### SHORT DESCRIPTION

Ayudas de la Comunidad de Madrid para la contratación de ayudantes de investigación

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### OTHER DETAILS

**Ref. num.** PEJ-2017-AI/IND-7269

# Research position in Computational Solid Mechanics

Application Form (/offer/44/apply)

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IMDEA Materials (Madrid Institute for Advanced Studies of Materials) is a non-profit, independent research institute, promoted by the Regional Government de Madrid (Spain), to carry out research in Materials Science and Engineering. IMDEA Materials Institute is committed to excellence in research by attracting talent from all over the world and to foster technology transfer to the industrial sector in a truly international environment. More information about the activities of the Institute can be found at: http://www.materials.imdea.org (http://www.materials.imdea.org)

### DESCRIPTION

The Computational Solid Mechanics Group at the IMDEA Materials Institute is looking for a pre-doctoral researcher to work in the topic of simulation and design of new meta-materials. These are artificial materials with a lattice structure, typically in the form of connected micro-beams, and designed to obtain properties that can not be found in standard materials. Some examples are materials with negative Poisson's ratio, materials with vanishing shear moduli, materials with acoustic band gaps, etc.

The hired researcher will work, while pursuing his/her PhD degree, in the design of new metamaterials with selective acoustic band gaps. The work will involve the design of computational tools for the fast calculation of dispersion relations, and their optimisation. In addition, some prototypes will be built using the 3D-printing facilities at IMDEA Materials.

### REQUIREMENTS

The candidate should have a degree in Engineering (mechanical, aeronautical, civil, or similar), physics, or mathematics, and a Master's degree in one of these fields with excellent academic credentials.

More specific skills that will be necessary to successfully carry out the research tasks are:

- Good level of English, both spoken and written.
- Proficiency in C++ or C programming.
- Analytical mindset, with a strong background in mathematics and numerical analysis.
- Notions of structural analysis, mechanics, and preferably, solid state physics.

Candidates must be registered as residents of the Community of Madrid (census, "empadronamiento") on 12/09/2017 and be registered in the National Youth Guarantee System of the Ministry of Employment and Social Security, whose specific requirements can be consulted here (http://www.empleo.gob.es/es/garantiajuvenil/accesojovenes.html).

## CONDITIONS

The researcher will work within the Computational Solid Mechanics Group at IMDEA Materials, using research computational codes and 3D printing facilities.

By working at IMDEA Materials Institute, the researcher will be exposed to an international environment, with the chance to collaborate with Spanish and foreign researchers, and to participate in national and international projects and conferences.

Contact (http://www.materials.imdea.org/contact)

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