

HIGH VOLTAGE TESTING

This competency focuses on advanced diagnostic, testing, and reliability assessment of high-voltage (HV) electrical equipment. Activities include testing of high-voltage capacitors, current transformers, and insulation systems under DC, AC, and lightning impulse conditions. The laboratory specialises in real-time data acquisition, signal analysis, and partial discharge diagnostics to support condition monitoring and predictive maintenance in power systems. The competency contributes to RDI by enabling safe validation, failure analysis, and lifetime optimisation of HV components for industrial and utility partners.



ACHIEVEMENTS

- Execution of high-voltage testing campaigns for capacitors, current transformers, and insulating materials under industrial operating conditions
- Publication of conference papers related to high-voltage capacitor testing and insulation diagnostics
- Support of industrial qualification and failure-analysis processes through accredited laboratory measurements



INFRASTRUCTURE

- High-voltage laboratory equipped for DC, AC, and lightning impulse testing
- HV DC generator with maximum test voltage of 150 kV
- HV AC generator with maximum test voltage of 200 kV
- Lightning impulse voltage generator with maximum test voltage of 300 kV
- Partial discharge measurement and insulation diagnostic systems
- Real-time data acquisition and signal-processing infrastructure
- On-site high-voltage testing capability for industrial partners



REFERENCES

- High-voltage capacitor testing projects with Isofarad Kft.
- Breakdown voltage testing of insulating materials in cooperation with KALL Ingredients Kft.