



The University of Applied Sciences Wiener Neustadt was the first University of Applied Sciences in Austria. It currently offers approximately 3,800 study places* in the areas of Business, Engineering, Health, Security and Sport at the Campuses Wiener Neustadt, Wieselburg, Tulln and Vienna. The University of Applied Sciences Wiener Neustadt is also an important innovation partner for business and engineering. By means of applied research and development as well as technology and knowledge transfer it is in constant dialogue with the business world. More than 800 administration and lecturer staff ensure a modern and efficient education system. The University of Applied Sciences Wiener Neustadt wishes to announce a vacancy for a suitable and qualified candidate for the position of

Ph.D. position – Department Aerospace Engineering

Development of a high power, high efficiency Electrical Power Systems (EPS) for CubeSats

The Aerospace Engineering department of the University of Applied Sciences Wiener Neustadt (FHWN) announces an open Ph.D. position. In the framework of the FHWN CubeSat Program, new concepts and new mission scenarios for CubeSats are investigated. Within this program the CubeSat PEGASUS was designed, recently launched and since then successfully operated in orbit. In cooperation with national and international scientific institutes, the FHWN defines presently future CubeSat objectives and missions. The team is looking to increase its size and is offering several Master and Ph.D. positions.

One of the central objectives for future CubeSat mission is to provide sufficient el. power to support power demanding scientific units or propulsion systems. The small size of CubeSats limits the amount of available surface for solar cells but also for radiators (heat dissipation). While presently a peak power consumption of 5-10W is the limit for 1U, demand for power levels ranging between 20 and 30W per 1U (available for several minutes) is foreseeable in the near future. One example of such requirements is the next CubeSat mission of the FHWN, called CLIMB, which will use an advanced electric propulsion system. In order to enable such mission scenarios, new concepts of highly efficient Electrical Power Systems (EPS) for CubeSats have to be developed. Possibilities to achieve this, includes enlargement of the available area for solar cells (development of a solar array is an ongoing activity at the FHWN) and the increase of EPS efficiencies.

Areas of responsibility:

The successful candidate will perform tasks including the assessment of existing electric power systems, trade-offs between promising concepts to increase power densities and efficiencies, development of engineering models and test-benches to assess them. Furthermore, as part of the outreach activities, the candidate is encouraged to publish the result of the research and shall take an active role in student advising and teaching.

The Ph.D. will be organized in cooperation with the Technical University of Dresden (Prof. Tajmar, Chair for Space Systems) and AIT Austrian Institute of Technology. The working place will be the University of Applied Sciences Wiener Neustadt, Austria. The successful candidate will be part of a larger team, and has the possibility to use the development and testing facilities of the FHWN as well as the ones from FH's R&D company FOTEC. This includes e.g. large and medium vacuum facilities, a thermal-vacuum chamber, vibration tables, sun simulators and ADCS test facilities.

The ideal candidate will have some or all of the following attributes:

- Earned Master/Diplom in a relevant discipline in particular in Aerospace Engineering, Electrical Engineering or Mechanical Engineering.
- Sound knowledge and expertise in theoretical and practical aspects of circuit design, preferably including switching power supply design and ESD protections
- Experience in PCB design and development including usage of relevant software tools (e.g. EAGLE, Altium Designer, Cadence Allegro)
- Experience/Skills in hardware based software development for μC
- Experience/Skills in testing and measurements in a laboratory environment
- Experience in a small satellite mission (or payload/instrument development project) related to electrical engineering and knowledge of the state-of-the-art in small-satellite development.
- Organizational skills to coordinate and conduct research.
- Demonstrated ability to collaborate effectively as part of an engineering and/or science research team.
- Demonstrated mentoring skills to manage and instruct students.

The University of Applied Sciences offers the successful applicant an attractive remuneration package depending on qualifications and experience (minimum € 1,900 for 40h) as well as holiday and social security entitlements, a modern and attractive working environment, flexible working arrangements and an interesting and challenging variety of work. Please submit your application (including cover letter describing your related experience and providing a point-by-point narrative of how you satisfy the required qualifications, full curriculum vitae, master's thesis abstract, names, addresses and emails of three people willing to write letters of recommendation, any additional items the candidate considers useful to judge her/his qualifications) by email to:

Dipl.-Soz.-Wiss. Alexander Darantik, HR Manager jobs@fhwn.ac.at

*Pending accreditation by the AQ Austria

cooperation with:

