dkfz. GERMAN CANCER RESEARCH CENTER IN THE HELMHOLTZ ASSOCIATION

Research for a Life without Cancer

The German Cancer Research Center is the largest biomedical research institution in Germany. With more than 3,000 employees, we operate an extensive scientific program in the field of cancer research.

The Division of **Medical Physics in Radiology** is offering

2 PhD Positions for Development of Integrated MRI Radiofrequency Body Arrays

(Ref-No. 2022-0372)

Multi-channel transmit systems in MRI offer advantages over the standard single-channel systems. With multiple channels, the homogeneity of the excitation can be improved to increase the quality of the images and the specific absorption rate (SAR, tissue heating) can be reduced to increase patient safety. Integrated multi-channel transmit arrays are a field of high interest at multiple field strengths. These positions are aimed at developing multi-channel body arrays for 1.5 Tesla, 3 Tesla and 7 Tesla.

Job description:

The successful candidates will be tasked with:

- Development and construction of a multi-channel transmit body array for a 1.5T open-source MRI system
- Development and construction of a reference design for a multi-channel transmit body array for a 3T-equivalent open-source implant test bed
- Development of new concepts for integrated body arrays for a 32-channel transmit system at 7T

During the project, the successful candidates will learn to use electromagnetic simulation software (CST Microwave Studio) and get insight into modern multichannel RF transmit and receive architecture.

Requirements:

Successful candidates will become members of a multidisciplinary international team and should:

- hold a graduate degree (master's / diploma) in physics, engineering, or a related scientific or technical field,
- possess keen interest in scientific research and be able to work independently,
- ideally have experience in electromagnetic theory,
- have experience in at least one programming language (preferably C/C++, MATLAB or Python),
- have good oral and written communication skills in English (German optional but advantageous).

Experience in MR physics including coil design would be beneficial, but is not a prerequisite.

We offer:

- Interesting, versatile workplace
- International, attractive working environment
- Campus with modern state-of-the-art infrastructure
- Access to international research networks
- Doctoral student payment including social benefits
- Flexible working hours
- Comprehensive training and mentoring program through the Helmholtz International Graduate School

The positions are limited to 3 years.

Important notice:

The DKFZ is subject to the regulations of the Infection Protection Act (IfSG). As a consequence, only persons who present proof of immunity against measles as well as against COVID-19 may work at the DKFZ.

For further information, please contact
Prof. Dr. Mark Ladd, phone +49 (0)6221/42-2550.

Zertifikat seit 2005 audit berufundfamilie

The DKFZ is committed to increase the proportion of women in all areas and positions in which women are underrepresented. Qualified female applicants are therefore particularly encouraged to apply.

Among candidates of equal aptitude and qualifications, a person with disabilities will be given preference.

To apply for a position, please use our online application portal (**www.dkfz.de**).

We ask for your understanding that we cannot return application documents that are sent to us by post (Deutsches Krebsforschungszentrum, Personalabteilung, Im Neuenheimer Feld 280, 69120 Heidelberg) and that we do not accept applications submitted via email. We apologize for any inconvenience this may cause.