

Excellence Centre of Tribology

AC2T research GmbH

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

*Focussed on
friction, wear &
lubrication research*



About AC2T research GmbH



12-14 Mio. €
turnover per year



135-150 employees
> 100 scientists & 20 nationalities



4000 m² space
1400 m² laboratories

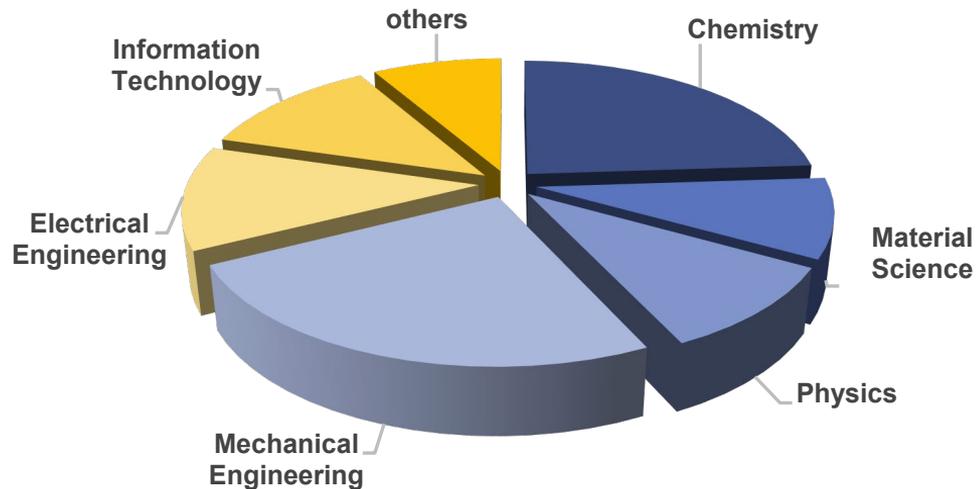


Fig.: Staff qualification

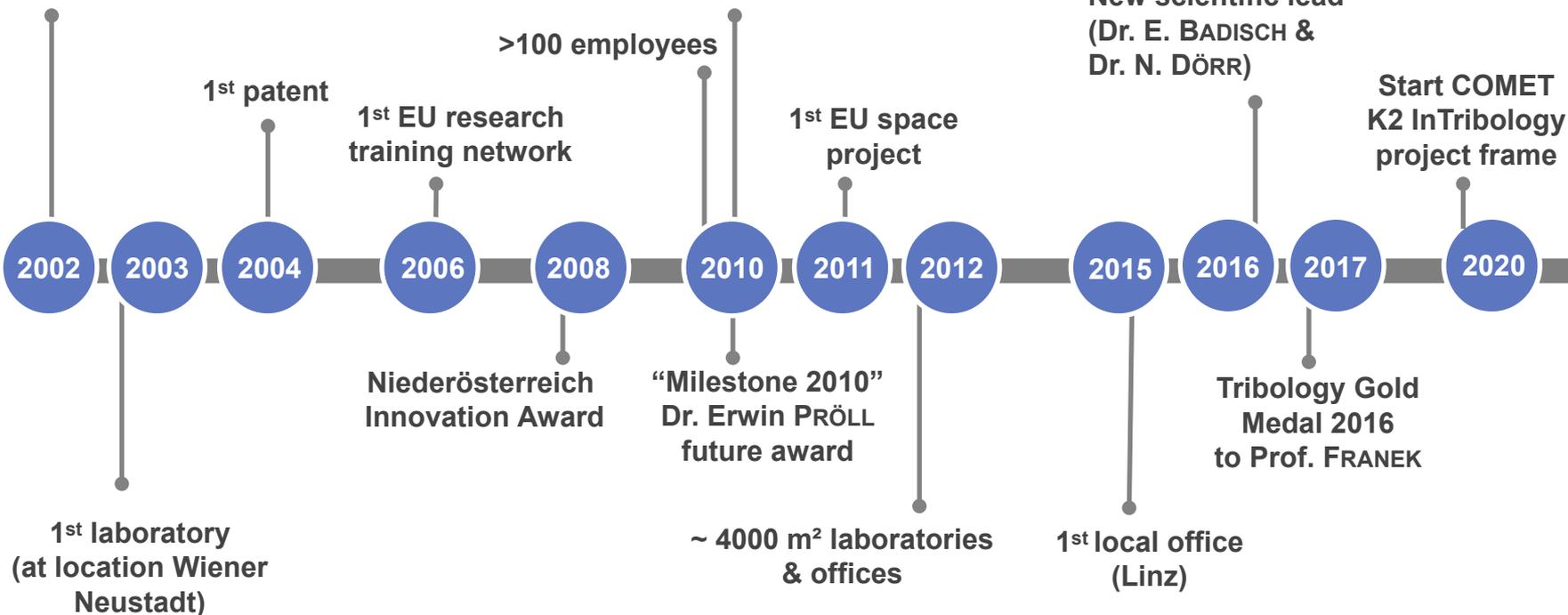
49.9 %-part owner of Aerospace & Advanced Composites GmbH
(research, development & engineering in the fields of materials, technology & testing)



