



We are looking for a PhD candidate to work in **metamaterials for biomedical ultrasound therapy applications** in an international research group. The candidate will be involved both in technological development of therapeutical devices for neuromodulation, BBBO and drug delivery, as well as in the development of fundamental aspects of new types of metamaterials for ultrasonic therapy.

Candidates should hold:

- **Master's degree** (or be close to completing it) in **Physics, Biomedical Engineering, Electrical Engineering, Acoustical Engineering** or other related areas which qualifies to enter a PhD program.
- A **non-European Union degree obtained in 2016 or later**.
- Knowledge of spoken Spanish or English appropriate for the research activity.
- Candidates must not hold a previous PhD degree.

The PhD position will be for **3+1 years**, to be filled as soon as possible. The student contract will be founded by the [Santiago Grisolfía Program](#).

Interested candidates are encouraged to contact us and send (1) a letter of motivation, (2) a CV, (3) Copy of official academic records including the academic title and grades obtained, together with dates and (4) the name and contact information of at least one reference to [fracafe@fis.upv.es](mailto:fracafe@fis.upv.es)

## Ultrasound Medical and Industrial Laboratory

The [Ultrasound Medical and Industrial Laboratory](#) (UMIL) works on developing Ultrasound-based techniques for both medical and industrial applications. Some of the ongoing research in the UMIL includes: 1) Ultrasonic focused beams for tissue characterization and therapy; 2) Transcranial propagation of ultrasound; 3) Magneto-Motive Ultrasound and photoacoustic Imaging; 4) Ultrasonic technology applied to odontology; 5) Ultrasound industrial applications.

The UMIL is located in the [Ciutat Politècnica de la Innovació](#) at the [Universitat Politècnica de València](#) (UPV) and is part of the [Instituto de Instrumentación para Imagen Molecular](#) (i3M).

UMIL has more than fifteen years of experience in the study of high intensity ultrasound propagation, both in the development of software for the prediction of the ultrasonic field, and in the design and construction of optimal ultrasonic emitters for treatment. It also carries out collaborations with some of the international reference centers in the fields of scientific diagnostic and therapeutic ultrasound, such as University College of London, Columbia University in the City of New York, Centro Integral de Neurociencias HM in Madrid, or Université de Strasbourg.

UMIL has developed a [new technology](#) based on the use of holographic lenses to correct and adapt the ultrasonic focus to the shape of deep brain structures for transcranial applications of ultrasound, as neuromodulation, BBBO or drug delivery. Holographic lenses can also be applied to hyperthermia or ultrasonic imaging. The PhD student will be involved in the new developments and applications of ultrasonic holograms.

### Information:

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<https://www.i3m-detectors.i3m.upv.es/umil>



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