

2 PhD Positions, Institute of Medical Engineering

“Next Generation CEST MRI for Accelerated Non-invasive Metabolic Imaging”

The development of stratified or personalized medicine requires non-invasive imaging technologies that enable the identification and localization of characteristic biomarkers. Within the framework of a national and international research cooperation, a new non-invasive metabolic imaging method (CEST-MRI) is to be developed into a clinically applicable method at 3T. For this purpose cutting edge contrast and image encoding techniques will be combined with advanced reconstruction techniques.

The Research partners:

- Institute of Medical Engineering, TU-Graz
- Institute for Mathematics, KFU-Graz
- Department of Neuroradiology, Universitätsklinikum Erlangen, DE
- Max Plank Institute for Biological Cybernetic, Tübingen, DE

The available Infrastructure allows to investigate each aspect of CEST. The equipment consist of 9.4T Head, 7T Whole Body, and two 3T Whole Body Systems (clinical field strength).

PhD Position #1: Research area one – accelerated imaging with optimized sampling and dedicated reconstruction techniques.

PhD Position #2: Research area two – molecular sensitivity enhancement by optimization of the RF-saturation.

Both research areas can build on existing expertise and software from previous projects.

Profile: Candidates must hold a Master degree in Biomedical Engineering, Physics or a related field with good programming skills. Knowledge in Magnetic Resonance Imaging, image processing or mathematical optimization is highly appreciated. Proficiency in English (both oral and written) and good communication skills are required. We are looking for candidates who are interested for research in an interdisciplinary international team.

Start/Duration: 2020 October 1 at the earliest / duration 3 years

Salary: €2,206 gross (14x/year) according FWF standard personnel costs for doctoral candidates.

Application: Please send your motivation letter, curriculum vitae, certificates of graduation, supporting documents and links regarding professional activities to rudolf.stollberger@tugraz.at,

Contact & Request: Prof. Dr. Rudolf Stollberger, Institute of Medical Engineering, Stremayrgasse 16/III, rudolf.stollberger@tugraz.at