

PhD Position in Medical Imaging

Electronics Design for Low-Field MRI Scanners

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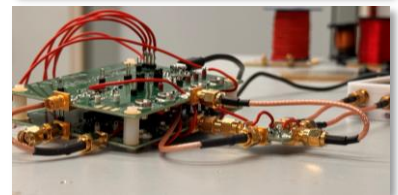
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We are seeking a Doctoral Researcher to drive the electronics development of our Low-Field Magnetic Resonance Imaging (LF-MRI) group. Together with Fraunhofer MEVIS, we build portable point-of-care scanners at 50-150 mT (2-6 MHz Larmor frequency), where coils, analog electronics and shielding are designed, built and measured in-house. Building on open-source hardware of the low-field MRI community, you will extend and improve these designs.

Your Key Responsibilities

- Work across the entire electronics and hardware chain, from simulation and circuit design to the assembly of the MRI scanner.
- Develop shielding and EMI mitigation for unshielded scanning, from passive concepts to active, deep-learning-based noise cancellation.
- Design, simulate and build RF and gradient coil geometries, including their power and thermal requirements, and characterise them on the bench.
- Develop board-level analog and power electronics from commercial components, covering schematic capture, PCB layout and lab bring-up.
- Validate your components in imaging experiments on our scanners.



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

Your Profile

- An excellent master's degree in electrical engineering, physics or a related field.
- Hands-on electronics: PCB design, soldering, and bench measurements (Oscilloscope, VNA).
- Experience with electromagnetic/thermal simulation and Python; interest in deep learning is a plus.
- Independent and self-motivated, with a strong collaborative mindset.

What We Offer

- An excellent collaborative, interdisciplinary research environment with leading scientists.
- Access to our own LF-MRI scanners, a well-equipped electronics lab, 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 via email by **15 October 2026** for the current application round. Please use the subject line "LFMRI_electroDesign_PhD_{LastName}" and include a CV, academic transcripts, a statement of research interests, and, if available, links to publications, thesis work, or code repositories.