# Excellence Centre of Tribology

## AC2T research GmbH

***Focussed on friction, wear & lubrication research***

# AC2T research GmbH

**One of the largest private tribology research service provider in the world**

# About
# AC2T research GmbH

**12-14 Mio. €**
*turnover per year*

**135-150 employees**
*> 100 scientists & 20 nationalities*

**4000 m² space**
*1400 m² laboratories*

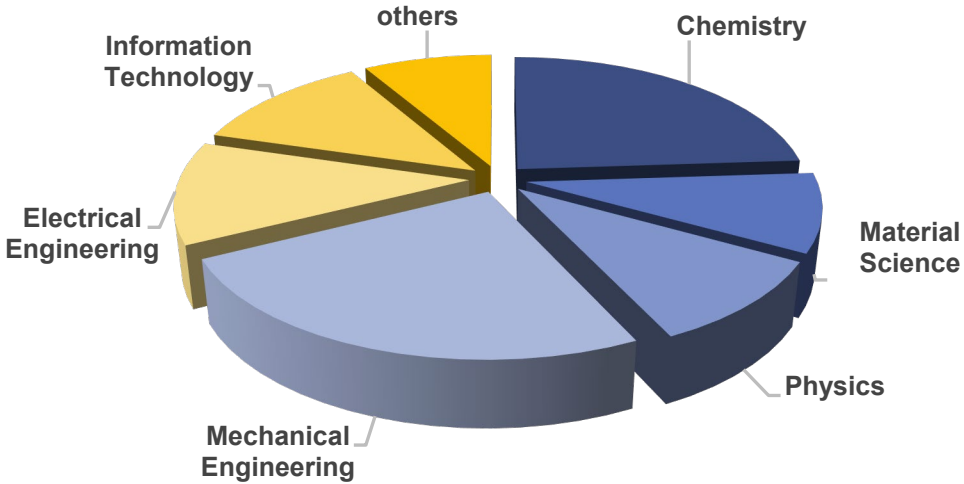
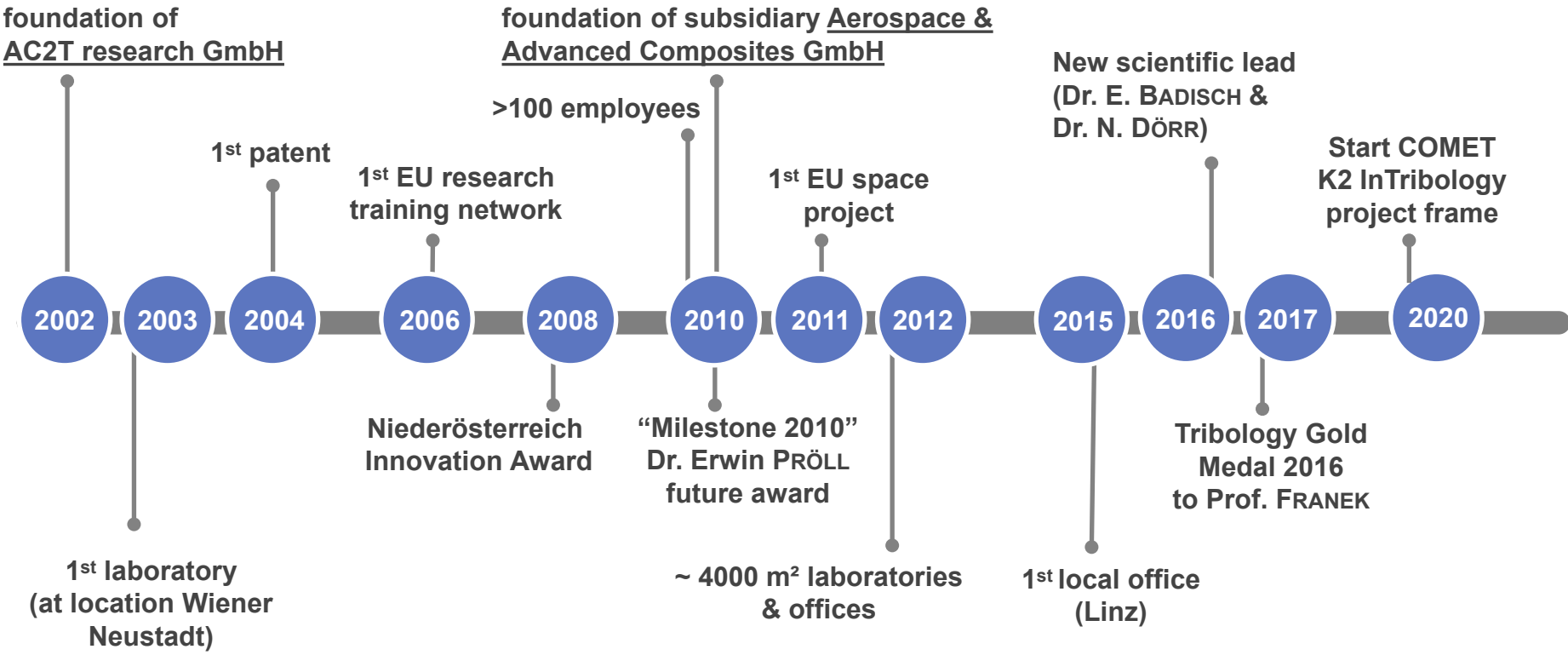



