

PhD on printable nanostructured sensors for structural composites

IMDEA Materials Institute is a public research organization founded in 2007 by Madrid's regional government to carry out research of excellence in Material Science and Engineering by attracting talent from all over world to work in an international and multidisciplinary environment. IMDEA Materials has grown rapidly since its foundation and currently includes more than 120 researchers from 17 nationalities and has become one of the leading research centers in materials in Europe which has received the María de Maeztu seal of excellence from the Spanish government. The research activities have been focused in the areas of materials for transport, energy and health-care and the Institute has state-of-the-art facilities for processing, characterization and simulation of advanced materials. More information can be found at <https://materials.imdea.org/>

DESCRIPTION

This is a PhD project at the interface between nanotechnology, 3D printing and advanced methods for aerospace composite sensing. It will be carried out jointly at the research groups of Prof. C. González and Dr. Juan J. Vilatela, as part of a European consortium (<https://cordis.europa.eu/project/id/101007022/es>) of leading companies and academic institutions.

The candidate will first establish a framework to rationalize the piezo resistive properties of yarns of carbon nanotubes combined with polymer matrices. He/she will also contribute to developing methods for 3D-printing of continuous fibres of CNTs, jointly with partners in Europe and an industrial supplier. A following objective is to integrate these nanostructured fibres in structural composites, and develop methods for signal processing and detection of damage and other phenomena. Application forms available at <http://jobs.materials.imdea.org/offer/161>.

REQUIREMENTS

Undergraduate and master's degrees in disciplines related to materials science, nanotechnology and/or mechanical engineering and solid mechanics with experience in modelling and simulation. Strong interest in experimental work is essential. Previous experience on characterisation of nanomaterials and/or manufacturing and study of structural composites will be positively evaluated. Command of written and spoken English is a prerequisite.

CONDITIONS

Contract with full social security coverage. Besides on-the-job technical training, IMDEA Materials Institute is committed to train the Institute's scientists and staff in "soft" or transversal skills. See the available training [here](#). Meet our some of our [alumni](#).