# Course Information Sheet for entry in 2026-27: Inorganic Materials for Advanced Manufacturing (EPSRC CDT)

## Course facts

| | |
|---|---|
| **Mode of study** | Full Time Only |
| **Expected length** | 4 years |

## About the course

The EPSRC CDT in Inorganic Materials for Advanced Manufacturing (IMAT) offers a four-year doctoral course focusing on the design, synthesis and characterisation of new inorganic materials and features integrated academic/industrial courses.

The IMAT CDT aims to train the next generation of doctoral scientists in the design, synthesis and characterisation of inorganic materials relevant to the future prosperity of the manufacturing sector. The course covers all aspects of the utilisation of raw materials, process chemistry and product delivery, and substantive projects spanning the breadth of inorganic chemistry and materials science.

The course has been designed in collaboration with 19 industrial partners representing a range of business sizes and technological expertise, in order to provide a holistic understanding of all aspects of the advanced materials manufacturing process.

The IMAT CDT uses a cohort-based training model, allied to training incorporating faculty, industry and peer-led components, to deliver scientists with:

- a broad spectrum training across the interface between inorganic materials and manufacturing; and
- in-depth expertise in one specific stream (raw materials, process or product).

### Course structure

An overview of the course structure is provided below. Details of the compulsory and optional elements of the course are provided in the *Course components* section of this page.

You will be trained in a single cohort initially (in the first six months) through a series of compulsory taught courses covering a wide range of topics in inorganic materials, and a short industrial internship. A tailored introductory programme will cover fundamentals in chemistry and materials.

You will also conduct an eight-week industrial internship during the second term of year one. Accommodation and travel expenses will be funded by the CDT. Industrial internships will provide you with the opportunity to work closely at the sites of the University's IMAT industrial partners. You will work within industry teams at sites across the UK, or abroad, and experience the demands and expectations of diverse end-users and customers.

From the second half of year one, you will focus primarily on your substantive research project, which you will have chosen before the start of your course.

To learn more about the research topics you'll have the opportunity to explore, please refer to the *Research areas* section on this page.

During all four years of the course you will receive a tailored programme designed to broaden your research and professional skills. The course expects to have strong engagement with industry, with regular visits and interactions with industrial partners.

### Attendance

The course is full-time and requires attendance in Oxford. Full-time students are subject to the University's Residence requirements. (//www.ox.ac.uk/admissions/graduate/after-you-apply/accommodation/residence-requirements)

Provision exists for students on some courses to undertake their research in a 'well-founded laboratory' outside of the University. This may require travel to and attendance at a site that is not located in Oxford. Where known, existing collaborations will be outlined on this page. Please read the course information carefully, including the additional information about course fees and costs.

### Resources to support your study

As a graduate student, you will have access to the University's wide range of resources including libraries, museums, galleries, digital resources and IT services.

The Bodleian Libraries is the largest library system in the UK. It includes the main Bodleian Library and libraries across Oxford, including major research libraries and faculty, department and institute libraries. Together, the Libraries hold more than 13 million printed items, provide access to e-journals, and contain outstanding special collections including rare books and manuscripts, classical papyri, maps, music, art and printed ephemera.

The University's IT Services is available to all students to support with core university IT systems and tools, as well as many other services and facilities. IT Services also offers a range of IT learning courses for students to support with learning and research, as well as guidance on what technology to bring with you as a new student (https://www.it.ox.ac.uk/what-to-bring) at Oxford.
The Inorganic Materials for Advanced Manufacturing CDT is based in the Departments of Chemistry and Materials. The majority of the taught courses during the first year will be held in the Doctoral Training Suite in the Rodney Porter Building. There is a dedicated student office, with individual desk areas and allocated computers.

Workspace after the initial taught course will be related to individual circumstances. If undertaking experimental work, you will be provided with space in a research laboratory with access to all the required equipment. If undertaking theoretical research, you will have shared office space.

You will have access to the departmental IT support staff, to the Radcliffe Science Library and other university libraries, and centrally provided electronic resources and technical workshops.

Experimental facilities are available as appropriate to the research topic. The provision of other resources specific to your project should be agreed upon with your supervisor as a part of the planning stages of the agreed project.

### Supervision

The allocation of graduate supervision for this course is the responsibility of the Department of Chemistry and the Department of Materials and it is not always possible to accommodate the preferences of incoming graduate students to work with a particular member of staff. A supervisor may also be found outside the Department of Chemistry and Department of Materials.

Most students can typically expect to meet with their supervisor, or a senior member of the research team, every week.

Departmental supervisors are drawn from some of the country's leading research chemists and materials scientists, many of whom have world-class reputations.

If there is the need for pastoral care, support is available from the project supervisor, the Programme Manager and the Associate Director for Student Experience.

