

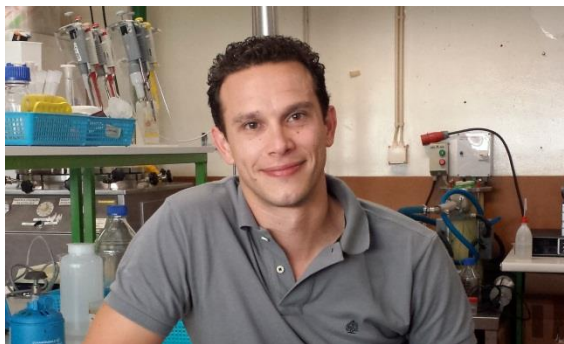
# ENGINews

Nº 55

30<sup>th</sup> September 2014

## Highlights

**Researcher from CEB receives "Outstanding Young Scientist" award**



**Miguel Cerqueira awarded by  
International Union of Food Science and Technology (IUFoST)**

## Awards

---

### **CEB Researcher receives "Outstanding Young Scientist" award**

Montreal, Canada, 10<sup>th</sup> July



Miguel Cerqueira, researcher from the Centre of Biological Engineering (CEB) of the EEUM, was granted the "Outstanding Young Scientist" award by the International Union of Food Science and Technology (IUFoST), the main international scientific organization in this area. This is the most important award for young scientists in food technology. The awarded researchers presented their projects to the world's leading authorities in the area of food science (academia, industry and government) during the 17<sup>th</sup> edition of the World Congress of Food Science and Technology (World Food Congress). The 2014 Young Scientist Award recipients are all under the age of 35, either post-doctoral students or beginning their academic career. The award is based upon their research, which must have an international application reflecting the Congress theme of Research That Resonates, along with recommendations from other professionals. Eight outstanding young food scientists from around the world - Kenya, Malaysia, Singapore, South Africa, Canada, Germany, Thailand and Portugal - received their awards.

[More...](#)

---

### **Professors from the DPS win Best Paper Award**

Lima, Peru, 31<sup>st</sup> July to 1<sup>st</sup> August



The paper "Lean games and hands-on approaches as learning tools for students and professionals", by Rui Sousa, Anabela Alves, Francisco Moreira and Dinis Carvalho, professors from the Department of Production and Systems (DPS) of the EEUM, won the "Best Paper Award" during the International Conference of Production Research - Americas (ICPR Americas). The acquired experience of using *Serious Games* associated with Lean Manufacturing originated this research. The paper shows how adopting such an approach allows responding to different expectations and typical needs of each type of learning, when combined with other active learning elements.

[More...](#)

---

## ALGORITMI's researchers win Work in Progress Best Paper Award

Barcelona, Spain, 18<sup>o</sup> September

The paper “Towards a Lightweight Embedded Virtualization Architecture Exploiting ARM TrustZone”, from ALGORITMI's Embedded Systems Research Group researchers Sandro Pinto, Daniel Oliveira, Jorge Pereira, Nuno Cardoso, Mongkol Ekpanyamong, Jorge Cabral and Adriano Tavares, won the Work in Progress Best Paper Award during the 19th IEEE International Conference on Emerging Technologies and Factory Automation. The paper results from the doctoral thesis' research entitled “Secure and Safe Virtualization-based Framework for Embedded Systems Development”, by Sandro Pinto (PhD in Electronic and Computer Engineering), under the supervision of Professors Jorge Cabral and Adriano Tavares (Department of Industrial Electronics – DEI – of the EEUM). The project is also supported by Masters dissertations of Jorge Pereira and Daniel Oliveira (students of the Integrated Masters in Industrial Electronics and Computers Engineering at the EEUM). The research describes and characterizes a software architecture supported by ARM TrustZone technology, which is quite recent but not diffused amongst the international community. “The results are very promising, showing that this type of virtualization solution may guarantee the requirements and functionalities which the present and future generation of embedded systems demand”, states Sandro Pinto.



