

Smart Technologies for Safety Engineering (SMART & SAFE)

Foundation for Polish Science - [TEAM Programme](#)

Task description:

Adaptive Vibroacoustics

(Ph.D. position, supervisor: Dr. Tomasz G. Zieliński)

The research is aimed to develop a new methodology for modelling, computer simulation and experimental verification of the innovative concept of smart, noise-absorbing composites able to significantly dissipate the energy of acoustic waves in a wide frequency range. The composite designs will consist of layers of porous acoustic insulators with embedded active elements (piezo-fibres or foils) and passive inclusions enabling to adapt the attenuating behaviour of the composites to a variety of frequencies. Numerical tools will be developed to allow for accurate multiphysics modelling of coupled problems in which acoustic waves propagate in acoustic and poroelastic media with embedded piezoelectric and elastic elements. The smart composites (of moderate thickness) may be first tested for application inside the aircraft cabins.

Condition:

Scholarship: 3000 PLN (+ 500 PLN social security) for 26 months.

Information on procedures of open call recruitment of candidates to the team

Potential candidates must live up to high requirements (depending upon the research position):

- 1) M.Sc. degree in engineering sciences, in particular in mechanical, civil, aerospace engineering or physics
- 2) Very good command of English (spoken, written)
- 3) Computer programming skills e.g. Fortran, C, Java
- 4) Proficiency in computer operation with particular focus on engineering software e.g. Finite Element Method packages (e.g. Abaqus), Matlab, Comsol, etc.
- 5) Experience in experimental research is an asset

The process of candidate selection will proceed in stages. In the first stage, CVs and motivation letters of all candidates will be carefully studied and ranked. First 5 candidates from the ranking list will be invited for interviews. In case of foreign researchers, the cost of travel and stay related to the interview will be reimbursed to the candidates. If someone of the first 5 candidates from the ranking list fails to pass the interview, another person from the remaining pool of 5 researchers will be invited instead.

Dates:

20 of October Cvs and motivation letters submission
21-25 of October Interviews

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