

INVITED LECTURES



Prof. Dr. **Eberhard Lemke**

DAY 1 13:10 - 14:00

MODELING OF PARTIAL DISCHARGES - OPPORTUNITIES AND LIMITATIONS OF THE EXISTING APPROACHES

Eberhard Lemke graduated from Technical University (TU) Dresden, in 1962, where he was involved in research and education in the field of high-voltage engineering for more than three decades and received the Ph.D. degree and Dr.sc. techn. degree in 1967 and 1975, respectively. In 2010, he was awarded an honorary doctorate (dr.h.c) from the Technical University Graz, Austria. From 1978 until 1981, he joined a power cable factory in Germany. During this time he developed the so-called Lemke Probe using non-conventional field coupling mode for PD diagnostics of HV apparatus in service. In 1987, he was appointed Professor at TU Dresden and founded the company Lemke Diagnostics GmbH in 1990, which manufactures among others instruments for PD diagnostics of HV equipment. Eberhard Lemke is author and co-author of several textbooks. He published numerous technical papers, holds various patents and is active in several national and international organizations, such as VDE, CIGRE, IEC and IEEE.



Prof. Dr.-Ing. **Christian Staubach**

DAY 1 14:30 - 15:00

DIAGNOSTICS TO ASSESS THERMO-MECHANICAL AGING OF THE GENERATOR INSULATION EXPOSED TO VOLATILE OPERATION



Dr. habil. **Zoltán Ádám Tamus, Ph.D.**

DAY 1 15:00 - 15:30

DIELECTRIC RESPONSE IN TIME-DOMAIN, AS A CONDITION MONITORING TOOL FOR ELECTRICAL INSULATIONS



Ing. **Pavel Calta, Ph.D.**

DAY 1 15:30 - 16:00

GROWTH AND CHARACTERIZATION OF THIN FILMS AND NANOSTRUCTURES FOR APPLICATION IN PHOTOVOLTAICS



Ing. **Sven Künkel**

DAY 1 16:00 - 16:30

PARTIAL DISCHARGE DETECTION IN MODERN POWER GRID



Ing. **Štefan Hardoň, Ph.D.**

DAY 3 9:00 - 9:20

EFFECT OF NANOPARTICLES ON THE DIELECTRIC SPECTROSCOPIC RESPONSE OF SELECTED TYPES OF EPOXY RESINS

DAY 1 - 6. 9. 2022 - 13:00 CONFERENCE OPENING

13:10-14:00 **OPENING LECTURE / Eberhard Lemke**
Modeling of Partial Discharges - Opportunities and Limitations of the Existing Approaches
Pavel Trnka,
Michael Muhr,
Rainer Haller

14:00-14:30 COFFEE BREAK

14:30-15:00 **INVITED LECTURE / Christian Staubach**
Diagnostics to Assess Thermo-Mechanical Aging of the Generator Insulation Exposed to Volatile Operation

15:00-15:30 **INVITED LECTURE / Zoltán Ádám Tamus**
Dielectric Response in Time-Domain, as a Condition Monitoring Tool for Electrical Insulations

15:30-16:00 **INVITED LECTURE / Pavel Calta**
Growth and Characterization of Thin Films and Nanostructures for Application in Photovoltaics

16:00-16:30 **INVITED LECTURE / Sven Künkel**
Partial discharge detection in modern power grid

16:30-17:00 COFFEE BREAK

17:00-18:30 POSTER SECTION I

ID 237 Zhengyong Huang

Aging Condition Diagnosis of the Oil-paper Insulation by Fluorescence Observation

ID 246 Štefan Hardoň

Comparison two types of nanowires on the dielectric properties of epoxy resin with SiO₂ nanoparticles

ID 238 Štefan Hardoň

The dielectric spectroscopy of new generation of transformer oil Shell

ID 239 Alena Pietrikova

Moisture absorption of glass-epoxy sandwich structure

ID 231 Jan Leffler

Investigation of Natural Ester Insulating Fluid Properties and Its Behavior within Full Operating Temperature Range

ID 247 Zdislava Mokrá

Preparation and Testing of Biodegradable Nanofluids

ID 272 Josef Pihera

Conductive tape influence on composite dielectric spectra

ID 254 Jiří Kopřiva

The Effect of High Concentrations of MgO on Space Charge Accumulation and Electric Field Distribution in Epoxy Resin

ID 271 Semih Bal

Investigation of Effects of Thermal Ageing on Dielectric Properties of Low Voltage Cable Samples by using Dielectric Response Analyzer

ID 216 Ivan Ivanov

The phenomenon of low frequency dielectric losses increasing in metallized film capacitors

ID 251 Nikolay Djagarov

Simulating a Inter Turn Fault by Asymmetric Induction Motor Model

ID 232 Karolina Kudelina

The Impact of Control Environments on Global Parameters of Electrical Machines in Case of Broken Rotor Bars

