先企业保持着良好的合作关系,包括塔塔集团,空中客车公司,Laing O'Rourke,合乐工程咨询,国家电网,劳斯莱斯,NASA,茂特(莫特麦克唐纳),英国石油公司,RWE npower能源公司,阿特金斯等。

我们的毕业生非常受业界欢迎。同时,为了提高他们的就业竞争力,我们还为本科学生提供了一年业界实习的机会。所有工程学院的课程都拥有相关专业学会的认证。

毕业生去向

阿特金斯 Atkins
英国宇航系统公司 BAE Systems
塔塔钢铁 Tata Steel
茂特(莫特麦克唐纳) Mott McDonald
英国国家铁路网 Network Rail
奥雅纳 Arup
国家电网 National Grid
雷尼绍 Renishaw
福特 Ford
空中客车 Airbus

土木工程排名

英国前10的土木工程类课程

1. > **卡迪夫大学**
2. 帝国理工学院
3. 邓迪大学
4. 谢菲尔德大学
5. 曼彻斯特大学
6. 纽卡斯尔大学
7. 利兹大学
8. 斯特拉斯克莱德大学
9. 伯明翰大学

以上排名信息由2014年英国卓越研究框架REF排名提供,采用平均绩点方式计算

通用工程排名

英国排名前10的通用工程类课程

1. > **牛津大学**
2. 剑桥大学
3. 谢菲尔德大学
4. 帝国理工学院
5. 伦敦国王学院
6. 伦敦大学学院
7. 卡迪夫大学
8. 邓迪大学
9. 布里斯托大学
9. 赫瑞瓦特大学
9. 爱丁堡大学

以上排名信息由2014年英国卓越研究框架REF排名提供,采用平均绩点方式计算

机械工程排名

英国前10的机械工程类课程

1. 帝国理工学院
2. 南安普顿大学
3. 谢菲尔德大学
4. > **卡迪夫大学**
5. 利兹大学
6. 巴斯大学
7. 诺丁汉大学
8. 兰卡斯特大学
9. 拉夫堡大学
10. 邓迪大学

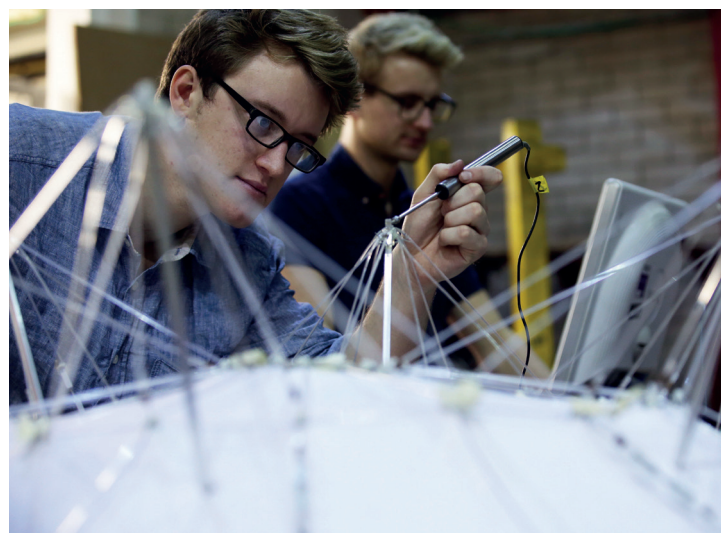
以上排名由2015年英国卫报大学排名提供

本科课程

BEng/MEng 建筑工程
BEng/MEng 土木工程
BEng/MEng 土木与环境工程
BEng/MEng 电力电子工程
BEng/MEng 综合工程
BEng/MEng 机械工程
BEng/MEng 医疗工程
以上所有课程都可以搭配一年业界实习机会

Engineering

www.cardiff.ac.uk/engin



Postgraduate courses

Advanced Mechanical Engineering MSc
Civil Engineering MSc
Communication Technology and Entrepreneurship MSc
Electrical Energy Systems MSc
Civil and Geoenvironmental Engineering MSc
Civil and Water Engineering MSc
Manufacturing Engineering, Innovation and Management MSc
Orthopaedic Engineering (surgeons only) MSc
Professional Engineering MSc
Structural Engineering MSc
Sustainable Energy & Environment MSc
Wireless and Microwave Communications Engineering MSc

PhD/MPhil Research areas

Energy
Environment and Sustainability
Health, Security and the Digital World
Mechanics, Materials and Advanced Manufacturing

Research

Cardiff School of Engineering is conducting research and advancing knowledge across a wide range of disciplines. Working with industrial partners and other organisations, researchers at Cardiff are leading cutting-edge projects that have numerous practical applications.

