

PhD Position in Medical Imaging

System Design for Low-Field Magnetic Resonance Imaging

Univ.-Prof. Dr.-Ing. Volkmar Schulz
Head of Institute

Dr. rer. nat. Yannick Kuhl
Group Leader Low-Field MR Systems

Chair of Imaging and Computer Vision
Kopernikusstr. 16
52074 Aachen, Germany

application@lfb.rwth-aachen.de

We are seeking a Doctoral Researcher to expand our Low-Field Magnetic Resonance Imaging (LF-MRI) group at the Chair of Imaging and Computer Vision. In collaboration with Fraunhofer MEVIS, we develop next-generation portable MRI systems by combining innovations in hardware, electromagnetic simulation, RF technology, and physics-informed AI for image reconstruction and noise cancellation. As one of the most promising directions in medical imaging, LF-MRI has the potential to bring MRI to the point of care, enabling new applications in primary care, and in mobile healthcare settings.

Your Key Responsibilities

- Model and optimize the B_0 field of permanent-magnet arrays, including Halbach geometries and develop new passive magnet shimming strategies.
- Design gradient coils for field linearity, efficiency and low eddy-current coupling.
- Quantify and compensate field imperfections such as temperature-driven B_0 drift in compact magnets through new field tracking approaches.
- Validate your designs by imaging experiments on our LF-MRI scanners.

Your Profile

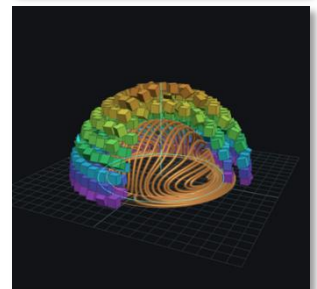
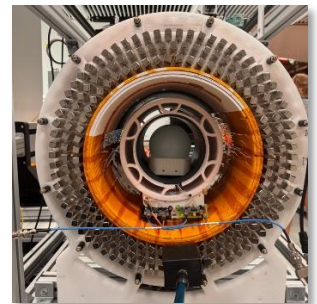
- An excellent master's degree in physics, mechanical or electrical engineering, or a related field.
- Solid expertise in hands-on lab work, Python programming, and design & simulation in CAD.
- Independent and self-motivated, with a strong collaborative mindset.
- Passionate about advancing medical imaging through innovation.

What We Offer

- An excellent collaborative, interdisciplinary research environment with leading scientists.
- Access to state-of-the-art low-field MRI and commercial MRI systems.
- Opportunity to shape next-generation MRI solutions and contribute to high-impact publications.
- A full-time position (TV-L) and RWTH employee benefits.

Applications

Applications should be submitted by email by **15 October 2026** for the current application round. Please use the subject line "LFMRI_SystemDesign_PhD_{LastName}" and include a CV, academic transcripts, a statement of research interests, and, if available, links to publications, thesis work, or code repositories.



*Top: Our own LF-MRI scanner.
Bottom: CAD drawing of permanent magnets + RF coil.*