Postdoc position

"Coupling of ionic and electronic transports in single-walled carbon nanotubes"

Location: Laboratoire Charles Coulomb, University of Montpellier & CNRS, Montpellier, France

Research project

The general aim of the project is to develop a sophisticated control and sensing of the motion of ions and molecules inside single-walled carbon nanotubes (SWCNTs). More precisely, the project aims at experimentally studying how ions in the inner channel of the nanotube and electrons in the nanotube wall couple during ionic and/or electronic transport. The methodology will involve field-effect transistors based on one or several SWCNTs also allowing the electrophoretic transport of ions through their inner channel.

The research will be based at Laboratory Charles Coulomb, a joint research centre of the University of Montpellier and CNRS, which has a strong expertise in the fabrication, structural characterization and electrical and nanofluidic studies of SWCNTs. The project will also include exchanges with theorists and simulation scientists of the research consortium.

Sought profile

We are seeking an experimental researcher highly motivated by such lines of research and holding a PhD degree in Physics, Chemistry, Biophysics or Materials science by the starting date of the contract. A strong experience in nano/microfluidics or in nanoelectronics (clean-room microfabrication and/or low-current electrical measurements) is compulsory. Candidates with high self-motivation, experimental rigour, taste and ability for experimental work, analysis skills and English communication are strongly encouraged to apply.

Application date: from now and until selection of the candidate

Starting date: between November 2018 and April 2019

Duration: 24 months (12 months renewable once)

Research supervisors: François Henn (francois.henn@umontpellier.fr), Vincent Jourdain (vincent.jourdain@umontpellier.fr), Adrien Noury (adrien.noury@umontpellier.fr)

Website of Laboratoire Charles Coulomb:
https://www.coulomb.univ-montp2.fr/?lang=en
Webpage of the host team:
https://www.coulomb.univ-montp2.fr/-Equipe-Nanostructures-?lang=en
Webpage of the University of Montpellier:
https://www.umontpellier.fr/

Application details

The candidate must send to the research supervisors:
- a personalized motivation letter detailing his/her interest for the project and his/her aptitudes for leading the proposed research,
- a detailed CV describing his/her past research achievements,
- the contact details of three reference persons.

Incomplete applications will not be considered.