

December 26th, 2024



## Title

*“Development of optoacoustic medical sensors”*

## Profile of the candidate

Bsc in Biomedical Engineering, Electronics Engineering, Telecommunication Engineering, Physics (or similar).

Msc in a “hard skills” engineering field like, Electronics, Machine Learning, Biomedical Engineering, Optics, Robotics, (or similar).

## Background and project description

In the Sensors Division of the Medical Engineering Development & Innovation Center (<https://www.medicuam.com/sensors-group/>) we are developing new medical sensing concepts based on optoacoustic technology. We offer a PhD student position within the framework of the European Innovation Council Pathfinder project “MOSAIC” ([https://eic.ec.europa.eu/eic-funding-opportunities/eic-pathfinder\\_en](https://eic.ec.europa.eu/eic-funding-opportunities/eic-pathfinder_en)). The PhD candidate will develop optoacoustic medical sensors. In particular, the researcher will work in all the aspects of the development of the sensor, including 3D design, optics design, mathematical simulations, development of signal processing algorithms, machine learning applied to clinic data etc. The prototypes will be tested in the clinic to proof their value for the diagnosis and monitoring for cardiovascular and metabolic diseases.

The Medical Engineering Development & Innovation Center (MEDICUAM, <https://www.medicuam.com>) is devoted to the development of medical technologies to solve unmet clinical needs and transfer them to the industry. Our members have played important roles in the invention and development of innovative medical devices participating in several start-up companies. Our funding sources include the European Commission, funding bodies in the USA, the Spanish Government and the Autonomous Community of Madrid.

## Department

Departamento de Tecnología Electrónica y de las Comunicaciones  
Escuela Politécnica Superior  
MEDIC  
Universidad Autónoma de Madrid

## **Requisites**

Good knowledge in several of the following fields is required:

*Signal processing*

*The physics of waves*

*Machine learning*

*Basic Optics*

*Ultrasound imaging/sensing*

*Optoacoustic imaging/sensing*

Programming skills:

*Matlab, Python, C++*

Languages.

*Fluency in English and Spanish is mandatory*

## **We offer**

Excellent work environment at the forefront of medical technology development.

Career development plan.

## **Contact**

Email your CV and a brief introduction to [juan.aguirre@uam.es](mailto:juan.aguirre@uam.es)