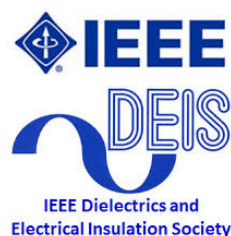


ICHVE 2018

2018 IEEE International Conference
on High Voltage Engineering
and Application

 10-13 SEP

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Exhibitors



Date: Sunday, 09/Sep/2018

2:00pm - 7:00pm Conference Reg: ConferenceRegistration is Open!

7:00pm - 9:30pm Welcome Reception

Date: Monday, 10/Sep/2018

9:00am - 9:30am OC: Opening Ceremony

9:30am - 10:30am I.E.: IEEE Caixin Sun and Stan Grzybowski Achievement Award

10:30am - 11:00am Group Photo: Group Photo

11:00am - 12:30pm KNS: Keynote Speeches

12:30pm - 2:00pm Lunch

1:45pm - 5:45pm P-AM: Poster session for Aging, Space Charge, and Maintenance

Poster Area

2:00pm - 3:30pm O-GS1: Oral session for Grounding Systems

Session Chair: Jinliang He

Session Chair: Charalambos A. Charalambous

2:00pm - 3:30pm O-IS1-Cable: Oral session for High Voltage Insulation Systems

Session Chair: Aleksandra Rakowska

2:00pm - 3:30pm O-MD1: Oral session for Monitoring and Diagnostics

Session Chair: Yaxiong Tan

Session Chair: Petru Notingher

4:00pm - 5:30pm O-GS2: Oral session for Grounding Systems

Session Chair: Qing Yang

Session Chair: Eleftheria Pyrgioti

4:00pm - 5:30pm O-IS2-Air: Oral session for High Voltage Insulation Systems

Session Chair: Kaveh Niayesh

Session Chair: Wenfeng Liu

4:00pm - 5:30pm O-MD2-PD: Oral session for Monitoring and Diagnostics

Session Chair: Stanislaw Gubanski

Session Chair: Youyuan Wang

7:00pm - 10:00pm Dinner

Date: Tuesday, 11/Sep/2018

9:00am - 10:30am O-MD3-PD: Oral session for Monitoring and Diagnostics

Session Chair: Noureddine Harid

Session Chair: Fuping Zeng

9:00am - 10:30am O-PA1: Oral session for Power and Industrial Applications

Session Chair: Antonios Moronis

9:00am - 10:30am O-TM1: Oral session for High Voltage Testing and Measurement

Session Chair: Frangiskos Topalis

9:00am - 1:00pm P-GS: Poster session for Grounding Systems

Session Chair: Ioannis F. Gonos

Session Chair: Tiebing Lu

9:00am - 1:00pm P-TE: Poster session for Transients and EMC

Session Chair: Tiebing Lu

Session Chair: Ioannis F. Gonos

11:00am - 12:30pm O-MD4-Monitoring: Oral session for Monitoring and Diagnostics

Session Chair: Yoshimichi Ohki

Session Chair: Marek Florkowski

11:00am - 12:30pm

Room 2	O-PA2: Oral session for Power and Industrial Applications Session Chair: Nicolas Younan
11:00am - 12:30pm Room 1	O-TM2-Trans: Oral session for High Voltage Testing and Measurement Session Chair: William Malcolm McDermid
12:30pm - 2:00pm	Lunch
1:45pm - 5:45pm Poster Area	P-IS: Poster session for High Voltage Insulation Systems Session Chair: Pantelis N. Mikropoulos
2:00pm - 3:30pm Room 3	O-MD5-Trans: Oral session for Monitoring and Diagnostics Session Chair: Stefan Tenbohlen Session Chair: Qiang Liu
2:00pm - 3:30pm Room 2	O-PA3: Oral session for Power and Industrial Applications Session Chair: Yuesheng Zheng Session Chair: Theofilos Papadopoulos
2:00pm - 3:30pm Room 1	O-TM3-Cables: Oral session for High Voltage Testing and Measurement Session Chair: Krzysztof Siodla
3:30pm - 4:00pm	Coffee Break
4:00pm - 5:30pm Room 3	O-MD6-Insulators: Oral session for Monitoring and Diagnostics Session Chair: Edson Guedes da Costa Session Chair: Weigen Chen
4:00pm - 5:30pm Room 2	O-PA4: Oral session for Power and Industrial Applications Session Chair: Chijie Zhuang Session Chair: Thomas Tsovilis
4:00pm - 5:30pm Room 1	O-TM4-Lightning: Oral session for High Voltage Testing and Measurement Session Chair: Yukio Mizuno Session Chair: Sergey Korobeynikov
7:00pm - 10:00pm	Concert
Date: Wednesday, 12/Sep/2018	
9:00am - 10:30am Room 3	O-AM1: Oral session for Aging, Space Charge, and Maintenance Session Chair: Josef Kindersberger Session Chair: Yu Gao
9:00am - 10:30am Room 1	O-IS3-Oil: Oral session for High Voltage Insulation Systems Session Chair: Feipeng Wang Session Chair: Johan J. Smit
9:00am - 10:30am Room 2	O-TM5-Insulation: Oral session for High Voltage Testing and Measurement Session Chair: Abderrahmane Beroual
9:00am - 1:00pm Poster Area	P-EM: Poster session for Electromagnetic Fields
9:00am - 1:00pm Poster Area	P-PA: Poster session for Power and Industrial Applications
10:30am - 11:00am	Coffee Break
11:00am - 12:30pm Room 3	O-AM2: Oral session for Aging, Space Charge, and Maintenance Session Chair: Michael Danikas Session Chair: Joni Kluss
11:00am - 12:30pm Room 1	O-IS4-Oil: Oral session for High Voltage Insulation Systems Session Chair: Konstantin Papailiou Session Chair: Rainer Patsch
11:00am - 12:30pm Room 2	O-TM6-Sponsors: Oral session for High Voltage Testing and Measurement Session Chair: Jerry Walker Session Chair: Panagiotis Svarnas
12:30pm - 2:00pm	Lunch
1:45pm - 5:45pm	P-MD: Poster session for Monitoring and Diagnostics

Poster Area	
2:00pm - 3:30pm	O-AM3: Oral session for Aging, Space Charge, and Maintenance Session Chair: Issouf Fofana Session Chair: Boxue Du
Room 3	
2:00pm - 3:30pm	O-IS5-Insulators: Oral session for High Voltage Insulation Systems Session Chair: Manu Haddad Session Chair: Bo Zhang
Room 1	
2:00pm - 3:30pm	O-TM7-PD: Oral session for High Voltage Testing and Measurement Session Chair: Davide Fabiani
Room 2	
3:30pm - 4:00pm	Coffee Break
4:00pm - 5:30pm	O-AM4: Oral session for Aging, Space Charge, and Maintenance Session Chair: Yasuhiro TANAKA
Room 3	
4:00pm - 5:30pm	O-IS6: Oral session for High Voltage Insulation Systems Session Chair: Masoud Farzaneh
Room 1	
4:00pm - 5:30pm	SM: Steering Committee
Room 2	
7:00pm - 10:00pm	Banquet
Date: Thursday, 13/Sep/2018	
9:00am - 11:30am	O-EM1: Oral session for Electromagnetic Fields Session Chair: Ioannis Stathopoulos Session Chair: Aydogan Ozdemir
Room 3	
9:00am - 11:30am	O-IS7: Oral session for High Voltage Insulation Systems Session Chair: Pantelis N. Mikropoulos Session Chair: Yushun Zhao
Room 1	
9:00am - 11:30am	O-TE1: Oral session for Transients and EMC Session Chair: Alexandre Piantini Session Chair: Peter Wouters
Room 2	
9:00am - 12:30pm	P-TM: Poster session for High Voltage Testing and Measurement
Poster Area	
11:30am - 12:00pm	Coffee Break
12:00pm - 1:00pm	CC: Closing Ceremony
1:00pm - 7:00pm	Technical Tour

Presentations

I.E.: IEEE Caixin Sun and Stan Grzybowski Achievement Award

Time: Monday, 10/Sep/2018: 9:30am - 10:30am

Advanced Application of Space Charge Measurement Using PEA Method for Evaluation of Insulating Materials

Yasuhiro TANAKA

Tokyo City University, Japan; ytanaka@tcu.ac.jp

Polymer-based dielectric materials for high-temperature film capacitors

Qi Li

Tsinghua University, China, People's Republic of; gili1020@tsinghua.edu.cn

KNS: Keynote Speeches

Time: Monday, 10/Sep/2018: 11:00am - 12:30pm

Research on Medium and High Voltage DC Breaking Technology

Mingzhe Rong, Yi Wu, Hao Sun, Hailong He

State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China, People's Republic of;
mzrong@xjtu.edu.cn

The Resurrection of High Voltage Overhead Lines

Konstantin Papailiou

CIGRE Science & Engineering, CIGRE, Paris, France; konstantin@papailiou.ch

Streamer Dynamics and DGA of Natural Ester Insulation Oil

Jian Li

Chongqing University; lijian@cqu.edu.cn

P-AM: Poster session for Aging, Space Charge, and Maintenance

Time: Monday, 10/Sep/2018: 1:45pm - 5:45pm · Location: Poster Area

Evaluation of the damage caused by bird pecking activity along composite high voltage insulators

Nikolaos C. Mavrikakis¹, Pantelis N. Mikropoulos¹, Kiriakos Siderakis², Ioannis Pellas², Emmanouel Thalassinakis²

¹Aristotle University of Thessaloniki, School of Electrical and Computer Engineering, Thessaloniki, Greece; ²Hellenic Distribution Network Operator S.A., Islands Network Operations Department, Heraklion, Greece; pnm@eng.auth.gr

A Novel Methanol-detection-method for the Aging Prediction of Paper Insulation in Power Transformer

Lei Peng, Qiang Fu, Musong Lin, Yihua Qian, Yaohong Zhao

Electric Power Research Institute, Guangdong Power Grid Co., Ltd., China, People's Republic of; penglei1025@whu.edu.cn

Analysis on carbohydrate as a criterion for solid insulation aging of transformer

Qiang Fu¹, Mengjun Wang¹, Lei Peng¹, Shengli Li², Xin Liu²

¹Electric Power Research Institute, Guangdong Power Grid Co., Ltd., China, People's Republic of; ²Huazhong University of Science and Technology; 13926402226@163.com

Interaction of Partial Discharge in Air with Silicone Rubber

Kazuki Komatsu, Mitsuki Shimada, Yukio Mizuno

Nagoya Institute of Technology, Japan; 30413080@stn.nitech.ac.jp

Significance of Space Charge Accumulation & DC Endurance of XLPE under Varying Insulation Thickness

Muhammad Shoaib Bhutta, Lijun Yang, Zhipeng Ma, Haoran Bian, Muhammad Ali Mehmood, Jawad Ahmad

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, China, People's Republic of; shoaibbhutta@hotmail.com, ylicqu@163.com, cqrmzp@sina.com, 563613504@qq.com, muhammadali@cqu.edu.cn

Preliminary Measurements and Simulations for Space Charges in Aeronautical Cables

Eddy AUBERT, El Hadji, Ndongo DIAW

Safran Electrical & Power, France; eddy.aubert@safran-group.com

Space Charge Analysis of Polyethylene with Chemical Defects Based on Density Function Theory