To create and sustain a dynamic research culture, research in the School is organised into the four themes of:

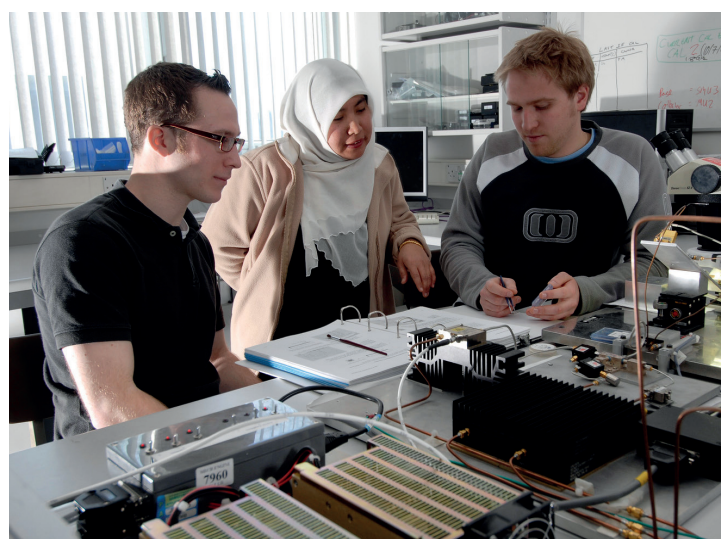
Environment and Sustainability
Mechanics, Materials and Advanced Manufacturing
Energy
Health, Technology and the Digital World.

These themes reflect the role that engineering plays in finding solutions to contemporary and future environmental, social, health and economic challenges.

Ranked 1st in the UK in the 2014 Research Excellence Framework (REF) the School's civil engineers are at the forefront of finding solutions to some of the most pressing global challenges related to the built and natural environments. Through multidisciplinary research they're playing a vital role in reducing environmental impact and increasing sustainable practices in a wide range of areas including construction, fuel, energy, waste disposal, water quality and flood protection.

General Engineering research at Cardiff University has a strong reputation for excellence, innovation and deep-rooted international links with industry.

The School's researchers benefit from high-quality facilities and equipment including, the £1.4M Morgan-Botti Lightning Laboratory, being used to investigate the effects of lightning strikes on aircraft, and the multi-million pound Gas Turbine Centre, which is at the heart of research into safe, low-carbon power and emission reduction.



工程学院

www.cardiff.ac.uk/engin



授课型研究生课程

MSc 高级机械工程
MSc 土木工程
MSc 通信技术与创业
MSc 电力能源系统
MSc 土木与地质环境工程
MSc 土木与水利工程
MSc 制造工程, 创新与管理
MSc 骨科工程 (仅限外科医生)
MSc 职业工程
MSc 结构工程
MSc 可持续能源与环境
MSc 无线微波通信工程

研究型研究生课题PhD/MPhil

能源
环境与可持续
健康, 安全与数字世界
机械, 材料与高级制造

研究领域

卡迪夫大学工程学院的研究领域非常广泛, 在与业界伙伴及其他机构的合作中, 卡迪夫的研究人员可以在进行顶尖研究的同时将他们应用到实际的项目中去。

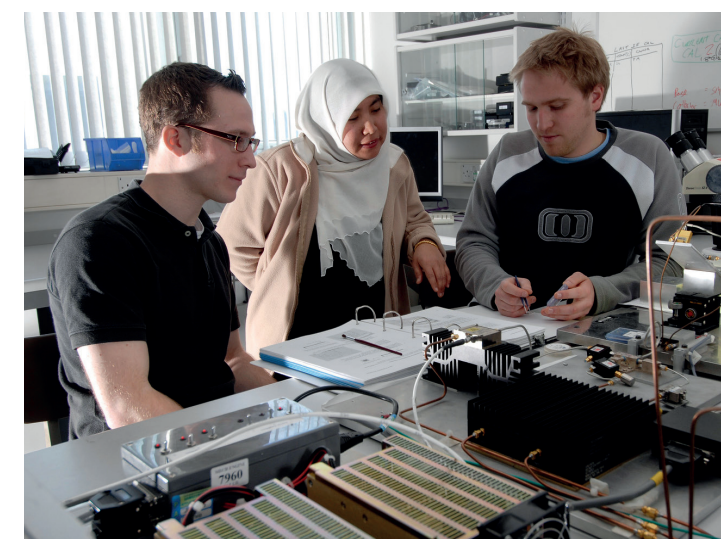
为了创造并维持一个活跃的研究氛围, 工程学院的研究项目被划分到以下四个主题中:

