

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 35¹
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 Skłodowska-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 Kaiserslautern, 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 / week.

B. THE POSITION - ESR09

Research Topic: *Protection concepts and devices based on elastically generated negative stiffness elements.*

Job description: The ESR will be hired by the company Group Science in Athens (<http://www.groupscience.gr/>) and will be supervised academically by NTUA.

The major objective of the ESR is to design of a seismic absorption foundation, 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.

Group Science and its related international partners, 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 seismic and low-frequency absorption foundations 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 foundation will be a designed in a parametric way, depending on the superstructure weight, dimensions and fundamental natural period to be isolated. It will be able to isolate all the horizontal seismic components and to the extent possible, the vertical direction. The design will enable its implementation not only to newly built structures, but also to existing ones to the extent possible.

The post holder will be employed on a fixed term (36-month contract) by Group Science 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 EEC/Joint Research Centre, ISPRA, in order to be acquainted to regulations and testing procedures of seismic products.

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 Organizations: 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 organization.

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, 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
- Experience in conducting lab experiments
- Experience in earthquake engineering and vibration isolation
- Experience in product design

E. SELECTION PROCESS

Application Procedure

Applicants interested may contact either Professor I.Antoniadis antogian@central.ntua.gr or Dr. G.Charalampopoulos, charal@groupscience.gr mentioning ESR09 for further details or for an application and are invited to submit the following documents by email no **later than May 12th 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.