



Post-Doctoral Position

In-situ Low-Field NMR measurements for Neutron Imaging. Development and applications.

NIMBE (<http://iramis.cea.fr/nimbe/>) and LLB (<http://www-llb.cea.fr>), both located at CEA Saclay (30 km south of Paris, France) invite applications for a Post-Doc position in Physics and instrumentation.

The successful candidate will be a driving force in a global attempt to design, install and use a low-field NMR spectrometer to be installed on a neutron imaging station for concurrent neutron/NMR experiments. She/he should have strong experience in low-field magnetic resonance applications and/or magnetic resonance hardware development (e.g. radio-frequency probes), or connected areas of experimental physics and engineering. Understanding of material science, and practical experience with Tecmag spectrometers will be a plus.

While SANS and neutron imaging techniques are extremely valuable tools to probe the large scale and mesoscopic/macroscopic structures in soft condensed matter, key physical information like transport quantities and dynamical parameters are not directly accessible. This kind of information can be easily obtained by Nuclear Magnetic Resonance (NMR). Adapting a NMR spectrometer on an imaging machine would make it possible to *i*) probe structural/topological information of a sample and simultaneously *ii*) access diffusion coefficients and T_1 , T_2 relaxation times on the same sample.

When fully functional, this device will be used for fundamental and industrial research in fields like geology, biology, food science (collaboration underway with Agro-Sup Dijon <http://www.agrosupdijon.fr/>) and batteries technologies.

Keywords: NMR, Neutron, Neutron Imaging, SANS.

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Location: Saclay, France

Start Date: Asap

Duration: 12 months

A 12 months extension of the position is possible.

Please submit a CV and brief (1 page) statement of interest.

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