

Partial Discharge Diagnostics

for transformers and cables

with practical measurements in the lab



Part 1: Fundamentals

**Deepen your knowledge of
partial discharge measurement**

**Register now for our practice-oriented
and manufacturer-independent seminar**

ENERGY SUPPORT



Institut für
Elektrische Energiesysteme
Leibniz Universität Hannover

Partial discharge measurement

Partial discharge measurement is one of the most sensitive and important methods for assessing the condition of the insulation system of high-voltage equipment. Due to the wide range of applications and measurement methods, however, it is also one of the most complex and demanding methods in high-voltage measurement.

This seminar shows the physical causes of PD, the effects on the insulation system and the principles of the most common measurement methods. The theoretical fundamentals are illustrated with practical examples and measurements in the high-voltage lab.

Target group:

The seminar is aimed at fleet managers / asset managers who have to evaluate PD measurements and project engineers who supervise partial discharge measurements, e.g. during acceptance tests. It provides the basic knowledge needed to interpret and evaluate PD measurement results.

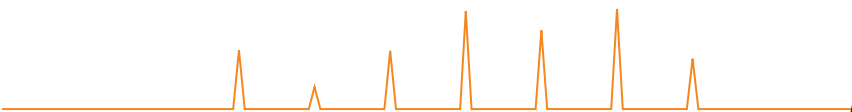
Key topics:

- Formation of partial discharges
- Measurement according to IEC 60270
- Measurement setup and calibration
- On-site measurement
- Interpretation of PD patterns

The focus is on transformers; at the participants' request, cables, GIS or rotating machines can also be covered.

The seminar is manufacturer-independent. It is not an equipment training.

Further information at:
www.energy-support.de/seminare



*The number of participants is limited.
Registrations are accepted in order of receipt.*

Programme

9:30 **Check-in**
10:00

10:00 **Welcome**
10:15

10:15 **PD fundamentals**

11:00 What are partial discharges? Where do they occur?
What are the consequences? Apparent charge, limit values

11:00 **Fundamentals of electrical measurement**

11:45 IEC 60270, measuring circuit, coupling capacitor, calibration, recording of patterns

11:45 **Coffee break**
12:00

12:00 **Practical measurement in the lab 1/2**

13:00 Setup, calibration, 2 different defects, patterns, inception voltage, extinction voltage

13:00 **Break: lunch together**
14:30

14:30 **Practical measurement in the lab 2/2**

15:30 2 further defects, patterns, interference and filters

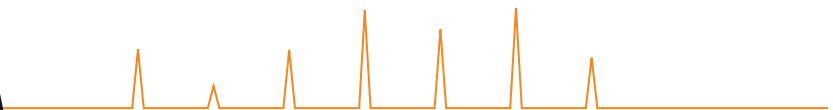
15:30 **Coffee break**
15:45

16:00 **Interpretation of patterns**

17:15 Defect types and associated pattern images

17:15 **Conclusion**

17:45 Discussion, open questions, interpreting your own PD patterns, farewell



Registration

for Partial Discharge Diagnostics (Part 1) on_____

Venue: Leibniz University Hannover, Institute of Electric Power Systems,
High Voltage Engineering and Asset Management Section
Schering Institute, Callinstr. 25A, 30167 Hannover, Germany

Please send your reply to:

Email: info@energy-support.de or fax: +49 2131 403 9608

Billing address:

Company / department	
Contact person	
Postcode, city, country	
Email	
Phone	

Participant 1:

Surname, first name	
Email	

Participant 2:

Surname, first name	
Email	

Participant 3:

Surname, first name	
Email	

The seminar fee of € 1,390 includes:

- Training documents
- Drinks and refreshments during breaks
- Lunch

Invoicing takes place before the event.

Date, legally binding signature, stamp:

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