



Candidate Brief for the position of:

Post-Doctoral Researcher

**Radiation and Environmental Science Centre
School of Physics & Clinical & Optometric Sciences**

**(Fixed-Term Specified Purpose contract up to 5 years,
funding in place until 31/07/2023)**

Reference: 308a/2020

Recruiting Difference; Reflecting Diversity

**Infinite
Possibilities**

TU Dublin at a glance

The new University – formed by a merger of Dublin Institute of Technology (DIT), Institute of Technology Blanchardstown (ITB) and Institute of Technology Tallaght (ITT)

- Ireland's largest university with over 28,000 Students
- Over 3,000 International Students
- Over 3,000 staff members of academic, administrative and support staff
- Annual budget circa €200 Million
- Only University in Ireland to offer programmes from Level 6 to Level 10 on the qualifications framework
- Over 150 Sports & Student Societies
- Over 1,000 Research Community
- 3 Incubation Centres

For further detail, please see <http://www.tudublin.ie/>

TU Dublin – A New University for A Changing Ireland

TU Dublin is Ireland's first Technological University - an exciting new milestone in Irish Higher Education. With campuses in Dublin City, Tallaght and Blanchardstown, it spans the largest population centres of Ireland's capital city. Building on the rich heritage of its founding organisations - DIT, IT Blanchardstown and IT Tallaght – TU Dublin will be inclusive and adaptable, creating educational opportunities for students at all stages of their lives.

Academic excellence in science, the arts, business, engineering and technology converge in TU Dublin to create the leaders of tomorrow. Our 28,500 students learn in a practice-based environment informed by the latest research and enabled by technological advances, with pathways to graduation from Apprenticeship to PhD.

Our thriving research community is engaged in applying innovation and technology to solve the world's most pressing challenges, collaborating with our national and international academic partners and our many networks in industry and civic society.

Dedicated staff offer an inclusive and welcoming learning experience and TU Dublin students develop as socially responsible, open-minded global thinkers who are ambitious to change the world for the better. As graduates, they will be enterprising and daring in all their endeavours, ready to play their part in transforming the future.

College of Sciences and Health

The College of Sciences and Health at TU Dublin – City Campus was established in 2010 and is located at TU Dublin – City Campus, Kevin Street and Cathal Brugha Street sites. The College builds on 120 years of experience in science and technology education and now offers practical, professional and career-oriented education, training and research in mathematics, computing, sciences and health. The mission of the College is to support economic and societal development by providing highly skilled graduates, trained researchers and an up-skilled workforce capable of anticipating and meeting demand in competitive global sectors including Food, Pharmaceutical and Life Sciences, ICT, Green Technology, Financial Services, Education and the Allied Health Professions.

The programmes that are currently offered by the College demonstrate the breath of opportunity available to prospective students in our College. Our strengths come from our excellent teaching staff, our successful research profile and our close ties with industry, the professions and the health sector. Almost all of our programmes are linked with industry and relevant professions through placement opportunities and other engagement activities, and our research is guided and informed by the needs of relevant sectors.

School of Physics & Clinical & Optometric Sciences

The School of Physics and Clinical & Optometric Sciences is one of six Schools in the College of Sciences and Health and provides education to undergraduate students in Physics, Clinical Measurement Science, Optometry, and Ophthalmic Dispensing. The School also has strong research interests and a large number of postgraduate students studying for the degrees of MPhil and PhD in disciplines across the School. It provides a vibrant research atmosphere with regular seminars and staff engaged in research at the forefront of their specialism.

Radiation and Environmental Science Centre

The Radiation and Environmental Science Centre (RESC) is a research centre in TU Dublin with ongoing research in radiation biology and biophotonics / clinical spectroscopy (<http://www.dit.ie/resc/>). RESC is housed in the FOCAS (Facility for Optical Characterisation and Spectroscopy) Research Institute, a 3200 m² facility with state of the art core laboratory support in microscopy and spectroscopy and a vibrant research community within its Centres of Research.

FOCAS houses a suite of spectroscopic instruments, including UV/Vis/NIR absorption spectrometers and two Fourier Transform infrared microscopes, a fluorescence spectrometer, three multi line Raman spectroscopic microscopes, including one with upright and inverted geometry for in situ AFM and/or fluorescence imaging. For microscopy, an AFM, Variable Pressure SEM with Cryofeed, Zeiss LSM510 META confocal laser scanning microscope, Zeiss Cell Observer and BD Accuri C6 flow cytometer are available. In the RESC 200 m² laboratory, two Raman microscopes are available as well as full cell culture, molecular biology and immunocytochemistry facilities. High end computing facilities associated with the Science Foundation Ireland ADAPT centre at TU Dublin are also available comprising a high performance Research Computing Cluster. Data modelling experiments using images, high content and multi-omics data with traditional machine learning and modern deep learning analyses are routinely conducted on this platform.

