

Postdoctoral position in biophotonics for cardiac electroporation monitoring

(Announcement date: December the 20th, 2021)

The *Biomedical Electronics Research Group* (<http://berg.upf.edu>) at Universitat Pompeu Fabra in Barcelona is seeking candidates for a postdoctoral position to carry out research on the assessment of photonic methods for monitoring irreversible electroporation in tissues.

We have access to a novel photonic technology able to monitor changes in tissues in real time. We want to explore the use of this technology for monitoring cardiac electroporation and we want to build a solid understanding of the cardiac electroporation phenomenon and how it translates to photonic observations. Research activities will include design and participation in acute and chronic animal studies, in vitro experimentation and numerical modeling studies.

Cardiac electroporation is now being developed as a cardiac ablation modality. Cardiac ablation is a common therapeutic option for managing arrhythmias in patients not responding to antiarrhythmic medication. The two most common cardiac ablation modalities, radiofrequency ablation (RFA) and cryoablation have high success rates. However, both modalities are accompanied by potentially fatal complications such as, for instance, severe esophageal injury leading to an atrio-esophageal fistula. Clinical complications and technical and practical limitations of both techniques are mostly related to their thermal nature. Therefore, non-thermal alternatives are of great interest. And, in the last years, irreversible electroporation, known in the cardiac field as 'Pulsed Field Ablation' (PFA), has gained the attention of major medtech companies.

Gross salary: 35,000 € per annum (up to 45,000 € for exceptionally experienced and talented researchers)

If interested, please apply by sending a single pdf with: 1- motivation letter, 2- curriculum vitae and 3- the contact details of three references. Please indicate the reference PHOTO_EP_1 in the subject.

To submit your application, please send an email with the indicated documentation to Prof. Antoni Ivorra (antoni.ivorra@upf.edu)

Please apply as soon as possible. The position will be filled as soon as we find the right match. The envisaged job starting date is February the 1st, 2022.

(This position will also be announced in Euraxess)

Desired skills and experience:

Candidates must hold a PhD degree and have ample experience as researchers on tissue electroporation. Candidates should have a BSc or MSc degree in engineering, including biomedical engineering, or physics. Previous knowledge and experience in biophotonics will be highly valued. Substantial research experience in the following areas will also be positively valued (not in order of preference): animal experimentation, in vitro experimentation, FEM simulations (e.g., COMSOL Multiphysics) and cardiac physiology.