Title: Long-range electrodynamic interactions between proteins

Localisation: Université de Montpellier, Institut d’Électronique et des Systèmes UMR 5214

contract duration: 12 months

Description:
The emergence of bioelectromagnetism, dedicated to the study of the effects of electromagnetic fields (EM) on living beings, and the existence of already highly developed theoretical models, have not yet made possible to highlight experimentally one of the most striking and challenging problems to understand arising from molecular biology: the high-efficiency and rapidity of biochemical reactions in living cells. The study proposed here will identify a novel biophysical scenario of protein-recognition through the activation of attractive electrodynamic forces acting over long distances.

The postdoctoral scientist will join a multidisciplinary group of Physicists, Biologists and Engineers. He/she will deal with the probing of the attractive electrodynamic forces acting over long distances by TeraHertz spectroscopy in watery conditions (near-field, TDS, CW).

The project is located at the interface between physics and biology and represents the overlapping of several disciplines: molecular biology, theoretical physics, computational biophysics, and instrumentation. The research program is supported by a strong infrastructure, which includes cell biology, clean room fabrication, biochemistry, computational facilities and micro/nano-electronics equipment. The applicant will be in charge of the communication between the partners and will manage two PhD-students.

Required skills:
The TeraHertz team at Montpellier University is seeking highly motivated and thoughtful postdoctoral scientists in experimental (bio-)physics. Candidates must have a doctoral degree and excellent verbal and written communication skills. Individuals with a background in physics or bio-physics or proteins dynamics or bioelectromagnetics will be considered. Experiences in Optics or THz measurement techniques are an asset but not mandatory.

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