Tao Lin¹, Xi Chen², Xuefeng Zhao³, Jiaming Li², Junbo Deng², Jing Liu³, Lu Pu³, Feng Gao³, Nan Wang³, Minghao Fan⁴

¹State Grid Xi'an Electric Power Supply Company, Xi'an, China; ²Xi'an Jiao tong University State Key Laboratory of Electrical Insulation and Power Equipment, China, People's Republic of; ³Research Institute of State Grid Shaanxi Electric Power Company, Xi'an, China; ⁴Research Institute of State Grid Anhui Electric Power Company, Anhui, China; lintoao@sn.sgcc.com.cn, 78345659@qq.com

Development of a Setup for Long-Term Investigations of Dielectric Ageing under Liquid Nitrogen

Stefan Seibel, Ralf Puffer

RWTH Aachen University, Germany; seibel@ifht.rwth-aachen.de

Study on Space Charge Characteristics During Aging Process of DC ZnO Resistors

QIAN WANG, JIE LI, Chenjie Ji

Xi'an University of Technology, China, People's Republic of; 1956388487@qq.com, 340576982@qq.com

Influence of Coupling Materials on Space Charge Measurements of Silicone Elastomers

Simon Spelzhausen, Mario-Rafael Ionian, Ronald Plath

Technische Universität Berlin, Germany; plath@ht.tu-berlin.de

Partial Discharge Patterns during Accelerated Aging of Medium Voltage Cable System

Martin Knenicky, Radek Prochazka, Jan Hlavacek

Czech Technical University in Prague, Faculty of Electrical Engineering, Czech Republic; knenimar@fel.cvut.cz

Study on the Protective Effects of TTA, Irgamet39 and T571 Passivators on Multiple Corrosive Sulfides

Haoxi Cong¹, Xiang Shu¹, Minhao Zhang¹, Peng Ren¹, Shiyue Du¹, Qingmin Li¹, Hu Jin²

¹School of Electrical and Electronic Engineering, North China Electric Power University, China; ²Electric Power Research Institute, China Southern Power Grid, China; ip2800@126.com

Decoupling of the Effect of Multiple Sulfides Based on the Entropy-weight method

Minhao Zhang¹, Haoxi Cong¹, Xiang Shu¹, Shiyue Du¹, Qingmin Li¹, Hu Jin²

¹North China Electric Power University, China, People's Republic of; ²Electric Power Research Institute, China Southern Power Grid; mhzhang0317@163.com

The Effect of Charge Rate on Space Charge Accumulation in Damped Alternating Current (DAC) Testing for Power Cable

Wei Wang¹, Da Jiang¹, Wenyan Dong¹, Zhongzheng Ning¹, Jun Xiong², Gang Du²

¹Beijing Key Laboratory of High Voltage & Electromagnetic Compatibility, China, People's Republic of; ²Electric Power Test & Research Institute, Guangzhou Power Supply Co. Ltd., China, People's Republic of; ww790324@163.com

Measurement of Space Charge Distribution in a Corona Cage under Influence of different Atmospheric Conditions

Jules Simplicie Dieumen¹, Jeremiah Jesaja Walker¹, Nicholas John West²

¹VAAL UNIVERSITY OF TECHNOLOGY, South Africa; ²University of the Witwatersrand; julesd@vut.ac.za

Detecting Fillers Content of Silicone Rubber via Laser-induced Breakdown Spectroscopy

Qishen Lyu¹, Rognhui Huang¹, P. Chen², Xiao Hong², XILIN WANG², Zhidong Jia²

¹Shenzhen Power Supply Co. Ltd, Shenzhen, China; ²Graduate School at Shenzhen, Tsinghua University, China.; wang.xilin@sz.tsinghua.edu.cn

Influence of Defect Type within Solid Insulation on the Behaviour of High Voltage Cables

Yacine MECHERI, Slimane BOUAZABIA

Université of Science and Technology, USTHB, Algiers, Algeria; yacmeheri@gmail.com

A Compact High-Voltage, Nanosecond Pulse Generator for Triggering Applications

Panagiotis G. Pouraimis, Alexios. P Platis, John M. Koutsoubis, Christos X. Manasis

Technological Educational Institute of Sterea Ellada, Greece; ppouraimis@gmail.com

O-GS1: Oral session for Grounding Systems

Time: Monday, 10/Sep/2018: 2:00pm - 3:30pm · Location: Room 3

Session Chair: Jinliang He

Session Chair: Charalambos A. Charalambous

Study on the Effect of Peak Value of Currents on Double-pulse Recovery Characteristics of Soil

Donghui Luo, Wenxia Sima, Tao Yuan, Xiaochuan Li, Potao Sun, Ming Yang

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; l_dh@cqu.edu.cn, cqsmwx@cqu.edu.cn, yuantao_cq@cqu.edu.cn, lixiaochuan_cq@cqu.edu.cn

The Research on New Type of Earth Resistivity Exploring Method for HVDC Deep-well Earth Electrode

Maoheng Jing¹, Xishan Wen¹, Zhuohong Pan¹, Hailiang Lu¹, Hansheng Cai², Shangmao Hu², Gang Liu², Lei Jia²

¹School of Electrical Engineering, Wuhan University, China; ²Electric Power Research Institute, CSG, Guangzhou, China; jingmaoheng@hotmail.com

Electric Resistivity Variation of Ground Enhancing Compounds Under Field Conditions

V.P. Androvitsaneas, C.A. Christodoulou, I.F. Gonos, I.A. Stathopoulos

NATIONAL TECHNICAL UNIVERSITY OF ATHENS, GREECE; v.andro@mail.ntua.gr

Determination of Earthing System for 5MVA Medium Voltage Distribution Substations

Nurul Azlina Abd Rahman¹, Norhasliza Mohd Hatta¹, Hannah Ahmad Rosli², Aziz Marzuki Ahmad Marican³

¹TNB Research Sdn Bhd, Malaysia; ²Tenaga Nasional Berhad, Malaysia; ³DCS Engineering Sdn Bhd, Malaysia; nurul.azlina@tnb.com.my

Electrochemical test and Simulation of corrosion rate of five common ground electrode materials

Zhihui ZHENG¹, Hansheng CAI², Shangmao HU², Maoheng JING¹, Gang LIU², Lei JA², Hailiang LU¹, Xishan WEN¹

¹School of Electrical Engineering, Wuhan University, China, People's Republic of; ²Electric Power Research Institute, CSG, Guangzhou, China, People's Republic of; 2016202070095@whu.edu.cn

A New Method to Include Complex Grounding System in Lightning Transient Studies and EMI Evaluations

Vegard Steinsland, Lasse Hugo Sivertsen, Emil Cimpan, Shujun Zhang

Western Norway University of Applied Sciences, Norway; 182992@stud.hvl.no

O-IS1-Cable: Oral session for High Voltage Insulation Systems

Time: Monday, 10/Sep/2018: 2:00pm - 3:30pm · Location: Room 2
Session Chair: Aleksandra Rakowska

An experimental investigation of the flashover behavior of outdoor cable terminations under lightning impulse application

Myriam Koch¹, Jens Hohloch²

¹Pfisterer Kontaktsysteme GmbH, Germany; ²Pfisterer Ixosil AG, Switzerland; myriam.koch@pfisterer.com

Dispersion of Carbon Blacks and Their Influence on the Properties of Semiconductive Materials use for High-voltage Power Cables

Weikang Li¹, Chong Zhang¹, Junwei Zha², Zhimin Dang³

¹Global Energy Interconnection Research Institute Co. Ltd, China, People's Republic of; ²University of Science & Technology Beijing, 100083, P. R. China; ³Tsinghua University, Beijing, 100084, P. R. China; zhajw@ustb.edu.cn

Research on Parameters of Step-stress Test to Obtain Life Exponent of XLPE-material used in DC Cable

HaoRan Bian, LiJun Yang, ZhiPeng Ma, ZhongXuan Li

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; cqubianhr@sina.com, ylicqu@cqu.edu.cn, 745868437@qq.com

Investigation on Interaction between Lubricants and Polymeric Cable Insulations

Christoph Felix Niedik, Frank Jenau

Institute of High Voltage Engineering, TU Dortmund University, Germany; felix.niedik@tu-dortmund.de

Partial Discharges at Artificial Defects in XLPE Cable Accessories under Superimposed Transient Waveforms

Jiayang Wu, Luis Castro Heredia, Armando Rodrigo Mor, Johan Smit

Delft University of Technology, Netherlands, The; j.wu-3@tudelft.nl

Space charge simulation of oil-paper insulation with multi-layer oil gap and oil impregnated pressboard

Runhao Zou¹, Jian Hao¹, Lianpeng Wang², Ruijin Liao¹, Min Dan¹, Chao Tang³

¹The State Key Laboratory of Power Transmission Equipment & System Security and New Technology, China, People's Republic of; ²TBEA Shenyang Transformer Group Co., Ltd. Shenyang, China.; ³College of Engineering and Technology, Southwest University, Chongqing 400715, China; zourunhao@qq.com

O-MD1: Oral session for Monitoring and Diagnostics

Time: Monday, 10/Sep/2018: 2:00pm - 3:30pm · Location: Room 1

Session Chair: Yaxiong Tan

Session Chair: Petru Notingher

High Frequency Model of Cables for Frequency Domain Analysis from Fault Localization Perspective

Younes Norouzi, C. Frohne, P. Werle

Nexans Deutschland GmbH, Germany; younes.norouzi@nexans.com

Gas Production Mechanisms of Camellia Oil-paper Insulation under Thermal Stress Based on Molecular Dynamics Simulation

Jinghan Zhou¹, Chenmeng Xiang², Jian Li¹, Yachao Wang¹, Chaoyu Wang¹, Dongchun Ma³, Ruibao Li³

¹State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400044, China; ²State Grid Hebei Electric Power Research Institute, Shijiazhuang 050021, China; ³Jinzhong Power Supply Company of State Grid Shanxi Electric Power Company, Shanxi 030001, China; cquzjh@cqu.edu.cn

Influence of Dielectric Coatings on AE Signals Generated in High Voltage Gas Insulated Systems

Arkadiusz Dobrzycki¹, Władysław Opydo², Sebastian Zakrzewski³

¹Poznan University of Technology, Poland; ²University of Science and Technology, Poland; ³Tele-Fonika Kable S.A., Poland; Sebastian.Zakrzewski@tfkable.com

Derivation and Verification of a Calculation Method for the Overhead Line Voltage Measurement considering the Influence of the Earth Conductor

Erwin Burkhardt, Frank Jenau

TU Dortmund University - Institute of High Voltage Engineering, Germany; erwin.burkhardt@tu-dortmund.de

Positive Streamer Development in Selected Dielectric Liquids in a Point-to-Sphere Electrode System with Pressboard Barrier

Pawel Rozga, Marcin Stanek, Konrad Strzelecki

Lodz University of Technology, Poland; pawel.rozga@p.lodz.pl

Fundamental Difference of Partial Discharge Phenomena under AC and DC Stresses

Hassan SAADATI¹, Peter WERLE¹, Jens Martin SEIFERT², Ernst GOCKENBACH¹, Hossein BORSI¹

¹Leibniz Universität Hannover, Germany; ²LAPP Insulators GmbH, Germany; saadati@ifes.uni-hannover.de

