MARIE Skłodowska-CURIE INNOVATIVE TRAINING NETWORK

OPEN CALL – PhD position

Host (recruiting) organisation

CIMNE, Barcelona, Spain

Project Title:

Static and dynamic global stiffness analysis for automotive pre-design

Supervisory team

Primary academic institution Dr. Sergio Zlotnik UPC/CIMNE	**Industrial institution** Dr. Xavier Larrayoz Seat
Secondary academic institution Dr. Rubén Sevilla Swansea University	

Project description

In car design, Body-in-White (BiW) refers to the phase in which the final contours of the car body are worked out. During the development process, the design of the components has to be continuously adapted according to the results of styling, simulation, prototyping and manufacturing. This can only be achieved through simultaneous engineering by a team specially dedicated to the project.
The objective of this research project is to devise computational tools as support for decision making to the BiW designers, in particular for performing the static and dynamic global stiffness analysis.

The scope of the project includes Reduced Order Modeling for linear static and dynamic analysis in parametric automotive structures. Attention will be paid to sensitivity analysis with respect to the different design parameters. The final goal of the project is to produce a compact computational vademecum displayed in a portable device to be used by the design engineer in situ and in real time.

Benefits

- Doctorate degree from both UPC·BarcelonaTech and Swansea University
- Integration within the research group of an automobile industry leader
- 36 month full-time employment contract

- Additional mobility and family allowances
- Research supervision and training by recognised experts in computational mechanics from academia and industry
- Access to state-of-the-art research and computing facilities
- Training in transversal skills (e.g. communication skills, entrepreneurship)

Prerequisites

- To have a strong undergraduate and MSc degree (or equivalent) in Engineering, Mathematics, Physics or a related field and a good level of English
- To have an enthusiastic attitude to conduct research, being hard-worker and critic
- To demonstrate knowledge of some programming languages such as Matlab and Fortran
- To have some experience with Finite Element analysis

Eligibility

Applicants shall, at the time of recruitment by the Universitat Politecnica de Catalunya · BarcelonaTech, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Full-Time Equivalent Research Experience is measured from the date when a researcher obtained the degree, which would formally entitle him/her to embark on a doctorate, irrespective of whether or not a doctorate is or was ever envisaged.

At the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in SPAIN for more than 12 months in the 3 years immediately prior to the reference date.

Duration of the project

The total duration of the project is 36 months.

Obligations of ESRs

- Completion of the PhD programme
- Be highly committed with quality research, training and management. The successful candidate is expected to become a future leader on the development and application of advanced computational methods for industry
- Take part of the mobility programme both in academia and industry
- Participate on the dissemination and outreach activities associated to the project
- Attend international conferences and present the research undertaken
- Contribute to the writing of articles in high impact international journals

Closing date

Until position is filled

How to apply

http://www.lacan.upc.edu/ProTechTion

Questions

protechtion.itn@upc.edu