Research engineer in instrumentation and magnetism (12 months)

FET open project "***ByAxon"*** *(H2020 program/2017-2020)*

Towards an active bypass for neural reconnection

http://www.byaxon-project.eu/

Instrumentation upgrade of a magneto-optical Kerr effect microscope for the study of magnetoresistances based on $La_{0.7}Sr_{0.3}MnO_3$ thin films

Context:

The CNRS-GREYC lab, located in Caen (France), is actively seeking a research engineer in instrumentation and magnetism. He/she will contribute to further optimization of the sensitive magnetic sensors developed for biomedical applications within an ongoing European project (ByAxon), in which a prototype of an active implant that could work directly at the spinal cord (SC) level is targeted. This implant will be primary focused on restoring the transmission of electrical signals in the injured SC, acting as an active local bypass. Specific requirements are related to the detection of electrical signal in the spinal cord, by magnetic sensing, and the role of the CNRS-GREYC lab is to fabricate magnetic sensors of detectivity as low as 100 $pT.Hz^{-1/2}$ at room temperature.

Role:

A magneto-optical Kerr effect (MOKE) microscope has already been developed and is used in the lab. Apart from it, magnetoresistance (MR) and low frequency noise are measured in a separate four-probe set-up with a variable temperature stage. The role of the engineer will be to add the possibility of measuring simultaneously MOKE properties (magnetic hysteresis cycles, coercive or anisotropy field), MR and low frequency noise in the MOKE set-up. In addition, two new features have to be developed: regulation of the temperature in the 300 – 330 K range, and rotation of samples during measurements.

The assignment will entail:

- Electronics readout design and tests
- Labview programing
- Characterization of various samples fabricated in the project

Required competences:

The candidate must hold a doctorate or an Engineer degree from the list below, in applied physics, instrumentation, or electrical engineering. He/she must be an experimentalist with background in electrical characterization and/or magnetic characterization.

https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000023816837&fastPos=1&fastReqId=598666480&categorieLien=id&oldAction=rechTexte

Personal/complementary skills:

He/she will join a team of 4 permanent researchers/lecturers, 1 PhD student and 1 engineer involved in the project. Therefore, the candidate should show some abilities to work in a team.

Contract terms with CNRS:

Location: GREYC (CNRS UMR6072) – ENSICAEN – Univ. Caen Normandie (France)

Start: Sept. 2019 (tentative)

Duration: one year

Net salary: 1950-2100 euros/month, according to CNRS salaries and depending on experience

Contact and How to apply

For more information : Dr Laurence Méchin - laurence.mechin(at)ensicaen.fr

The application should be submitted on the CNRS portal at http://bit.ly/2JTBkrN **before 14 July 2019.**

Selection will start immediately, so early submissions are strongly encouraged.