MUNICH AEROSPACE – NEW HORIZONS IN AVIATION AND SPACE

In 2010, through Munich Aerospace and its pooling of research, graduate programmes and teaching an alliance had been formed between the **Technical University Munich** (TUM), the **Bundeswehr University Munich** (UniBwM), the **German Aerospace Center** (DLR), as well as **Bauhaus Luftfahrt** (BHL).

To promote excellent, scientific young academics, Munich Aerospace awards a PhD scholarship on

Experimental Analysis of Drop-In Biofuels as an Alternative Fuel for Small Aero Engines

The research group **"Small Aero Engines – Performance and Emissions using Drop-In Fuels"** is led by Dr. Christian Helcig from the Institute for Turbomachinery and Flight Propulsion at the Technical University of Munich (TUM), and involves the Institute of Aeronautical Engineering at the Universität der Bundeswehr München (UniBwM) of Prof. Andreas Hupfer. The research aims at the investigation of drop-in biofuels using experimental analysis of the combustion characteristics (UniBwM) and their mode of operation on a helicopter engine (TUM). The effects of the modified fuels on stationary and non-stationary engine operation will be examined. The main focus is on the fuel-specific influence on the entire aircraft propulsion system's functionality, starting with the fuel system's functionality, to the atomization and combustion behaviour within the combustion chamber. Emissions will be analysed and evaluated. Relying on a long-lasting and strong collaboration on several research topics, the TUM and UniBwM will bring together their expertise and tightly collaborate within this activity.

Your tasks

- Scientific work in the field of low emission combustion of small aero-engines
- Experimental and theoretical research using modern measurement and analysis methods
- Design, build, and test combustions systems for small aero engines
- Parameter variations and investigation of aerosol and exhaust emissions

Your profile

- Excellent Master graduation in aerospace/mechanical engineering or related field
- Strong understanding of Flight propulsion and/or combustion theory
- Familiarity with propulsion design and analysis codes.
- Experience with laboratory installations, experimental work and evaluation of test results
- Excellent German and English language skills

Are you motivated, a team-player but also able to work independently, self-organized and reliable? Then you are the perfect PhD candidate for this ambitious work!

The Institute of Aeronautical Engineering (UniBwM) offers a pleasant working atmosphere in an excellent and committed team within a well-equipped environment at Ludwig Bölkow Campus. The research group consists of a highly motivated and interdisciplinary team that will support you during your personal and scientific development.

The Scholarship

Munich Aerospace scholarship is awarded for three years. According to the Munich Aerospace scholarship directives, the monthly scholarship is € 1,575 per month (tax-free upon §3 no. 44 EStG). Munich Aerospace scholarship holders are entitled to attend the Munich Aerospace Graduate School, formed by the TUM Graduate School and the DLR-Graduate-Program. You have access to special events and training. An additional grant of up to € 6,100 per year will be available to cover expenses directly related to the PhD project (e.g. textbooks, laptop, conference travels, public transport, housing subsidy). The scholarship holder is part of a Munich Aerospace research group and receives additional technical support from the research group head. The PhD can take place either at UniBwM or TUM, and the completion of the university degree should not be more than three years before the application for the scholarship.

Interested?

Please send us your application, including relevant documents (cover letter, CV, diplomas, transcript of records) in PDF format to andreas.hupfer@unibw.de. The application deadline is March 15, 2021.

We are looking forward to your application!

Technical
University
of Munich

der Bundeswehr
Universität München