

Job ID: HEPHY139DOC123

The Institute of High Energy Physics (HEPHY) of the Austrian Academy of Sciences (OeAW) in Vienna, Austria, performs a rich experimental particle physics research program participating in accelerator and non-accelerator-based experiments. The institute has significant involvement in the CMS experiment at CERN, Belle II at KEK, and several experiments for searching for Dark Matter. A research group works on the R&D of particle detectors for those experiments and their applications in medical imaging, where we collaborate with MedAustron, an ion cancer therapy and research center. Within this context, we are offering a

PHD STUDENT POSITION (F/M/X)

*Ultra-Fast Silicon Detectors for 4D tracking applications in
high-energy physics and medical applications*

(part-time, 30h per week)

for a duration of three years.

Your tasks:

- Design studies of novel solid-state particle detectors based on Low Gain Avalanche Silicon Detectors (LGADs) or Silicon Carbide base material, including detailed sensor simulation using TCAD and Allpix2
- Simulation of full electronics chain from detector to analog and digital electronics (SPICE, QUCS, Mentor, Cadence, Xilinx/Altera tools)
- Characterization of detector prototypes and readout electronics in the lab by electrical tests, laser pulses using the Transient Current Technique, and radioactive sources
- Tests of these prototype detectors at the particle beams of MedAustron, DESY or CERN beam test facilities
- Regular reports and presentations in the frameworks of CMS and RD50/DRD3 collaborations
- Supervision of Bachelor and Master students within the working group

Your profile:

- Master's degree (or equivalent) in physics, electrical engineering or similar field
- A general understanding of electronics and knowledge of programming languages like Python is highly recommended

Our offer:

- Exciting and diversified work embedded in a motivated team of experts
- Training in advanced characterization methods in solid state sensor technologies, also relevant for other high-tech domains
- Participation in the CMS and/or RD50/DRD3 collaborations with the possibility of extended research visits
- Attendance of international conferences and schools
- An annual gross salary of € 37.773,33 according to the salary scheme of the Austrian Academy of Sciences

The academic curriculum will be hosted at the technical university of Vienna (TU Wien).

Please send your application, including a CV, a statement of research interests, a list of publications, and at least one recommendation letter via e-mail to hephy-office@oeaw.ac.at (mentioning Job ID: HEPHY139DOC123), **no later than January 31st, 2024**. Application is possible until the position is filled. For further information, please contact Marko.Dragicevic@oeaw.ac.at or Thomas.Bergauer@oeaw.ac.at.

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.