



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

sound
bounce

Application details:

Start date: Immediately

Closing date: Open – immediate start required

The School of Engineering at Trinity College ranks in the top 1% of global rankings for citations of published research work. The school has a long history of engagement in European research, in particular noise reduction technologies in an aerospace context. This post will be hosted within the Fluids, Vibration & Acoustics (FVA) from the School of Engineering. The FVA group has been conducting research for over 30 years on modelling and analysis of flow/structure interaction including aero-acoustics, vibro-acoustics and environmental acoustics.

SoundBounce is an SME based in Dublin, which has developed a novel acoustic material for use in the automotive, aerospace, construction, and power generation industries. The company is at the forefront of development of new materials for the acoustics industry and provides exciting employment opportunities to work on the next generation of acoustic materials.

Job description

In recent years a new class of acoustic materials with highly unusual properties has been proposed as an acoustic metamaterial. These materials have the ability to alter the reflection, absorption or transmission of sound in a controlled manner that is unlike any traditional or natural material. These metamaterials are often based on novel materials with complex geometric structures that must be precision manufactured to achieve the acoustic properties desired.

SoundBounce is an acoustic metamaterial for superior noise reduction developed in Ireland. SoundBounce is a composite material, comprising of a naturally occurring responsive material enclosed in a cellular shaped skin. The TANDEM research project will focus on the development of large scale test demonstrators of this novel metamaterial and the work is funded through the EU H2020 SME instrument.

The researcher will make use of the department's world leading additive manufacturing and acoustic test facilities to advance the Technology Readiness Level (TRL) of this metamaterial from the current TRL 4 to TRL 6/7. This will involve testing and validating the performance of this metamaterial under real-world conditions.

The post is fully sponsored by SoundBounce who will be the direct employer of this role.

TANDEM is an EU H2020 SME Instrument funded project that brings together expertise from acoustics, applied mathematics, and chemistry to deliver the next generation of acoustic materials.

SoundBounce is an acoustic metamaterial providing superior noise reduction and is the focus of project TANDEM. It is a paradigm shift over the current state of the art, enabling the creation of smaller, lighter products with unrivalled low frequency performance. This is critical in the construction, automotive, power generation and aerospace sectors where space is at a premium.

Find out more:

<https://www.tcd.ie/mecheng/research/fluids-acoustics-vibration/>

<http://ambercentre.ie/facilities/>

Essential requirements

The ideal candidate should have expertise in:

- Experimental acoustics – preferably normal and grazing incidence impedance measurement
- Finite Element Modelling – preferably COMSOL multiphysics
- CAD – Solidworks, Creo or equivalent

Desirable Requirements:

- Proven track record in scientific work and a relevant PhD degree.
- Interaction with industrial research projects
- Experience writing scientific papers jointly with the other members of a research group.

SALARY AND CONTRACT TERMS

The post is funded by the SoundBounce project for a fixed-term of 2 years. Salary will be placed on the Irish University Association's Researcher salary scales between point 2 and point 9 dependent on experience (€37,757 - €46,853).

Successful candidates can access an employee share option scheme, personal conference and training budget, and company bonuses.

Applications

Please apply directly to Dr. John Kennedy (jkenned5@tcd.ie) including the following attachments:

Application letter

Curriculum Vitae.

Course transcripts of Doctoral degree with grades and Certificate of Doctoral degree.

List of publications with the most significant publications highlighted.

References with names and contact details.

Applications will be considered until the position is filled but we will start reviewing candidates immediately.

MORE INFORMATION

For additional information, please contact

John Kennedy, Assistant Professor, Mechanical & Manufacturing Engineering

jkenned5@tcd.ie

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The Trinity Centre for Gender Equality and Leadership (TCGEL) was established in 2017 to deliver the University's strategic objectives to advance gender equality. Trinity College was among the first Irish applicants to receive the Athena Swan Bronze award, highlighting its commitment to promoting women in Science, Engineering and Technology. <https://www.tcd.ie/tcgel/>

SoundBounce is an equal opportunities employer.