The Call

A **three-year PhD position in solid-state NMR spectroscopy of advanced materials** is available at the **University of Lille** in France. It will start preferably in **October 2017**.

Project Description

Hybrid materials are promising for numerous applications, such as catalysis, gas storage or drug delivery. Solid-state NMR provides unique information about the atomic-level structure of defects and surfaces in hybrid materials. Nevertheless, a major limitation is the lack of sensitivity of solid-state NMR, which limits the observation of defects and surfaces, particularly for insensitive isotopes with low gyromagnetic ratio, low natural abundance or subject to large quadrupolar interaction. Recent instrumental developments, such as high-magnetic field and Dynamic Nuclear Polarization (DNP), can boost the sensitivity of solid-state NMR. This project aims at developing and applying novel solid-state NMR methods to probe the local environment of quadrupolar nuclei in hybrid materials. The structural information obtained by solid-state NMR will be useful to improve the performances of hybrid materials.

Host and research Infrastructure

Lille is a vibrant and handsome city, imbued with a rich history, located in the middle of northwestern Europe (only 30 min by high-speed trains from Brussels, 1h from Paris and 1h30 from London). Lille is one of France’s top student cities and the university of Lille is a leading center for magnetic resonance. Lille NMR facility includes 800 and 900 MHz NMR spectrometers and has been selected to host the first 1.2 GHz NMR spectrometer to be installed in France. Our research group is internationally known for the development of solid-state NMR methods, notably for quadrupolar nuclei, and the characterization of hybrid materials. We have an expertise in high-field solid-state NMR spectroscopy and we are among the pioneers of high-field DNP-NMR of hybrid and inorganic materials.

The Applicant

We seek application from **national and international students** who have graduated in physics or chemistry, preferably with a background in material sciences or NMR spectroscopy. The successful applicant will be given the opportunity to work in an exciting environment with national and international collaborations.

Funding

The scholarship would be **1684.93 € per month** (gross amount)
Contact

Applications and informal queries about the lab and research projects should be directed by email to olivier.lafon@univ-lille1.fr and frederique.pourpoint@ensc-lille.fr