ACOUTECT

Open Position at Moelven Töreboda AB in the Field of Building Acoustics

Low-frequency acoustic behavior of composite lightweight floors (ESR6)

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 Sklodowska-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 month to join Moelven Töreboda AB, Töreboda, Sweden.

Moelven Töreboda AB is a glulam producer located in the mid-south part of Sweden. The factory was founded in 1919, which makes us the world's oldest glulam producer. The number of employes is 115, and we produce around 45 000 m³ glulam products per year. An increasing product for us to design, produce and erect large wooden structures. This includes bridges and multistorey buildings for dwellings, schools or offices. Moelven Töreboda AB is a part of the Norwegian group Moelven Industrier ASA.

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

The impact noise insulation in lightweight floors is often poor at low frequencies, when compared to heavyweight floors. This has been shown in previous research projects (e.g. Swedish research project AkuLite) to affect the acoustic climate in dwellings, both by objective measurements and by subjective grading. In particular, lightweight floors with a heavy screed on top do not behave as the acoustic designers intend. The approach here is to study the upper part of a lightweight floor, by considering it as a composite plate. Composite plates have been studied thoroughly when they have thin surface sheets of metal, but the surface leaves are considerably thicker in floor constructions. In that case much less is known. Parametric studies are made using statistical and deterministic models, as well as measurements, to describe the composite panel's vibroacoustic behaviour. Emphasis is placed on the frequency region 20 – 100 Hz, a region that has been shown to be of particular importance for the subjective impression of impact noise.

Candidate Profile

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

- Knowledge of computational modeling. programming languages and signal processing is a strong advantage
- 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.

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 institute for more than 12 months in the 3 years immediately prior to the recruitment.

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.