

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 9

“ResilRoad”: Risk-based Resilience indicators for Roadway networks (WP3-ESR9)

The University of Nottingham (UK)



The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

Expected Collaborators

AECOM (UK), University College of Dublin (Ireland)

The logo for AECOM, featuring the word "AECOM" in a bold, black, sans-serif font. The letter "E" is stylized with a horizontal bar through it.

Project Summary/Objectives

The aim is to define a risk based methodology for quantifying the resilience of road networks to extreme events, including weather events and man-made events. For this, a simplified probabilistic characterization of hazards will be defined considering their impact on the network, based on historical data. A network traffic model will be used to define the potential impact of these events on the usability of the network, considering for example the increased travel time. Comparing this with the benefits resulting from the network, a resilience measure can be defined, and sensitivity analysis can be used to identify critical assets in the network.

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 Guidelines which investigates innovative transport infrastructure modelling and methodologies for the creation of guidelines for roads and railways management. 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. The University of Nottingham will provide expertise with structure design, generate a FE model of the structure, risk and reliability. The partnership with strategic partners will provide:

- AECOM: investigation, survey, monitoring, design and modelling of highway and railway footbridges and viaducts
- University College of Dublin: traffic loading and modelling

The successful applicant will be recruited by The University of Nottingham 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 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

¹ UK factor = 1.203

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).

Responsibilities

	Main Responsibilities	% time per year
1.	Join research project at UNOTT and in secondments	55%
2.	Admin: Writing reports, managing tools for collaborative research and be in charge of meeting agenda and minutes	10%
3.	Preparation of scientific publications and possible research proposals	10%
4.	Attend network wide events and represent NTEC externally	10%
5.	Assistance in student supervision	5%
6.	General tasks in the research group	5%
7.	Participate in outreach activities to the wider society	5%

Specific Requirements

	Essential	Desirable
Qualifications/ Education	Excellent degree in civil engineering or closely related areas, qualifying the candidate for PhD studies.	
Skills/Training	<ul style="list-style-type: none"> • Ability to adapt to a multi-disciplinary context • Experience in programming • Basic understanding of material/structure behaviour 	<ul style="list-style-type: none"> • Risk assessment in civil engineering • Modelling of complex systems
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"> • Experience in structural analysis • 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 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. 	

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

smartietn.eu

Any question on:

- this specific project, contact Dr Luis Neves, luis.neves@nottingham.ac.uk
- the SMARTI ETN project, contact Dr Davide Lo Presti, Davide.Lopresti@nottingham.ac.uk

Please note that applications sent directly to these email addresses will not be accepted.