

SMARTi

European Training Network
2017-2021



Early Stage Researcher with PhD enrolment

Sustainable **M**ulti-functional **A**utomated **R**esilient **T**ransport **I**nfrastructures **ETN** will bring together a stimulating platform where the stakeholders of the transport infrastructure sector will work alongside world-wide experts in smartening of systems (developers of high-tech sensors, advanced monitoring equipment, automated structures, etc.,) with direct support from the roads, railways and airports managers. As a result, SMARTI ETN will create a new generation of highly-skilled and appealing professionals that will be in great demand in this rapidly expanding field and will benefit Europe and developing countries. *Do you want to be one of them?*

Project 6

“Smart Damper”: Smart railway and road bridges through novel formulation for introducing seismic damper (ESR6-WP2)

University of Palermo (Italy)



UNIVERSITÀ
DEGLI STUDI
DI PALERMO

Expected Collaborators

University College of Dublin (Ireland), FIP Industriale (Italy)



Project Objectives

The challenge of this project is to propose a theoretical formulation for modelling structural bridges equipped with dampers along the span in such a way to predict the smart bridge response. This project aims to:

- Develop a damped bridge model for transport infrastructures (focused on railways) with dampers made of innovative and sustainable materials.
- Use novel formulation and approaches for the implementation of the model, together with better prediction of traffic loading
- Utilise different materials in order to define the optimum damper for the bridge. The damping technique will may be used in already built bridges and in new constructions.

Environment

The research is carried out within the framework of the Marie Curie European Training Network 'SMARTI' with opportunities to join network wide training events and international collaboration. The candidate will work within the Work Package SMARTI Prototypes that will investigate innovative transport infrastructure prototypes for roads, pavements and airports. Furthermore the candidate will benefit from collaborative research with 14 similar research positions in the network.

The project will be developed through planned international collaborations with at least two international partners. University of Palermo will provide expertise with bridge engineering, structure dynamics, theoretical formulation of problems and computational modelling. The partnership with strategic partners will provide:

- University College of Dublin: traffic loading and modelling
- FIP Industriale: smart materials, site visits, constraints on engineering implementation

The successful applicant will be recruited by University of Palermo and will register for a 3 year PhD at the same institution. The total funding available for each position is in line with the Marie Curie ETN Scheme, and comes to €37320 per year. This amount will be multiplied by a country factor¹ and on

¹ Italy factor = 1.067

top an extra allowance will be available to cover mobility expenses. The fellows will pay taxes according to the rules of the country of recruitment. A career development plan will be prepared for each fellow in accordance with his supervisor and will include training, planned secondments and outreach activities.

Application Process

(1) SMARTI ETN will perform the recruitment of all the Early stage Researchers (ESR) through **smartietn.eu** website

(2) Check you meet Eligibility criteria and Specific requirements for the ESR position project/s you are applying for.

(3) Prepare the following application documents (in English):

1. A curriculum vitae, including contact details, education (at University level and other), work experience, prizes/awards, language skills, etc... (max. 2 pages). The CV should reflect a representative array of achievements and qualifications appropriate to the post for which application is being made.
2. Official academic record of undertaken courses & grades for Bachelor (and Master if required in specific criteria) degree.
3. A motivational letter in which the applicant describes his or her motivation to pursue postgraduate studies and to conduct the research project/s applied for. Mention the ESR project number or numbers (in the latter indicate order of preference if any) on your motivational letter and the subject of the email.
4. A reference letter.

(4) Upload your documents in smartietn.eu before the 1st June 2017 deadline.

(5) The documents provided will be used to select the best candidates. Applications will be analysed by a **selection committee led by the coordinator and formed by both academic and industry partners**. Recruitment procedures will be open, efficient, transparent and supportive, as well as tailored to the type of positions advertised. All Institutions value diversity and are committed to equality of opportunity.

Eligibility Criteria

- Applicants can be of any nationality. They are required to undertake transnational mobility (i.e. move from one country to another) when taking up their appointment. Nationality is therefore not a criterion. Rather the location of the researcher's residence or main activity during the 3 years prior to their recruitment is determining. *(This means: You can only apply to a project which is hosted in a country in which you did not reside or carry your main activities (such as work or study) for more than 12 months within the last 3 years. This excludes short stays such as holidays or compulsory national service).*

- Applicants must be Early-Stage Researchers (ESRs) which means, at the time of recruitment by the host organisation, they must be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. For research experience it is meant since the date that the graduate has been awarded with a degree allowing him/her to embark on a PhD programme (i.e. date of master degree).

Specific Requirements

	Essential	Desirable
Qualifications/ Education	<p>Master’s degree in Civil, Mechanical or Materials Engineering, qualifying the candidate for PhD studies.</p> <p>At the time of recruitment, candidates must be in the first four years of their research careers (full-time equivalent research experience after qualifying degree) and have not yet been awarded a doctoral degree</p>	
Skills/Training	<ul style="list-style-type: none"> • Strong background in mathematics and structural dynamics, as well as Matlab and/or Mathematica skills. • Actively manage other stakeholders engaged in the research; also an ability to identify and set achievable targets and deliver to these deadlines. 	
Experience	<ul style="list-style-type: none"> • Previous work experience is NOT necessary. <p>However these are essentials:</p> <ul style="list-style-type: none"> • Willingness to think out-of-the-box and use background to adapt into a new context 	<ul style="list-style-type: none"> • Already worked within a research team • Scientific Papers published
Personal Qualities	<ul style="list-style-type: none"> • Ability to work independently • Ability to work efficiently in a team • Pro-active • Good communication skills 	
Other	<ul style="list-style-type: none"> • Fluent in oral and written English. • Ability to present scientific work in oral and written format. 	<ul style="list-style-type: none"> • Italian language is welcome

Do not wait, apply for this position in the following link

<http://smartietn.eu>

Any question on:

- this specific project, contact Prof. Antonina Pirrotta (antonina.pirrotta@unipa.it) and Natalia Colinas-Armijo (natalia.colinasarmijo@unipa.it).
- the SMARTI ETN project, contact Dr. Davide Lo Presti (Davide.Lopresti@nottingham.ac.uk).