O-GS2: Oral session for Grounding Systems

Time: Monday, 10/Sep/2018: 4:00pm - 5:30pm · Location: Room 3

Session Chair: Qing Yang

Session Chair: Eleftheria Pyrgioti

Seasonal Variation and Timeless Evolution of Ground Resistance

V.P. Androvitsaneas¹, G.J. Tsekouras², I.F. Gonos¹, I.A. Stathopoulos¹

¹NATIONAL TECHNICAL UNIVERSITY OF ATHENS/HIGH VOLTAGE LABORATORY, Greece; ²UNIVERSITY OF WEST ATTICA, Greece; v.andro@mail.ntua.gr

A New Method of Grounding Grid Fault Diagnosis Based on Grounding Conductor Soundness

Shaojing Wang¹, Wenrong Si¹, Kai Gao¹, Fenghua Wang²

¹Electric Power Research Institute, State Grid Shanghai Electric Power Company, China, People's Republic of; ²Key Laboratory of Control of Power Transmission and Conversion, Ministry of Education, Shanghai Jiao Tong University, Shanghai, China; jing_skr@163.com

Comprehensive Modelling Technique to Allow DC Interference Evaluations on Buried Pipeline Systems near Photovoltaic Installations

Andreas Dimitriou, Charalambos A. Charalambous

University of Cyprus, Cyprus; charalambous.a.charalambos1@ucy.ac.cy

An improved scheme for flexible grounding fault suppression in distribution system based on IGBT

Jiaquan Ran, Qing Yang, Song Chen, Lewei He

Chongqing University, China, People's Republic of; 20114510@cqu.edu.cn

Manual Wiring Measurement of DC Deep Well Grounding Resistance

Shangmao Hu², Jiafeng Chen¹, Hansheng Cai², Shaodong Li¹, Lei Jia², Gang Liu², Hailiang Lu¹

¹Wuhan University, China, People's Republic of; ²State Key Laboratory of HVDC, Electric Power Research Institute, CSG, Guangzhou, China; 2952109338@qq.com

O-IS2-Air: Oral session for High Voltage Insulation Systems

Time: Monday, 10/Sep/2018: 4:00pm - 5:30pm · Location: Room 2

Session Chair: Kaveh Niayesh

Session Chair: Wenfeng Liu

Influence of Surface Roughness on Breakdown in Air Gaps at Atmospheric Pressure Under Lightning Impulse

Odd Christian Feet, Frank Mauseh, Kaveh Niayesh

Norwegian University of Science and Technology (NTNU), Trondheim, Norway; kaveh.niayesh@ntnu.no

Surface charging of dielectric barriers in short rod-plane air gaps – experiments and simulations

Hans Kristian Meyer¹, Andreas Blaszczyk², Schueller Michael³, Mauseh Frank¹, Pedersen Atle⁴

¹Norwegian University of Science and Technology (NTNU), Norway; ²ABB Ltd., Switzerland; ³Hochschule für Technik, Rapperswil, Switzerland; ⁴SINTEF Energy Research, Trondheim, Norway; hans.meyer@ntnu.no

Electric Field Feature Extraction and Breakdown Voltage Prediction of Sphere Gaps with Quasi-uniform Field

Zhibin Qiu, Jiangjun Ruan, Xuezhong Wang, Qi Jin

Wuhan University, China, People's Republic of; whuerliuming@whu.edu.cn

Internal fault diagnosis of SF6 high voltage circuit breaker based on gas composition analysis

Yulong Miao¹, Siying Wu², Ju Tang², Fuping Zeng², Qiang Yao¹

¹Electric Power Research Institute, State Grid Chongqing Electric Power Company, China, People's Republic of; ²Wuhan University, China, People's Republic of; 1623231099@qq.com

Breaking Capacity of Disconnectors and Earthing Switches Operated in Alternative Gases

Torsten Psotta¹, Volker Hinrichsen¹, Bernhard Lutz²

¹TU Darmstadt /FG Hochspannungstechnik, Germany; ²Siemens AG, High Voltage Products, Germany; psotta@hst.tu-darmstadt.de

Surface Charge Accumulation Behavior on GIL Spacer Under DC Voltages in SF6/N2 Mixtures

Ke-Feng Li¹, Yan-Qin Liu¹, Xiao-Feng Fan¹, Xiang-Yu Liu¹, Jian-Yi Xue², Jun-Bo Deng², Guan-Jun Zhang²

¹State Grid Sichuan Electric Power Company Chengdu Power Supply Company; ²Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, China, People's Republic of; jyxuexitu@126.com

O-MD2-PD: Oral session for Monitoring and Diagnostics

Time: Monday, 10/Sep/2018: 4:00pm - 5:30pm · *Location:* Room 1

Session Chair: Stanislaw Gubanski

Session Chair: Youyuan Wang

Classification of multiple PD Sources by Signal Features and LSTM Networks

Benjamin Adam, Stefan Tenbohlen

Institute of Power Transmission and High Voltage, Germany; benjamin.adam@ieh.uni-stuttgart.de

Comparison of PD Characteristics Induced by Metal Particles and Bubbles in Flowing Transformer Oil

Yongze Zhang¹, Ju Tang^{1,2}, Cheng Pan², Shouxiao Ma³, Qiang Yao⁴, Yulong Miao⁴, Yi Luo²

¹State Key Laboratory of Power Transmission Equipment & System Security and New Technology Chongqing University, China;

²School of Electrical Engineering, Wuhan University, Wuhan, China; ³Institute of Water Resources and Electric Power, Qinghai University, Qinghai, China; ⁴Electric Power Research Institute of State Grid Chongqing Electric Power Company, Chongqing, China; 1164160547@qq.com

Efficient PD Monitoring of HV Electrical Systems Using HFCT Sensors

Fernando Alvarez¹, Eduardo Arcones¹, Fernando Garnacho², Ángel Ramírez², Javier Ortego³

¹Universidad Politecnica de Madrid, Spain; ²LCOE-FFII; ³DIAEL; eduardo.arcones@upm.es

A Versatile System for PD Diagnostics

Laurentiu Viorel Badicu, Wojciech Koltunowicz, Oliver Krause

OMICRON Energy Solutions GmbH, Germany; wojciech.koltunowicz@omicronenergy.com

Recognition of partial discharge types based on SF6 decomposed components under negative DC

Yulong Miao¹, Xu Yang², Fuping Zeng², Ju Tang²

¹Chongqing Electric Power Company Electric Power Research Institute, Chongqing, China; ²School of Electrical Engineering, Wuhan University, Wuhan, China; 2876938742@qq.com

Power Quality Indices for Electrical Power Systems under Non-Stationary Disturbances

Panagiotis Karafotis, Konstantinos Christodoulou - Galanopoulos, Dimitrios Siagkas, Pavlos Georgilakis

National Technical University of Athens, Greece; helion91@hotmail.com

O-MD3-PD: Oral session for Monitoring and Diagnostics

Time: Tuesday, 11/Sep/2018: 9:00am - 10:30am · *Location:* Room 3

Session Chair: Nouredine Harid

Session Chair: Fuping Zeng

Safety Analysis of Inner Capacitive Coupling Partial Discharge Sensor for 10kV Cable Joints under Lightning Impulse

Qinghua Zhan¹, Liezheng Tang², Xiaomei Ou¹, Yijun Liu¹, Tiecheng Li², Fan Yi², Guowei Li¹, Junbo Wang¹

¹Foshan Power Supply Bureau, China, People's Republic of; ²Wuhan University, China, People's Republic of; tlz9302@163.com

Modern Noise Rejection Methods and their Applicability in Partial Discharge Measurements on HVDC Cables

Andreas Elben¹, Tobias Fechner², Xianzhang Lei², Ronald Plath¹, Mingyu Zhou²

¹TU Berlin; ²Global Energy Interconnection Research Institute Europe GmbH; elben@ht.tu-berlin.de

Calculation Method of Partial Discharge Severity Assessment Index Weight Using Factor Analysis Based on Mutual Information

Yulong Miao¹, Miao Jin², Ju Tang², Fuping Zeng², Siyuan Zhou², Yin Zhang²

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Partial discharges in free helium bubbles in transformer oil

Sergey Korobeynikov^{1,2}, Alexander Ridel^{1,2}, Denis Karpov², Marina Merediva², Alexander Ovsyannikov¹

¹Novosibirsk State Technical University, Russian Federation; ²Lavrentyev Institute of Hydrodynamics; korobeynikov@corp.nstu.ru

Understanding Corona Discharges using Digital Imaging

Shakthi Prasad D, Subba Reddy Basappa

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Analysis of UHF sensor response to EM waves excited by surface discharge in air using FDTD simulation

Alaa Loubani, Nouredine Harid, Huw Griffiths

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O-PA1: Oral session for Power and Industrial Applications

Time: Tuesday, 11/Sep/2018: 9:00am - 10:30am · Location: Room 2
Session Chair: Antonios Moronis

Resonant Fault Current Limiter for MV applications

Wojciech Piasecki, Adam Ruszczuk, Mariusz Stosur

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Studies on the Variation of Transformer Reactive Power Caused by DC Bias and Its Impacts on System Voltage

Hanli Weng¹, Lei Liu¹, Yi Wan², Xiangning Lin¹, Zhenxing Li¹, Jingguang Huang¹

¹College of Electrical Engineering & New Energy, China Three Gorges University, China; ²Three Gorges Electric Energy Co., Ltd, Yichang, China; honey_weng@163.com

Analysis of Shock Wave Overpressure Induced by Impulse Discharge Arc

Jiaming Xiong, Lee Li, Hongyu Dai, Haibo Wu, Bin Yu, Mingyang Peng

Huazhong University of Science and Technology, Wuhan, China, China, People's Republic of; xjm@hust.edu.cn

Advanced analysis and diagnostics for remote on-line PD monitoring of HV rotating machines

Andreas Kokkotis, M. Seltzer-Grant, A. Polley, E. Barnwell

HVPD, United Kingdom; andreas.kokkotis@hvpd.co.uk

Broadband Far-infrared Spectroscopic Identification and Quantification of Antioxidants in Polymeric Insulation

Takaaki Ogishima, Takuya Kozai, Naoshi Hirai, Yoshimichi Ohki

Waseda University, Japan; yohki@waseda.jp

Thermal Behavior Analysis in a Porcelain-Housed ZnO Surge Arrester by Computer Simulations and Thermography

Arthur Francisco Andrade, Josué Marcos Batista Fernandes, Helem Monyelle de Melo Alves, Edson Guedes Costa

Universidade Federal de Campina Grande, Brazil; edson@dee.ufcg.edu.br

O-TM1: Oral session for High Voltage Testing and Measurement

Time: Tuesday, 11/Sep/2018: 9:00am - 10:30am · *Location:* Room 1
Session Chair: Frangiskos Topalis

Statistical Analysis Research on Dynamic Testing Index Optimization of High Voltage Power Equipment

Yiping Cui¹, Yuehan Wang²

¹Electric Power Test & Research Institute of Guangzhou Power Supply Co. Ltd., China, People's Republic of; ²Guangdong Power Grid Co., Ltd.; cuyiping@126.com

Precision electric characterization of LDPE specimens made by different manufacturing processes