[More...](#)

---

## Researcher from CGIT wins risk management award “Prémio Decidir Melhor”

Lisbon, 18<sup>o</sup> September

Cláudio Santos, holding a PhD in Leaders for Technical Industries (LTI) completed at the EEUM within the framework of the MIT-Portugal Programme, was one of the three awardees of the “Prémio Decidir Melhor” (Best Decision Award), granted by Quidgest, a management software company. The project “R&D Project Selection Incorporating Risk Management” was developed during his PhD thesis supervised by Madalena Araújo, full professor from the Department of Production and Systems (DPS) of the EEUM and Nuno Correia, Director of the Composite Materials and Structures Unit of the INEGI (Porto, Portugal). The thesis describes the development of a methodology to support R&D project selection which includes risk management practices. A software prototype was also developed aiming at helping to implement the project in industrial settings. The award ceremony took place during the 6th Q-Day Conference. With this initiative, Quidgest wishes to contribute to the creation of scientific-based knowledge to improve decision making processes in Portugal.



[More...](#)

---

## Welcoming Ceremony for new UMinho Students

Campus of Gualtar, 15<sup>th</sup> September

The UMinho welcomed 2300 new students which chose the academy for one of the most important experiences in their lives. The new students had the opportunity to listen the welcoming messages of the Rector of the UMinho, Professor António Cunha, and the President of the Academic Association, Carlos Videira. The Rector of the UMinho referred to the importance of the new students for the continuation of the “UMinho” project. The Rector also mentioned that the UMinho is a high quality University, promoting an overall education project, focusing on development. The UMinho is also internationally renowned and highly considers merit recognition. Solidarity and inclusion are some of the main interests and concerns of this academy.



On the 25<sup>th</sup> September the UMinho welcomed International Students. 56 new students, mostly from Angola and Brazil, will be received by the Schools of Architecture, Sciences, Law, Economy and Management and Engineering (students enrolled in the framework of the recently approved legislation for international students to enrol in 1<sup>st</sup> cycles and IMs).

At the EEUM, the welcoming ceremony for Master students took place on the 26<sup>th</sup> September. The opening ceremony for PhD students follows on the 2<sup>nd</sup> October.

[More...](#)

Photo: Nuno Gonçalves / UMDicas

---

## Urine transformed into electricity and fertilizer

The Centre of Biological Engineering (CEB) of the EEUM is involved in a European project entitled “Value from Urine”, which has raised interest amongst both National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA). The project’s goal, although it is still in an initial stage, is to produce high-phosphorus soil fertilizer and then, in a second phase, to use microbial fuel cells which are able to generate electricity and high-nitrogen fertilizers. The ValuefromUrine project will develop, demonstrate and evaluate an energy-efficient system for the recovery of nutrients from urine. This technology is based on research on Bio-electrochemical systems conducted in the Wetsus Resource recovery Theme and a urine treatment concept developed in the Separation at source Theme. Madalena Alves, professor at the Department of Biological Engineering (DEB) of the EEUM, is the national coordinator for this project.



[More...](#)

---

## Nuno Peixinho elected to Governing Board of DYMAT

Cambridge, United Kingdom, 10th September



Nuno Peixinho, professor at the Department of Mechanical Engineering (DEM) and researcher at the Centre for Mechanical and Materials Technologies (CT2M) of the EEUM, was recently elected to the Governing Board of the European organization DYMAT - European association for the promotion of research into the dynamic behaviour of materials and its applications. This organization focuses on studying the dynamic behaviour of materials with aspects such as experimental techniques, constitutive modelling, micro-structural effects and numerical simulations. The main goal of DYMAT is to bring together engineers and scientists from all nations working in these fields. For this purpose, the association organizes conferences, technical meetings, seminars, training courses and student camps. DYMAT is also involved in trial normalization, publications and promoting partnerships for research projects. The election took place during the organisation's General Assembly in the framework of the Hopkinson Centenary Conference.

