# 92nd European Study Group with Industry

## by Deolinda M. L. D. Rasteiro*

The 92nd European Study Group with Industry took place from 6 to May 10, 2013 at ISEC, the Coimbra Engineering Institute of Coimbra's Polytechnic, organized by the Department of Mathematics and Physics, ISEC-DMF (http://dfm.isec.pt/esgi92/) and LCM – Laboratory for Computational Mathematics (http://www.uc.pt/uid/lcm) of Centre for Mathematics of the University of Coimbra (https://cmuc.mat.uc.pt/rdonweb/).
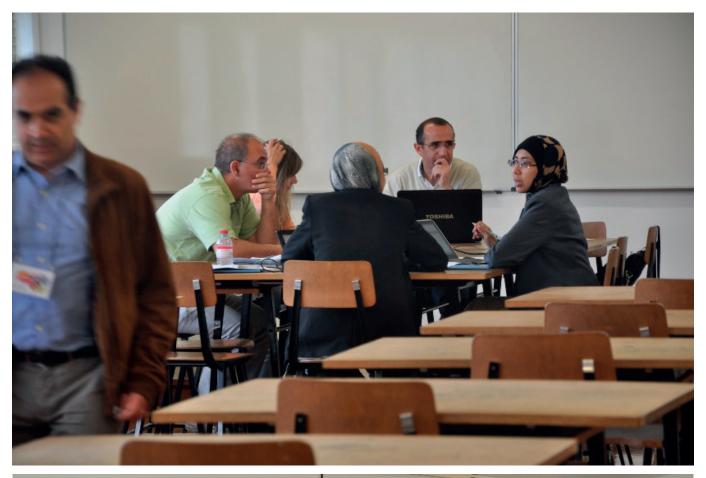
The meeting has counted with the participation of several experts with a large experience in this type of events. By the 7th consecutive year, Portuguese researchers and academics tried to strength the links between Mathematics and Industry by using Mathematics to tackle industrial problems that were proposed by industrial partners (see: http://www.ciul.ul.pt/~freitas/esgip.html).

For the participants, these problems were mathematically interesting challenges. For the companies, those were open-problems that had not yet been solved with their own (and/or consulting) resources.

The set of problems proposed had a wide variety of features due to theirs origin and also due to the extent of application.

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In this edition there were selected 4 problems proposed by different companies namely, Critical Software (http://www.criticalsoftware.com), TULAES (http://www.tulait.eu/Tulaes/servi%C3%A7os.html), Active Space Technologies (http://www.activespacetech.com/EN/home.htm) and Sonae MC (http://www.hipersuper.pt/tag/sonae-mc/). The problems that were proposed were: Model to Estimate and Monitor the progress of System Testing Phase, Customer's Expected

Energy Consumption, Modelling percolation and fractal structure in aerogels, Picking optimization respectively. The mathematical subjects used during the event comprehended probability theory, statistics, classification, optimization, numerical analysis or partial differential equations, just to name a few.

In this year's Portuguese ESGI, especially due to the current economic situation, the results overwhelmed the organizers (and the companies') best expectations. For the organizers, some of them involved since 2007 when the first Portuguese ESGI edition took place, the objective is to spread mathematical knowledge and use it to help the industrial tissue. According to them, the success of ESGI's in Portugal may be measured by the growing number of participants, proposed problems, and by the fact that some companies are submitting new problems after their first participation. The comments from the companies' representatives were very positive.