### Assessment

All modules during the taught course component involve some aspect of formal assessment, including written reports, problem-solving, and group and individual presentations.

Throughout the project component of the course, a termly report on your progress is usually submitted by both you and your supervisor.

You will be admitted as a Probationary Research Student and, at an appropriate stage (normally after six terms), you must pass the Transfer of Status assessment, to ensure you have the potential to gain a doctorate, in line with the University's graduate student progression guidelines. This assessment is made by independent assessors based on overall performance in the taught course component, together with a project report, a short presentation and an oral examination. Assuming that you satisfactorily transfer to DPhil status, your research proceeds with quarterly reporting throughout the rest of your course.

You must apply for Confirmation of Status by the end of your ninth term, to ensure that you are on track to complete the thesis within a reasonable time. You will be expected to submit a DPhil thesis within, at most, four years from the date of admission. The thesis will usually be read by two examiners, one of whom is normally from Oxford and one from elsewhere, and assessment will be via the thesis and an oral (viva voce) examination. The examiners will judge, along with other requirements, whether you have made a significant and substantial contribution to a particular field of learning.

## Course components

### Compulsory study

A tailored introductory programme will cover fundamentals in chemistry and materials. Details of the modules are listed below.

#### Core Technical Modules

1. Raw Materials:

- Raw Materials distribution, ethics, circularity
- Bottom up/top down synthesis

2. Process

- Characterisation tools in chemistry and materials
- Processing to manipulate materials properties
- Computational methods, AI, Digitisation, Data analytics
- Interface and Surface Chemistry

3. Product

- Product design for circularity and end use

**Industrial Immersion Modules**

This part of the training programme focuses on awareness of:

- RRI + Ethical, regulatory and compliance issues
- Communicating science to different audiences
- IP, Research Translation & Entrepreneurship
- Advanced industrial workshops

**Internship**

You will also conduct an eight-week industrial internship during the second term of year one. Industrial internships will provide you with the opportunity to gain experience relevant to one or more of the core themes:

- raw materials;
- process; or
- product.

## Research areas

The following examples of topics researched by past students illustrate the themes that may be explored in this course:

- Leveraging Bismuth Redox Catalysis to Build Difficult Bonds
- Repurposing C-F bonds for nucleophilic fluoride delivery using metal hydride materials
- Developing sustainable single crystals for ultrasensitive medical imaging devices
- Unlocking chemical complexity in machine learning for battery materials
- Electrocatalytic CO2 Reduction to Hydrocarbons over Modified Cu Catalysts
- Nitro reduction at carbon for manufacture of amine-containing chemicals: a combined computational and experimental study of mechanisms and selectivity
- Towards the discovery of novel photocatalysts for the conversion of carbon dioxide to green chemicals
- Plasma-assisted olefin depolymerisation
- Electrospinning solid oxide electrolysis cells – hydrogen production for the energy transition
- Simplifying operation of cytochrome P450 monooxygenases for fine chemical manufacturing
- Using Carbon Dioxide to Make High Performance, Recyclable Engineering Polymers: Combined Experimental and Machine Learning Investigations
- Fluorochemicals from Fluoroapatite
- F-ion conductive liquid electrolytes
- Transmembrane transport and bioactive delivery using degradable multi-block polymers
- Development of stable wide-bandgap perovskites for silicon-based tandem solar cells
- Open-Shell Iron-Boryl Complexes for Strong Bond Activation
- Photochromic main-group lanthanide luminescent materials for sensing and information storage
- Organometallic Iron Cluster Catalysts for Sustainable Chemical Synthesis
- Engineering the Magnetism of New Solids
- Synthesis of Inorganic Molecular Compasses
- Two-Dimensional Metal-Organic Frameworks
- Elemental and low-valent main group species for fluoride repurposing from PFAS
- Nanozyme-enhanced diagnostics: leveraging structural insights for performance optimisation
- Design of Fast-Charging Cathode Materials for Sodium-Ion Battery Applications
- Integrating metal-sensitisation into photosurfactant assemblies for light-addressable soft matter applications

## Changes to this course

The University will seek to deliver this course in accordance with the description set out in this course page. However, there may be situations in which it is desirable or necessary for the University to make changes in course provision, either before or after registration. The safety of students, staff and visitors is paramount and major changes to delivery or services may have

to be made if a pandemic, epidemic or local health emergency occurs. In addition, in certain circumstances, for example due to visa difficulties or because the health needs of students cannot be met, it may be necessary to make adjustments to course requirements for international study.

Where possible your academic supervisor will not change for the duration of your course. However, it may be necessary to assign a new academic supervisor during the course of study or before registration for reasons which might include illness, sabbatical leave, parental leave or change in employment.