Xiangdong Xu¹, Karolina Gaska¹, Mattias Karlsson², Henrik Hillborg³, Ulf Gedde²

¹Chalmers university of technology, Sweden; ²Royal Institute of Technology, Sweden; ³ABB AB, Power Technology, Corporate Research, Sweden; xiangdong.xu@chalmers.se

Methods for Post-Processing and Trend Analysis of Conductivity Measurement Data

Claudius Freye, Frank Jenau

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Study on Suppressing Voltage Increase of Current-Switching Capability Test

Lu Wang, Chungiang Su

Xi'an High Voltage Apparatus Research Institute Co., Ltd., China, People's Republic of; 29464383@qq.com,
suchungiang@xihari.com

Study of Nitrogen-Oxygen Reaction Efficiency for High Current Graphite-electrode Gas Switch

Bin Yu^{1,2}, Lee Li¹, Hongyu Dai¹, Ming-yang Wu¹, Haibo Wu¹, Jiaming Xiong¹, Zhixue Wang²

¹State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science & Technology, Wuhan 430074, China; ²State Grid Wuhan Power Supply Company, Wuhan 430012, China; 616928315@qq.com,
616928315@qq.com

Partial discharge activity studied by its excess current

Xiangdong Xu

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P-GS: Poster session for Grounding Systems

Time: Tuesday, 11/Sep/2018: 9:00am - 1:00pm · Location: Poster Area

Session Chair: Ioannis F. Gonos

Session Chair: Tiebing Lu

Examination of the effectiveness of the grounding systems of distribution substations

Georgios Poulimenos, Katerina Damianaki, Christos Christodoulou, Vasilios Androvitsaneas, Ioannis F. Gonos
National Technical University of Athens, Greece; kdam@central.ntua.gr

Research on the Method of Risk Probability Evaluation of Grounding grid

Peng Kang¹, Weidong Shi¹, Xiaochuan Li², Sen Wang³, Zhizhong Li³, Tao Yuan²

¹China Electric Power Research Institute, Beijing, China; ²Chongqing University, China, People's Republic of; ³State Grid Shanxi Electric Power Research Institute, Xian, China; lixiaochuan_cq@cqu.edu.cn

Examining the operation of the grounding system of a PV installation

Ioannis Naxakis, Grigoris Michos, Sokratis Pastromas, Eleftheria Pyrgioti

University of Patras, Greece; naxakis@ece.upatras.gr

Assessment of Wind Turbine Grounding System

Sokratis Pastromas, Konstantinos Maimaris, Iason Stasinou, Ioannis Naxakis, Eleftheria Pyrgioti

High Voltage Laboratory, University of Patras, Greece, Greece; pastromas@ece.upatras.gr

Calculation of the assembled grounding resistance from complex grounding systems by using analytical considerations only

Martin Hannig

DEHN + SÖHNE GmbH + Co.KG., Germany; martin.hannig@dehn.de

Regularity of Current Dispersal in Different Kinds of Grounding Electrode

Hanwu Luo¹, Lekai Zou², Fan Yang², Muhammad Tanveer Riaz², Shigang Cui¹, Bing Gao²

¹State Grid East Inner Mongolia Electric Power Maintenance Company; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University; zouleikai@cqu.edu.cn

Measurement and Analysis of Impulse Grounding Impedance for UHV Transmission Tower

Wenrong Si¹, Chenzhao FU¹, Tianyi WU¹, Shaojing WANG¹, Peng YUAN²

¹State Grid Shanghai Electrical Power Research Institute, China, People's Republic of; ²Xi'an MaoRong Power Equipment Co., Ltd; siwenrong@126.com

Optimal Arrangement of Long Vertical Rods to Reduce Ground Resistance considering Their Shielding Effect

Sen Wang¹, Yongli Wang¹, Jian Zhang¹, Zhizhong Li¹, Wei Li¹, Xinliang Lv²

¹Shaanxi Electric Power Research Institute, China, People's Republic of; ²State grid Shaanxi Electric Power Company; shizbcn@sina.com

Corrosion Condition Detect of Entire Grounding System in a 500kV Converting Station Using Electrical Impedance Imaging Method

Yifan He^{1,2}, Xianjun Shao¹, Jiayuan Hu¹, Yuancheng Liu¹, Chaohui Jin³, Jianqiao Pan³

¹Research Institute of State Grid Zhejiang Electric Power Limited Company; ²Xi'an Jiaotong University Electric Engineering Institute; ³Pinghu Electric Service Company of State Grid Zhejiang Electric Power Limited Company; yifan_he@126.com

P-TE: Poster session for Transients and EMC

Time: Tuesday, 11/Sep/2018: 9:00am - 1:00pm · Location: Poster Area

Session Chair: Tiebing Lu

Session Chair: Ioannis F. Gonos

Experiment and Research on Induced Electric Field Generated by 110kV AIS Disconnecting Switch

Zihao Gao, Jie Guo, Xuni Rao, Mengzhen Li, Wei Zhang

Xi'an Jiao Tong University, China, People's Republic of; 371528896@qq.com

Study on 330kV GIS Transient Enclosure Voltage Caused by Disconnecting Switch Operation

Xuni RAO, Jie GUO, Zihao GAO, Xiaoke WU, Zexin ZHAO

School of electrical engineering of Xi'an Jiao Tong University, China, People's Republic of; 471196881@qq.com

Computation of transient profiles along non-uniform transmission lines using the numerical Laplace transform

Rodrigo Nuricumbo-Guillén¹, Fermin Pascual Espino-Cortés¹, Pablo Gomez², Carlos Tejada-Martínez¹

¹Instituto Politécnico Nacional, Mexico; ²Western Michigan University, USA; rodrigo.ng.85@gmail.com

Parameters Analysis of Measured Lightning Overvoltages from a Substation

Qin Zhu Chen¹, Huangjing Zhang², Jian Yin¹, Wenxia Sima², Song Huang¹, Potao Sun², Yang Yu¹, Zhengzheng Fu²

¹Hainan Power Grid Co. Ltd, Haikou 570311, China; ²Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400030, China; 1945283808@qq.com

Calculation and Analysis of Audible Noise of Transmission Lines in the Crossing Area

Gonghao Xie¹, Wangling He¹, Wanzhang Fu¹, Lei Lan¹, Changcheng Zhu², Yeqiang Deng¹

¹Wuhan University, China, People's Republic of; ²State Grid Hubei Electric Power Company limited Research Institute; xiegonghao@whu.edu.cn, wanglinghe88@gmail.com, 598682349@qq.com, leilan69@163.com, 1960473996@qq.com, 595236780@qq.com

Investigation of lightning surge effects on a grid-connected PV plant

Pitshou Bokoro, Wesley Doorsamy

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Transient Overvoltage in 10kV Hybrid OHL-Cable System during Energization

Xuefeng Zhao¹, Jiaming Li², Lu Pu¹, Zeli Ju¹, Shuangzan Ren¹, Wei Duan¹, Haofei Sun¹, Minghao Fan³, Xi Chen², Junbo Deng²

¹Electric Power Research Institute of State Grid Shaanxi Electric Power Company, China; ²Xi'an Jiao tong University State Key Laboratory of Electrical Insulation and Power Equipment, China, People's Republic of; ³Electric Power Research Institute of State Grid Anhui Electric Power Company, China; 78345659@qq.com

On the Dynamic Electric Field Distribution of 500kV GIS Basin-type Insulators Under Very Fast Transient Over-voltage

Tao Yang¹, Rui Yang¹, Hengxin He¹, Junjia He¹, Hai Qian², Wenhao Lu², Jun Deng²

¹State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology, China, People's Republic of; ²Maintenance & Test Center, EHV Power Transmission Company, CSG; 2256061385@qq.com

Parameter Identification of Surge Arrester Models Using Levenberg-Marquardt and Shuffled Complex Evolution Methods

Thainá Santos Xavier¹, George Rossany Soares Lira¹, Valdemir Silva Brito²

¹Federal University of Campina Grande, Brazil; ²Federal Institute of Paraiba; george@dee.ufcg.edu.br

Research on Lightning Withstand Level of 110kV Transmission Line Installed Current Limiting Coil

Hansheng Cai¹, Huaifei Chen², Lei Jia¹, Gang Liu¹, Shangmao Hu¹, Hailiang Lu², Xishan Wen²

¹Electric Power Research Institute, CSG, Guangzhou, China; ²School of Electrical Engineering Wuhan University, Wuhan, China; 2012302540120@whu.edu.cn, luhailiang@whu.edu.cn

O-MD4-Monitoring: Oral session for Monitoring and Diagnostics

Time: Tuesday, 11/Sep/2018: 11:00am - 12:30pm · Location: Room 3

Session Chair: Yoshimichi Ohki

Session Chair: Marek Florkowski

Fiber-Enhanced Raman Spectroscopic Monitoring of Fault Characteristic Gases Dissolved in Transformer Oil by Hollow-Core Photonic Crystal Fiber

Jianxin Wang¹, Weigen Chen¹, Fu Wan¹, Pinyi Wang¹, Jiaxuan Wang¹, Haiyang Shi¹, Xiaobo Li², Ronghua Zhang²

¹Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; ²State Grid Dezhou Power Supply Company; wangjianxin16@163.com

Comparative Analysis Between Three Attributes Used for Monitoring High Voltage Insulators

José Alexandre R. Xavier, **José Maurício B. Bezerra**, Ayrilw Manyson C. Arcanjo

UFPE - Universidade Federal de Pernambuco, Brazil; jmbb.ufpe@gmail.com

Condition Monitoring of Metal-oxide Surge Arresters using Leakage Current Signal Analysis

Wesley Doorsamy, **Pitshou Bokoro**

University of Johannesburg, South Africa; pitshoub@uj.ac.za

Energy Monitoring and Control of Distribution Network using Smart Metering

Subba Reddy Basappa, Umanand L

Indian Institute of Science, Bangalore, India, India; sreddy@iisc.ac.in

Substation-oriented PMU placement considering transformer tap settings

Nikolaos M. Manousakis¹, **George N. Korres**²

¹University of West Attica; ²National Technical University of Athens; manousakis_n@yahoo.gr, gkorres@cs.ntua.gr

Nondestructive Testing Method of Weak Adhesion Defects in Composite Insulation Equipment Based on Analysis of Ultrasonic Signal

Sida Zhang¹, Hanqing Wang¹, **Li Cheng**¹, Ruijin Liao¹, Chenjun Guo²

¹State Key Laboratory of Power Transmission Equipment & System Security and New Technology, China, People's Republic of;

²China South Power Grid International Co. LTD.; zsdstar@126.com, chengl16@cqu.edu.cn

O-PA2: Oral session for Power and Industrial Applications

Time: Tuesday, 11/Sep/2018: 11:00am - 12:30pm · *Location:* Room 2
Session Chair: Nicolas Younan

Induced Losses in Non-Magnetically Armoured HVAC Windfarm Export Cables

Dimitrios Chatzipetros^{1,2}, James A. Pilgrim¹

¹University of Southampton; ²Hellenic Cables S.A.; dc2r15@soton.ac.uk

The Research on Selective Discharge Experiment of Double Scaling Wind Turbines

Yeqiang Deng¹, Xlshan Wen¹, Yu Wang¹, Lei Lan¹, Lu Qu², Tianjun Si¹, Jianwei Xu¹, Jian Wang¹