The core expertise of the RESC is in radiobiology. In addition, research over the past 10 years has involved applications of spectroscopy in biology and medicine, in cancer diagnostics and more recently in radiation biology and radiation protection.

Job Description

Role Overview

A postdoctoral researcher position is available with the Radiation and Environmental Science Centre (RESC) on a research project funded by the Science Foundation Ireland Frontiers for the Future programme. The project aims to develop ultra-fast Fourier-transform infrared-based imaging for applications in breast cancer prognosis with a parallel development of machine learning approaches for image interpretation from multiple histopathological sources.

The candidate will work in an interdisciplinary team of physical and life scientists and will also be required to liaise with collaborators at the University College Dublin and elsewhere. Experience in the development of machine learning and AI-based methods for imaging data is a requirement of the position, while experience in the development and operation of photonic imaging apparatus or equivalent will be a significant advantage.

Applicants should have attained their PhD in a relevant discipline with background knowledge and experience in machine learning.

The work on this Research Programme is carried out by Postdoctoral Research Fellows and Senior Postdoctoral Research Fellows and is quasi-autonomous research activity. The mentoring Principal Investigator (PI) will advise the appointee on the conduct of their research which itself will be part of a research programme that the PI is responsible for. The intention is that during the employment of the appointee, they will avail of learning opportunities provided by TU Dublin and/or external agencies related to their particular research programme or research practice in general. At the completion of the Senior/Postdoctoral Research Fellowship period, the appointee will be expected to leave the University and continue their academic formation and development in a different research environment. At the completion of the mentored training period, the appointee should be in a position to take up employment as a fully autonomous researcher with another employer.

Principal Accountabilities

- Manage and conduct a specific programme of research and scholarship under the leadership of the Principal Investigators.
- Liaise with project collaborators in University College Dublin
- Disseminate the outcomes of this research and scholarship including peer-reviewed academic publications of international standing and presentations at national and international conferences.
- Attend meetings and represent the research team both internally and externally.
- Prepare and present research findings to colleagues for review purposes.
- Assist with the preparation of progress reports for the funding body as required.
- Take responsibility for and manage and conduct administrative and management tasks associated with the programme of research in accordance with TU Dublin Financial Regulations and the conditions of the funding body.
- Play an active role in knowledge and technology transfer activities.
- Assist in the further development of the research programme and in seeking and pursuing appropriate external funding.

- Seek new areas of research and prepare and submit research bids and proposals that will enhance the reputation of TU Dublin.
- Where appointed to do so by TU Dublin, supervise or co-supervise with a full time member of TU Dublin staff, graduate research students.
- Engage in appropriate training and professional development opportunities as required by the Principal Investigators.
- Participate fully in the wider research and scholarly activities of the Research Centre/University and College/School.
- Teach on undergraduate and taught postgraduate programmes for a maximum of 100 hours in one academic year.
- The postholder will carry out any other duties within the scope, spirit and purpose of the job as requested by the PIs or Director of the College/School.
- Comply with all TU Dublin policies and regulations, including those in relation to Research Ethics and Health and Safety.

Person Specification

The ideal candidate will demonstrate the appropriate mix of knowledge, experience, skills, talent and abilities as outlined below:

Knowledge and Experience

- A PhD or equivalent in physics/chemistry/engineering/computing or an equivalent subject area (**Essential**)
- Knowledge and experience in quantitative data analysis with Python/Matlab/R or similar in computational biology, chemometrics, or machine learning settings (**Essential**)
- Evidence of a research profile and publication record of relevance to the field of focus of this research project (**Essential**)
- Knowledge of Raman and/or FTIR imaging (or other hyperspectral imaging approaches) and/or histopathological imaging (**Desirable**);
- Experience of handling and working with patient samples (**Desirable**);
- Experience of project management (**Desirable**);

Skills, talents & abilities

- Commitment to high quality research
- Effective written and verbal communication skills with ability to present complex information effectively to a range of audiences
- Good organisational skills
- Ability to work collaboratively and as part of a team
- Knowledge transfer skills

Further information for Post-doctoral Researcher

In the case of a 1st Post-doctoral Fellowship where the applicant may not have graduated yet, the successful applicant must, at the time of appointment, provide a letter from the appropriate graduate studies office confirming that the student has completed the programme including all the examination requirements and is just awaiting the formal graduation ceremony and the likely date on which that will take place.

Eligibility to compete

Eligibility to compete is open to candidates who are citizens of the European Economic Area (EEA) or Switzerland. The EEA comprises member states of the European Union along with Iceland, Liechtenstein and Norway. Other candidates may be eligible to compete subject to their having an appropriate work permit for the nature and duration of the position.

For Technological University Dublin staff, a secondment for the duration of the contract may be considered.

Terms and Conditions of Employment

A full statement of terms and conditions of employment will be given to the successful applicant in accordance with Terms of Employment (Information) Acts 1994 and 2001.

The main terms and conditions of employment are as follows:

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| Tenure: | The post will be offered on a Fixed-Term Specified Purpose basis for up to 5 years, initial funding is in place until 31/07/2023. |
| Location: | The successful candidate will initially be based in TU Dublin, Camden Row , RESC, FOCAS Research Institute but may be reassigned at the discretion of TU Dublin. |
| Salary: | The successful candidate will be appointed at point (01) of the Post-Doctoral Researcher Salary Scale i.e. €41,025 gross per annum. Remuneration may be adjusted from time to time in line with Government pay policy. Incremental credit may apply in line with University policy. |
| Hours of work: | A 39 hour working week is in operation. This can be reviewed by collective agreement, with the Minister for Further and Higher Education, Research, Innovation and Science. Having regard to the nature of the work, attendance outside these hours may be required from time to time. |
| Probation: | The terms of the University's Staff Induction policy and Probation procedure may apply. |
| Annual leave: | Annual Leave and Public Holidays shall be granted as per the Holidays (Employees) Act 1973 and Organisation of Working Time Act 1997. The annual leave entitlement for this post is 25 days per annum this is inclusive of the University closure days. |

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| Retirement: | The appointee will not be entitled to join the Education Sector Superannuation Scheme; however the University has a PRSA in place. A PRSA is a straightforward pension product that was introduced in 2003 by the Pensions (Amendment) Act 2002. It is a contract between an individual and the authorised PRSA provider in the form of an investment account that can be used to save for retirement. |
| Sick Leave: | The terms of the TU Dublin Sick Leave policy will apply. Sick leave will be in accordance with arrangements authorised from time to time by the Minister for Further and Higher Education, Research, Innovation and Science. |

Other conditions:

Nature of the post

The post will be on a Fixed Term Specified Purpose basis for up to 5 years, with initial funding in place until 31/07/2023, subject to the terms of the provisions of the Technological Universities Act 2018.

Application Process

Application Form

Applications will be accepted through the online application service at www.tudublin/vacancies. A CV will be required in addition to the application form. All correspondence from the University regarding your application will be by email. Please ensure that the security filters on your email provider will accept emails from TU Dublin.

Closing Date

The closing date for applications is **5pm (Irish Time) on 13th August 2021**. Late applications will not be accepted.

It is anticipated that interviews for this post will take place on **24th September 2021**. Please note that the interview date might change. The interview assessment will be 40 minutes in length and will include a presentation of 10 minutes duration. The topic of this presentation will be as follows:

“The candidate’s previous research experience”.

Contact information

For further information about this post please contact: Dr Aidan Meade at aidan.meade@tudublin.ie.

For queries regarding the application process, please contact Rosemary Okafor at (01) 220 5157 between 9.30 and 5.00pm, Monday to Friday or email rosemary.okafor@tudublin.ie.

For guidance on completing your application please follow steps 1-10 as outlined below in the Guidance on completing the Application Form section.

Further Information for Candidates

Canvassing will automatically disqualify.

You are also advised that you can only submit one application per competition. Should you have any issues with your submission, please contact us.

TU Dublin is an equal opportunities employer and is committed to the employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community.

In accordance with TU Dublin's Protection of Children and Vulnerable Adults policy, all candidates applying for a post will be required to disclose previous convictions or pending prosecutions on the Application Form. Candidates applying for a position in a Designated Area will be required to undergo Garda Vetting as part of the selection process. Decisions regarding appointments may be made by University Management based on the candidate's declaration.

The University may require candidates to undertake a pre-employment medical with an Occupational Health Physician. Normally pre-employment medicals are required for positions with a duration of one year or more. The primary purpose of the pre-employment medical is to assess an individual's fitness for a particular position or occupation with regard to the requirements for that post. TU Dublin will have regard to its obligations under the Disability policy to make reasonable accommodation for a candidate.

A conditional offer of employment may be made to the successful candidate(s) **subject to** submission and verification of required evidence of qualifications, professional experience, references, pre-employment medical, Garda Vetting as appropriate. No appointment will be made unless Human Resources verify a candidate's academic qualifications and/or evidence of professional experience required for the role. In this regard, where a qualification and/or professional experience is an essential criterion, candidates will be required to provide original academic transcripts, parchment and original statements from previous employers. The cost incurred by an applicant for requesting an academic transcript will not be covered by the University. The University reserves the right to verify documentation with the relevant bodies/employers.

