Improving hyperpolarised helium-3 production and administration

Post-doctoral position

Marie Curie fellowship for experienced researcher (PhD or 4-10 years of experience in research)

Total duration: 2 years - Start date: March 2008

Places of work: Paris, France (1st year) and Mainz, Germany (2nd year)

Gross salary: 49200 euros/year + travel, mobility, and relocation allowances

The experimental physicist or research engineer should have relevant experience for polarised helium production, characterisation, and handling. These processes mainly involve optical techniques for pumping and detection with laser sources, high vacuum techniques for control of gas flow and purity, static or NMR techniques for measurement of nuclear magnetisation.

The work will focus on new instrumental developments for on-site production of hyperpolarised He3 gas in Paris, and for controlled gas administration to patients or animal subjects as well as efficient He3 recycling after MR imaging in Mainz. The objective is to improve and characterize the performances of prototype setups, and to boost up the transfer of knowledge between the two places.

Environment: The Laboratoire Kastler Brossel is a research laboratory of the Ecole Normale Supérieure, affiliated to University Paris 6 and to the CNRS, located in the heart of Paris. The Institute of Physics is part of the University of Mainz. Hyperpolarised He3 has been intensively developed and used in both laboratories for over 20 years, in research programs including fundamental tests of atomic physics and quantum statistics, study of gas and liquid He3 at low temperature, high-energy and neutron physics, and MRI of lung ventilation in humans. The teams involved in this project have had a long-standing successful collaboration (see their web pages for more information on the research projects).

Funding: The project is funded as part of the EU 6th Framework Program - Research and Training Network PHELINET (Polarised Helium Lung Imaging Network). Specific trans-national mobility conditions apply for recruitment. The Marie Curie fellowship includes a basic monthly allowance for 2 years (gross amount of employment contract ~4100€ per month), and a few additional travel, mobility, and relocation allowances.

Further training: The recruited fellow will be encouraged to participate in ongoing collaborations with other researchers across Europe, with multiple opportunities to visit leading international laboratories, and to attend taught summer schools. She/He will also benefit from the stimulating, high level and multidisciplinary environment for research and training provided by the host institutions. This position offers the opportunity to benefit from different backgrounds and acquire experience in different countries and academic systems.

Contacts:

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Conditions for recruitment:

- The candidate should preferably be a national of EU Member or Associated States, excluding France and Germany.
- At the date of appointment, she/he should not have resided or worked in France or in Germany for more than 12 months in the last 3 years.

PHELINET recruitment is based on an equal opportunity policy. Female candidates are strongly encouraged to apply.