



## CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

### Research Fellowship (BI-RE)

One research fellowship (BI-RE) is open at the **Fundação da Faculdade de Ciências da Universidade de Lisboa**, for a project entitled Tumor Treating Fields (TTF), to be carried out at the Institute of Biophysics and Biomedical Engineering, and financed by Novocure (<http://www.novocure.com>), under the following conditions:

1. **Scientific Area:** Biomedical Engineering
2. **Requirements for admission:** Applicants should have a PhD in Physics, Engineering or related areas and have a strong background in numerical modelling in electromagnetics. Previous experience with the finite element method is a high priority, particularly aspects related to mesh generation and optimization. Experience in neural stimulation (TMS or tDCS), EEG or MEG is also an advantage.
3. **Work plan:** The objective of this work is to improve our understanding of the use of intermediate frequency electric fields to treat brain tumours, specifically Glioblastoma multiforme (for more details see *Eur J Cancer* 2012; 48(14): 2192-2202). The successful applicant will 1) develop analytical and finite element models (FEM) describing the distribution of intermediate frequency electric fields within the brain, 2) use DTI data to incorporate anisotropy in the electrical conductivity (i.e., the electrical conductivity tensor) in white matter in the FEM modeling framework, and 3) develop analytical and finite element models of the electric fields produced within cells in response to an applied AC electric field. The inclusion of anisotropy data and the study of the electric field at the cellular level will be performed in collaboration with the Section on Tissue Biophysics and Biomimetics, NICHD, NIH, USA. An isotropic realistic head model has already been developed at IBEB, using programs such as Brainsuite, Mimics, Comsol and Mathematica (see our latest paper entitled “The electric field in the cortex during transcranial current stimulation” at <http://dx.doi.org/10.1016/j.neuroimage.2012.12.034>).
4. **Legislation framework:** Portuguese Law Nr. 12/2013, from 29 January (Research Grant Holder Statute).
5. **Place of work:** The work will be developed at the Institute of Biophysics and Biomedical Engineering (IBEB), Faculty of Science of the University of Lisbon, under the scientific guidance of Prof. Pedro Cavaleiro Miranda.
6. **Fellowship duration and start:** The initial contract is for a duration of 6 months, renewable up to a maximum of 24 months. The contract will start on the 22<sup>nd</sup> April 2013, or at later date to be agreed by both parties.
7. **Monthly allowance:** The scholarship amounts to € 1500 per month. Scholarships are not subject to income tax. The scholarship will be paid monthly by bank transfer. Fellows will have a personal accident insurance and, if not covered by any social protection scheme can ensure the right to social security through adherence to voluntary social insurance scheme, pursuant to “Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social”.
8. **Selection method:** Candidates will be assessed by the quality of their CV and the relevance of their experience. Shortlisted candidates will be interviewed via Skype.
9. **Selection Committee:** Pedro Cavaleiro Miranda, Ricardo Salvador, Eduardo Ducla-Soares. The Committee reserves the right not to make an appointment, should there be no suitable candidates.
10. **Publication/notification of results:** The final results of the evaluation will become public, through an ordered list, which will be posted at the entrance hall of the **Fundação da Faculdade de Ciências da Universidade de Lisboa**, located at the Faculdade de Ciências da Universidade de Lisboa, C1 bldg – 3<sup>rd</sup> floor, Campo Grande, 1749-016 Lisboa, and sent to the candidates by email. The selected candidate will be notified by email.



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11. **Deadlines:** This call for applications is open until the 15<sup>th</sup> of April 2013.
12. **Application:** Applications may be filed via e-mail to [pcmiranda@fc.ul.pt](mailto:pcmiranda@fc.ul.pt), attaching the following documents: a motivation letter, Curriculum Vitae, copy of PhD certificate, the contacts of at least two persons willing to provide reference letters, and other relevant documentation.