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Institut für Technische Verbrennung

RWTH AACHEN UNIVERSITY

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PhD/Post-Doctoral Position in Experiments

Ultra-low emission, novel energy carriers, advanced combustion concepts, high efficiency are key-requirements for next generation combustion systems. The development of future energy conversion engines relies on the understanding of fundamental physical and chemical combustion phenomena. In this context, experiments have been and will be in future an essential tool to provide detailed insights into the combustion process. However, the targets of experiments have become extremely diverse, complex, and challenging. Detecting multiple quantities simultaneously, aiming for higher spatial and temporal resolution, ensuring highest reproducibility, and providing accurate predictions of measurement uncertainties are the main guidelines for our experimental work.
We at ITV believe that the future of successful and top-level combustion research lies in joint experimental and numerical studies. Therefore, we employ a wide range of different experimental facilities covering the entire spectrum from fundamental burner configurations to practical combustion systems. Burner configurations, such as counterflow burners, laminar burning vessel, or flat flame burner, allow for detailed investigations of combustion characteristics and emission formation of future energy carriers. High-pressure facilities provide a sophisticated environment to study highly complex multiphase flow processes under engine-relevant conditions (Spray chamber) or to develop novel combustion concepts for gas turbines (MILD combustion). To evaluate the potential of novel combustion control concepts and alternative fuels under practical conditions, we employ several engine test facilities.
Our diagnostic equipment covers the full spectrum from probing to laser techniques. We use exhaust gas sensors to access the emission reduction potential of new concepts or fuels in practical engines. The gas chromatograph coupled with a mass spectrometer (GC/MS) and the Time-of-Flight mass spectrometer yield the concentrations of stable and unstable species in flames to trace the reaction chemistry and emission formation of novel fuels. At ITV, several lasers and highly accurate cameras (low and high-speed) are combined to detect two-dimensional, spatially resolved field of OH-distribution, temperature, and soot.
You are searching for opportunities to support the development of next generation combustion systems?
You are looking for new challenges in the field of experiments?
Your spectrum of experimental research topics piqued your attention?

Send your initiative application to jobs@itv.rwth-aachen.de.

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Detailed information are also provided on our webpage:
www.itv.rwth-aachen.de