

The Institute of High Energy Physics ([HEPHY](#)) of the Austrian Academy of Sciences, Austria's leading non-university institution for science and research, performs a rich experimental particle physics program participating in accelerator and non-accelerator based experiments. The institute has major involvements in CMS at CERN, the Belle II experiment at KEK and several Dark Matter discovery experiments. An active theory group completes the research profile of the institute. Now HEPHY is offering a position as

PHD STUDENT (F*M) for Sensor Development and Production within the CMS experiment
(part-time, 30 hours per week)

for a duration of three years.

HEPHY is one of the founding members of the CMS Collaboration. We have been strongly involved in the design, construction and operation of two of the major components of the experiment: the trigger system and the tracking detector. Our experience in building silicon based detectors, the construction of FPGA based hardware and development of the appropriate firmware together with our expertise in reconstruction algorithms and its implementation in software allow us to play a leading role within the collaboration.

We are providing major contributions to the upgrade of the tracking system and the novel High Granularity Calorimeter (HGCAL) of CMS. Our main task is the development and design of the radiation hard silicon sensors for both detectors and the quality control during production of the several tens of thousands of sensors needed to construct the experiment.

Outside CMS, members of the group are involved in CERNs RD50 collaboration to develop future radiation detectors and in several national and EU funded projects investigating cutting edge sensor technologies and their applications in particle physics and medicine.

HEPHY is looking for a graduate student to join our silicon sensor development team. The successful applicant is expected to play a leading role in the sensor production for the CMS Tracker and shall support all related activities within the group.

Main tasks:

- Develop characterization methods to study the quality and performance of silicon sensors
- Improvements and maintenance of our setups for sensor quality assurance
 - Process and Sensor Quality Control (PQC, SQC), long term test climate chamber
 - Auxiliary hardware and infrastructure
 - Control and monitoring software
- Analysis of measurement results
- Optimisation of quality assurance procedures
- Regular reports and presentations in the frameworks of CMS and RD50 at CERN
- Supervision of Bachelor and Master students within the working group

Requirements:

Applicants shall have a Master degree (or equivalent) within the field of experimental particle physics. Experience in the development of particle detectors and a general understanding of electrical engineering and information technologies is recommended.

We offer:

- Interesting and diversified work embedded in a motivated team of experts
- Participation in the CMS collaboration
- A position located in Vienna with regular working meetings at CERN and at collaborating institutes with the possibility of longer research visits as well as attendance of international conferences and schools
- an annual gross salary of € 30.273,60 (before taxes) according to the collective agreement to the salary scheme of the Austrian Science Fund ([FWF](#))

Please send your application including a CV, a statement of research interests, a list of publications and two recommendation letters via e-mail to Marko.Dragicevic@oeaw.ac.at, no later than **March 31, 2020**.

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. The OeAW lays special emphasis on increasing the number of women in senior and in academic positions. Given equal qualifications, preference will be given to female applicants.