Appointees are also required to furnish:

- as evidence of age, a certified extract from a Public Register of Birth or passport;
- Proof of PPS Number (e.g. social services card);

Appeals:

If a candidate wishes to appeal either a shortlisting decision or a Selection Board decision, they must indicate their intention to do so by submitting an email to the Resourcing Manager (referred to as HR Management throughout this appeals process) within 2 working days of the date upon which written notification to the unsuccessful candidate is issued. The email notice of intent must be followed by the submission of the Appeal Form to HR Management. The completed Appeal Form must be submitted no later than 5 working days of the date upon which written notification to the unsuccessful candidate is issued or up to 3 working days after the submission of the email notice of intent. Further details in relation to the University's Recruitment, Selection & Appointment Policy, including details in relation to the Appeals Procedure, can be found at the following link: [Recruitment, Selection and Appointment Policy](#)

Guidance on completing the Application Form: Hints and Tips

"Technological University Dublin (TU Dublin) is committed to attracting, recruiting, developing and retaining the highest calibre of staff to build a diversified, supportive, innovative and inclusive workforce reflective of the wider community. TU Dublin aims to attract the best people who have the experience, knowledge, skills, abilities and competencies to support the University's mission. TU Dublin supports equality of opportunity, diversity and inclusion and encourages underrepresented groups to make applications and accommodates candidates with disability to apply for posts"

[Recruitment, Selection and Appointment Policy](#)

The following section is designed to give advice to candidates on how to make their best application.

1. In accordance to TU Dublin's commitment to equality of opportunity for all job applicants, if you have a disability that prevents the use of the online system, you will be supported in your application and HR will send you an application pack. You are asked to request any reasonable accommodation in sufficient time to ensure you can participate fully in the process.
2. In order to make a valid application for the post advertised, you must complete all sections of the Application form and you must also submit a CV. In relation to Academic or Research posts, unless otherwise directed in this document, you should limit the number of publications/attachments to a maximum of three.

3. In Section E of the application form, you are asked to provide the details of two referees. If we contact your referees (following interview) they will be given a copy of the job description for the post and the requirements of the role and in this context, they will be asked to comment on your professional work/ability and on your character. TU Dublin also reserves the right to contact referees directly.
4. In the supporting statement, at Section F, you have the opportunity to highlight particular skills, competencies, achievements and personal qualities to support your application. This section carries a word limit of 2,000 characters including spaces. You should adhere to this word limit if you choose to submit this statement by uploading a word document.
5. TU Dublin applies a shortlisting process for all competitions. Therefore, you should ensure that the information provided clearly and fully describes how you satisfy the essential, desirable, and any of the other role requirements set out in the Person Specification. It is important to ensure that your application clearly demonstrates that you hold the qualifications, knowledge and experience required for the role.

Normally, the number of applications received for a position exceeds that required to fill existing and future vacancies of the position. While a candidate may meet the eligibility requirements of the competition, if the numbers applying for the position are such that it would not be practical to interview everyone, TU Dublin may decide that a number only will be called to interview. In this respect, TU Dublin provides for the use of a shortlisting process to select a group for interview who, based on an examination of the applications appear to be the most suitable for the position. The Selection Board will examine the applications against a pre-determined criteria based on the requirement of the position as advertised. This is not to suggest that other candidates are necessarily unsuitable or incapable of undertaking the job, rather that there are some candidates, who based on their application, appear to be better qualified and/or have more relevant experience. **With that in mind, it is therefore, in your own interest to provide a detailed and accurate account of your qualifications/experience on the application form.**

6. Where possible TU Dublin will indicate the anticipated Interview date within the candidate brief. It is the University's preference that candidates attend for interview in person. However, if you reside outside the island of Ireland or if you will be temporarily abroad on the date of the interview, TU Dublin may facilitate video conferencing which you must request if you are shortlisted and invited to interview. It is your responsibility to provide the conditions appropriate to an interview setting at the agreed interview date and time, and that you have access to compatible technology to allow the interview to take place.
7. TU Dublin will not accept a late application. Most competitions are open for up to three weeks. You will not be able to submit an application on the online system once the deadline is passed. Therefore, you should ensure you allow sufficient time to make your application in advance of the closing time.

8. For information on the University's Data Protection Policies and Procedures, please see our website <https://www.tudublin.ie/explore/gdpr/> and our Data Protection Notice for Recruitment Candidates <https://www.tudublin.ie/media/website/explore/privacy-policyx2fgdpr/documents/appendices/E-Recruitment-Candidates-4-12-20.pdf>
9. For further information regarding TU Dublin please log onto <https://www.tudublin.ie/>