

# Curriculum vitae

## Personal information

**Name:** Ulrich Doll  
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## Professional experience

**12/2023 – date** **Aarhus University, Denmark**  
**Tenure Track Assistant Professor**, Department of Mechanical and Production Engineering, Fluids and Energy Section

**11/2021 – 10/2023** **Cranfield University, United Kingdom**  
**Visiting Fellow**, Centre for Propulsion and Thermal Power Engineering

**07/2020 – 10/2023** **Paul Scherrer Institute (PSI), Villigen, Switzerland**  
**Senior Scientist**, Department of Nuclear Energy and Safety, Experimental Thermal-Hydraulics Group

**07/2017 – 06/2020** **Paul Scherrer Institute (PSI), Villigen, Switzerland**  
**Scientist**, Department of Energy and Environment, Thermal Processes and Combustion Laboratory

**02/2009 – 06/2017** **German Aerospace Center (DLR), Cologne, Germany**  
**Scientist**, Institute of Propulsion Technology, Engine Measurement Systems Group

## Education

**06/2014 – 08/2016** **Technical University Dresden, Dresden, Germany**  
**Ph.D.** (Doctor of Engineering) **Advisor:** *Prof. Jürgen Czarske*, **Title of thesis:** *“Filtered Rayleigh scattering (FRS) for the simultaneous determination of pressure, temperature and velocity fields in gaseous flows”*

**09/2000 – 11/2008** **Technical University Berlin, Germany**  
**Diploma Engineering Science**, **Title of thesis:** *“Measurement of density fluctuations in oscillating combustion by laser-induced Rayleigh scattering”*

## Scientific community activities

**Referee** Experiments in Fluids, International Journal of Heat and Mass Transfer, Physics of Fluids, Experimental Thermal and Fluid Science, Measurement Science and Technology, Optics Letters, Optics Express, Applied Optics, Combustion Science and Technology

**Session chair** AIAA SCITECH 2023 Forum in National Harbor, USA; 18th International Symposium on Flow Visualization (ISFV 2018) in Zurich, Switzerland

## Awards

**2017** **EU FP7 LEMCOTEC Award of Excellence** for First Application of filtered Rayleigh scattering to Lean Combustion, awarded by the LEMCOTEC consortium (coordinator Rolls Royce Germany, 38 participating organizations from academics and aerospace industry)

**2009** **Dietrich Bechert Award** for excellent diploma theses

## Research projects (selection)

**2020 – 2023** **SINATRA – Seeding-free, non-intrusive aero-engine distortion measurements**  
*Awarding body:* EU H2020 Clean Sky 2. *Length:* 36 months. *Role(s):* PI, WP leader, Task leader, Researcher. *Topic/Contribution:* Development of a non-intrusive seeding-free measurement technique to characterize the resulting aero-thermal flow distortions at the intake of airframe integrated aero-engines with boundary layer ingestion.

**2019 – 2022 LEAFINNOX**

*Awarding body:* EU H2020 Clean Sky 2. *Length:* 42 months. *Role(s):* Supervisor, Researcher. *Topic/Contribution:* Application of laser induced fluorescence diagnostics to characterize resulting flame topology and temperature field of novel combustion concepts for jet engines to minimize NOx and particulate emissions.

**2019 – 2020 Premixed Diesel**

*Awarding body:* Research Association for Combustion Engines (FVV), Swiss Federal Office of Energy (SFOE). *Length:* 24 months. *Role(s):* Task leader, Supervisor, Researcher. *Topic/Contribution:* Characterization of mixing and ignition processes inside a single stroke engine loaded with multiple injections by combined passive optical and laser-optical high speed measuring methods.

**2018 – 2019 REAL – Research on alternative combustion concepts for efficient gas engines**

*Awarding body:* Research Association for Combustion Engines (FVV), Swiss Federal Office of Energy (SFOE). *Length:* 40 months. *Role(s):* Researcher, Supervisor. *Topic/Contribution:* Quantification of the mixing behavior of methane injections in a constant volume cell under machine-relevant conditions using tracer-based laser induced fluorescence.

**2010 – 2017 FACTOR – Full Aerothermal Combustor-Turbine interactiOns Research**

*Awarding body:* EU FP7 Transport. *Length:* 81 months. *Role(s):* Researcher. *Topic/Contribution:* Carrying out filtered Rayleigh scattering measurements at the Laboratory of Technologies for High Temperature of the University of Florence to investigate the aero-thermal flow behind the nozzle guide vane cascade of a three-sector gas turbine combustor simulator.

**2011 – 2017 LEMCOTEC – Low Emissions Core-Engine Technologies**

*Awarding body:* EU FP7 Transport. *Length:* 69 months. *Role(s):* Researcher. *Topic/Contribution:* Applying particle image velocimetry, laser induced fluorescence as well as filtered Rayleigh scattering to characterize temperature and flow field at the outlet of a high pressure aero-engine combustor.