1. **Interested institution:**

Biomechanical Engineering Group (BIOMECE)
Biomedical Engineering Research Centre (www.creb.upc.edu)
Universitat Politècnica de Catalunya
Av. Diagonal 647
08028 Barcelona, Catalonia, Spain

2. **Brief Description of the Institution**

The Biomedical Engineering Research Centre (CREB) of the Universitat Politècnica de Catalunya (UPC) is an interdisciplinary research centre with the aim of covering the demand for R&D in the fields of biomedical engineering. The CREB is made up of a team of 80 highly qualified researchers with proven professional experience (42 are doctors in engineering, physics and computers and 38 have bachelor’s degrees). For more than thirty years it has carried out important applied research work and technology transfer aimed at sectors involved in biomedical innovation, such as the business and hospital sectors. The CREB is part of TECNIO, the umbrella name devised by the Government of Catalonia and set up with the aim of bringing together leading experts currently working in applied research and technology transfer in Catalonia.

Currently, the CREB has seven research fields located in different departments of our university. These are the followings: Biomechanical Engineering, Biomaterials and Tissue Engineering, Biomedical Signals and Systems, Robotics and Vision, Instrumentation and Bioengineering, Dosimetry and Ionizing Radiation, and Computer Graphics.

The division of Biomechanical Engineering (BIOMEC Group) focuses its research on the development of theoretical, numerical and experimental methods for the study of the biomechanics of human motion and the behaviour of biological tissues.

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

- [ ] Chemistry (CHE)
- [ ] Social Sciences and Humanities (SOC)
- [ ] Economic Sciences (ECO)
- [x] Information Science and Engineering (ENG)
- [ ] Environmental Sciences and Geology (ENV)
- [ ] Life Sciences (LIF)
- [ ] Mathematics (MAT)
- [ ] Physics (PHY)
### 4. Research / Project Description

The BIOMEC Group research lines are the following:

- Capture and kinematic analysis of human motion. Healthy and pathological gait analysis.
- Development of multibody biomechanical models for the dynamic analysis of motion and the study of muscle force sharing.
- Mechanical design and simulation of assistive and rehabilitation devices.
- Optimization formulations to predict muscle and joint contact forces by means of non-invasive techniques.
- Application of human movement analysis to sport and footwear.
- Advanced tissue constitutive modelling based on clinical images and biophysical couplings.
- *In silico* and experimental exploration of tissue biophysics.
- Scale integration and dynamic coupling to organ biomechanics for patient-specific *in silico* medical trials.

### 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.

### 6. Contact person

Josep Maria Font Llagunes  
Email: josep.m.font@upc.edu

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

CV, academic records and letter of motivation.

Please note that:

- Deadline of the next call for proposals for Marie Sklodowska – Curie Individual Fellowships is **September, 10th 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