¹Wuhan University, People's Republic of China; ²South China Power Grid Research Institute, Guanzhou, People's Republic of China; dengyeqiang@whu.edu.cn

Two-stage Cascaded EHD Air Pump Evaluation

Antonios Moronis, Emmanouil Fylladitakis, Ioannis Raptis

University of West Attica, Greece; amoronis@teiath.gr

Enhanced Oil Recovery by Repetitive Electrohydraulic Shock Waves: Fracturing and Enhanced-Permeability

Siwei Liu, Yi Liu, Hua Li, Qin Zhang, Fuchang Lin

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Physical Constraints at Design of a High Current Damping Inductor for the High Energy Capacitor Bank

Haibo Wu, Lee Li, Hongyu Dai, Jiaming Xiong, Bin Yu, Mingyang Peng

Huazhong University of Science and Technology, China, People's Republic of; hustwuhb@hust.edu.cn

On the Modelling of a Hybrid HVAC-HVDC Overhead Transmission Line: Techniques and Challenges

Effrosyni Maria Gralista^{1,2}, Madeleine Gibescu¹, Konstantinos Velitsikakis²

¹Eindhoven University of Technology, The Netherlands; ²DNV GL Energy Advisory, The Netherlands; mfroso@gmail.com

O-TM2-Trans: Oral session for High Voltage Testing and Measurement

Time: Tuesday, 11/Sep/2018: 11:00am - 12:30pm · Location: Room 1
Session Chair: William Malcolm McDermid

Voltage Dependence of Dissipation Factor Measurements on High Voltage Instrument Transformers

David Archie Wallace, Joni Klüss, Zeeshan Ahmed

Mississippi State University, United States of America; david@ece.msstate.edu

A Model Considering Deep Saturation of the Iron Core for 10 kV Potential Transformers

Yuan Zhou¹, Cuiru Yang¹, Wenxia Sima², Linglong Cai¹, Xiaochuan Li², Tao Yuan², Yonglai Liu²

¹Electric Power Research Institute of Guangdong Power Grid Co., Ltd., Guangzhou, Guang Dong, China; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing, China; lixiaochuan_cq@cqu.edu.cn

Development of a Pulsed High Frequency Source for Testing Cellulosic Insulation Material for High Voltage Solid State Transformer Applications

Michael Schueller¹, Philipp Schmitt², Stefan Jaufer², Christoph Krause², Giuseppe Gatti², Reto Christen¹, Matthias K. Bucher¹, Jasmin Smajic¹

¹University of applied Sciences Rapperswil, Institute for Energy Research, Switzerland; ²Weidmann Electrical Technology AG, Switzerland; mschuell@hsr.ch

On-line Monitoring of Current Transformer Dielectric Loss Based on Absolute Measurement

Kai Wang¹, Jun Jiang¹, Chaohai Zhang¹, Min Chen², Haojun Liu², Hong Zheng³

¹Nanjing University of Aeronautics and Astronautics, China, People's Republic of; ²State Grid Zhejiang Electric Power Co. Ltd. Research Institute; ³Hangzhou Kelin Electric Power Equipment Co., Ltd; jiangjun0628@163.com

Study on Applying Corona Effect to Prevent Ice Disaster of Transmission Line

Xingliang Jiang, Meilin Zhu, Qin Hu, Yafei Huang, Ledong Hou

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; 467972197@qq.com

Study on MVU Tests Method of ±1100kV Thyristor Valves for HVDC Power Transmission

Chunqiang Su¹, Chen Liu¹, Mingang Zhou¹, Dongfei Huang¹, Qiang Li¹, Yantao Lou²

¹Xi'an High Voltage Apparatus Research Institute Co., Ltd., China, People's Republic of; ²Xi'an XD power systems Co., Ltd., China, People's Republic of; swangq@qq.com, liuchen@xihari.com

P-IS: Poster session for High Voltage Insulation Systems

Time: Tuesday, 11/Sep/2018: 1:45pm - 5:45pm · Location: Poster Area
Session Chair: Pantelis N. Mikropoulos

Study on Electric Field Distribution and Metal Joints Optimization of Insulated Rods for UHV Live Working

Yuqun FANG¹, Guangkai YU², Bin WANG¹, Chen CHEN¹, Tian WU³

¹State Grid Jinhua Power Supply Company, China; ²China Electric Power Research Institute, China; ³Three Gorges University, China; yarchergk@gmail.com

Effect of temperature on dielectric loss factor of biodegradable transformer oil

Maciej Jaroszewski¹, Abderrahmane Beroual², Damian Gołębowski¹

¹Wrocław University of Science and Technology, Poland; ²University of Lyon, Ecole Centrale de Lyon, AMPERE Lab; maciej.jaroszewski@pwr.edu.pl

Analysis of Dielectric Properties and Breakdown Characteristics of Vegetable Insulating Oil With Modified by ZnO Nanoparticles

Gang Chen¹, Jian Li¹, Hua Yin¹, Zhengyong Huang¹, Qian Wang², Lin Liu³, Jianxin Sun³, Jianfeng He¹

¹State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400044, China; ²State Grid Shanxi Electric Power Company, Shanxi 030001, China; ³Jinzhong Power Supply Company of State Grid Shanxi Electric Power Company, Shanxi 030600, China; cq545689552@163.com

Negative Corona Characteristics on RTV SIR Coated Glass Insulating Surface under Ramp High Voltages

Nikolaos C. Mavrikakis, Pantelis N. Mikropoulos

Aristotle University of Thessaloniki, School of Electrical and Computer Engineering, Thessaloniki, Greece; pnm@eng.auth.gr

A study on the Breakdown Characteristics of Natural Ester Based Nanofluids with Magnetic Iron Oxide and SiO₂ Nanoparticles

Georgios D. Peppas¹, Vassilios P. Charalampakos², Eleftheria C. Pyrgioti³, Aristides Bakandritsos⁴, Aikaterini D. Polykrati⁵, Ioannis F. Gonos⁵

¹Raycap, S.A.; ²Department of Electrical Engineering, Technological Educational Institute of Western Greece, Patras, Greece; ³Department of Electrical and Computer Engineering, University of Patras, Patras, Greece; ⁴Department of Physical Chemistry, Palacky University in Olomouc, Czech Republic; ⁵School of Electrical and Computer Engineering, National Technical University of Athens, Athens, Greece; gpeppas@raycap.com

Study on the Motion Pattern of a Spherical Metal Particle in DC GIL

Qianqiu Shao, Wenxia Sima, Potao Sun, Hang Xu, Ze Yin, Zhengzheng Fu

Chongqing University, China, People's Republic of; 1945283808@qq.com

The diagnostic method of decomposed components for sulfur hexafluoride electrical equipment

Qiang YAO¹, Zhicheng LEI², Yulong MIAO¹, Ju TANG², Fuping ZENG²

¹Electric Power Research Institute of Chongqing Power Company Electric Power Research Institute of Chongqing Power Company; ²Wuhan University, China, People's Republic of; 623463348@qq.com

HVDC Cable: LDPE Nano dielectric and its response to low frequencies

NAGESHWAR RAO BURJUPATI, NANDAKUMAR V S, ANJU R K, ASHWIN PARTHASARATHY, KANDIBAN R

CENTRAL POWER RESEARCH INSTITUTE, BANGALORE, INDIA, India; nageshburjupati@gmail.com

Calculation Method of Corona Loss of Transmission Line Based on AC/DC Power Flow

Wenxia Pan, Xin Chen, Yi Li

The College of Energy and Electrical Engineering, Hohai University, China; pxh@hhu.edu.cn, ChenX_hhu@163.com

Study of the Influence of Void Defect Size on Partial Discharge Characteristics in Solid Insulation

Hongtao Li¹, Yongyong Jia¹, Ke Zhao¹, Qian Zhang², Junhao Li², Xutao Han²

¹State Grid Jiangsu Electric Power Company Research Institute, Jiangsu, China; ²Xi'an Jiaotong University, China, People's Republic of; xituhanyutao@qq.com

Study on the Noise Characteristics of 10kV Vegetable Insulating Oil Transformer

Xiangrong Li¹, Jian Li¹, Feipeng Wang¹, Zhenyong Huang¹, Wei Yao¹, Gang Chen¹, Jianfeng He¹, Jiajun Pan¹, Hanxiang wang¹, Yuqing Chen², Wenxiang Mo²

¹State Key Laboratory of Power Equipment & System Security and New Technology, Chongqing University, China, People's Republic of; ²Tests and Research Institute of Guangzhou Power Supply Bureau Co., Ltd, Guangzhou, China, People's Republic of; 20161101007@cqu.edu.cn

Study on Pollution Classification and External Insulation Configuration of ±1100 kV DC Transmission Line

Liang Tian, Ruiping Huang, Jun Zhou, Bo Liu, Songsong Zhou
China Electric Power Research Institute; 251001181@qq.com

Electrical Field Distribution in ±600 kV Converter Transformer Bushing Core with the Application of Epoxy Resin with Nonlinear Conductivity

Jin Li¹, **Boxue Du**¹, Hucheng Liang¹, Meng Xiao¹, Mingli Fu², Yi Jing², Y. Gao¹
¹School of Electrical Engineering & Automation, Tianjin University; ²Electric Power Research Institute, China Southern Power Grid; duboxue@tju.edu.cn

Study on Flashover Characteristic and Critical Flashover Current of icing and polluted 110kV Composite Insulators

Maoqiang Bi¹, Zhangang Yang², Tianyan Jiang¹, Xi Chen¹, You Wang³
¹Chongqing University of Technology, China, People's Republic of; ²State Grid Chongqing Jiangbei Electric Power Supply Branch, China, People's Republic of; ³Chongqing Vocational Institute of Engineering, China, People's Republic of; bimaqiang@cqu.edu.cn

AC Breakdown Characteristics of Air Insulated Sphere-Plane Gaps with Glass Barriers

Yuesheng Zheng¹, Yong Chen¹, Hongzhi Zhang¹, Yuriy V. Serdyuk²
¹Fuzhou University, People's Republic of China; ²Chalmers University of Technology, Sweden; yueshengzheng@fzu.edu.cn

Study on Lightning Protection of Wind Turbine Blades

Qian Wang, Jie Li, Jun Lu
Xi'an University of Technology, China, People's Republic of; qianqian82@126.com, lijierogers@sina.com

Study on the Insulation Reliability Model of Printed Circuit Boards Under Continuous Square Impulse Voltage

Taotao Xiong, Quan Zhou, Tianyan Jiang, Mingqian Wen, **Xi Quyang**
Chongqing University, China, People's Republic of; 201711021036@cqu.edu.cn

Optimal Design of Spacer for High Voltage Gas Insulated Switchgear

HyunWoo Joo, ChaeYoon Bae, JongUng Choi, YoungGeun Kim
LS Industrial Systems, Korea, Republic of (South Korea); hwjoo@lsis.com

Simulation and Analysis on Surface Discharge Development in Composite Dielectrics

CHONG PAN¹, **YOU WANG**²
¹Chengdu Power Supply Company of State Grid, China, People's Republic of; ²Chongqing Vocational Institute of Engineering, China, People's Republic of; emailpc@163.com

Numerical Simulation of Surface Erosion of Pantograph Strip during the Pantograph Lowering Process