Fig.: Staff qualification

**49.9 %-part owner of Aerospace & Advanced Composites GmbH**
*(research, development & engineering in the fields of materials, technology & testing)*

# History of AC²T



# Location
## Technology & Research Center WIENER NEUSTADT

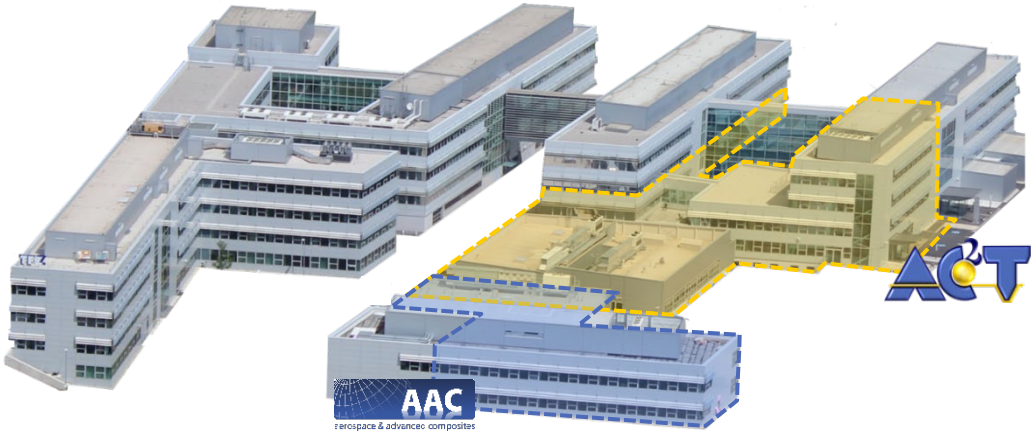


**Space (AC²T):**

**~ 2000 m² offices**

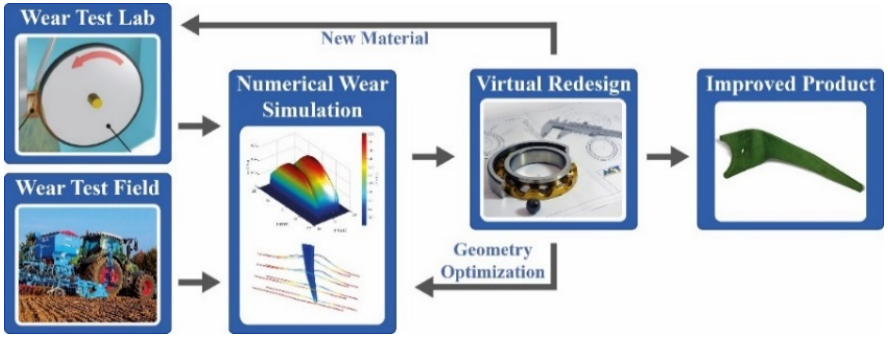
**~ 1400 m² laboratories**

**~ 600 m² others**

# Research focus
## Overview

- **Systemic approach**
  - Materials
  - Surfaces
  - Lubricants

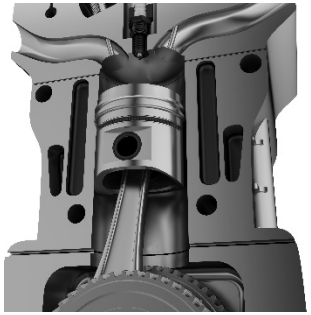


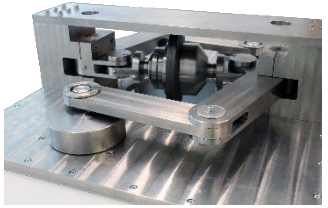

- **Advanced R&D Infrastructure**
  - Unique testing and validation infrastructure
  - Advanced analytics
  - Multi-physical modelling und simulation
  - Lab-to-Field development approach

