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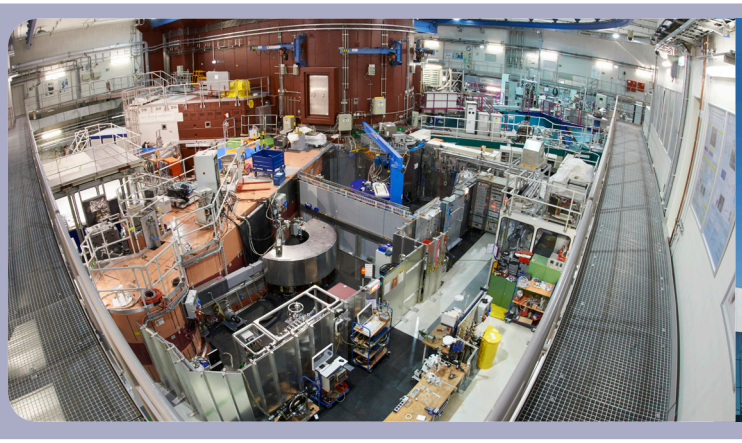
The Technical University of Munich (TUM) operates the Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II) in Garching near Munich, which is one of the most powerful and modern neutron sources. The leading position in science in the field of research with neutrons is achieved by a cooperation between the TUM and the Helmholtz Centres in Jülich and Geesthacht under the name Heinz Maier-Leibnitz Zentrum (MLZ). We are looking for:

Practical Semester - B.Sc. Thesis (m/w/d)
Physical Engineering - Computer Science - Electronic Engineering

High bandwidth nanocurrent monitors for antimatter beam profiling - Our facility is home to NEPOMUC, the world's most intense antimatter beam. Steering and optimization of NEPOMUC's beam requires devices capable of determining size and position of the beam across the transfer line; ideally fast, precise, reliable and inexpensive enough for an abundance of them to be employed.

A possible approach to realizing such devices is that of partially shield the beam with charge collectors and to measure the collected current as a function of their position. You'll be tasked with building a working prototype of such device and characterize its performance. This will involve:

- Optimizing the device design, selecting size and type of electronic and mechanical components according to the technology available.
- Producing the CAD drawings necessary for the manufacture.
- Supervising the manufacture of the prototype.
- Characterizing the performance of the device, either with a test beam or directly at NEPOMUC.
- (optional) Writing a firmware for the device control board.



You will be given the opportunity to experience applied research first-hand and to practice interdisciplinary collaboration with scientists and engineers. We put a special emphasis on the education aspect during the training. In addition to your work, you will gain an insight into the technology and applications of a large-scale research facility.

In case of an online application please send the documents compiled in a PDF file.