



EFFICIENT POWER ELECTRONICS,
POWERTRAIN & ENERGY SOLUTIONS
RESEARCH GROUP

POWER ELECTRONICS RELIABILITY LAB (PERL)

**YOUR EXPERT RESEARCH GROUP FOR FUNDAMENTAL SCIENTIFIC
ADVANCEMENT AND CUTTING-EDGE RELIABILITY TESTING OF
POWER ELECTRONICS SYSTEMS**

PERL enables fundamental and applied research for assessing the reliability of power electronics components and systems. This lab is equipped with state-of-the-art infrastructure to perform accelerated lifetime and mission profile-oriented tests and contribute to international testing standards. PERL is cofunded and supported by Flanders Make, a strategic research center for the manufacturing industry.

APPLICATIONS



Renewables & Smart Grid



Electric Traction



Industrial



Charging Systems



Automotive

FACILITIES

- Dynamic double pulse tester for semiconductor devices characterization: 1.2 kV and 200 A
- Power cycling tester & thermal impedance tracer: 3 x 400 A, 1 x 1200 A
- Mission profile-based tester for motor drives and grid-tie inverters: up to 250 kW
- Mission profile data logger with high-precision sensors: 1.2 kV, 300 A
- EMC test cabinet & magnetic components characterization: 0.5 – 3.0 GHz
- Thermal imaging and X-ray diffractometer
- Programmable battery emulator: 50V-1000 V, 300 A

OUR SERVICES

- Accelerated Lifetime Testing (ALT) according to the IEC 60749-34 standard
- Simultaneous Performance Testing up to 12 semiconductor switches
- Double Pulse Testing (DPT) for Si, SiC, GaN switches & beyond
- Mission Profile Testing (MPT) on power electronics systems and their controllers
- Pre-compliance EMC testing with temperature cycling
- Sequential power cycling and vibration testing
- Thermal characterization of power electronics systems in real-field operation
- Cloud-connected ready-to-go software framework and tool for reliability estimation



EPOWERS is part of MOBI Core Lab @ Flanders Make



ELECTROMOBILITY
RESEARCH CENTRE

FLANDERS
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DRIVING INNOVATION IN MANUFACTURING

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