环境与可持续
机械, 材料与高级制造
能源
健康, 技术与数字世界

这些研究主题非常明确的反映了工程师们为了解决当代以及未来可能面临的环境, 社会, 健康以及经济挑战方面所做出的努力。

作为2014年英国卓越研究框架REF排名第1的土木工程, 我们的土木工程师活跃在解决建造与自然环境全球挑战的第一线。通过跨学科的研究, 他们在帮助许多领域解决环境影响并进行可持续应用的环节中扮演了关键角色, 这些领域包括建造, 燃料, 能源, 废物处理, 水体质量以及洪水防治等。

工程学院的通用工程研究由于其杰出的研究水平, 创新能力, 以及与业界的紧密联系, 有着很高的声望。高质量的研究设施为研究者们提供了良好的基础支持。学院拥有耗资140万英镑的Morgan-Botti雷电实验室用来研究雷击对飞行器的影响, 还拥有耗资数百万英镑的燃气轮机中心用来研究安全低碳的能源以及减排。



Mathematics

www.cardiff.ac.uk/maths

The School of Mathematics has a reputation for internationally excellent research and high quality teaching.

The School currently has over 500 undergraduate students and over 60 postgraduate students and is committed to supporting all students to fulfil their academic potential through the provision of high quality teaching, supervision, pastoral care and learning opportunities.

All courses are designed to challenge and to stimulate academic curiosity.

All undergraduate degrees are accredited by the IMA (Institute of Mathematics and its Applications).

The School has strong professional development programmes in which undergraduate students at the end of their second academic year can opt to take a 12-month period of training in a mathematics environment in industry, commerce or government. These programmes play a significant role in bringing high quality students to Cardiff and preparing our graduates for fulfilling careers.

All students on MSc programmes spend 3 months in industry applying their mathematical knowledge to practical problems. The School's strong links with commerce, industry and government ensure that their graduates are highly valued.

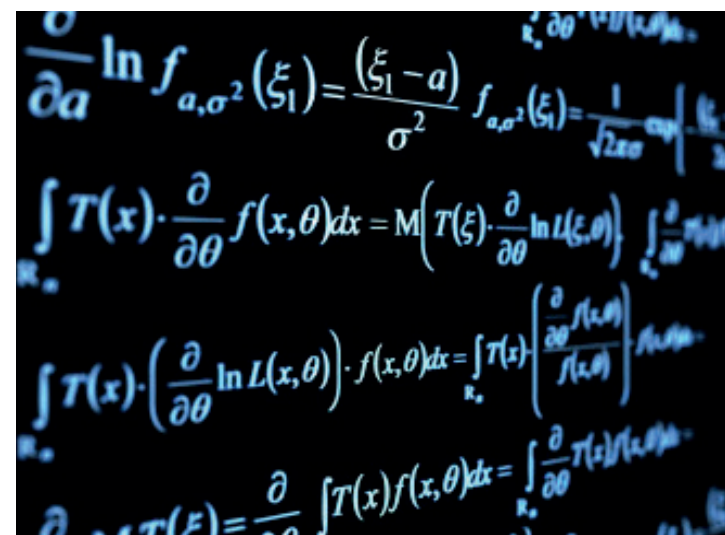
Graduate Destinations

BAE Systems / Deloitte / Ernst and Young /
PriceWaterhouseCoopers LLP / Roche Pharmaceuticals

Undergraduate Courses

Mathematics MMath/BSc+
Mathematics & its Applications*+ BSc
Mathematics, Operational Research & Statistics*+ BSc
Physics and Mathematics BSc

*Available with an optional Professional Placement Year
+Available with an optional Year Abroad



Postgraduate Courses

Operational Research and Applied Statistics MSc
Operational Research, Applied Statistics and Financial Risk
MSc Data Science and Analytics MSc (From Oct 2016 subject to programme approval)

PhD/MPhil Research Areas

- Analysis and Differential Equations
- Number Theory
- Applied Mathematics (Newtonian and non-Newtonian Fluid Dynamics, Mathematics and Mechanics of Deformable Solids, Numerical Analysis)
- Mathematical Physics (Operator Algebras and K-Theory, Statistical Mechanics and Conformal Field Theory)
- Statistics
- Operational Research

Research

Research in the School of Mathematics extends across several areas, notably Analysis and Differential Equations, Applied Mathematics, Mathematical Physics, Operational Research and Statistics. Each field has its own highly active research group, which collaborates with leading academic researchers throughout the world.

