

Pole Tribology

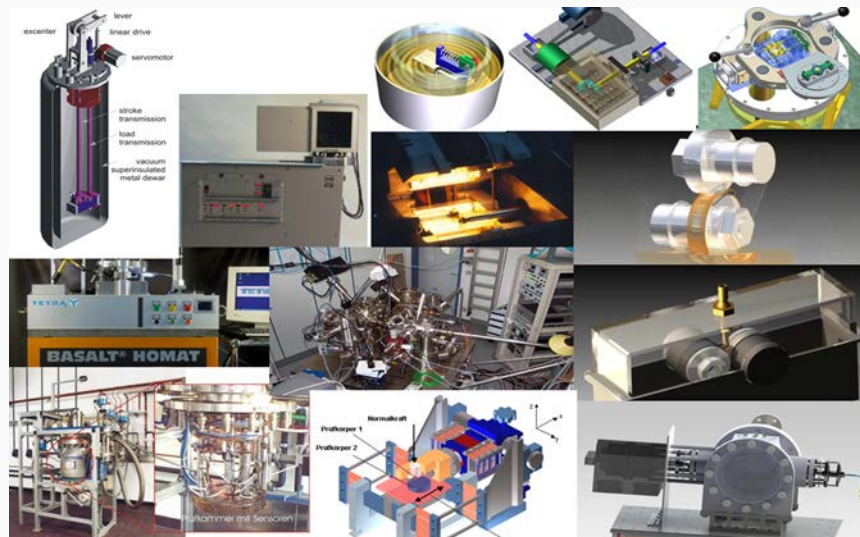
Division Macro-Tribology & Wear Protection

Mission Statement:

The field of activity "Macro-Tribology & Wear Protection" promotes socio-political topics, such as resource, energy and material efficiency, through technology and process innovation:

- **Friction reduction** = Energy efficiency & conserving resources
- **Wear Protection** = Material efficiency & conserving resources
- **Tribology** = Conserving resources through reduction of friction and application of biofuels & biolubes based on renewable resources as well as hydrogen and methane.

Tribometry is a basic requirement for extreme operating conditions, since the equipment is still not commercially available and flows into the international standardization and is licensed.



The technical orientation of extreme operating conditions

taking into account subsidiarity and federalism:

- ➔ Extreme operating conditions are a technological rupture, which will be overcome by the technological contributions of the division 6.3 and became a standard solution in the future.
- ➔ This represents the contribution of the 6.3 to the economically relevant development of technology.
- ➔ The **distinguished technological positions of extreme operating conditions** are defined by the fields of activities, like highest contact stresses, cryogenic- & high temperatures, hot steam, fretting, CH₄ & H₂ as source of energy and through the development of novel tribometry from micro- to macro scale incl. int. standardization, reference materials and marketing.

The targeted fields are:

1. **Energy efficiency** by reducing friction through alternative lubricants and materials.
2. **Conservation of resources** through reduced wear under increased load carrying capacity by alternative coatings, alloys and lubricants down to „zero & no wear“ without spontaneous failure.
3. Adherence to cost specifications and **environmental legislations** by granting the feasibility of material and lubricant technical solutions, since legislation (REACH) force **“substitutes though prohibitions“** (Cr^{VI+}, Ni, Co, borates, biolubes, lead, particulates (tires, brakes)).
4. Development of **novel tribometry** from micro to macro scale.
5. **Software** for archiving tribological data (TRIDAS) and simulation of erosion (ErowSim) together with online search tool TRIBOCOLLECT.