Pan Xu, **Guoqiang Gao**, Zefeng Yang, Chengkun Li, Xuwei Duan, Wenfu Wei, Guangning Wu
Southwest Jiaotong University, China, People's Republic of; xnjdggq@163.com

Study on the Influence of slight looseness of steel foot on performance of suspended porcelain insulators

Maoqiang Bi¹, Jinlin Hu², Tianyan Jiang¹, Xi Chen¹, You Wang³
¹Chongqing University of Technology, China, People's Republic of; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400030, China; ³Chongqing Vocational Institute of Engineering, Chongqing, 402260, China; bimaqiang@cqu.edu.cn

Thermal and electric conductivity of insulating oils with magnetite nanoparticles

Aikaterini D. Polykrati¹, C.S. Koutsira¹, Vasilios Charalampakos², A. Kyritsis¹, Georgios Peppas³, Ioannis F. Gonos¹, Eleftheria Pyrgioti³
¹National Technical University of Athens, Greece; ²Technological Educational Institute of Western Greece; ³University of Patras, Greece; apolyk@central.ntua.gr

Performance Evaluation of Polymeric Insulators from a Dynamic Variations Analysis of Voltage Distribution along the String

Victor Andrade L. Ferreira, José Maurício B. Bezerra, Diego S. Lopes
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Predicting Critical Conditions in Polluted Distribution Insulators Using Phase Angle Index of Leakage Current

Mousalreza Faramarzi Palangar¹, Amin Mahmoudi²

¹Babol Noshiravani University of Technology, Iran, Islamic Republic of; ²Flinders University, Australia; r.faramarzi89@gmail.com

Acid Rain Pollution Effect on the Electric Field Distribution of a Glass Insulator

Chibuike Ilomuanya, Shahab Farokhi, Azam Nekahi

Glasgow Caledonian University, United Kingdom; chibuike.ilomuanya@qcu.ac.uk

Effect of electric field and temperature on the diffusion of water molecules in oil - paper insulation system

Wei Wang, Wenyan Dong, Da Jiang, Zhongzheng Ning

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Corona Resistance Improvement of Polyimide Films by Non-Thermal Plasma Modification

Yan Yang

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Electric Field Calculation and Optimization of Shielding Device for Filter Capacitor Tower in ±1100kV Indoor DC Yard

Bo Yue¹, Weigi Li², Jialong Wang^{1,2}, Shuo Wang², Zehua Wu², Zongren Peng²

¹State Power Economic Research Institute, Beijing, 102209, China; ²State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China, People's Republic of; zehua_wu@qq.com

Effect of Accelerated Thermal Aging on the Properties of Paper-Ester Composite Insulation

Harjo Suwarno

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The Electro-Thermal Coupling Computation of Resin Impregnated Paper Oil-SF6 Immersed Bushings

Shiling Zhang¹, Qiang Yao², Chenyu Zhao³

¹State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute, China, People's Republic of; ²State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute, China, People's Republic of; ³State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an 710049, China; zchy9671801@stu.xjtu.edu.cn

Study on the Analysis and Diagnosis of Dissolved Gases in Camellia Insulating Oil

Hanxiang Wang¹, Jian Li¹, Chenmeng Xiang², Zhengyong Huang¹, Feipeng Wang¹, Sijing He¹

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New and Reclamation Transformer Oil Behavior under Accelerated Thermal Aging

Fettouma GUERBAS, L. Adjaout, A. Abada, D. Rahal

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Study on current density and conductivity mathematical model of SF6 under DC uniform field strength

Zhousheng Zhang, Na Dong

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Functionalized high-k Nanowires Polymer Nanocomposites with Enhance Energy Storage Capability

Xingyi Huang, Guanyao Wang, Yingke Zhu, Pingkai Jiang

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Outdoor Insulator Surface Condition Evaluation using Image Classification

Damira Pernebayeva, Diana Sadykova, Alex James, Mehdi Bagheri
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Air Gap Discharge Characteristics and Altitude Correction of 500 kV Tower at Areas Higher than 4000m above Sea Level

Yujian Ding¹, Xiuyuan Yao¹, Ming Liang², Buqiong Xiao³

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Study of field aged transformer insulation oil properties using GC-MS

Muhammad Ali Mehmood, Jian Li, Huang Zhengyong, Wang Feipeng, Muhammad Shoaib Bhutta, Li Xudong, Jawad Ahamd

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Analytical modeling of arc re-ignition conditions on polluted insulating surfaces

Hadjrioua Farid¹, Mahi Djillali¹, Slama Mohammed El Amine²

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Different Approaches for Mathematical Evaluation of Resorption Currents in Nanodielectrics

Jaroslav Hornak, Pavel Trnka, Václav Mentlík, Ondřej Michal, Pavel Totzauer

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Verification of Relative Permittivity Models for Composite Nanodielectrics at Elevated Temperatures

Jaroslav Hornak, Ondřej Michal, Pavel Trnka, Petr Kadlec, Václav Mentlík, Pavel Totzauer

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The Transition of Surface Charge Accumulation Dominating Way in HVDC GIS

Yi Luo¹, Ju Tang¹, Cheng Pan¹, Jia Yin¹, Yongze Zhang², Bo Zhang³, Quansheng Zhu⁴

¹Wuhan University, China, People's Republic of; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, China, People's Republic of; ³Pinggao Group Co., Ltd, State Grid Corporation of China, China, People's Republic of; ⁴State Grid Henan electric power company, State Grid Corporation of China, China, People's Republic of; 328664489@qq.com

Study on the neutral inductance of shut reactor of insulation level for UHV transmission lines

Qian Wang, Wen Sun, Chenjie Ji

Xi'an University of Technology, China, People's Republic of; 420136276@qq.com

O-MD5-Trans: Oral session for Monitoring and Diagnostics

Time: Tuesday, 11/Sep/2018: 2:00pm - 3:30pm · Location: Room 3

Session Chair: Stefan Tenbohlen

Session Chair: Qiang Liu

Sensitivity of Connection Schemes for Detection of Axial Displacement of Transformer Winding by Frequency Response Analysis

Satoru Miyazaki¹, Mehran Tahir², Stefan Tenbohlen²

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Validation of Simulated UHF Electromagnetic Wave Propagation in Power Transformers by Time and Frequency Domain Measurements

Takahiro Umemoto¹, Stefan Tenbohlen²

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Experiences with Measurement and Analysis of the Dielectric Response of Instrument Transformers

Maik Koch¹, Martin Anghuber²

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State Assessment on Distribution Network Equipment Oriented by Big Data Visualization

Yiping Cui, Le Luan, Yuquan Liu, Wenxiong Mo, Hongbin Wang

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Fault prediction of Power Transformer by Association Rules and Markov

Houying Li¹, Youyuan Wang¹, Yigang He², Yushun Zhao², Xuanhong Liang¹

¹Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; ²HeFei University of Technology, HeFei, China; 1374757093@qq.com

The Feasibility Study of ±1100kV On-site Assembled ±1100kV Converter Transformer

Jianxin Guan, Pengfei Jia, Shuqi Zhang, Xinru Yu, Chao Wu

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O-PA3: Oral session for Power and Industrial Applications

Time: Tuesday, 11/Sep/2018: 2:00pm - 3:30pm · Location: Room 2

Session Chair: Yuesheng Zheng

Session Chair: Theofilos Papadopoulos

Improving the Process for Distribution Network Optimization in Medium Voltage Level (11) kV by Developing Short Term Load Forecast Method

Maha Ismail AIDahmi, Omar Reyadh AlAhmad

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Controlled HVDC links between RES and strong or weak power grids: comparative review

Christos Dikaiaikos¹, Panos Papageorgiou², Antonio Alexandridis², George Papaioannou¹

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Calculation of Losses in Three-Core Submarine Cables for Fractional Frequency Transmission Operation

Dimitrios Kossyvakis, Andreas Chrysochos, Konstantinos Pavlou

HELLENIC CABLES, Greece; achrysochos@fulgor.vionet.gr

Simulation of a DC Superconducting Fault Current Limiter for the Design of Online Monitoring System

Jiajun Pan¹, Yaxiong Tan¹, Chao Sheng², Leishi Xiao², Jian Li¹, Weigen Chen¹

¹Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; ²Electric Power Research Institute of Guangdong Power Grid Corporation, Guangzhou 510080, China; tyxtqq@126.com

Enhancement of DUBAL Network Operational Performance Using HTS-FCL

Hamood Naji Ahmed², Noureddine Harid¹, Huw Griffiths¹

¹Khalifa University of Science and Technology, United Arab Emirates; ²Dubai Global Aluminium, Abu Dhabi, United Arab Emirates; noureddine.harid@ku.ac.ae

The simulation model of SFCL and its cooperation with circuit breaker

MingQian Wen, Quan Zhou, Xi Ouyang, Taotao Xiong

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O-TM3-Cables: Oral session for High Voltage Testing and Measurement

Time: Tuesday, 11/Sep/2018: 2:00pm - 3:30pm · Location: Room 1
Session Chair: Krzysztof Siodla

Evaluation, Optimization and Test of a Standard Air-Dielectric Coaxial Cable Filled With Oil for Possible Use in HV Kicker Systems at CERN

Dimitrios Kontelis^{1,2}, Alvaro Ferrero Colomo², Ioannis Gonos¹, Thomas Kramer², Tobias Stadlbauer²

¹National Technical University of Athens, Greece; ²CERN, CH-1211 Geneva 23, Geneva, Switzerland; dimitrios.kontelis@cern.ch

On-Site Acceptance and Diagnostic Testing of Submarine Inter-Array Cables at Offshore Wind Farms using Damped AC

Edward Gulski¹, Rogier Jongen¹, Matthijs de Heus², Aleksandra Rakowska³, Krzysztof Siodla³, Hans Gaal⁴

¹onsite hv solutions ag, Switzerland; ²onsite hv solutions Benelux BV, the Netherlands; ³Poznan University of Technology, Poland; ⁴Visser and Smit Hanab BV, the Netherlands; aleksandra.rakowska@put.poznan.pl

Contemporary Techniques and Case Studies in Offline Condition Assessment of MV Underground Power Cables

Adeola Adebomi, Hein Putter, Philipp Legler

Megger Germany; adeola.adebomi@megger.com

Analysis of Alternative Parameters of Dynamic Resistance Measurement in High Voltage Circuit Breakers

Herbet Filipe Sousa¹, Adiano Costa de Oliveira¹, Henrique Nunes de Santana¹, Edson Guedes da Costa¹, Tarso Vilela Ferreira²

¹Federal University of Campina Grande, Brazil; ²Federal University of Sergipe; edson@dee.ufcg.edu.br

Short-Circuit Making of Medium Voltage Load Break Switches Using a Grid Connected Test Circuit

Philipp C. Jabs¹, Kaveh Niayesh¹, Nina Sasaki Støa-Aanensen²

¹NTNU, Norway; ²SINTEF Energy Research, Norway; philipp.jabs@ntnu.no

Cables XLPE-insulation Residual Life Monitoring

Dmitry A. Polyakov¹, Dmitry A. Yurchuk¹, Konstantin I. Nikitin²

¹Omsk State Technical University, Russian Federation; ²Tyumen Industrial University (Tobolst Industrial Institute), Russian Federation; polyakovdmitry@yandex.ru