The School offers a lively postgraduate environment, with a large community of postgraduate researchers working in all its specialist areas. In addition to the substantial funds it attracts from the Research Councils and European Union, the School receives significant awards from the Leverhulme Trust, the Ministry of Defence, the Wellcome Trust, GlaxoSmithKline, and Proctor and Gamble.

数学学院

www.cardiff.ac.uk/maths

卡迪夫大学数学学院拥有国际知名的杰出研究声望, 以及高质量的教学水平。

学院共有500多名本科学生和60多名研究生。学院通过高质量教学与监督, 生活关怀以及各种学习机会来确保所有学生可以全面的发掘他们的学术潜力。课程的内容设计也使学生保持了学术好奇心。

所有本科课程均拥有数学及应用数学学会IMA认证。

学院为学生制定了一系列有力的发展计划, 所有本科学生在结束第2学年的学习后, 都可以选择参加为期12个月的实习。该实习项目将在相关的工业, 商业或政府机构进行, 为学生提供一个真实的数学工作环境。这些课程吸引了许多学生前来卡迪夫, 并且通过参加这些课程, 他们也将在学习基础知识的同时充分提高他们的就业竞争力。

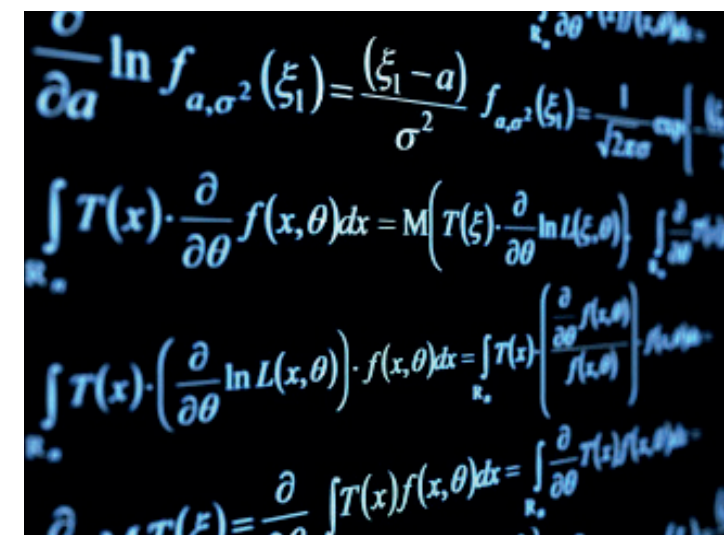
所有的硕士课程学生将会有3个月的项目实习时间。在这3个月中, 他们需要应用他们所学到的数学知识来解决数学应用中所遇到的实际问题。学院与工业, 商业以及政府机构的紧密合作, 确保了我们的毕业生炙手可热的地位。

毕业生去向

英国宇航系统公司 BAE Systems
德勤 Deloitte
安永 Ernst and Young
普华永道 PriceWaterhouseCoopers LLP
罗氏制药 Roche Pharmaceuticals

本科课程

BSc 数学
BSc 数学及其应用*
BSc 数学, 运筹与统计*
BSc 数学与计算
BA 数学与法语
MMath数学
*可选一年业界实习



授课型研究生课程

MSc 运筹与应用统计
MSc 运筹, 应用统计与风险

研究型研究生课题PhD/MPhil

- 分析与微分方程
- 数论
- 应用数学
- 牛顿与非牛顿流体动力学
- 数学与固体形变力学
- 数值分析
- 数学物理学
- 算子代数与K理论
- 统计力学与共形场论
- 统计学
- 运筹学

研究领域

数学学院的研究领域覆盖非常广泛, 其中主要包括分析与微分方程, 应用数学, 数学物理学, 运筹与统计等方面的研究。每个研究领域内的研究小组都非常活跃, 并保持与全球其他优秀数学研究者的紧密合作。

学院为研究生提供了一个充满活力的学习研究氛围。在大的研究群体下, 每个学生都拥有自己独特的研究方向。数学学院的研究经费来源除了从研究委员会和欧盟方面获得的可观部分, 还包括从利华休姆信托基金, 英国国防部, 惠康基金会, 葛兰素史克以及宝洁公司等方面获得的研究资助。

Physics and Astronomy

www.cardiff.ac.uk/physx

The School of Physics and Astronomy has an international reputation for excellence and a strong commitment to innovative and supportive teaching.

The School's undergraduate degree schemes are designed to offer students an intellectual challenge and tuition in solving real-life problems. The adaptability of Cardiff graduates makes them highly sought after by industry, commerce and academia and the option of a one-year professional placement further increases their breadth and employability.

The School has research interests covering a wide range of physics and astronomy topics, all of which are integrated into their postgraduate courses.

