

Competitiveness of European industry and Climate change mitigation can go hand in hand

Falex Tribology

Dr. Dirk Drees



Tribology is the science and technology related to friction, wear and lubrication

“Enabling Europe's industrial and climate goals by improving materials durability and friction reduction in components.”

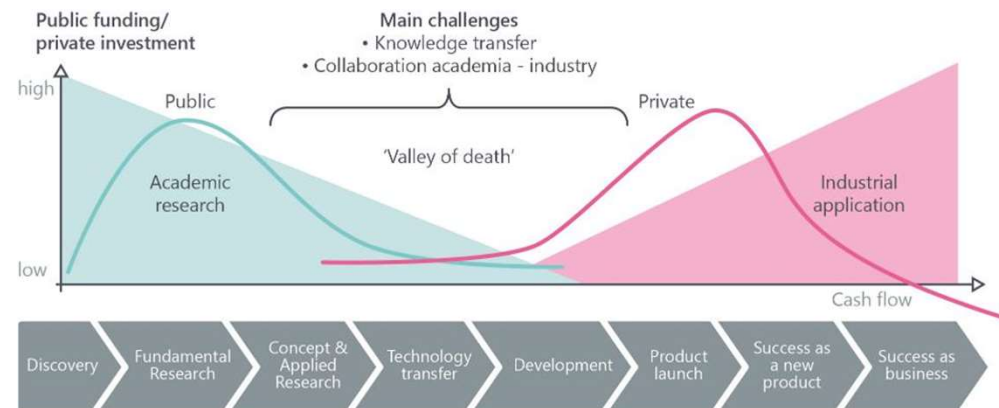
How do you start ?”

- Keywords :

- ‘Europe’
- Materials durability : this means longer lifetimes, less downtime, less spare parts, transport, ...
- Friction reduction in components : this means energy reduction

All the above factors contribute to CO2 reduction, ‘smarter’ society, more comfort for consumers, cleaner environment etc.

- Wear and Friction in one term : **TRIBOLOGY** : Enabling technology, one of key components in Sustainability Goals
- Smarter Europe :
 - Enabling machine learning, AI : producing better and more data related to materials durability
 - Accelerate development cycles : relevant feedback of materials durability to materials designers and end users
 - Bridge the ‘development gap’



EU Project pedigree

- M-ERA.NET DCECC 2022-2025: developing novel composites for freight train brakes
 - Falex is testing the durability of materials in braking conditions
 - Objective to reduce wear, particle contamination in the environment, and noise
- Micropitting FAST 2023-2024 : focus on micropitting damage mechanisms
 - Falex evaluates new lubricants that must reduce this damage in e.g. wind turbines, E-vehicle bearings, etc
- FACT project 2021-2024 : production of material degradation data for input in AI systems
 - 10-fold acceleration of quality data production compared to conventional test techniques
- MOZART HORIZON EUROPE 2023-2026 : Metal matrix nanocomposites to replace Hard Chromium
 - Falex runs component-related friction and wear tests prior to industrial testing
 - Falex is the bridge between material development and industrial implementation
- PROCETS HORIZON EUROPE -2020-2024 : Composite coatings electroplating and thermal spraying
 - Falex helps optimize production parameters for the most durable coating variations
- HARDALT FP7 – hard coatings durability
- SUPERSONIC FP7 – high velocity sprayed coatings durability and friction reduction
- NEWBONE FP6 – load bearing bone implants fretting wear damage simulation
- EREBIO FP5 – Development of environmentally friendly lubrication by triboreactive materials
- RHEOFILM FP5 – Advanced tribology characterization on Micro and Nano scale
- +++

> 17 projects in 25 years => innovation and development mindset

Falex is a bridge

Quality
Knowledge
Partner Solutions

Bulk
Materials

Metals
Polymers
Ceramics
Composites

Coatings

Surface treatments

3D printed

Lubricants



Consumer Goods



Energy Industry



Construction



Lubricants



Materials



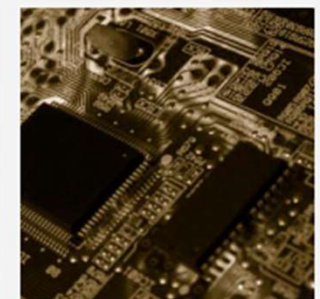
Tribo Corrosion



Transportation



BioMed&Biological



Micro-mechanics/electronics

Tools in a nutshell



26 different 'tribometers'

www.factlabs.org/our-tools

- Force ranges from 1 mN to 10,000 N
- Speeds, geometry, velocity profiles
- Lubricated – heated – environmentally controlled
- Facilities for microscopy/SEM/surface topography tools
- Brainpower :
 - 25 years experience in translating industrial tribology challenges into laboratory projects
 - Developing of test methods for adequate 'data production'

Mission



Using our **tools** and **know-how**,
we aim to provide our **industrial partners** the

relevant, reliable and repeatable

durability and friction data
that they need to solve their **competitiveness** and
climate challenges,.

This leads to a high quality **partner-solutions** approach
that takes into account the timelines, budgets and goals
of our partners.

Constant internal **innovation** in testing methods, procedures,
standardisation and new insights into friction and wear
related products keeps us ahead as a reference laboratory
for tribology related questions.

Future Horizon topics



Our topics of interest :

Developing new friction and wear testing methodologies in E-vehicle research, wind and solar energy

Rail transport Europe : materials improvement, brakes, rails, wheels

Machine learning projects that require quality test data for development and learning

'your tribology topic'

Keywords :

Micro pitting, pitting

Wear and durability

Friction reduction

Machine learning enabling



Links and contact info

www.factlabs.org

<https://factlabs.org/contact>

ddrees@falex.eu

Contact Us

Service and quality you can rely on since 2000

<input type="text" value="Full Name*"/>	<input type="text" value="Email*"/>	<h3>Falex Application Laboratories</h3> <p>In Belgium and in the USA, our labs house more than 30 different tribometers from leading brands Falex, PCS Instruments, Microtap, Wazau and Plint. Two physical locations, one place to address your questions. We support Europe and the world for standard and tailored tribology testing.</p>
<input type="text" value="Phone"/>	<input type="text" value="What service are you interest"/>	
<input type="text" value="Country"/>		
<input type="text" value="Write your message..."/>		<h3>Dr. Dirk Drees</h3> <p>CEO Application Center (ddrees@falex.eu) Wingepark 23B Rotselaar B-3110 BELGIUM</p>
<input type="button" value="SEND MESSAGE"/>		