For further information please see our page on changes to courses (//www.ox.ac.uk/admissions/graduate/courses/changes-to-courses) and the provisions of the student contract (//www.ox.ac.uk/admissions/graduate/after-you-apply/your-offer-and-contract) regarding changes to courses.

## Costs

### Annual course fees

The fees for this course are charged on an annual basis.

**Fees for the 2026-27 academic year at the University of Oxford**

| Fee status | Annual Course fees |
|---|---|
| Home | £10,470 |
| Overseas | £34,700 |

**What do course fees cover?**

Course fees cover your teaching as well as other academic services and facilities provided to support your studies. Unless specified in the additional information section below, course fees do not cover your accommodation, residential costs or other living costs. They also don't cover any additional costs and charges that are outlined in the additional costs information below.

**How long do I need to pay course fees?**

Course fees are payable each year, for the duration of your fee liability (your fee liability is the length of time for which you are required to pay course fees). For courses lasting longer than one year fees will usually increase annually, as explained in the University's Terms and Conditions (//www.ox.ac.uk/students/new/contract) .

Graduate students who have reached the end of their standard period of fee liability will be required to pay a University continuation charge and/or a college continuation charge.

The University continuation charge, per term for entry in 2026-27 is £656, please be aware that this will increase annually. For part-time students, the termly charge will be half of the termly rate payable by full-time students.

If a college continuation charge applies (not applicable for non-matriculated courses) it will be between £150 and £500, as explained in our information about continuation charges (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/continuation-charges) . Please contact your college for more details, including information about whether your college's continuation charge is applied at a different rate for part-time study.

**Where can I find more information about fees?**

Our fees and other charges (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges) pages provide further information, including details about:

- course fees and fee liability (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/courses-fees-and-liability) ;
- how your fee status is determined (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/fee-status) ;
- changes to fees and other charges (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/changes-to-fees-and-charges) ; and
- continuation charges (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/continuation-charges) .

Information about how much fees and other costs will usually increase each academic year is set out in the University's Terms and Conditions (//www.ox.ac.uk/students/new/contract) .

### Additional costs

There are compulsory elements of this course that entail additional costs beyond fees (or, after fee liability ends, continuation charges) and living costs. The CDT will fund all travel and accommodation expenses associated with the compulsory industrial internship that students undertake during the first year. Depending on your choice of research topic and the research required to complete it, you may also incur additional expenses, such as accommodation and travel expenses related to placements and conferences, and research expenses related to your chosen research topic. The CDT provides funding to all students to contribute to the cost of attendance at conferences and placements (neither of which are compulsory). It also provides all students with a consumables budget, to contribute to the costs of their research expenses.

### Living costs

In addition to your course fees and any additional course-specific costs, you will need to ensure that you have adequate funds to support your living costs for the duration of your course.

**Living costs for full-time study**

For the 2026-27 academic year, the range of likely living costs for a single, full-time student is between £1,405 and £2,105 for each month spent in Oxford. We provide the cost per month so you can multiply up by the number of months you expect to live in Oxford. Depending on your circumstances, you may also need to budget for the costs of a student visa and immigration health surcharge (//www.ox.ac.uk/admissions/graduate/fees-and-funding/living-costs) and/or living costs for family members or other dependants (//www.ox.ac.uk/admissions/graduate/fees-and-funding/living-costs#field_listing_content_content-item--2) that you plan to bring with you to Oxford (if dependant visa eligibility criteria (//www.ox.ac.uk/students/visa/before/family) are met).

**Further information about living costs**

The current economic climate and periods of high national inflation in recent years make it harder to estimate potential changes to the cost of living over the next few years. For study in Oxford beyond the 2026-27 academic year, it is suggested that you budget for potential increases in living expenses of around 4% each year – although this rate may vary depending on the national economic situation.

A breakdown of likely living costs for one month during the 2026-27 academic year are shown below. These costs are based on a single, full-time graduate student, with no dependants, living in Oxford.

**Likely living costs for one month in Oxford during the 2026-27 academic year**

| | Lower range | Upper range |
|---|---|---|
| **Food** | £315 | £545 |
| **Accommodation** | £825 | £990 |
| **Personal items** | £160 | £310 |
| **Social activities** | £50 | £130 |
| **Study costs** | £35 | £90 |
| **Other** | £20 | £40 |
| **Total** | £1,405 | £2,105 |

For information about how these figures have been calculated as well as tables showing the likely living costs for nine and twelve months, please refer to the living costs (//www.ox.ac.uk/admissions/graduate/fees-and-funding/living-costs) page of our website.

## Document accessibility

If you require a more accessible version of this document please contact Graduate Admissions and Recruitment by email (graduate.admissions@admin.ox.ac.uk).