History of AC²T

foundation of AC²T research GmbH

foundation of subsidiary Aerospace & Advanced Composites GmbH

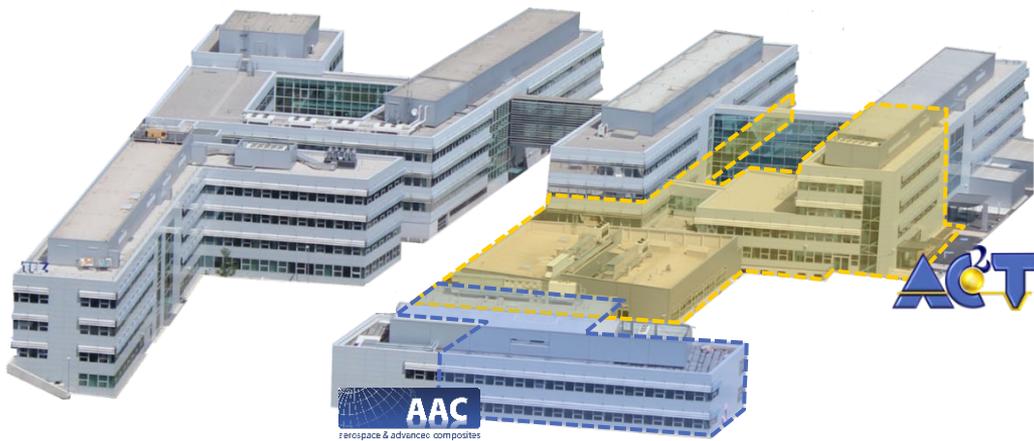




Location Technology & Research Center WIENER NEUSTADT



Space (AC²T):
~ 2000 m² offices
~ 1400 m² laboratories
~ 600 m² others





Research focus Overview

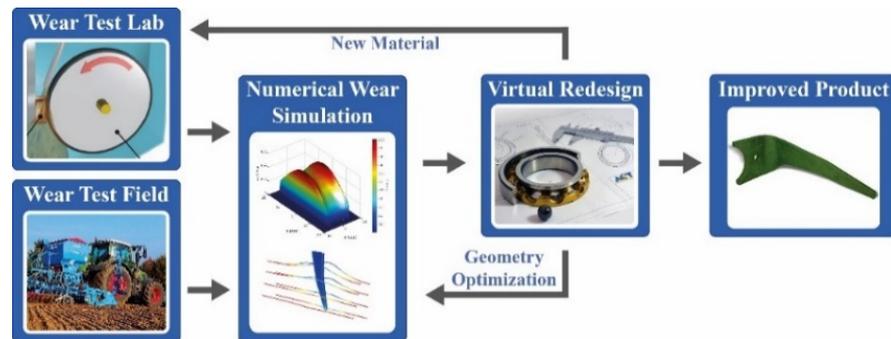
Systemic approach

- ▲ 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

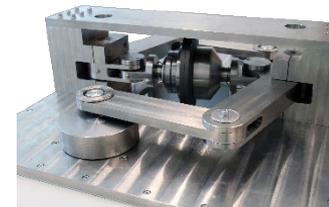




Research focus

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

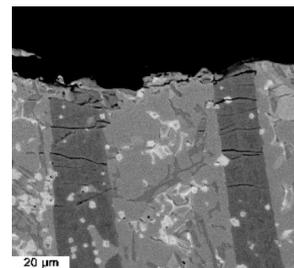
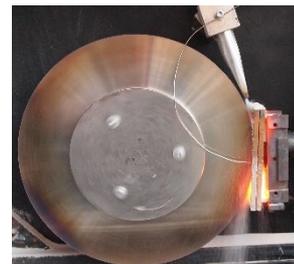
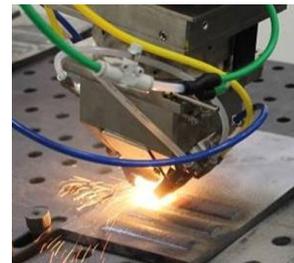




Research focus

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**

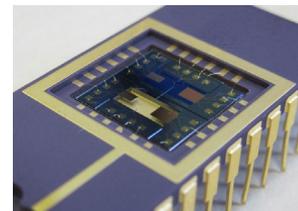
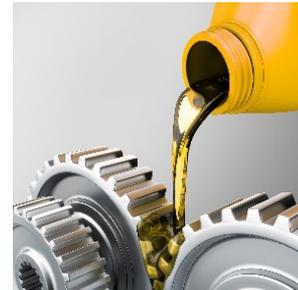




Research focus

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**

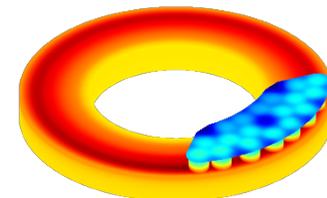
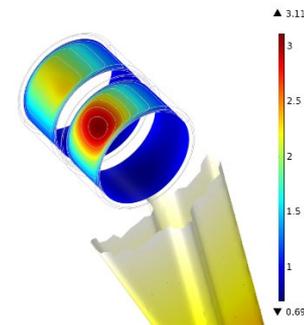
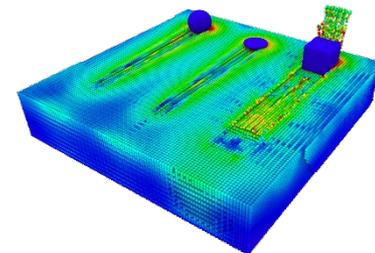




Research focus

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

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