[More...](#)

---

## Hi-tech underwear created in cooperation with the UMinho

The Fibrous Materials Research Group of the Centre for Textile Science and Technology (2C2T) of the EEUM collaborated with Impetus, a Portuguese company, in the creation of their most recent innovation: urine-absorbent non-odorous underwear. The underwear products for urinary incontinence are able to absorb 60 ml of urine, in women's products, and 90 ml in men's products. According to Alberto Figueiredo, CEO of Impetus, the products were developed to replace other solutions such as pads or adult diapers. The new underwear has many advantages, especially in terms of comfort. Produced with a garment developed by the UMinho, entitled "ProtechDry", the new underwear is already certified as a "medical device". In the meantime, Impetus and UMinho are working on other health products, such as items with a larger absorption capacity (140 ml for women and 150 for men), with a variation with embedded sensors for paraplegic users.



The underwear products have already reached worldwide markets in the beginning of September through a partnership with the Dutch company EMERGO, which specializes in medical devices.

[More...](#)

---

## Paper from EEUM's researchers most cited in Scopus/Elsevier



The image shows a screenshot of the Scopus database search results. The top entry is highlighted in yellow and matches the text of the adjacent paragraph. The search criteria include 'Nanotechnology' and 'Construction and Building Materials'. The results list the paper title, authors, and publication details.

The paper “Nanotechnology: Advantages and drawbacks in the field of construction and building materials” is the most cited paper in Scopus/Elsevier database between 3472 papers published since 2011 in the ISI-A1 journal Construction and Building Materials. The paper reviews current knowledge about nanotechnology and nanomaterials used by the construction industry.

[More...](#)

---

## EEUM's students present Fashion for Fall-Winter 2014/2015

Instituto de Design, Guimarães, 4<sup>th</sup> July



The finalist students of the 1<sup>st</sup> cycle degree in Fashion Design and Marketing of the EEUM presented a fashion show with projects developed under the theme “Metamorphosis”. The event was produced by the students of the Master Programme in Fashion Design and Communication. The students formed five work groups and created collections for the Fall-Winter 2014/15 season, composed of approximately 30 garments each. The “Instituto de Design”, located at the Campus of Couros of the UMinho, received a fashion show with around 90 original designs in the runway.

[More...](#)

---

## “Summer at Campus” at the EEUM

Campus of Gualtar and Azurém, 21<sup>st</sup> to 25<sup>th</sup> July



The EEUM took part in this year’s edition of the “Summer at Campus”, a programme developed by the UMinho aiming at promoting culture, science and art amongst youth and also at assisting young students which intend to access higher education with choosing an area of studies. For the 2014 edition, there were three different activities available at the EEUM: “Computing without Borders”, “Engineering and New Materials” and “Industrial Biotechnology and Bioengineering”, in which around 40 students participated.

[More...](#)

---

## Executive Council of the IFToMM meets at the EEUM

Campus of Azurém, 13<sup>th</sup> to 15<sup>th</sup> September



The Department of Mechanical Engineering (DEM) of the EEUM organised the 47<sup>th</sup> Annual Meeting of the Executive Council of the International Federation for the Promotion of Mechanism and Machine Science (IFToMM). This event, organised in Portugal for the first time, took place at the EEUM's facilities, in Azurém, Guimarães. The IFToMM is a federation which aims at promoting research, development and industrial application in the domain of Mechanism and Machine Science. The federation counts on the participation of national associations from more than 60 countries. During the work meetings, the President of the Executive Council of the federation, Professor Yoshiko Nakamura, from the University of Tokyo, Japan, acknowledged DEM's hospitality during the meeting organisation.

[More...](#)

---

## New Cooperation agreements

### UMinho signs cooperation agreement with REFER



Following a proposal of the EEUM, the UMinho has recently signed a cooperation agreement with REFER – Rede Ferroviária Nacional, the company responsible for providing the public service of managing the national railway network infrastructure in Portugal. The agreement aims at establishing technical and scientific cooperation opportunities between the UMinho and REFER in domains related to railway, namely referring to specific research projects, prototype development and experimental trials.

[More...](#)

**ENGNews** is a publication of all members of the EEUM. Please send your news to [divulgacao@eng.uminho.pt](mailto:divulgacao@eng.uminho.pt)

The editors of the **ENGNews** are entitled to select the information to be published.  
Thank you for your understanding.