O-MD6-Insulators: Oral session for Monitoring and Diagnostics

Time: Tuesday, 11/Sep/2018: 4:00pm - 5:30pm · Location: Room 3

Session Chair: Edson Guedes da Costa

Session Chair: Weigen Chen

Studies on High Voltage Composite Insulators under very low Temperature

Dinesh Sharma, Subba Reddy Basappa

Indian Institute of Science, Bangalore, India, India; ds68006@gmail.com, sreddy@iisc.ac.in

Safety Condition Evaluation of the Contaminated Insulators Based on the Characteristic of the UV images

Shenghui Wang¹, Leilei Niu¹, Nan Li², Fangcheng Lv¹, Yunpeng Liu¹

¹North China Electric Power University, People's Republic of China; ²State Grid Baoding Electric Power Supply Company, People's Republic of China; hdwsh@ncepu.edu.cn, raynewwood@qq.com

110kV Cable Joint Temperature Computation Based on Radial Basis Function Neural Networks

Qinghua Zhan¹, Liezheng Tang², Xiaomei Ou¹, Yijun Liu¹, Ke Tang², Rou Chen², Guowei Li¹, Junbo Wang¹

¹Foshan Power Supply Bureau, China, People's Republic of; ²Wuhan University, China, People's Republic of; tlz9302@163.com

1H NMR Tests on Damaged and Undamaged XLPE Samples

Taiji Wang¹, Lydia Gkoura², Noureddine Harid¹, Georgios Papavassiliou², Huw Griffiths¹

¹Khalifa University of Science and Technology, United Arab Emirates; ²National Centre for Scientific Research "Demokritos", Athens, Greece; wang.taiji@ku.ac.ae, l.gkoura@inn.demokritos.gr, noureddine.harid@ku.ac.ae, g.papavassiliou@inn.demokritos.gr, huw.griffiths@ku.ac.ae

Effects of Suspended Moisture Particles on AC Breakdown Voltage and Electric Field Distribution of Vegetable Insulation Oil

Muhammad Ali Mehmood, Jian Li, Huang Zhengyong, Wang Feipeng, Li Xi, Muhammad Shoaib Bhutta, Li Xudong

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Gas Sensors Based on Flower-like ZnO Structures: Detection of Acetylene Gas Dissolved in Transformer Oil

He Zhang¹, Weigen Chen¹, Zihao Song¹, Zikai Jiang¹, Xiaobo Li², Ronghua Zhang²

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O-PA4: Oral session for Power and Industrial Applications

Time: Tuesday, 11/Sep/2018: 4:00pm - 5:30pm · Location: Room 2

Session Chair: Chijie Zhuang

Session Chair: Thomas Tsovilis

Effect of spark plasma sintering process on dielectric properties of CaCu₃Ti₄O₁₂ ceramics

Chao Xu, Xuotong Zhao, Lulu Ren, Jianjie Sun, Ruijin Liao

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, China, People's Republic of; xuchao1995@cqu.edu.cn

A Research on the Super-hydrophobic Surface Constructing Method for the Out-door Insulator Based on the Recycling of Composite

Xiangjun Zeng¹, Xueer Wang², Li Cheng², Sida Zhang², Ruijin Liao²

¹Electric Power Research Institute. CSG. Guangzhou. China; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, China, People's Republic of; lucarelli@foxmail.com, lucarelli@foxmail.com

Influence of Pulse Bursts on PD Magnitude Distributions in SF₆ Gas under Positive DC Voltage

Xinyu Luo¹, Ju Tang^{1,2}, Cheng Pan², Qiang Yao³, Yulong Miao³

¹State Key Laboratory of Power Transmission Equipment and System Security and New Technology, Chongqing University, China;

²School of Electrical Engineering, Wuhan University, China; ³Electric Power Research Institute of State Grid Chongqing Electric Power Company, Chongqing, China; luoxinyu@cqu.edu.cn

Experimental Study on Reducing Icing on Conductor Using Self-heating Ring

Yafei Huang, Xingliang Jiang, Ledong Hong, Meilin Zhu, Xingbo Han

CHONGQING UNIVERSITY, China, People's Republic of; 1075207751@qq.com

Surge Arrester with High Performance Metal Oxide Varistors for Deeply Suppressing Overvoltage in AC UHV Systems

Pengfei Meng, Yao Zhou, Jinbo Wu, Jun Hu, Jinliang He

Tsinghua University, China, People's Republic of; mpf15@mails.tsinghua.edu.cn

Statistical Study of Needle-plate Partial Discharge Stage Characteristics under DC Voltage

Disheng Wang, Lin Du

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; 20161101032@cqu.edu.cn, dulin@cqu.edu.cn

O-TM4-Lightning: Oral session for High Voltage Testing and Measurement

Time: Tuesday, 11/Sep/2018: 4:00pm - 5:30pm · *Location:* Room 1

Session Chair: Yukio Mizuno

Session Chair: Sergey Korobeynikov

Experimental investigation on corona charge-voltage characteristics in the coaxial configuration under lightning impulse voltages

Evanthia Bousiou, Pantelis Mikropoulos

Aristotle University of Thessaloniki; ebousiou@auth.gr

Investigations of transformer winding responses to standard full and chopped lightning impulses

Marek Florkowski¹, Jakub Furgal², Maciej Kuniewski², Piotr Pająk²

¹ABB Corporate Research; ²AGH University of Science and Technology; maciej.kuniewski@agh.edu.pl

Generation of Non-standard Lightning Impulse Unipolar Waveshapes

Miltom Shigihara, Alexandre Piantini, Celso Braz, Daiana Silva, Clovis Kodaira

University of Sao Paulo, Brazil; piantini@iee.usp.br

Application of Neural Network in Atmospheric Correction of High Voltage Test

Chen Liu, Meng Shen, Qiang Li, Chunqiang Su, Peng Wei

Xi'an High Voltage Apparatus Research Institute; liuchen331@gmail.com

Determination of Corona Inception Voltages of Rod-Plane Electrode Systems

Suat Ilhan¹, Aytug Font¹, Aydogan Ozdemir¹, Fermin Espino-Cortes²

¹ISTANBUL TECHNICAL UNIVERSITY, Turkey; ²SEPI ESIME Zacatenco, Instituto Politécnico Nacional, Mexico; ilhansu@itu.edu.tr

Experimental Study on the Flashover Characteristics of Polluted Insulators under Short-tail Lightning Impulse Waveform

Pei Xiao, Hengxin He, Junjia He, Chen Cheng, Mian Xiao

State Key Laboratory of Advanced Electromagnetic Engineering and Technology, China, People's Republic of;
491950187@qq.com

O-AM1: Oral session for Aging, Space Charge, and Maintenance

Time: Wednesday, 12/Sep/2018: 9:00am - 10:30am · Location: Room 3

Session Chair: Josef Kindersberger

Session Chair: Yu Gao

Discharge Characteristics of Different Air Terminals for Lightning Protection

Chijie Zhuang¹, Zezhong Wang¹, Rong Zeng¹, Lei Liu², Te Li³, Min Li², Yingzhe Cui¹, Jinliang He¹

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Test of Durability of Epoxy Resin Insulation of Converter Valve Saturable Reactor Under Pulsed Voltage and Pulsed Heat

Yi Zhang¹, Zhiquo Tang¹, Chongshan Zhong², Chenhao Zhao¹, Xueheng Gao¹

¹North China Electric Power University, China, People's Republic of; ²China Agricultural University, China, People's Republic of; tangzhyquo@163.com

Theoretical and Empirical-Based Thermal Modelling of Power Transformers

Ahmed Gamil¹, Ali Al-Abadi¹, Franz Schatzl¹, Eberhard Schluecker²

¹SGB Power Transformer (SGB-SMIT Group), Regensburg, Germany; ²Institute of Process Machinery and Systems Engineering (iPAT), Friedrich-Alexander-University, Erlangen, Germany; ahmed.gamil@sgb-smit.group

Partial Discharges under DC Voltage Stress Simulation and Measurement

Lucas Hofer, Josef Kindersberger

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Surface Charge Distribution Measurement before and after DC Flashover: A Novel Insight to the Influence of Surface Charge on Flashover Voltage

Yu Gao, Minghang Wang, Ning Zhao, Ziyi Li, Yong Liu, Tao Han

Tianjin University, China, People's Republic of; hmgaoyu@tju.edu.cn

Effect of UV Radiation on Liquid Silicone Rubber

Qian Wang, Xidong Liang, Weining Bao, Tingyu Jiang, Shaohua Li

Tsinghua University, China, People's Republic of; 769553463@qq.com

O-IS3-Oil: Oral session for High Voltage Insulation Systems

Time: Wednesday, 12/Sep/2018: 9:00am - 10:30am · Location: Room 1

Session Chair: Feipeng Wang

Session Chair: Johan J. Smit

Effect of Different Impurities on Motion Characteristics and Breakdown Properties of Insulation Oil under DC Electrical Field

MIN DAN¹, JIAN HAO¹, WEI QIN¹, RUIJIN LIAO¹, RUNHAO ZOU¹, ZHU MENGZHAO², SHUAIWEI LIANG³

¹Chongqing University, China, People's Republic; ²State Grid Shandong Electric Power Co. LTD. Shandong Electric Power Research Institute Jinan, China; ³State Grid Zhejiang Electric Power Co. LTD. Ningbo Electric Power Company Ningbo, China; 1132319778@qq.com, cquhaojian@126.com, 1132319778@qq.com

Enhancement DC Breakdown and Thermal Property of Oil Impregnated Pressboard by Deposition Al₂O₃/PTFE Nano-Structure Functional Film

Jian Hao^{1,3}, Cong Liu¹, Yanqing Li¹, Shengxun Zheng², Ruijin Liao¹, Qu Zhou⁴

¹The State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, China, People's Republic of; ²State Grid Zhejiang Electric Power CO. LTD. Hangzhou Electric Power Company, Hangzhou, China.; ³College of Power Engineering, Chongqing University, Chongqing 400044, China; ⁴College of Engineering and Technology, Southwest University, Chongqing 400715, China; cquhaojian@126.com

AC Breakdown Strength of Natural Ester Oil based Nanofluid with Graphene Nanosheets

Vasileios Charalampakos¹, Evaggelos Chatzikalymnios², Eleftheria Pyrgioti², Georgios Peppas³, Aristeidis Bakandritsos⁴, Aikaterini Polykrati⁵, Ioannis Gonos⁵

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The Effect of Alumina Nanorods on Breakdown Performance of Transformer oil

Muhammad Rafiq

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Experience with Iso-Paraffinic Insulating Oil for Power Transformers

William Malcolm McDermid, M. Partyka, T. Black

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Suppression of Surface Charge Accumulation of Dry and Oil-impregnated Nomex Paper by Surface Fluorination

Li He, Feipeng Wang, Jian Li, Tao Zhang, Khan Muhammad Zeeshan, Yushuang He, Tianyan Jiang

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O-TM5-Insulation: Oral session for High Voltage Testing and Measurement

Time: Wednesday, 12/Sep/2018: 9:00am - 10:30am · Location: Room 2

Session Chair: Abderrahmane Beroual

Is dry-band characteristic a function of pollution and insulator design?

