

Postdoctoral Position - Electronics for Neuro-prosthetic Systems based on Microstimulators (Reference number: eAXON-PD1)

In the context of an ERC Consolidator Grant recently awarded, the Biomedical Electronics Research Group (BERG) of Universitat Pompeu Fabra in Barcelona is seeking candidates for a postdoctoral position to carry out research on electronic design of neuroprosthetic systems based on injectable electronic implants.

The project to be supported by the ERC Consolidator Grant is titled "Electronic AXONs: wireless microstimulators based on electronic rectification of epidermally applied currents" (eAXON) and it is intended to explore an innovative method for implementing neuroprosthetic systems based on injectable microstimulators.

We want to develop and demonstrate wireless networks of implants capable of stimulating the muscles and recording their activity. Potentially, among other fields of application, this technology will be used to recover motor functions in patients who suffer from paralysis. The implants will look like short pieces of flexible thread; a very few centimeters long and less than a millimeter thick. These unprecedented features will be possible because the electrical supply methods used so far in active implants (batteries and inductive coupling) will be avoided. Our implants will be based on rectification of innocuous bursts of high frequency current applied externally through textile electrodes.

Gross salary: 31,000 € to 36,000 € per anum

If interested, please apply by sending an email to randp.dtic@upf.edu with a motivation letter, curriculum vitae and the contact details of three references as a single pdf. Please indicate the reference number eAXON-PD1.

This position will be available until filled. Please apply as soon as possible.

Desired Skills and Experience

Candidates should hold a PhD degree in electronics engineering, or a related engineering discipline, and have an excellent scientific-technical background in biomedical electronics, particularly in portable or implantable biomedical electronic systems. Ample experience in analogue and digital electronics is required. Experience in power electronics will be considered very positively. The project will involve the development of an ASIC by an external design house; a background in microelectronics or experience designing ASICs at system level will be considered very positively. In addition, experience in the following areas will be positively valued (not in order of preference): electrical stimulation, animal experimentation, FEM simulations, micromachining, encapsulation of implants, electrical safety and electromagnetic compatibility standards and electronic packaging and connection technologies.

Candidates must be proficient in spoken and written English.

About the Universitat Pompeu Fabra

Established in 1990, Pompeu Fabra University (UPF) is a public university in Barcelona. It is the second best university in Spain and the 17th best young university in the World according to the Times Higher Education rankings (2017). It is the number one Spanish university in number of ERC grants.