

## PhD programme within Medical Physics

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Together with the **Medical University of Vienna** we, **EBG MedAustron** GmbH a Centre for Ion Beam Therapy Treatment and Research in Wiener Neustadt, offer a **30h PhD position** with an enrolment in the PhD programme "Medical Physics" at the Medical University of Vienna starting from autumn 2019.

The close cooperation between EBG MedAustron and the Medical University of Vienna offers the opportunity to work in the field of ion beam therapy on a high-level research basis. Beam time, equipment and infrastructure are available for the researchers of the Medical University of Vienna. Especially for the announced PhD project a variety of state-of-the-art detectors, e.g. ionisation chambers, thermoluminescence dosimeter, films as well as detector arrays are available. Performing measurements in a proton and carbon ion beam using the modern detector equipment in combination with the anthropomorphic ARDOS phantom facilitates to work in the cutting edge field of cancer research.

The Department of Radiation Oncology is a high-end equipped photon and brachytherapy department with 5 linear accelerators, CT, an open MR and access to PET/CT and MR/PET imaging devices in the general hospital of Vienna. More than 5 PhD students and 7 post-docs are performing research in the context of precision radiotherapy with protons or ions in the medical radiation physics group of Univ.-Prof. Dr. Dietmar Georg.

## PhD Programme "Implementation and validation of 4D motion mitigation techniques and dose calculation methods for protons and carbon ions"

### Job Description:

The research project will focus on 4D dosimetry and dose calculation in the context of clinical motion mitigation techniques when treating moving targets with scanned particle beams. Interplay dose calculation and its experimental validation with the in-house built anthropomorphic moving phantom ARDOS1 will be an essential part of the project. For defining optimal motion mitigation technique for selected tumour indications spot and beam delivery parameter need to be identified in close collaboration with the team of the accelerator physicists. The PhD student will also participate in the carbon commissioning phase of the non-clinical research infrastructure at the MedAustron facility and works in close cooperation with other projects focusing on online-tumour tracking and the respective implementation for moving targets.

### Your Qualifications:

- Master degree in Physics, biomedical engineering or related studies
- Research interest and ambitions for excellence in medical physics
- Fluent in English (oral and written)
- Analytical skills and ability to work independently on a project basis
- Experience with treatment planning and dosimetry in radiotherapy, ideally particle therapy
- Basic knowledge in Python and MatLab programming

- Good communication skills relevant for working in an international research and study group

**Conditions:**

- 30 hours/week (payment according to salary scheme of the Austrian science fund FWF; brutto/month: 2162.40€ plus 13th and 14th salary )
- Employer: EBG MedAustron GmbH
- Place of work: The working place will be at the MedAustron Centre for Ion Therapy and Research, which is well connected with public transportation to the city of Vienna and Wiener Neustadt.
- Envisaged starting date: November 1, 2019

Please **submit** your application and CV by email to Prof. Dr. Dietmar Georg (dietmar.georg@meduniwien.ac.at) **until September 30, 2019.**



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### Additional information

Location	<b>Wiener Neustadt</b>
Position type	<b>Work-study program</b>
Start of work	<b>Nov 1, 2019</b>

### Responsible

Sigrid Giehsauer