MTU
Ollscoil Teicneolaíochta na Mumhan
Munster Technological University

Professor of Photonics



University: Munster Technological University
Faculty: Faculty of Science and Informatics
Organisational home: Centre for Advanced Photonics and Process Analysis
Reports to: Dean of the Faculty of Science and Informatics
Location: Across MTU Campuses

The Opportunity

Munster Technological University is establishing its first professorial appointments to strengthen research leadership, develop talent and extend the contribution of its research to industry and society. The Professor of Photonics will build on an established research platform to advance its scale, international influence and impact.

Photonics is the science and technology of generating, controlling and detecting light. It connects fundamental scientific discovery with applications in communications, healthcare, manufacturing, food, energy and the environment. Developments in photonic materials, devices, lasers and sensing create opportunities for research that advances scientific understanding and addresses significant technological challenges.

MTU has established substantial capability through its Centre for Advanced Photonics and Process Analysis, CAPPA. Its research spans nanophotonics, photonic materials, laser dynamics, spectroscopy, imaging, optical sensing and process analysis. Specialist facilities, an active postgraduate research community and national and European collaborations provide a strong foundation for further development.

The CAPPA Technology Gateway connects research expertise with industry needs, while the MTU@Tyndall partnership provides complementary research relationships and opportunities. Wider university strengths in science, computing, engineering, health and other disciplines support interdisciplinary applications.

The appointment offers an internationally recognised researcher the opportunity to build on these strengths, develop research talent and lead programmes that connect fundamental and applied photonics with technological, economic and societal benefit.





Purpose and Scope of the Role

The Professor will provide academic and research leadership in Photonics, strengthening the quality, scale and sustainability of MTU's research and innovation activity in this field. The role may expand to take on a broader remit, including Research Centre activity leadership or supervision.

Research capacity building is central to the appointment. The Professor will combine their own research leadership with the development of Colleagues, Doctoral Researchers and Collaborative Teams. They will strengthen competitive funding activity, deepen external partnerships and extend the contribution of MTU's research to industry and society.

The role requires a substantial research record in Photonics, Nanophotonics, Optics or a closely aligned field that contributes directly to Photonics Research and Innovation. Relevant expertise may include Integrated Photonics; Photonic Materials; Laser or Semiconductor Devices and Dynamics; Spectroscopy, Imaging or Optical Sensing; and Photonic Design and Integration.

Complementary expertise may include Biophotonics, Quantum and Semiconductor Photonics, Optical Communications, Environmental Sensing, Photonic Manufacturing or the application of Artificial Intelligence to Photonic Systems and Spectral Data. These areas illustrate potential directions; candidates are not expected to demonstrate expertise across all of them.

Working with existing research leaders and colleagues, the Professor will strengthen CAPPA's research programme and develop collaborations across relevant disciplines. They will advance fundamental and applied research and support its progression towards technologies, processes or applications where appropriate.

Principal Responsibilities

Research and Innovation

- Develop and lead a coherent photonics research agenda that builds on CAPPA's established strengths and addresses significant scientific and technological challenges.
- Strengthen research capacity by developing collaborative teams, mentoring colleagues and supporting emerging researchers to establish independent research profiles and funding portfolios.
- Lead competitive funding proposals and secure sustainable national, international and industry-supported research income.
- Develop and lead substantial interdisciplinary and multi-partner research programmes, connecting expertise within MTU and across external research networks.
- Conduct, lead and disseminate high-quality fundamental and applied research, strengthening MTU's international standing in photonics.
- Supervise doctoral researchers to completion and support the development of postgraduate and postdoctoral research talent.
- Contribute to the strategic development and effective use of specialist research infrastructure, working with relevant colleagues and partners.
- Advance the development, characterisation and validation of photonic materials, devices, systems or applications, supporting pathways towards translation and impact.
- Champion research integrity, responsible innovation and an inclusive research culture.

