

PhD Position

Electronic Systems Development for Low- Field MRI

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Head of Institute

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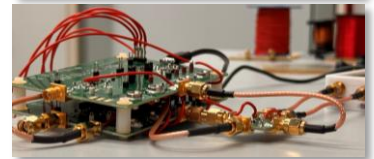
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We are seeking a Doctoral Researcher to expand our Low-Field Magnetic Resonance Imaging (LF-MRI) group at the Chair of Imaging and Computer Vision. In collaboration with Fraunhofer MEVIS, we develop next-generation portable MRI systems by combining 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

- Conduct research on novel RF and EMC concepts, including RF coil architectures, transmit/receive strategies, and shielding approaches to improve SNR and robustness against electromagnetic interference (EMI).
- Develop, prototype MRI electronics subsystems, including components such as TR-switches, dynamic RF retuning circuits, and receiver electronics through simulation and experimental validation.
- Integrate the developed subsystems into our LF-MRI scanners, translating the hardware innovations into improved medical imaging performance.



*Top: Our own LF-MRI scanner.
Bottom: Part of the RF electronics.*

Your Profile

- An excellent master's degree in electrical engineering, physics or a related field.
- Solid expertise in electronics design; experience in RF electronics & Python programming.
- 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 **1 October 2026** for the current application round. Please use the subject line "LFMRI_electronics_PhD_{LastName}" and include a CV, academic transcripts, a statement of research interests, and, if available, links to publications, thesis work, or code repositories.