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PROJECTS IN HYPERPOLARIZED XENON NMR AND CEST MRI

Seeking applications from PhD student and postdoc candidates

MOLECULAR IMAGING

The Molecular Imaging group at the Leibniz-Institut für Molekulare Pharmakologie (FMP), headed by Leif Schröder, is seeking candidates to become part of various NMR/MRI projects for which we recently received long-term external funding. Our work focuses on functionalized xenon hosts to address targets of biochemical and medical diagnostic relevance. We develop techniques for Hyper-CEST detection (chemical exchange staruation transfer with hyperpolarized nuclei) to achieve a huge sensitivity enhancement and to obtain MRI contrast at unprecedented sensitivity.

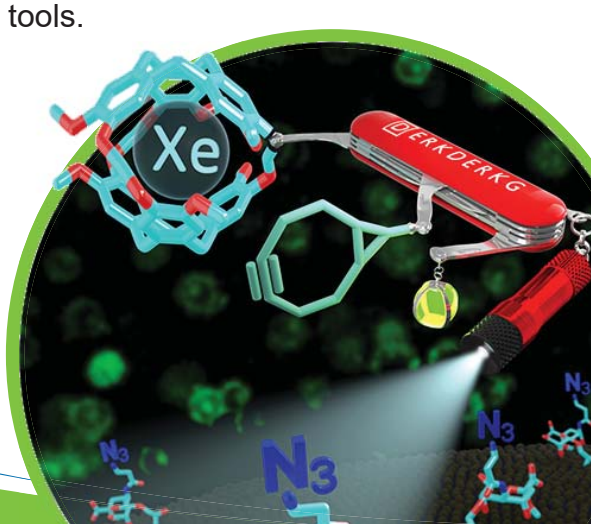
PhD and postdoctoral candidates who are interested in interdisciplinary projects are encouraged to contact the group for discussing options to join our team. Funding is avaliable immediately and projects can be partially tailored to the interest and background (physics, biophysics, bochemistry) of the candidates. Our work provides the opportunity to learn state of the art techniques that are only available in a few labs world wide. We are a dynamic, interdisciplinary team that strives for making significant advances at the interface between physics, chemistry and the life sciences. The Berlin-based lab is embedded into one of the nation's most active life sciences hubs.

Various aspects such as generation and handling of hyperpolarized xenon, NMR and MRI pulse sequence development, investigations of nanocarriers and model membranes, as well as studies with an NMR live cell bioreactor and small animal studies are part of our projects.

The FMP is located on the Campus Berlin-Buch and maintains close relationship with the universities of Germany's capital. An interdisciplinary approach is essential for our projects, and a particular strength of the FMP is the close interaction in the fields of physics, chemistry, and biology. The unique combination of technology platforms at the FMP, including a state-of-art NMR facility with small animal imaging capabilities, a screening unit and a mass spectrometry lab, provides an ideal environment for research projects that strive to develop novel diagnostic tools.

Related work by our group:

Science **314**: 446-9 (2006)
Proc. Natl. Acad. USA **111**: 11697-702 (2014)
Angew. Chem. Int. Ed. **54**: 2806-10 (2015)
Angew. Chem. Int. Ed. **54:** 13444-47 (2015)
Chem. Sci., **6**: 6069-75 (2015)
Nano Lett. **14**: 5721–26 (2014)



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