**Post Specification**

<table>
<thead>
<tr>
<th>Post Title:</th>
<th>PhD Student Recruitment for research on “3D printing of thermoelectric energy harvesting devices”</th>
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<tbody>
<tr>
<td>Post Status:</td>
<td>48-Month Contract (Fixed-term, Full-time) Preferably starting in April 2020</td>
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<tr>
<td>Research Group / Department / School:</td>
<td>Pakdel Group / Department of Mechanical &amp; Manufacturing Engineering / School of Engineering,</td>
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<td>Location:</td>
<td>Trinity College Dublin, the University of Dublin College Green, Dublin 2, Ireland</td>
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<td>Reports to:</td>
<td>Prof. Amir Pakdel, Principal Investigator</td>
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<td>Salary:</td>
<td>According to SFI guidelines:</td>
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<td>• An annual PhD studentship of € 18,500</td>
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<td>• An annual contribution to cover the tuition fees</td>
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<td>Hours of Work:</td>
<td>8 hours per day</td>
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<td>Closing Date:</td>
<td>Candidates will be considered until the position is filled.</td>
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**Application Procedure**

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Applicants should submit:
- A full Curriculum Vitae, including the marks (%) for all modules/courses completed to date, and the names and contact details of TWO referees (email addresses),
- A cover letter (aka: motivation letter/ personal statement/ statement of purpose) to:

  Prof. Amir Pakdel
  pakhela@tcd.ie
Post Summary
Prof. Amir Pakdel, a principal investigator and group leader in Trinity College Dublin, is currently seeking a PhD candidate to perform research on preparation of organic conductive materials and inorganic semiconducting nanomaterials to manufacture flexible thermoelectric energy harvesters by additive manufacturing (3D printing) techniques.
This cutting-edge research project will be in collaboration with National Institute for Materials Science (NIMS; Tsukuba, Japan) and National Graduate School of Engineering of Caen (ENSICAEN; Caen, France). The successful candidate will have the chance to visit these institutes and use their state-of-the-art facilities for this collaborative research project.
Upon graduation, you will be qualified to follow a career path either in academia (Engineering, Solid-State-Physics, or Organic/Polymer Chemistry) or various branches of industry.

Standard Duties and Responsibilities of the Post
- To conduct a specified programme of research under the supervision and direction of the Project Leader
- To engage in appropriate training and professional development opportunities as required by your Project Leader, School, or College in order to develop research skills and competencies

Funding Information
Funding for this post is provided by Science Foundation Ireland.

Person Specification

Qualifications
An ideal applicant will have:
- a 1st Class or strong 2.1 Honours Bachelor’s degree in Physics, Chemistry, Materials Science or related disciplines. (Essential)
- a Master’s degree in one of the aforementioned disciplines (Desirable, but not essential)
Nationals of all countries that have diplomatic relations with ROI are eligible to apply.
Knowledge & Experience (Essential & Desirable)

- Knowledge and experience on preparation or applications of organic conductive materials, conductive polymers, or inorganic semiconducting nanomaterials (Essential)
- Knowledge and experience on thermoelectric materials and devices (Desirable)
- Knowledge and experience on manufacturing of flexible electronics (Desirable)
- Knowledge and experience on 3D printing techniques (Desirable)

Skills & Competencies

- Excellent time-management, written and oral communication skills.
- Excellent organisation and motivation to manage the day-to-day running of a research project, to identify research objectives and to carry out appropriate research activities within a given timescale.