Teaching and Learning

- Provide academic leadership in research-informed teaching and contribute to undergraduate, postgraduate and professional education in photonics and related disciplines.
- Contribute to curriculum and programme development that reflects advances in photonics research, technology and professional practice.

- Work with colleagues and external partners to identify emerging skills needs and develop relevant educational responses.
- Support interdisciplinary learning that connects photonics with relevant scientific, engineering and application domains.
- Create opportunities for students to engage with research, specialist facilities and practical technological challenges.
- Contribute to academic quality assurance and effective, inclusive and student-centred teaching practices.

Contribution to Society

- Develop partnerships that translate photonics research into economic, societal and environmental benefit, with particular attention to regional needs and opportunities.
- Work with industry, the CAPPA Technology Gateway and MTU's innovation and enterprise functions to support knowledge transfer, technology adoption and commercialisation where appropriate.
- Apply photonics expertise to challenges that may include healthcare, food quality, environmental monitoring, communications and sustainable manufacturing.
- Support the progression of research towards validated technologies, processes and services that address industry and public-sector needs.
- Contribute evidence and expertise to technology roadmaps, standards, professional practice and public discussion relevant to the field.
- Promote responsible innovation and the contribution of photonics to sustainable technological development.

Contribution to the University

- Contribute to the development and implementation of faculty and university research priorities, strategies and initiatives relevant to photonics.
- Work with existing research leaders and colleagues to strengthen CAPPA's research programme and its connections across MTU.
- Provide collegial academic leadership that develops interdisciplinary collaboration across faculties, campuses and research groups.
- Develop research opportunities through MTU@Tyndall and other relevant national and international partnerships.
- Mentor colleagues and emerging research leaders, strengthening institutional research capability and a positive research culture.
- Contribute to university committees, academic governance and strategic initiatives appropriate to the role.
- Represent MTU externally and develop relationships that enhance its reputation, research opportunities and contribution to regional and international development.

Person Specification

The successful candidate will be an internationally recognised research leader in photonics or a closely aligned field, with a substantial record of advancing photonics research and innovation. They will bring a clear intellectual direction and the ability to strengthen an established research programme through collaborative leadership, talent development and external engagement.

Candidates from complementary disciplines must demonstrate a clear, substantial and sustained contribution to photonics. Expertise in an application area, without a demonstrable record of original photonics research, will not satisfy the disciplinary requirement.

Essential Criteria

Candidates must demonstrate:

1. *Relevant Qualification* - A doctorate.
2. *Research excellence and standing* - A sustained record of high-quality research and internationally recognised leadership in photonics, nanophotonics, optics or a closely aligned field, demonstrating a substantial contribution to photonics research and innovation.
3. *Research leadership and capacity building* - A demonstrated record of developing research capability through team development, mentoring or collaborative programme leadership, together with the ability to strengthen and expand an established interdisciplinary research programme.



4. *Competitive research funding* - A successful record of securing external research funding as principal investigator, coordinator or equivalent research lead, including leadership of substantial competitive awards, and contributing to the effective delivery of funded programmes.
5. *Doctoral and post-doctoral supervision* - Substantial supervision of successful doctoral researchers to completion. Supervision of postdoctoral research staff and other research supporting staff.
6. *Teaching and educational contribution* - Demonstrated ability to contribute effectively to research-informed teaching and learning. Relevant evidence may include undergraduate or postgraduate teaching, doctoral education, professional education, curriculum development or other substantive educational activity.

Desireable Criteria

1. *Interdisciplinary collaboration and external engagement* - A record of developing productive interdisciplinary research partnerships and sustained collaboration with industry, research organisations, public bodies or other external partners relevant to photonics.
2. *Research application and impact* - Evidence that their research has contributed to technological, industrial, economic, societal, environmental or professional outcomes beyond academic publication.
3. *Collegial leadership* - Evidence of working effectively with colleagues, supporting researcher development and contributing to a positive, inclusive research and academic environment.

Evidence of Suitability

Candidates should address each essential criterion in their application, identifying their own contribution and the outcomes achieved.

