

# Materials Laboratory for Lifetime Analysis of Insulation Systems in Electrical Machines

## Technical data

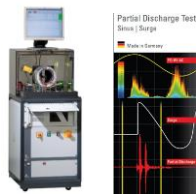
- Temperature test chambers with recirculation
- Climate test chamber for environmental simulations
- Winding tester with pd measurements
- Acceleration table with variable
- High voltage high frequency pulse generator

Maximum Temperature	300 °C
Climate temperatures	-70 °C to 180 °C
Humidity range	10 to 98 % r.H.
Max. Test voltage	up to 6 kV
Vibration frequency	30 Hz to 100 Hz
Max. acceleration	5,3g (at 100 kg)
Pulse generator	1,2 kV at 80 kHz



## Equipment

- Temperature test chambers: Binder FP400
- Climate test chamber: CTS C-70/350
- Acceleration table: Knauer Engineering VS10008
- Data logger: National Instruments cDAQ



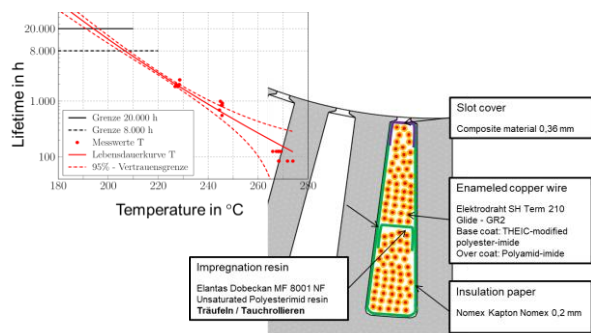
- Winding tester: Schleich MTC3

## Measurement capabilities

Partial discharges at high voltages AC/DC	Polarization index
Capacity	Loss factor
Inductivity	Acceleration
Partial discharges at surge voltages	Insulation resistance

## Current application/ Opportunities

- Development of application-specific novel insulation systems
- Increasing the continuous power of an electric traction drive while maintaining a resource-saving design
- Development of a general methodology to consider the lifetime during the thermal utilization of electrical machines
- Prediction of possible overload capacity especially for the application of load-variable drive machines in EV



Managing Director:  
**Univ.-Prof. Dr.-Ing. habil. Dr. h. c. Kay Hameyer**

Schinkelstraße 4 Phone: +49-241-80-97667  
 D-52056 Aachen Fax: +49-241-80-92270  
 Homepage: www.iem.rwth-aachen.de