Further Information for Applicants

<table>
<thead>
<tr>
<th>URL Link to Department</th>
<th><a href="https://www.tcd.ie/Engineering/">https://www.tcd.ie/Engineering/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>URL Link to Trinity College Dublin</td>
<td><a href="https://www.tcd.ie">https://www.tcd.ie</a></td>
</tr>
<tr>
<td>URL Link to Human Resources</td>
<td><a href="https://www.tcd.ie/hr/">https://www.tcd.ie/hr/</a></td>
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</table>
Trinity College Dublin, the University of Dublin

Trinity is Ireland’s premier university, with a proud tradition of excellence stretching back to its foundation in 1592. The oldest university in Ireland, and one of the oldest in Europe, today Trinity sits at the intersection of the past and the future, and is ideally positioned as a major university in the European Union. Our 47-acre campus is located in the heart of Dublin city centre and is home to historic buildings dating from the University’s establishment, as well as some of the most cutting-edge teaching and research facilities in Ireland. Students at Trinity benefit from a unique educational experience across a range of disciplines in our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences. The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success.

Trinity has developed 18 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. These internationally recognised themes include such diverse areas as Cancer, Immunology, Telecoms, Identities in Transformation, Nanoscience, Neuroscience, and Making Ireland. Researchers from across the University work together in innovative ways to develop new and exciting approaches to their research and explore the frontiers of knowledge in the 21st century. In creating these dedicated research themes, Trinity’s researchers are able to become a more powerful force on the global stage, successfully competing for large-scale grants and attracting top students and faculty to the University. Trinity is home to Ireland’s first purpose-built Nanoscience research institute, CRANN, which opened in January 2008. This state-of-the-art facility houses 150 scientists, technicians, and graduate students in specialised laboratories, fostering creative innovations that have seen Trinity’s researchers make significant breakthroughs.

The Trinity Long Room Hub for Arts and Humanities Research Institute is the University’s flagship institute for research in the Arts and Humanities, providing a world-class environment for cross-disciplinary collaborative projects. The Long Room Hub provides a central location through which the University’s internationally respected Arts and Humanities research can become more visible, demonstrating its relevance for contemporary and future societies.
Researchers from across the University regularly participate in debates on topical issues facing the world today. As well as operating an International Visiting Research Fellowship programme, the Long Room Hub also hosts major EU-funded Digital Humanities projects.

One of the most instantly recognised parts of Trinity’s campus is the famous Old Library, home to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps, and early printed material. Trinity’s Library is the largest research library in Ireland and is an invaluable resource to Trinity’s students and research community. Built up over the four centuries of the University’s existence, the Library’s collections have benefitted from its status as a Legal Deposit library for the past 200 years, granting Trinity the right to claim a copy of every book published in Ireland and the UK. At present, the Library’s holdings span approximately 4.25 million books, 22,000 printed periodical titles, and access to 60,000 e-journals and 250,000 e-books.

Trinity attracts top students from Ireland and abroad and prides itself on the consistently high standard of student admitted to the University every year. These students are drawn to Trinity for the excellence of our research-led teaching and for the quality and prestige a degree from this University confers. Trinity has also pioneered accessibility to education in Ireland, becoming the first university in the country to reserve 15% of its undergraduate places for students from non-traditional learning groups. Trinity is the top-ranked European university for student entrepreneurship and Europe’s only representative in the world’s top-50 universities.

Our alumni have gone on to shape the history of Ireland and of Western Europe in a wide range of fields. These include such notable figures as Jonathan Swift, Oscar Wilde, William Rowan Hamilton, Edmund Burke, William Stokes, Denis Burkitt, Louise Richardson, Lenny Abrahamson, and Anne Enright. Three of Trinity’s graduates have been awarded Nobel prizes: Ernest Walton for Physics in 1951; Samuel Beckett for Literature in 1968; and William Campbell for Physiology / Medicine in 2015. Trinity also counts the first female President of Ireland among its alumni in Mary Robinson, as well as other notable former Presidents Douglas Hyde and Mary McAleese. At Trinity we are justifiably proud of our tradition, and we strive to uphold this excellence as we face the demands of the 21st century.
Ranking Facts

Trinity is the top ranked university in Ireland. Using the QS methodology, the University is ranked 104th in the world and using the Times Higher Education World University Rankings methodology Trinity is 117th in the world.

