H2020-MSCA-ITN-2018 - Template for Early Stage Researchers Job Listing

"PhD fellowship in the Marie Skłodowska-Curie ITN European Training Network INSPIRE on the development of innovative ground Concepts for structure protection"

General Information

ORGANISATIONS/COMPANIES Group Science/National Technical University of Athens

LOCATION Greece > Athens

Type of Contract Temporary

Job Status Full-time

HOURS PER WEEK 35[1]

RESEARCH FIELD Engineering, Environment

RESEARCHER PROFILE Early Stage Researcher - PhD Candidate

APPLICATION DEADLINE 31st May 2019

OFFER STARTING DATE Latest by 1st Nov 2019

EU RESEARCH FRAMEWORK PROGRAMME H2020 / Marie Skłodowska-Curie Actions

MARIE CURIE GRANT AGREEMENT NUMBER* 813424

PROJECT WEBSITE for more info: 813424

**Grant Agreement Signature is expected to be completed within the following weeks*

We are pleased to invite applications for a PhD position in the new four-year EU-funded Marie Sklodowska-Curie ITN programme "INSPIRE - INNOVATIVE GROUND INTERFACE CONCEPTS FOR STRUCTURE PROTECTION". This network is led by National Technical University of Athens and consists of 7 European universities (Univ. of Trento, ETH, Univ. of Lille, Technical University of Keiserslauten, Univ. of Mons, Univ of Bologna) 1 Research Institute (Centre National de la Recherche Scientifique) as well as 5 industrial partners (RINAC,FIP, ADT, IGF, GRSc).

A. THE PROJECT

The goal of INSPIRE is to foster a new generation of highly qualified researchers and engineers able to implement novel soil-foundation-structure concepts for the efficient protection of structures from all ground induced hazards, including earthquakes and all other sources of low-frequency noise and vibration excitations.

INSPIRE relies on recent innovative scientific and technological concepts, mainly developed within the broad concept of meta-materials – *natural or artificial materials or structures which exhibit extraordinary properties for inhibiting or conditioning wave propagation in all spatial directions over broad frequency bands*. General developments of meta-materials will be combined or enriched with novel absorption and isolation concepts **(**i.e negative effective mass and stiffness moduli media, novel friction vibro-impact rocking motion based non-linear mechanisms) with the goal to overcome the limitations of the existing seismic and low-frequency isolation technologies and deliver highly-damped, low maintenance and easily implemented designs.

[1] Depends on the Internal Regulation of each Institution. It typically varies between 35-40 hours / weak.

B. THE POSITION - ESR15

Research Topic: *"Meta-Panels" Development of novel panels for low-frequency noise isolation inside buildings (walls, floating floors, ceilings*

Job description: The ESR will be hired) and supervised academically by NTUA.

The major objective of the ESR is to design of a novel panels able to provide low frequency noise isolation inside buildings for frequency ranges in the range 50Hz-500Hz, which will be based on the negative stiffness damping effect. This effect, (the "KDamper" concept) has been developed and by NTUA and preliminary results indicate that it can offer a significant potential and brilliant perspectives in the direction of absorption of seismic and other 3D low frequency excitations.

NTUA Group Science and ISOLGOMMA, are interested in exploiting any potential technological products, based on this concept. Towards this direction the main objective of the ESR is do develop designs and preliminary demonstrators of low-frequency noise isolation panels based on this concept, which can lead to realistic and marketable end-products, offering the potential of viable market products and commercial exploitation.

The effect of negative stiffness will be generated by proper elastic elements. The panels will be a designed in a parametric way, depending on the superstructure weight, dimensions and fundamental natural period to be isolated. The design will enable its implementation in walls, ceilings and floors even of existing structures and will enable efficient mass production and implementation procedures.

The post holder will be employed on a fixed term (36-month contract) by National Technical University of Athens and enrolled as a PhD student at the National Technical University of Athens. The candidate will be also expected to spend 3 Months at the ISOLGOMMA company/Italy, University of Lille/Metamaterials Group and Technical University of Kaiserslautern.

C. ADDITIONAL INFORMATION

Benefits

- Be part of a team of leading scientists
- Prestigious EU fellowship.
- Develop multidisciplinary research skills.
- Excellent training programme covering structural analysis and advanced geotechnical engineering, geodynamics, wave propagation, noise isolation and vibration attenuation
- Establish a professional network in academia and industry
- Secondments and visits to partners in different countries

Eligibility criteria

Mobility eligibility requirement: The fellow must not have resided in the country where the research training activities will take place for more than 12 months in the 3 years immediately prior to the recruitment date (and not have carried out their main activity (work, studies, etc.) in that country).

Exceptions International Organisations: Eligible researchers must not have spent more than 12 months in the 3 years immediately prior to the date of selection in the same appointing international organisation.

Experience eligibility requirement: Eligible applicants must be in the first 4 years of their research careers (full-time equivalent research experience) at the signature of the contract (measured from the time the Master's degree has been obtained).

Eligible applicants must not hold a PhD.

D. JOB REQUIREMENTS/ QUALIFICATIONS

Required Languages : Excellent knowledge of English Language. Greek will be considered a plus.

Skills/Qualifications

Essential

- MS degree or equivalent in a relevant subject (Civil Engineering, Mechanical Engineering, Material Science and Engineering, Physics, Computational Mechanics)
- Background in CAD, dynamic analysis of structures and elasticity/strength of materials.
- Basic Programming Languages (e.g. Matlab)
- Excellent oral and written communication skills with well-developed interpersonal skills.
- Ability to work effectively and collaboratively within a multidisciplinary team.
- Enthusiastic, self-motivated individual, willing to take part in personal skills training, international travel and public outreach activities.
- Demonstrated commitment to high-quality research

Desirable

- Experience in using finite element analysis S/W
- Background on CAM
- Experience in conducting lab experiments
- Experience in noise isolation and acoustics
- Experience in product design

E. SELECTION PROCESS

Application Procedure

Applicants interested may contact Professor I.Antoniadis antogian@central.ntua.gr mentioning ESR15 for further details or for an application and are invited to submit the following documents by email no later than May 31st 2019.

1) A full CV in English Language
2) At least 1 reference letter (in English) from one former supervisor and/or lecturer.
3) Scanned degree certificate (usually the Master Degree) which would formally entitle him/her to embark on a doctorate. In case the degree has not been obtained yet, it is necessary to send a declaration of the university stating that the degree will be obtained before the expected starting date.
4) Academic transcripts: Document indicating marks as well as the courses/classes they have attended within the last year of BSc and at Master Degree and statement declaring graduation ranking (e.g. top 10%)
4) Academic transcripts (document indicating marks as well as the courses/classes they have attended within the last year of BSc and at Master Degree).
5) Evidence of language qualifications to confirm language level
6) Statement of Purpose (2 pages max)

Evaluation Criteria

Applications must be in English and will be evaluated against the following criteria:

- Educational record
- Scientific quality of the applicant's CV. Past research experience within the broad scope of the project will be positively evaluated (e.g. participation in research projects, labs, authorship of journal/conference paper(s))
- Expected individual impact and benefit to the fellow and to the project

The candidates will be evaluated on the basis of the received documents and the best 3 candidates for each position may be invited for an interview through video conferencing.