19:30-22:00 **Dinner - Parkhotel Pilsen**

Eberhard Lemke,
Christian Weindl,
Yoji Fujita

Magdaléna Trnková,
Jaroslav Horňák

DAY 2 - 7. 9. 2022

9:00-10:30 ORAL SECTION I

9:00-9:15 ID 255 Radek Procházka

Application of SFRA method for evaluation of short-circuit tests of power transformers

9:15-9:30 ID 226 Pavel Pečinka

Verification of quality rotor cages by Electromagnetic Field

9:30-9:45 ID 252 Nikolay Djagarov

Simulation of Broken Rotor Bar Fault by Asymmetric Induction Motor Model

9:45-10:00 ID 267 Sebastian Bottler

Interface and data aggregation for modeling electric power systems with sector coupling technologies

10:00-10:15 ID 228 Hadi Ashraf Raja

Custom Simplified Machine Learning Algorithms for Fault Diagnosis in Electrical Machines

10:15-10:30 ID 249 Ondřej Kabot

Partial discharges analysis of electrical machine winding in low pressure environment

Zoltán Adám Tamus,
Pavel Mach,
Pavel Prosr

10:30-11:00 COFFEE BREAK

11:00-12:30 ORAL SECTION II

11:00-11:15 ID 248 Christoph Engelen

Localization of PD-events in HV-Windings of Rotating Machines

11:15-11:30 ID 261 Mo'ath Bani Fayyad

The effects of the corona wire distribution with triangular collecting plates on the characteristics of electrostatic precipitators

11:30-11:45 ID 260 Nobuhiro Nakamura

Current Distribution Analysis in Porous Electrode of Lithium-ion Battery by Transmission Line Model under High Voltage Signal Application

11:45-12:00 ID 268 Timo Alexander Hertlein

Intelligent and network serving charging control for E-Mobility

12:00-12:15 ID 257 Tobias Blenk

Characteristics and advantages of a state-space orientated calculation in regenerative energy systems

12:15-12:30 ID 219 Mikhail Olkhovskiy

Comparison of One-Dimensional and Two-Dimensional Reference Signal Representation for Insulation Aging State Recognition

Alena Pietříková,
Stefan Kornhuber,
Josef Pihnera

12:30-14:30 Lunch - Parkhotel Pilsen

14:30-16:00 POSTER SECTION II

ID 265 Daniel Korenciak

Comparison of time and frequency method in fault detection for transformer windings

ID 266 Daniel Korenciak

Diagnostics of construction parts of the dry transformers

ID 264 Pavel Mach

Influence of Current Pulses on Resistance of Conductive Adhesive Joints

ID 227 Lukáš Kupka

Measurement systems analysis for the determination of volume resistivity and polarisation indexes

ID 236 Alena Pietříková

Graphene-based UWB antenna on the polyimidesubstrate

ID 242 Tomáš Řeřicha

Educational methods for Industry 4.0

ID 263 Stefan Siegfried Veit

Impact of new IoT technologies for diagnostics and maintenance purposes in buildings

Štefan Hardoň,
Ondřej Michal

14:30-16:00 POSTER SECTION II

ID 221 Polina Shcherbakova

An Approach to Monitoring and Establishing Customers' Liability over Power Quality

ID 229 Hadi Ashraf Raja

Cost-efficient real-time condition monitoring and fault diagnostics system for BLDC motor using IoT and Machine learning

ID 241 Pavel Rous

Influence of thermal aging on intermetallic compound growth in solder alloys

ID 218 Martin Hirman

Influence of Corrosive Gases on Reliability of Conductive Joints

ID 230 Siarhei Outsou

Fault Diagnosis System of Cartesian Robot for Various Belt Tension

ID 222 Jiří Švarný

Measurement of low AC currents by the standard current probe equipped with lock-in amplifier

Štefan Hardoň,
Ondřej Michal

19:00-22:00 Dinner - Kalikovský Mlýn

More information about the place and how to get there can be found on the leaflet (or scan QR)



DAY 3 - 8. 9. 2022

8:30-9:00 COFFEE BREAK

9:00-10:45 ORAL SECTION III

9:00-9:15 KEYNOTE LECTURE / Štefan Hardoň

Effect of nanoparticles on the dielectric spectroscopic response of selected types of epoxy resins

9:15-9:30 ID 215 Christian Staubach

Potential and limitation of dielectric response analysis for mechanically aged VPI insulation

9:30-9:45 ID 245 A.-C. Uhr-Müller

Comparison of Dielectric Factors at Different Temperatures for New and Pre-Aged PILC Cables

09:45-10:00 ID 217 Valentino Nikolić

Assessing thermal and dielectric characteristics of healable, low-field illuminating optoelectronic stretchable material for electrical insulating purposes

10:00-10:15 ID 235 Alena Kozáková

Method for evaluation of impregnant compatibility with lead-wire insulation

10:15-10:30 ID 243 Henry Hirte

Review on Space Charge Induced Aging and Voltage Endurance Tests of Polymeric Insulating Materials Under High DC Voltage

Christian Staubach,
Jozef Kudelčík,
Radek Procházka

10:45 - 10:55 CONFERENCE CLOSING

12:00-14:00 IEEE CS YP AG Meeting