

PRESSE INFORMATION



THE INSTITUTE

The Erwin L. Hahn Institute for Magnetic Resonance Imaging—named after the physicist and inventor of the spin echo Erwin Louis Hahn—is an inter-university facility of the University of Duisburg-Essen and the Radboud Universiteit Nijmegen. Founded in 2005, it focuses on the research, development and application of ultrahigh-field magnetic resonance imaging (UHF MRI). Currently, the institute is home to nine research groups on a great variety of topics. Research is carried out with a whole-body MAGNETOM Terra 7-Tesla MRI system from Siemens Healthcare.

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THE SCANNER

The MAGNETOM Terra 7-Tesla MRI system works with a magnetic field strength of 7 Tesla, while standard models used in a hospital environment work with 1.5 and 3 Tesla. Thus, the scientists at the ELH work with ultrahigh-field magnetic resonance imaging - UHF MRI for short. The 7-Tesla MRI system provides high sensitivity for structural and functional measurements in the body and allows images with very high resolution. The scanner weighs 20 tons and is the strongest magnet in the Ruhr area. For reference: 7 Tesla equals about 140,000 times the magnetic field of the earth.

THE COOPERATIONS

Renowned cooperation partners of the Erwin L. Hahn Institute include the Ruhr University Bochum and the German Cancer Research Center in Heidelberg.

THE LOCATION

The institute is located on the premises of the UNESCO World Heritage Site Zollverein in Essen, in the former control station of the coking plant. The Zollverein colliery was once regarded as the largest and most efficient mine in the world.

THE RESEARCH GROUPS

The research groups at the ELH strive to answer a wide range of scientific questions and topics, and work closely together in collaborations. The ELH serves as an ideal platform for teamwork across research groups so that technical as well as methodological and medical issues of the 7-Tesla UHF MRI can be investigated in an interdisciplinary manner.

The current main research topics at the institute are pain research, cognitive neuroscience, fMRI&GABA spectroscopy, high field and hybrid MR imaging, prostate, biopsychology, high-resolution neuroimaging, RF manipulation, cerebellar function as well as memory and navigation.



BODY & BRAIN

The Erwin L. Hahn Institute is one of the few institutions in the world that focuses on both the imaging of neuronal processes in the brain using functional MRI (fMRI)—to better understand, for example, addiction and anxiety—as well as actively working to improve whole-body methodological diagnostics, especially in the clinical environment. Unlike 1.5 and 3 Tesla scanner, UHF MRI usually allows extremely high-resolution images without the aid of contrast agents, and metastases in the human body can be detected earlier.



CONTACT Us

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