

ACOUCTECT

Open Position at Level Acoustics & Vibration in the Field of Building Acoustics

Towards vibro-acoustic insulation of service equipment at lightweight building elements (ESR9)

Acoutect is a European project running from January 2017 until December 2020. This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement number 721536.

Acoutect marries "Acoustics" and "Architect" and responds to the important role that Acousticians have in the design of modern buildings. The overarching aim of Acoutect is to set up a PhD training network on building acoustics and react to the acoustic challenges stemming from modern building concepts to deliver sustainable indoor environments with respect to health and well-being. The coordinator of the project is Eindhoven University of Technology (TU/e).

Within this project we are seeking an early-stage researcher (ESR) for a duration of 36 months to join Level Acoustics & Vibration.

Level Acoustics & Vibration

Level Acoustics & Vibration is a spin-off company of the Eindhoven University of Technology (TU/e) and is located in the *Laboratorium voor Akoestiek* at the TU/e campus.

The main focus is the development and implementation of calculation and measurement methods within the fields of building acoustics, room acoustic, vibrations and low frequency noise in buildings and from railway towards buildings, and the impact of outdoor noise (outdoors and towards buildings). Besides Level Acoustics & Vibration applies newly-developed knowledge in cutting-edge (inter)national building projects and product development.

The *Laboratorium voor Akoestiek* houses the staff of Level Acoustics & Vibration as well as university staff of the chair Building Acoustics of the TU/e. The chair Building Acoustics is the acoustics research group of the unit Building Physics and Services (BPS) being the leading academic group on acoustics of the built environment in the Netherlands. Research conducted by Level Acoustics & Vibration often is in close cooperation with the chair Building Acoustics.

Our laboratory has three sound transmission rooms, one of which is used as a reverberation chamber, as well as dedicated vibration, building and room acoustic measurement equipment.

Project Background

To ensure a healthy environment for people living and working in buildings, research and engineering in the area of building acoustics is essential. Developments in modern building concepts, such as sustainable low-energy consuming buildings, buildings with lightweight materials and open plan working environments, as well as the need to build in extremely noisy areas, require involvement of acoustic experts in order to successfully (re)design buildings without negatively impacting upon people's health and well-being. Taking up current and future acoustic challenges requires innovative solutions based on a thorough understanding and mastering of modern methods and tools, as well as a holistic acoustic approach involving acoustic design, products and subjective evaluation. However, in the complex field of building acoustics, research activities typically are not holistic and have become slightly marginalised. As a consequence, there is a lack of building acoustics experts.

To meet the future acoustic needs of the built environment, Acoutect is constructed around two objectives:

1. Establish a long-lasting European-wide training programme on building acoustics.
2. Launch an innovative research programme.

With these objectives, Acoutect will equip early stage researchers (ESRs) with skills to ensure acoustic quality of modern and future building concepts, and with excellent perspectives for a career in industry or academia within the area of building acoustics. The training and supervision to reach these objectives is offered by the Acoutect consortium.

Vacancy description

Building installations generate noise, both airborne and structure-borne. Fighting that has never been simple. There are two trends in architecture which increase the importance of installation noise: firstly the amount of installation equipment in dwellings is increasing, secondly lightweight construction is becoming popular more and more. Due to matching impedances of source (equipment) and receiver (wall/floor) and relatively low stiffness and mass of lightweight building elements, the response of lightweight building elements due to structure borne

excitation by installations tends to be hard to predict and often relatively high.

Your research project will focus on the development of solutions based on creating dis-interaction of equipment and lightweight building elements. To that aim, understanding of the physics of the equipment, of the building elements and their interaction needs to be built up, tools to encapsulate and disseminate this knowledge developed and smart solutions created. The research will entail theoretical analyses, modelling and measurements.

Candidate Profile

All candidates must be fluent in spoken and written English. The R&D is multidisciplinary. An ideal candidate has an M.Sc. in physics or in engineering (e.g. acoustics, building physics, mechanical engineering).

- Knowledge of computational modelling. Programming languages and signal processing is a strong advantage.
- Experience with experimental measurements and statistical analyses.
- Candidates get the opportunity to perform this work as part of a PhD study.
- All members of the network are equal opportunity employers, both female and male candidates are invited to apply.

Job conditions

The host organisation will appoint the successful applicant under an employment contract with a very competitive salary according to EU regulation, including social security. The duration of the contract is, at least, 36 months. The fellow is expected to join their host organizations starting from July 2017 (estimated time). The salary is composed from the following allowances depending on the personal status of each fellow (see more details at www.acoutect.eu):

- Living allowance: Monthly rate of €3,110. This amount will be multiplied by the Country Correction Coefficient of the recruiting institution. This amount includes the monthly salary for the fellow before any deductions (contributions of both employers and employees to social security, pension, taxation, voluntary deductions, etc.).
- Mobility Allowance: Monthly rate of €600. Contributes to the expenses of the researcher caused by the mobility.
- Family Allowance: Monthly rate of €500. For all the recruited fellows who have family at the time of the recruitment.

Additional funding for participation to courses, workshops, international conferences, etc. is ensured.

This position includes doctoral studies. The successful applicant must register for the PhD program at TU/e. The duration of the doctoral studies in the Netherlands is 4 years. Therefore, this position includes an additional year

contract at the end of Acoutect (the employment contract conditions for this last year are according to TU/e regulations).

EU Eligibility criteria for candidates (in short)

The applicant may be of any nationality.

The applicant shall at the time of recruitment be in the first four years of his/her research career and have not been awarded a doctoral degree. This is measured from the date when the applicant obtained the degree, which would formally entitle him/her to register as PhD candidate.

The applicant must not have resided or carried out his/her main activity in the country of the host organisation for more than 12 months in the 3 years immediately prior to the recruitment.

Benefits

Level Acoustics & Vibration offers to the selected candidate a stimulating and ambitious research and work environment. The city of Eindhoven lies in the technological heart of the Netherlands and has a population of 21,000 students.

Besides this, employees of Level Acoustics & Vibration may use some of the attractive benefits the TU/e campus offers, a child-care facility, and a modern sports complex. Assistance for finding accommodation can be given.

How to Apply

Follow the instructions at www.acoutect.eu.

APPLY NOW! Application open from February 1st 2017. The evaluation process of the applications will start from April 1st 2017.

Questions regarding this position: info@acoutect.eu.