

Topic: MRI-Magnet Remote Monitoring (MagReMon)

Description:

To be able to monitor MRI magnets, a system has been developed that allows the monitoring of the most relevant parameters of magnet refrigeration systems remotely.

Tasks:

As an addition to this system, a subsystem has to be developed that is able to predict failures of the magnet cold head. With the help of a self-learning algorithm (to be developed), changes of the sound of the cold head have to be recognized and analyzed by using reference data. The results of this analysis in conjunction with the shield temperature values of the magnet should lead to weighted prediction of expected failures and required maintenance actions that help to avoid downtime caused by faulty cold heads. The system has to be able to analyze data from a large amount of MagReMon modules.

As a second task, a web interface has to be developed where users of the MagReMon system can log in and get access to the status and parameters of their system(s). Communication protocols with the MagReMon modules installed at the customer site, including audio and video streaming, have to be developed and implemented.

The preparation of the thesis is to be made under consideration of the guidelines for Bachelor/ Master Thesis of the Faculty of Electrical Engineering and Information Technologies OVGU and the corresponding norms. For more information and literature please visit <http://www.inka-md.de/>.
