EMVeM - a Marie Curie Initial Training Network (ITN) project funded by the European Commission

OPEN POSITIONS AT KU LEUVEN IN MECHATRONICS SIMULATION

Project description: EMVeM ("Energy efficiency Management for Vehicles and Machines") is an EC Marie Curie FP7 Initial Training Network project Nr. GA 315967, which runs from Jan. 1, 2013 till Dec. 31, 2016 (duration 4 years). The main aim of the project is to establish a training network for Ph.D. students on methodologies to increase the energy efficiency of vehicles and machines. The network consists of the following academic, research and industrial partners:

N.	Partner name	Sector	Country
1	Katholieke Universiteit of Leuven (KU Leuven)	Academia	Belgium
2	Università degli Studi di Udine (UniUD)		Italy
3	University of Sao Paulo (EESC-USP)		Brazil
4	Transilvania University of Brasov (TUB)		Romania
5	Fraunhofer Gesellschaft fur angewandte Forschung (FhG)	Research Institutes	Germany
6	Flanders Mechatronics Technology Centre (FMTC)		Belgium
7	Institute of Industrial Technologies and Automation of the National Research Council (CNR-ITIA)		Italy
8	Ikerlan S.Coop (Ikerlan)		Spain
9	Austrian Institute of Technology (AIT)		Austria
10	LMS International, a Siemens Business (LMS)	Industry	Belgium
11	Bayerse Motoren Werke AG (BMW)		Germany
12	Textil Technology Transfer GmbH – 3T (3T)		Germany

Project Background & Objectives:

In view of reducing the ecological footprint of machines and vehicles, effective and efficient analysis techniques and adequate measurement technologies are required to produce world leading products with a high energy-efficiency, without compromising functionality/safety/performance/etc. Combined with the increasing trend towards virtual design and prototyping, to reduce costs and development times, this need for designing 'green' products creates an urgent industrial need for robust and volatile simulation and experimental validation methodologies in machine and vehicle product design.

Since nowadays products become more and more multi-disciplinary by the constantly increasing integration of added functionality and product intelligence (i.e. mechanical systems work together with electronic systems, linked through control schemes which are steered using embedded software, etc.) and since energy is a global design attribute which is influenced by all disciplines, the development of energy analysis methodologies, both numerical and experimental, requires an integrated research strategy.

This EMVeM ITN brings together research and industrial partners who will collectively train early stage researchers, drawing together skills and expertise in a range of different technical approaches. The industrial partners put forward specific applications, behind which are generic difficulties associated with energy efficiency analysis. The academic and research center partners bring a diverse range of potential research approaches and the capability of research training, provision of courses and dissemination and outreach to the wider community. Together the consortium can develop and promote research, knowledge and application of energy efficiency management analysis within EU industry.

Within EMVeM, KU Leuven has 2 open positions for Early Stage Researchers (ESR) (duration 36 months each). We invite and encourage you to apply, if you are a motivated candidate who fulfills the 'general candidate profile' below, which includes the eligibility criteria imposed by the European Commission

With the accepted candidate, an **R&D program and PhD trajectory** in line with the EMVeM project objectives and background/interest of the candidate will be defined.

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General Candidate Profile:

The specific position involves participation in the EMVeM training network with a main focus on new modeling methodologies with the application to energy efficiency of vehicles and machines. Profile of a **suitable candidate:**

- He/she is fluent in spoken and written English, in view of collaboration/presentation/reporting;
- has a MSc degree in engineering (mechanics, mathematics, computer science, control engineering, physics) *(see further: 'eligibility')*
- suitable candidates must be motivated to work as part of an international team, and be capable to work independently group;
- mobility and flexibility for research exchanges and training courses are required.

The research activities will be mainly carried out at Partner **KU Leuven**, located in Leuven, Belgium, while shorter visits (few days to a few months) to other industrial, to research or to academic partners will be implemented according to the EMVeM training and research programme.

Specific Competence Profile:

Required Competences/Experiences:

- having a broad multi disciplinary background,: mechanics, drive systems, sensors, control and embedded software
- being familiar with mechatronics
- having knowledge on different modeling methodologies: 1D like Modelica, Bond Graphs, Simulink schemes, 3D methods like finite elements, multi-body dynamics, …
- having some experience with control systems
- being able of thinking on 'system level'

Competences/Experiences considered as an asset / advantage:

- expertise in flexible multi-body modelling
- experience with Modelica, AMESim
- performed already a mechatronic design
- implemented a control system
- knows about Model Based System Engineering or heard about Requirements, Functional, Logic and Process terminology

Eligibility criteria: An eligible Early Stage Researcher (ESR) candidate holds an MSc degree in Engineering. ESR means a researcher who, at the time of recruitment by KU Leuven, has not yet been awarded the doctorate degree and is in the first 4 years (full-time equivalent) of his/her research career. In addition, at the time of recruitment by KU Leuven, the researcher must not have resided or carried out his/her main activity (work, studies, etc…) in Belgium for more than 12 months in the 3 years immediately prior to his/her recruitment under the project. Compulsory national service and/or short stays such as holidays are not taken into account.
Women are especially encouraged to apply.

Remuneration: The remuneration will be in line with the EC rules for Marie Curie grant holders and consists of a salary augmented by a net mobility allowance. For more information, please see the FP7-PEOPLE-2012-ITN Call for Proposal, available at the address http://ec.europa.eu/research/participants/portal/page/people?callIdentifier=FP7-PEOPLE-2012-ITN.

APPLY NOW! Envisaged Start Date will be middle of 2013.

APPLICATION: To apply, please send a **detailed CV** together with a **letter of motivation** and **names of reference(s)** to

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