

Practical Semester / Master's Thesis Position in Ultra High Field Imaging and fNIRS/EEG

The Forschungszentrum Jülich GmbH, a member of the Helmholtz Association of German National Research Centres, is one of the largest interdisciplinary research centres in Europe. The 5200 people strong research facility employs more than 3200 researchers and technical staff who develop technologies in the areas of health, energy, and climate. The centre is also home state-of-the-art 3T, 7T whole-body MR scanners and a 3T MR-PET scanner that has been installed at the Institute for Neuroscience and Medicine-4 (INM-4). These facilities are complemented by a 9.4T animal scanner also based on the Siemens software and hardware platform. A 64-channel MR-compatible EEG system (Brainproducts) is implemented at 3T and 3T MR-PET scanners. Additionally, 16 channel fNIRS/EEG (Brainproducts) system is available for research

Practical semester/ Master thesis positions are available in 7T MRI and NIRS/EEG – data acquisition and processing. Master students who are pro-active and capable of independent work and have interest in science and research are only invited to apply.

Qualifications and skills required:

- Ideally, candidates should be a master student in Biomedical Engineering, Medical Physics, Neurobiology, Psychology, (Cognitive) Neuroscience, or related study programs.

Qualifications and skills Preferred (NOT MANDATORY)

- Programming skills (Matlab / Python)
- Technical and practical knowledge about neuroimaging techniques (fMRI, MR, EEG, fNIRS) and / or signal processing methods / algorithms and multivariate data analysis.
- Experience with software packages such as SPM, FSL and CPAC are advantageous.

Considering the interdisciplinary knowledge and skills required for the position, students are expected to do an internship in the institute before commencing the master thesis. Since the position includes close interaction with psychiatric patients' business fluency in German language is expected (Level C2). The position will be placed in an international team where team meetings and scientific presentations are routinely held in English.

The positions will be mainly placed in Jülich, projects involving patients will be in part performed at the University hospital of the RWTH Aachen (distance Juelich-Aachen 35 km). It is also possible to work from offices in University Hospital Aachen. Within the scope of various ongoing trimodal

projects, Practical semester / Master's thesis can be planned and adapted to the student's background and research interests. Motivated students are welcome to contact us to discuss available projects. Informal discussions are strongly encouraged; please contact

Prof. Dr. med. Irene Neuner *ineuner@ukaachen.de* (or) *i.neuner@fz-juelich.de*

Applications should be submitted electronically via email, should include a CV, cover letter with a short description of research interests and motivation. The positions are open for applications.