



High Voltage test platforms

A distinctive set of test platforms at an independent research & innovation centre

SuperGrid Institute's High Voltage test platforms provide a wide range of tests and consulting services, drawing on our diverse in-house expertise.

OVERVIEW

An exceptional set of test platforms developed to support our in-house research and innovation activity, these facilities are one of the driving forces behind our expertise in HVDC & MVDC technologies and are now available for use by our clients.

Specialised in HV & MV substation equipment and cables, we also perform characterisation tests on solid, liquid and gas insulation media at competitive rates.

Our services are aimed at HV & MV equipment and cable manufacturers, component suppliers and research laboratories with advanced testing needs.

DESCRIPTION

The High Voltage test platforms consist of several test fields dedicated to specific tests and applications.

- A 700m² faraday cage, with the possibility of separation into two test areas. These test fields are designed for GIS, AIS and cable system tests.
- An outdoor platform is also available for ageing tests on GIS and AIS systems.
- Two 20m² shielded rooms for lower voltage tests (up to 400kV).
- A hyperbaric test platform for subsea equipment and cable testing.



1200 kV DC Generator © Thomas Campagne

AVAILABLE SERVICES

We perform tests according to the CIGRE technical brochures and IEC standards, or according to clients' needs.

- Dielectric tests on AC & DC equipment rated up to 500 kV
- DC Dielectric and long-term ageing tests on cables with a dummy loop and GIS loop
- Bus-charging current switching tests
- Partial discharge measurements
- Cable monitoring and characterisation (leakage current, space charge)
- Characterisation of gas, liquid and solid insulation
- Technical advice and consulting services
- Combined hyperbaric and dielectric tests

This list is not exhaustive. Please contact us to express your needs so we can offer you a personalised service.

MEASUREMENTS & MONITORING

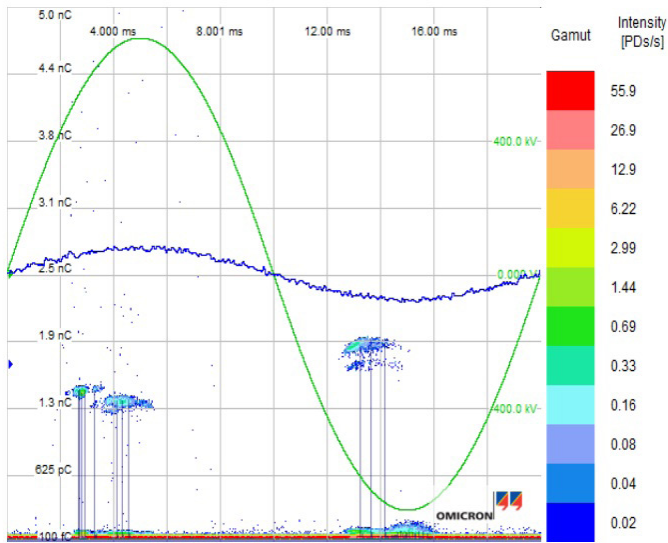


Voltage measurements are performed with factory calibrated dividers. All our HVDC generators have embedded RC dividers.

Two additional PD-free dividers can be positioned to accommodate different test set-ups:

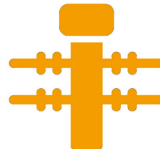
- Universal RC divider, up to 2000kV LI, 1800kV SI, 1000kV DC, 700kV DC
- Capacitive divider up to 800kV AC, with embedded PD measuring impedance
- GIS RC divider up to 850kV DC.

Specific measurements can be carried out with scientific instruments available in the laboratory (UHF systems, UV systems, Ultrasounds, electrometers, high speed camera...)



Example of a PD measurement on a defective AC system © SuperGrid Institute

COMBINED TESTING POSSIBILITIES



- Low electromagnetic noise levels suitable for PD measurements (<500fC @ 600kV DC) and other low signal measurements (leakage current...)
- Combined tests (BIAS)

- Superimposed tests (SUIMP)
- AC and impulse cold characteristics (test during operation of the apparatus)
- Thermal electric tests overlaying current and voltage
- Combined hyperbaric pressure tests (up to 40 bars): voltage and temperature tests on HVDC & MVDC cable systems



Superimposed test © SuperGrid Institute

Equipment	Specification	Other features
DC Sources	Up to 200kV Up to 400kV	<ul style="list-style-type: none"> • Easy use and handling • Direct cable connection up to 200kV • Polarity reversal • Well-suited for R&D basic tests
HVDC Sources	Up to 800kV, 30mA Up to 1200kV, 20mA	<ul style="list-style-type: none"> • With polarity reversal • Slope adjustment from 1 to 20 kV/s • Low partial discharge level, below 800fC at rated voltage
HVAC source	Up to 660kV	<ul style="list-style-type: none"> • Slope adjustment from 1 to 16 kV/s • Fast switch-off unit available • Possibility to test cable length up to 15m with compensation systems
HVAC & HVDC metal clad source	Up to 750kV AC Up to 850kV DC	<ul style="list-style-type: none"> • Well-suited for long-term / ageing tests • Low PD level • Access to outdoor test field (L 11m x W 11m x H 15m)
Impulse generator	Up to 2000kV 200kJ	<ul style="list-style-type: none"> • Possibility to adjust the generator to deliver impulses from 20kV to 2000kV • BIAS and Super Imposed compliant
High current heating system	4 x 5kA	<ul style="list-style-type: none"> • Automatic compensation unit for the optimisation of the input power rating

CONTACT

For additional information or to ask for a quote, please contact:

sales@supergrid-institute.com

ADDED VALUE

As a research and innovation centre covering a wide scope of advanced research, our HV dielectric test platform can collaborate with our other platforms to combine equipment and carry out advanced R&D testing.