

# **“EXPRESSION OF INTEREST” FOR HOSTING MARIE S. CURIE FELLOWS IN SPANISH INSTITUTIONS (CALL MSCA IF 2015)**

## **1. Interested institution:**

-Technical University of Catalonia (UPC) <http://www.upc.edu/>

-Heat and Mass Transfer Technological Center (CTTC) <http://www.cttc.upc.edu/>

ETSEIAT C/ Colon 11 Edifici TR4 08222 Terrassa (Barcelona) Spain

## **2. Brief Description of the Institution**

The Heat and Mass Transfer Technological Center (CTTC) from the Technical University of Catalonia (UPC) was founded, and is being directed, by Prof. Assensi Oliva more than three decades ago. Nowadays, the center is composed by 6 professors/assistant professors and around 50 full-time researchers, including post-docs, PhD students and support staff.

The research activities of the CTTC are focused on two main lines. The first one is dedicated to the mathematical formulation, numerical resolution and validation of heat and mass transfer and fluid mechanics phenomena. Topics of research in this line are: natural and forced convection, turbulence modeling, aerodynamics, fluid-structure interaction, combustion, two-phase flow, solid-liquid phase change, radiation, porous media, numerical algorithms and solvers, high performance computing, etc. The second line involves the application of the acquired know-how from the basic studies mentioned above to the thermal and fluid dynamic optimisation of thermal system and equipment. Within this second line the Research Group is working on: refrigeration (vapour compression refrigerating systems, hermetically sealed reciprocating compressors, absorption refrigerating systems,...), HVAC (ventilation, diffusion of contaminants in buildings,...), active and passive solar systems (solar collectors using transparent insulation materials, building facades with transparent layers and ventilation,.....), heat exchangers (gas liquid compact heat exchangers for automobile radiators, evaporators and condensers,...), heat storage (by liquids and using phase change materials,.....), turbomachinery, etc.

These lines of research have allowed the Group to occupy a privileged position within the UPC with a high level of technology transfer by means of projects with several national and international companies. Moreover, the group has led and participated in several competitive projects both National and from the fifth, sixth and seventh European Framework Program. A more detailed list of the different lines of research, publications and research projects developed in the CTTC can be found in: [www.cttc.upc.edu](http://www.cttc.upc.edu)

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**3. Please tick the areas of research (as established in Marie Skłodowska Curie Actions)**

- |  |   |
|--|---|
| <input type="checkbox"/> Chemistry (CHE)   | <input type="checkbox"/> Environmental Sciences and Geology (ENV) |
| <input type="checkbox"/> Social Sciences and Humanities (SOC)                        | <input type="checkbox"/> Life Sciences (LIF)                      |
| <input type="checkbox"/> Economic Sciences (ECO)                                     | <input checked="" type="checkbox"/> <b>Mathematics (MAT)</b>      |
| <input checked="" type="checkbox"/> <b>Information Science and Engineering (ENG)</b> | <input checked="" type="checkbox"/> <b>Physics (PHY)</b>          |

**4. Research / Project Description**

The Heat and Mass Transfer Technological Center (CTTC) at the Technical University of Catalonia (UPC), is seeking candidates for a postdoctoral position in computational fluid dynamics. Specific areas of interest are compressible flows, aerodynamics, fluid-structure interaction, computational aeroacoustics and combustion. Other related topics (e.g. numerical methods, turbulence modeling, high-performance computing, solvers, ...) will be also considered (see the Brief Description of the Institution and the web-page of the Research Group for a complete list of our lines of research).

Apart from a PhD in mechanical engineering, applied mathematics, physics, or computational science, a proven proficiency in programming (e.g. Fortran, C, C++, ...), numerical methods and mathematics are required for this position.

Candidates with previous experience with:

- Finite Volume/Element Method
- Direct Numerical Simulation
- Modeling of fluid structure interaction
- Turbulence modeling
- High Performance Computing

are particularly encouraged to apply.

**5. Who can apply?**

At the deadline for the submission of proposals (10/09/2015), researchers (\*):

- shall be in possession of a doctoral degree or have at least four years of full-time equivalent research experience.
- must not have resided or carried out their main activities in the country of Spain for more than 12 months in the 3 years immediately prior to the abovementioned deadline.

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## **6. Contact person**

Prof. Assensi Oliva                      or              F.Xavier Trias (Ramón y Cajal Researcher)  
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Tel. 34 93 739 81 92 FAX 34 93 739 89 20

## **7. Applications: documents to be submitted and deadlines**

- Curriculum Vitae
- Motivation letter
- Two recommendation letters

Deadline: July 2015

Please note that:

- Deadline of the next call for proposals for Marie Skłodowska - Curie Individual Fellowships is **September, 10<sup>th</sup> 2015**.
- Oficina Europea is only responsible for the display of the expressions of interests received by the institutions; further contact and information requests will take place directly between the host institutions and the interested researchers.

(\*) Further details on the Call and additional eligibility criteria can be found at the [Participants' Portal](#)