Overall

- Trinity is Ireland’s No.1 University in the QS World University Ranking, THE World University Ranking and the Academic Ranking of World Universities (Shanghai).
- Trinity is ranked 104th in the World, and 36th in Europe, in the 2018/2019 QS World University Ranking.
- Trinity is ranked in the Top 120 for Graduate Employability in the QS 2018 Rankings.
- Trinity is in the Top 50 most innovative universities in Europe according to Reuters.¹
- Between 2010 and 2015, Trinity was ranked the top university in Europe for entrepreneurship according to Pitchbook’s independent analysis.²

Internationalisation

- Trinity is ranked 52nd in the world in the THE World University Ranking for international outlook.

Research Performance

- Of the 981 institutions included in the THE World University Rankings for 2017, Trinity is in the top 15% internationally for research performance.
- Trinity is ranked in the top 15% internationally by QS for citations.

In the QS World University Subject Rankings:

- Trinity is ranked in the top 50 worldwide in four subject areas according to the QS World University Subject Rankings 2018. The University is ranked in the top 100 globally for 20 subjects overall.
- Trinity’s Top 50 subjects include Nursing (25th), Classics (28th), English (28th) and Politics (43rd).
- Trinity is ranked in the top 100 for each of the following 16 subjects: History, Languages, Philosophy, Theology, Computer Science, Biology, Medicine, Pharmacy, Chemistry, Geography, Materials Science, Education, Law, Social Policy, Sociology and Sport.
- The University is ranked in the top 100 for three broad subject areas: Arts & Humanities (57th), Life Sciences & Medicine (87th), and Engineering & Technology (89th).
Research Themes

- Ageing
- Cancer
- Creative Arts Practice
- Creative Technologies
- Digital Engagement
- Digital Humanities
- Genes & Society
- Identities in Transformation
- Immunology, Inflammation & Infection
- International Development
- International Integration
- Making Ireland
- Manuscript, Book and Print Cultures
- Nanoscience
- Neuroscience
- Telecommunications
- Smart Sustainable Planet
- Next Generation Medical Devices
The Selection Process in Trinity

The Selection Committee (Interview Panel) may include members of the Academic and Administrative community together with External Assessor(s) who are expert in the area. Applications will be acknowledged by email. If you do not receive confirmation of receipt within 1 day of submitting your application online, please contact the named Recruitment Partner on the job specification immediately and prior to the closing date/time.

Given the degree of co-ordination and planning to have a Selection Committee available on the specified date, the University regrets that it may not be in a position to offer alternate selection dates. Where candidates are unavailable, reserves may be drawn from a shortlist. Outcomes of interviews are notified in writing to candidates and are issued no later than 5 working days following the selection day.

In some instances the Selection Committee may avail of telephone or video conferencing. The University’s selection methods may consist of any or all of the following: Interviews, Presentations, Psychometric Testing, References and Situational Exercises.

It is the policy of the University to conduct pre-employment medical screening/full pre-employment medicals. Information supplied by candidates in their application (Cover Letter and CV) will be used to shortlist for interview.

Applications from non-EEA citizens are welcomed. However, eligibility is determined by the Department of Jobs, Enterprise and Innovation and further information on the Highly Skills Eligible Occupations List is set out in Schedule 3 of the Regulations https://www.djei.ie/en/What-We-Do/Jobs-Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Highly-Skilled-Eligible-Occupations-List/ and the Ineligible Categories of Employment are set out in Schedule 4 of the Regulations https://www.djei.ie/en/What-We-Do/Jobs-Workplace-and-Skills/Employment-Permits/Employment-Permit-Eligibility/Ineligible-Categories-of-Employment/. Non-EEA candidates should note that the onus is on them to secure a visa to travel to Ireland prior to interview. Non-EEA candidates should also be aware that even if successful at interview, an appointment to the post is contingent on the securing of an employment permit.
Equal Opportunities Policy

Trinity is an equal opportunities employer and is committed to 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. On that basis we encourage and welcome talented people from all backgrounds to join our staff community. Trinity’s Diversity Statement can be viewed in full at https://www.tcd.ie/diversity-inclusion/diversity-statement.