

February 11th, 2022



Title

“Development of an optoacoustic sensor/imaging simulator”

Profile of the candidate

Last year student of:
Ingeniería Informática/Telecomunicaciones
Doble grado de Ingeniería Informática y Matemáticas
Máster en Ingeniería de Telecomunicaciones
Máster en Ingeniería Informática

Background and project description

Optoacoustic imaging and sensing combine the rich contrast related to optical excitation with the advantageous resolution to depth ratio typical of ultrasound imaging/sensing. These characteristics give optoacoustic imaging/sensing a competitive edge over other imaging/sensing methods currently applied in biology and medicine.

In the Sensors Division of the Medical Engineering Development & Innovation Center (<https://www.medicuam.com/sensors-group/>) we are developing new sensing and imaging concepts based on the optoacoustic paradigm. The candidate will develop an optoacoustic/ultrasound simulator in MATLAB that will allow to test new concepts related to optoacoustic sensing and imaging tailored to solve specific clinical needs.

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 creation of several start-up companies (Plenotika <https://plenotika.com/> and 2eyes vision <https://www.2eyesvision.com/es/>) and have developed relevant novel clinical optoacoustic imaging systems which have caught the attention of major scientific journals (<https://www.medicuam.com/sensors-group/>).

Department

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

Requisites

Basic image/signal processing knowledge.

Basic knowledge of numerical methods (FDM, FEM, etc).

Basic understanding of the physics of waves.

Basic knowledge of image formation methods.

Good programming skills on Matlab.

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