- **Comprehensive use of digital transformation & data science**

# Research focus
## Friction optimization

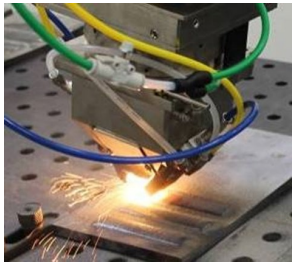
- **Customized materials and surfaces**
  for friction optimization
- **Development of efficient and functional components**
  bearings, clutches, brakes, sealings and drivetrain components
- **Efficient product design**
  by computational material engineering
- **Lifetime and reliability assessment** via
  micro- and nanoscopic friction and wear measurement

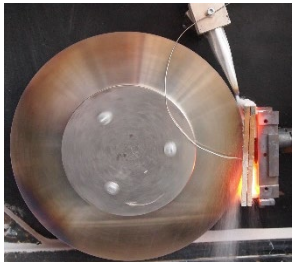


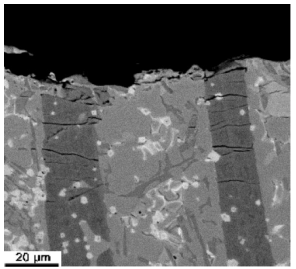


# Research focus
## Wear reduction strategies

- **Development of wear resistant coatings and thin films**
  for high temperature and tribocorrosive environments
- **Reliable & efficient forming processes and tools**
  with reduced lubricant using novel self-lubricating coatings
- **Smart maintenance solutions**
  for reliable operation by embedded wear sensors
- **Rail / wheel tribology**

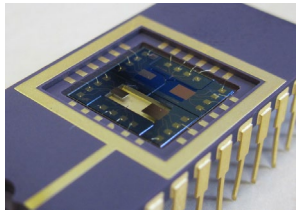






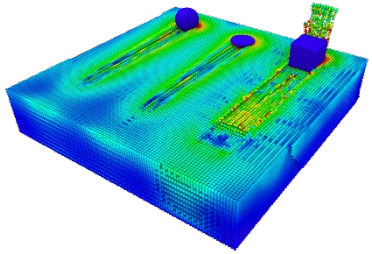
# Research focus
## Sustainable lubrication

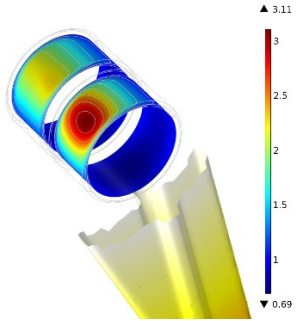
- **Customized lubrication solutions**
  for engines, gears, transmissions, hydraulics & more
- **Insight into lubricant and fuel behaviour**
  on macro-, micro and molecular level
- **Designing of robust oil condition sensor systems**
  based on multi-parameter sensor arrays
- **Green lubricants and alternative fuels**

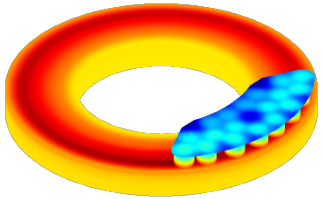


# Research focus
## Data & digitization driven tribology

- **Prediction of component performance** via lab-to-field environment - digital twin & hardware-in-the-loop
- **Customized components, systems and processes** via multiscale simulations and data science methods
- First-principles **tribodesign approach** based on physical and chemical processes
- **Databased modelling and digitization**





# … see you at AC²T


## Standort Wiener Neustadt

**Viktor-Kaplan-Straße 2/C**
**2700 Wiener Neustadt**

**+43 (0) 2622 81600**
**office@ac2t.at**

## Standort Linz

**Hafenstraße 47-51**
**4020 Linz**

**+43 (0) 2622 81600-400**
**office@ac2t.at**