In the 2014 Research Excellence Framework (REF) the School climbed 28 places to 6th in the UK. This substantial rise reflects the University's strategy to support fundamental science.

Top 10 Physics

1. Strathclyde
2. Oxford
3. St Andrews
3. Edinburgh
3. Nottingham
6. > **Cardiff University**
7. Cambridge
7. Manchester
9. Durham
10. Imperial College

REF ranking by Grade Point Average – www.cardiff.ac.uk/REF



Graduate Destinations

BAE Systems / DWP / EDF / Jaguar Landrover / NASA / Rolls Royce / Banking

Undergraduate Courses

Astrophysics MPhys/BSc
Physics* MPhys/BSc
Physics with Astronomy* MPhys/BSc
Physics & Mathematics BSc
Physics with Medical Physics BSc
Physics with Music BSc
Physics with a Preliminary Year BSc
Theoretical & Computational Physics BSc

*Also available with an optional professional placement year.

Postgraduate Courses

Biophotonics MSc
Physics MSc *
Astrophysics MSc *
* new for Oct 2015

PhD/MPhil Research Areas

Astronomy & Astrophysics
Astronomy Instrumentation
Condensed Matter and Photonics
Gravitational Physics
Musical Acoustics

Research

Research in the School of Physics and Astronomy is organised into four groups: Condensed Matter and Photonics; Gravitational Physics; Astronomy, and Astronomy Instrumentation.

The School's strategy is focused on ensuring world-class performance in each of the four research groupings, evidenced by outputs in major, high-impact journals, strong and diverse research income and collaboration with major international centres of excellence.

Research staff are actively involved in numerous major international collaborations, including the Cardiff-led SPIRE instrument consortium for the Herschel satellite and the LIGO science collaboration seeking to detect gravitational waves.

物理与天文学院

www.cardiff.ac.uk/physx

卡迪夫大学物理与天文学院享有杰出的国际声誉,致力于提供具有创新性的教学环境,并为学生提供充分的支持。

学院的本科课程设计从解决现实挑战的角度出发,提供恰到好处学术挑战和教学内容。这样的课程设计使我们的毕业生具有很强的适应能力,因此受到各类工商业及学术机构的欢迎。同时,学生还可以通过自由选择为期一年的实习项目来进一步增强他们的知识范围和就业能力。

学院在物理与天文方面的研究课题非常广泛,并且这些研究都与研究生教学相结合。在2014年英国卓越研究框架REF排名中,学院较上次排名攀升了24位,目前英国排名第6名。这一排名的提升充分反映了卡迪夫大学对基础科学学科发展的支持。

排名

- 英国前10的物理类课程
1. 斯特拉斯克莱德
 2. 牛津
 3. 圣安德鲁斯大学
 4. 爱丁堡大学
 5. 诺丁汉大学
 6. > **卡迪夫大学**
 7. 剑桥大学
 7. 曼彻斯特大学
 9. 杜伦大学
 10. 帝国理工学院

以上排名信息由2014年英国卓越研究框架REF排名提供,采用平均绩点方式计算 www.cardiff.ac.uk/REF

毕业生方向

英国宇航系统公司 BAE Systems
英国就业与退休保障部 DWP
英国电力网络 EDF
捷豹路虎 Jaguar Landrover
美国宇航局 NASA
劳斯莱斯 Rolls Royce
银行业



本科课程

BSc/MPhys 天体物理学
BSc/MPhys 物理学*
BSc/MPhys 物理与天文*
BSc物理与数学
BSc物理与医用物理学
BSc物理与音乐
BSc物理(含一年预备课程)
BSc理论与计算物理学
*可选一年业界实习

授课型研究生课程

MSc 生物光子学
MSc 物理学*
MSc 天体物理学*
* 2015年秋季开设

研究型研究生课题PhD/MPhil

天文与天体物理
天文仪器
凝聚体与光子学
引力物理学
音乐声学

研究领域

物理与天文学院拥有四个研究小组:凝聚体与光子学小组,引力物理学小组,天文学小组以及天文仪器小组。

通过在高质量的大型学术期刊的论文发表,不同来源的有力研究收入,以及与国际知名研究中心的合作,这些研究小组充分证明了他们在各自研究领域世界一流的研究水平。学院也通过各项措施来确保这些小组可以顺利的进行各自的研究。

在诸多大型国际合作项目中都有我们的研究人员的参与,包括由卡迪夫大学主导的赫歇尔空间天文台光谱与光度成像接收器项目 SPIRE,以及激光干涉引力波天文台LIGO 对引力波的探测项目等。

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