



CIT UPC CENTERS



SMILE&WORK, 'SERIOUS GAMES' TO INCREASE INTEGRATION INTO THE WORKPLACE OF PEOPLE WITH INTELLECTUAL DISABILITIES

Smile&Work, developed by the Computer Graphics division at the Biomedical Engineering Research Centre ([CREB UPC](#)), is one of three projects selected in the First Call for Proposals for Applied Research Projects to Develop Accessible Technologies, announced by [Indra](#) and the [Fundació Universia](#) in October 2016.

The objective of Smile&Work is to design and validate a series of "serious games" in which a person with an intellectual disability can train online in work protocols and in social and relationship skills, and can learn how to react in unexpected situations. The serious games provide personalised learning without the need for constant supervision.



NEW TECHNOLOGIES TO IMPROVE THE FOUNDRY PROCESS

The Hydraulic and Pneumatic Systems Laboratory ([LABSON UPC](#)) has presented the final results of [Flexicast](#), a project in which new technologies have been developed to transform the conventional (batch-by-batch) foundry process into a flexible (mould-by-mould) process, using cast iron manufacturing cells. The challenges could be grouped into three blocks: obtain a high quality cast iron, reduce the number of defects in the pieces, and design an automated foundry process, based on the use of robots. An additional challenge has been to promote greater training of staff and therefore, guarantee jobs.

Flexicast is part of the Seventh Framework Programme. The four-year project began in 2012. In addition to LABSON UPC, the project coordinator, 13 other partners were involved: [Fundiciones de Roda](#), Proservice, Ondarlan, Tecnalía, Eurecat, CNR (ITIA/IMAMOTER), Comau, [CIMNE](#), TSS Modena, Innospexion, Put Poznan, Arc and Foseco France SAS.

METHOD TO MEASURE IONISING RADIATION IN HEALTHCARE STAFF

The Dosimetry and Ionising division at the Biomedical Engineering Research Centre ([CREB UPC](#)) has participated in a project to develop methods for estimating the radiation dose in the crystalline lens of the eyes



of healthcare staff. The aim is to identify staff who could develop cataracts (loss in transparency of the crystalline lens) due to exposure to ionising radiation. In operating theatres, it is very difficult to make these estimations as various people are involved in operations and the dose depends on different parameters (distance to the source of radiation, quality of the source, exposure time). Consequently, systems have been developed to quantify exposure using thermoluminescent dosimetry and to evaluate different methods of protecting staff (lead aprons and glasses, lead thyroid shields, protective screens, etc.).

Studies have been carried out in health centres such as the *Hospital Clínico San Carlos* in Madrid; *Hospital de la Vall d'Hebron* in Barcelona; and the *Clínica Universitaria de Navarra* in Pamplona. The results showed that if no protective measures are used, 40% of healthcare staff who carry out operations may receive a dose that is close to the limits established in European legislation.

CIT UPC ACTIVITIES

CIT UPC AT THE CATALAN COORDINATOR OF FOUNDATIONS' CAFÈ DE LA RECERCA

On 20 December, CIT UPC participated in the *Cafè de la Recerca* (Research Cafe) that was organised by the *Catalan Coordinator of Foundations* (CCF). The meeting was promoted by the CCF's Committee of Technology and Research Foundations, to discuss current topics in science and research. On this occasion, Miquel Puig Raposo, general director of the Consortium of University Services of Catalonia (CSUC) gave a talk entitled *Com aconseguir la col·laboració enlloc de la competició en recerca* (How to achieve collaboration instead of competition in research).



CIT UPC AT THE PRESENTATION OF THE SMART FOMENT INITIATIVE

CIT UPC attended the Smart Foment presentation, a *Foment del Treball* initiative to promote knowledge exchange and networking between private and public companies, universities, technology centres and other organisations, to optimise business opportunities in an interconnected environment such as that found today.



TECHTRAINING

UPCOMING TRAINING COURSES

- [Curso profesional en Energía Eólica](#)
- [Cálculo de componentes mecánicos mediante elementos finitos](#)



THIS MONTH ON THE CIT UPC BLOG...

2017: the innovation of the future

One of the main instruments for funding science at continental level, the **European Research Council (ERC)**, will have been

CALENDAR

X INTERNATIONAL CONFERENCE ON ENERGY INNOVATION
"Local energy markets – dream or
facta" Symposium

EMPCWER

Ene
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running for ten years in 2017. The programme forms part of Horizon 2020 and selects and funds the best basic research projects. [...] + [Read more](#)



INFORMATION OF INTEREST

PUBLICATION OF THE REPORT “OECD SCIENCE, TECHNOLOGY AND INNOVATION OUTLOOK 2016”

The OECD has published the eleventh edition of the report “[OECD Science, Technology and Innovation Outlook 2016](#)”, a biennial publication that aims to inform policy makers and analysts on changes in global science, technology and innovation patterns worldwide. In addition to OECD countries, Brazil, China, India, Indonesia, Russia and South Africa are included, among other countries.



HIGHLIGHTS

SEER PROMOTES A SMART ENERGY CAMPUS AT THE UPC

Researchers at [SEER UPC](#) are promoting the ‘[SolarCampus](#)’, a project in which a team of students from the ESEIAAT will design and construct [two photovoltaic plants](#) on two buildings in the UPC’s Terrassa Campus. Once installed, the plants will supply 50 kW of renewable energy for consumption.



DID YOU KNOW...

PARTICIPATION IN THE CREATION OF THE FIRST SPANISH ECO-FRIENDLY CAR


The director of Motion Control and Industrial Applications ([MCIA UPC](#)), Luis Romeral, was the scientific director of [VERDE](#), a National Strategic Consortium in Technical Research (CENIT) project led by [SEAT](#) and designed to generate the knowledge and technology required to manufacture and market the first eco-friendly car in Spain. Other participants in the project included the Electromagnetic Compatibility Group ([GCEM UPC](#)).






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