OPEN POSITION

IMDEA Materials Institute is a non-profit research organization, promoted by the Regional Government of Madrid, Spain, to carry out research activities in Materials Science and Engineering. More information can be found at www.materials.imdea.org

The research group of Multiscale Materials Modeling at IMDEA Materials is seeking a

PhD candidate - Multiscale mechanical modeling of metals

(Ref: ENV-RA01)

to carry out a PhD in Computational Materials Science. The candidate will develop computational models of the **mechanical response and fracture of complex microstructures in superalloys** for aeronautical components. Activities will be carried out within the **Multiscale Materials Modeling** group. Developments will be based **on crystal plasticity** theory to model the behavior at the single grain/dendrite level, and computational homogenization to expand the simulation to the scale of the heterogeneous polycrystalline microstructure, in particular combining **finite elements and Fourier transform**-based numerical approaches.

The research will be part of a **collaborative project, coordinated by a world-leading aerospace company**, which will involve other PhD theses and postdoctoral projects on different aspects of advanced manufacturing of aeronautical superalloys. Close interactions with industrial partners will ensure that the research meets industrial standards. Joint experimental activities within the Micro- and Nano-Mechanics group at IMDEA will provide the researcher with extensive experimental data to validate computational developments.

The candidate will learn advanced concepts in materials modeling, nonlinear computational mechanics, crystal plasticity, finite elements, FFT solvers, aeronautical superalloys, and gain hands-on experience in scientific programming for multi-scale and multi-physics modeling. The student will get experience in a technological field with high employability

Starting date: as soon as possible

Requirements: The optimum candidate should have a Master in Materials science, Mechanical engineering, Applied Mathematics, Physics or similar or finish it this academic year**. High level of English is mandatory.**
 In addition, knowledge of some of the following fields will be positive
-Continuum Mechanics, finite elements
-Programming skills (python, C++ fortran)
-Materials science

Conditions: - Starting date: Available immediately; open until filled.
- Full time contract including social security coverage.
- Enrolment in an academic PhD program.

Contact: Interested candidates please send your CV **indicating the job reference, reference letters, and your academic grades,** to:

http://jobs.materials.imdea.org