

# Position Offered: UNIVERSITY GRADUATE

## Project: *Digital techniques in medical devices*

**Technological and scientific fields:** Physics; design engineering

**Location:** Valencia, Comunidad Valenciana, Institute for Instrumentation in Molecular Imaging (i3M), <https://i3m.csic.upv.es>

**Research Group/PI:** Medical Imaging and Therapy Systems, IP José María Benlloch Baviera, <https://i3m.csic.upv.es/research/stim>

### PROJECT SUMMARY

Digital techniques enable increasingly versatile and effective medical applications. This project is oriented towards proton therapy and research into radiobiological effects. In recent years, clinical evidence has been found that the same dose of radiation can have different effects on the patient if it is concentrated in a time of less than 1 second compared to standard treatment. The research group works on several related aspects. On the one hand, the development of radiation detectors capable of measuring the total dose in such short times, and on the other hand, the in-vitro study of the effects of radiation on cell cultures. These works require experimental setups and laboratory models adapted to each environment. CAD design and instant 3D printing of designed components allows for a very efficient workflow. This project will promote the incorporation of new modules and techniques such as artificial intelligence and advanced industrial modeling and manufacturing in SolidWorks.

### PROFESSIONAL PROFILE

#### Minimum requirements:

University degree required: Degree in Industrial Design Engineering and Product Development

#### Merits to be considered:

The following aspects will be positively valued:

- Experience using SolidWorks software
- English certificate (minimum level B1)
- Experience in the design of laboratory models for research in physics, medicine or biology

### WHAT IS OFFERED

The project combines activities related to the group's lines of research with four main training activities, each culminating in the writing of a work and which can lead to scientific publications and contributions at conferences, including the design and construction of an ion beam monitor based on scintillating fibers for use in hadrontherapy or the design of an underground laboratory for the new i3M building. The person hired will carry out several stays in national (CLPU Salamanca, CNA Sevilla, IGFAE Santiago de Compostela) and international research centers (DKFZ Heidelberg). In addition, he/she will take a series of online courses on advanced industrial design techniques.

#### Contract conditions:

Indefinite contract for a University Graduate associated with the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (37.000 € - 41.000 €).

**Start of contract: before 31 December 2024**

### PRINCIPAL INVESTIGATOR CONTACT

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