Relevant evidence may include influential publications and other research outputs; leadership of substantial national or international funding awards; interdisciplinary programmes and teams developed; doctoral completions; photonic technologies or processes validated or adopted; industry collaborations; and contributions to standards, technology roadmaps or professional practice.

Translation and commercialisation achievements may include invention disclosures, patents, licensing, enterprise creation, industry-funded research or other evidence of application. Candidates may demonstrate impact through different combinations of technological, industrial, economic and societal contributions.

Experience of developing specialist research infrastructure, collaborative research environments or doctoral training programmes can provide evidence of capacity building. Leadership in international networks, professional bodies or advisory initiatives can provide evidence of research standing and influence.

Research quality and impact will be considered in the context of the candidate's discipline and contribution. The examples above are illustrative and are not additional mandatory criteria.

Responsibilities and Working Arrangements

The responsibilities of the appointment include Research and Innovation, Teaching and Learning, Contribution to Society and Contribution to the University. Their balance will vary over time according to the University's strategic and operational needs and applicable workload allocation arrangements.

The Professor will undertake other appropriate duties relevant to their skills, competencies and professorial role, maintain their professional development, and comply with relevant university policies and the nationally agreed contract of employment.

Employment Terms

Appointment

- The appointment is full-time and permanent, subject to the terms of the contract of employment.

Salary

- The nationally agreed contract specifies the following salary scale, effective from 1 June 2026: €137,172; €141,988; €146,792; €150,889; €155,208; €159,524; €168,795. The applicable approved scale will apply at appointment, including any subsequent authorised revisions. Starting salary is determined by the rules governing starting pay and pay on promotion and is not subject to negotiation. Incremental progression is subject to relevant university policies and fulfilment of agreed duties.

Probation

- Appointment is subject to a probationary period of 12 months. Confirmation, any continuation of probation and termination during probation are governed by the contract and applicable procedures.

Place of work

- Across MTU Campuses. Regular attendance at other university sites may be required, and appointees must undertake duties at locations reasonably required by the University. In-person attendance is required to discharge the duties of the role. Any remote working arrangement requires approval under the University's Blended Working Policy.

Reporting Relationship

All appointees report to the Dean of the Relevant Faculty. Reporting arrangements are subject to the provisions of the nationally agreed contract.

Annual leave

- Annual leave entitlement is 30 days, inclusive of any compulsory leave days reasonably determined by the University. Leave arrangements must be agreed in advance with the relevant line manager and are subject to university needs and applicable provisions.

Hours and workload

- The appointment is full-time and extends across the 12-month university year. Appointees are required to work the hours reasonably necessary for the proper performance of their duties, taking account of applicable working-time legislation. Remuneration reflects the flexibility required of the role, with no additional payment for additional hours worked. The balance of duties varies according to strategic and operational needs and applicable workload allocation arrangements.

Sick leave and other leave

- Sick leave is governed by the applicable public service sick leave scheme. Other leave entitlements apply in accordance with relevant statutory provisions, university policy and applicable public service arrangements.

Pension

- Membership of the relevant superannuation scheme is compulsory. The applicable scheme, retirement age and pension terms depend on public service rules and the appointee's circumstances. Public service pension abatement provisions may apply where relevant.



Employment Terms

Professional development

- Appointees are expected to maintain their professional development and participate in relevant university development and compliance training.

External activities

- External employment, self employment, working partnerships and consultancy require prior written approval, as specified in the contract.

Academic and professional obligations

- Appointees are subject to contractual provisions on academic freedom, research integrity, confidentiality, data protection and intellectual property, together with relevant university policies and applicable legislation.

Notice

- Subject to the probationary provisions and other contractual exceptions, either party must give at least three months' written notice to terminate employment, unless a shorter period is mutually agreed.

Contractual basis

- The nationally agreed contract of employment governs the appointment. Any separately agreed university support arrangements are subject to their specific terms and approvals.

The University regrets that it cannot pay expenses for candidates attending interviews for this post or for taking up the position, if appointed.



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