



Large Engines  
Competence Center



Institut für Strömungslehre und  
Wärmeübertragung

We are searching in Graz:

# Research Engineer (PhD Student) Fundamental investigations of ammonia flames (m/f/d)

## Task description

We are looking for a motivated and creative PhD student for a joint position between the Large Engines Competence Center (LEC) and the Institute of Fluid Mechanics and Heat Transfer (ISW) at Graz University of Technology. The PhD position is an integral part of a cutting-edge project focused on exploring the fundamentals of ammonia combustion. As a carbon-free fuel, ammonia represents a promising alternative to carbon-based fuels, offering a pathway to significantly reducing greenhouse gas emissions in the energy and transportation sectors. Performing highly detailed numerical simulations, the project aims to provide fundamental insight into the complex interaction between turbulence and chemistry in ammonia flames. The deeper understanding shall help to overcome technical challenges of low flame speed and high pollutant formation (NO<sub>x</sub>), hence ultimately foster the application of ammonia combustion in innovative large-engine concepts, paving the way towards sustainable transport solutions and energy generation.

## Responsibility

- Definition of a representative turbulent flame scenario
- Conduct high-fidelity DNS and LES of ammonia flames
- Support experiments
- Process and analyse data
- Interact closely within the LEC and ISW research team
- Communicate the project results in regular internal meetings and to project partners
- Disseminate the project results

## Your profile

- Master's degree in Mechanical Engineering, Chemical Engineering, Physics, or a related field
- Strong interest in fluid mechanics, heat transfer, and combustion
- Programming and technical writing skills
- Fluent in German and/or English
- Ability to work in a team, initiative, flexibility
- Fluent in English and/or German

## Our offer

- Doctoral thesis related to an exciting research field
- Access to outstanding research facilities
- Opportunity to work in a dynamic, interdisciplinary environment
- Close collaboration with leading experts in the field
- A supportive academic and research community
- Excellent possibilities for further personal and professional development
- Full-time position with a monthly gross salary of Euro 3.578,80.-
- Earliest starting date: as soon as possible

### The LEC supports equal opportunities and diversity.

We are looking for dedicated and motivated individuals with research talent.

## Contact:

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Become part of our  
LEC team!

We look forward to  
receiving your  
application.

[www.LEC.at](http://www.LEC.at)