Maurizio Albano, A. Manu Haddad, Nathan Bungay

Cardiff University, United Kingdom; albanom@cardiff.ac.uk

Creeping Discharge Development Over Insulator Surfaces in Natural Gases: Design and Implementation of Test Procedure

Michail Michelarakis¹, Phillip Widger¹, Abderrahmane Beroual², Abderrahmane (Manu) Haddad¹

¹Advanced High Voltage Engineering Research Centre School of Engineering, Cardiff University, The Parade, Cardiff, United Kingdom; ²University of Lyon, Ecole Centrale de Lyon, Ampere CNRS UMR 5005, 36 avenue Guy Collongue, 69134 Ecully, France; MichelarakisM@cardiff.ac.uk

AC Breakdown Strength and Volume Resistivity Characteristics of Epoxy Resin Composite with Surface Modified Alumina Nanoparticles

Muhammad Zeeshan Khan, Feipeng Wang, Jian Li, Muhammad Arshad Shehzad Hassan, Jawad Ahmad, He Li, Kaizheng Wang

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Breakdown Characteristics of C3F7CN/CO2 Gas Mixtures in Rod-Plane Gaps

Loizos Loizou, Lujia Chen, Qiang Liu

The University of Manchester, United Kingdom; loizos.loizou@manchester.ac.uk

1200KV High Power Testing Laboratory Configuration and Optimized Design Method of Oscillating Circuit

Wenjie Zhou, Shen Hong, Yong Chen, Ling Zhang

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Superimposed voltage testing of HVDC equipment with oscillating impulse voltage

Martin Hallas, Christian Dorsch, Volker Hinrichsen

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P-EM: Poster session for Electromagnetic Fields

Time: Wednesday, 12/Sep/2018: 9:00am - 1:00pm · Location: Poster Area

AC Interference Evaluation of a Cathodically Protected Subsea Structure

Charalambos A. Charalambous¹, Andreas Dimitriou¹, A. Lazari¹, D. Buxton², P. Ernst²

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The electrostatic field between parallel asymmetric cylindrical conductors

Antonios Moronis

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The Effect of Insulation Defects on Electric Field Distribution of Power Cables

Cihat Cagdas Uydur¹, Oktay Arikani², Ozcan Kalenderli³

¹Trakya University, Turkey; ²Yildiz Technical University, Turkey; ³Istanbul Technical University, Turkey; cihatcagdasuydur@gmail.com

Simulation Analysis on Influence of Combustion Particles on the Gap Electric Field under DC Voltage

Ziheng Pu¹, Yuyao Xiong¹, Tian Wu¹, Zejun Lu², Chunhua Fang¹

¹College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, China; ²Wuhan NARI Limited Company, State Grid Electric Power Research Institute, Wuhan, China; pzhdq@ctqu.edu.cn

Digital Filter Based on Chaos Theory Used for Removing Narrow-Frequency-Band Noise in PD Signals

Tianyan Jiang^{1,2}, Shouhua Cheng¹, Xi Chen¹, Maoqiang Bi¹, Xiafei Yang³

¹Chongqing University of Technology, China, People's Republic of; ²State Key Laboratory of Power Equipment & System Security and New Technology, Department of High Voltage and Insulation Engineering, School of Electrical Engineering, Chongqing University; ³China Nuclear Power Engineering Co., Ltd.; 63451449@qq.com, 1309841400@qq.com, 491240310@qq.com, 3342615943@qq.com, 3024195663@qq.com

Survey of Electromagnetic Interference of ± 1100 kV HVDC Project on Communication Network for DC Filter Necessity Research

Yiming Ji¹, Jin Zhang², Pengjiao Zhang³, Bo Yue¹, Yiming Yang¹, Fangjie Wu¹

¹State Grid Economic and Technological Research Institute Co., LTD, China, People's Republic of; ²State Grid Co., LTD, China, People's Republic of; ³Northwest Electric Power Design Institute Co., Ltd, China, People's Republic of; jyiming44@163.com, yuebo@chinasperi.sgcc.com.cn, yangyiming@chinasperi.sgcc.com.cn

Simulation Calculation of Electric Field Protection for Live Working on UHV Transmission Line

Li Zhi¹, YU JIAO ZHANG¹, Xiongfeng Huang¹, YanJun Shen¹, Jiansheng Yuan²

¹China Three Gorges University, China, People's Republic of; ²Tsinghua University China, People's Republic of; zhiwanzhili@126.com, jiao_zyj@163.com, sxdxhuangxf@163.com, 332929061@qq.com, yuan@tsinghua.edu.cn

Electric Field Distribution and Optimization of Different Shielding Device for Composite Insulators in ± 1100 kV Indoor DC Yard

Bo Yue², Shuo Wang¹, Jialong Wang¹, Weiqi Li¹, Chenyu Zhao¹, Zongren Peng¹

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Voltage Distribution Design of a Novel 363kV Vacuum Circuit Breaker

Ai Shaogui¹, Yu Xiao², Huang Yongning¹, Yang Fan², Fan Yiping¹, Li Xing²

¹Electric Power Research Institute of Ningxia Electric Power Company of State Grid Corporation of China; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, School of Electrical Engineering, Chongqing University; yuxiao@cqu.edu.cn

Electric Field Analysis of ± 1100 kV Resin Impregnated Paper UHVDC Wall Bushing under Different Voltage Forms

Chenyu Zhao¹, Zongren Peng¹, Peng Liu¹, Shiling Zhang², Naiyi Li³, Yunhao Mo¹

¹Xi'an Jiaotong University State Key Laboratory of Electrical Insulation and Power Equipment, China, People's Republic of; ²State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute; ³State Grid Zhejiang Electric Power Company Zhejiang Electric Power Research Institute; zchy9671801@stu.xjtu.edu.cn

Research on the Measuring System for IGBT Current Distribution

Xianwei Ma, Mengyue Hu, Heli Meng, Yangchun Cheng, Jun Zhang

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3D Electric Field Simulation of Converter Transformer with Real Insulation Materials Utilized in HVDC Systems

Weidong Sun¹, Lijun Yang¹, Jian Hao¹, Firuz Zare²

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Design of Termination for an AC Disruptive Voltage Test on a 35 kV Cable

Arthur Francisco Andrade, Edson Guedes Costa, Filipe Lucena Medeiros Andrade, Clarice Sofia Henrique Soares, George Rossany Soares Lira

Federal University of Campina Grande, Brazil; george@dee.ufcg.edu.br

P-PA: Poster session for Power and Industrial Applications

Time: Wednesday, 12/Sep/2018: 9:00am - 1:00pm · Location: Poster Area

Numerical and Experimental Analysis of the Aging Impact on the Cooling Capacity of a Natural Ester-Based Oil Used in Power Transformers

Alfredo Ortiz, Fernando Delgado, Félix Ortiz, Inmaculada Fernández, Agustín Santisteban
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Investigation of lightning strike effects on wind turbine critical components

Sokratis Pastromas, Konstantinos Sandros, Konstantinos Koutras, Eleftheria Pyrgioti
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Research on the key technical parameters of the 10kV disconnecter on surge arrester

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2036068004@qq.com, zt5040@163.com, 3448796986@qq.com, wy_20002@163.com

Electric Field Analysis and Structure Design of the Baffle of Bird Guard Used in 220 kV Transmission Line

YanJun KUANG¹, Yanglin LI¹, Yongqing DENG², Daochun HUANG², Zhibin QIU², Yiming XIE²

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The influence of Water and Straw Powders Contaminants on Shell DIALA B Transformer Oil

Moch Dhofir, Rini Nur Hasanah, Hadi Suyono, Hesti Vini Widiastuti, Lestari Ayuningsih, Hery Purnomo
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Equivalent Circuit Parameters of Power Tap-Off from Insulated Shield Wires of High Voltage Transmission Lines at Different Rated Voltages

Guowei Qi¹, Yuesheng Zheng¹, Kai Xia¹, Wenbin Wu², Fuwang Liao², Shengwen Shu²

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Partial Discharges Activity within an Internal Void at AC Voltage Disturbed by High Frequency Components

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Negative Sequence Current Control of Offshore Wind Farm Based on Diode Rectifier HVDC

Sang Heon Chae, Jin Hong Ahn, Min Hyeok Kang, Gi Hoon Kim, Seungmoo Yang, Ho Min Kim, Eel-Hwan Kim
Jeju National University, Korea, Republic of (South Korea); chae@jejunu.ac.kr

A Study on the Operation Method of Hybrid Energy Storage System Connected with Wind Turbine

Min Hyeok Kang, Sang Heon Chae, Jin Hong Ahn, Gi Hoon Kim, Seong Hoon Lee, Seungmoo Yang, Ho Min Kim, Eel-Hwan Kim

Jeju National University, Korea, Republic of (South Korea); minh0131@gmail.com

Multi-objective control of active distribution systems incorporating various types of distributed energy resources

Dimitrios Siagkas, Panagiotis Karafotis, Pavlos Georgilakis

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Multi-Objective Distribution Network Reconfiguration Based on Deep Learning Algorithm

Xingqiang CHEN, Hao TAN, Bing YU, Changxin LI, Xiaoqing CHEN

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Investigating the effect of convection, radiation and solar radiation heat loss on the rating of buried power cables using Finite Element Simulations

Jerry Walker, Taryn Becker

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Key Technology and Engineering Application of the Disassembly-transported UHV AC Transformer

Hui-hao Guo, Min-feng Shao, Sheng-wei Cai, Jing Yin, Hui Li, Jiang-bo Chen, Cheng Chen

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Numerical Calculation of Static Temperature Distribution of Transformer Bushings and Analysis of Influential Factors

Zehua Wu¹, Huidong Tian¹, Haoran Wang^{1,2}, Shiyi Zhou¹, Ran Shi¹, Liu Peng¹, Zongren Peng¹

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Thermal Simulation Analysis of Temperature Distribution Characteristics in 220kV GIS

Shanyuan Sun¹, Liang Zhang¹, Junhao Li¹, Xutao Wu², Xiuguang Li², Bo Ma², Pei Ding²

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Design and Construction of a Sensitive Electronic Control System for the Injection of Fast Transient Pulses into a Current Measurement System

Nicolaas Oosthuisen¹, Jerry Walker²

¹VAAL UNIVERSITY OF TECHNOLOGY, South Africa; ²VAAL UNIVERSITY OF TECHNOLOGY, South Africa; nicon@telkomsa.net

Experimental study on thermal shock damage characteristics of pantograph strip

Yijuan Song, Wenfu Wei, Zefeng Yang, Ming Lu, Guoqiang Gao, Guangning Wu

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A New Method on Calculation of Lightning Trip Rate of 35 kV or Under Overhead Distribution Lines in Ungrounded Neutral Point System

Muliang Cai¹, Jian Wang², Yeqiang Deng², Huayun Wang¹, Ziqiang Wei³, Yu Zhang¹, Yu Wang², Xishan Wen², Yi An¹, Zhixiang Deng¹

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GIS Implementation for Small Hydraulic Power Plants Placement

Konstantin Nikishin¹, Ekaterina Tolstikhina², Eugeny Golovan³, Anton Pletyonkin³

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A Fast, High-Voltage, Pulse Power Driving Circuit for Copper-Halide Lasers

Basilios S. Tsikimis, Tomas Ch. Chardalias, Athanasios K. Ftoulis, John M. Koutsoubis, Christos X. Manasis

Technological Educational Institute of Sterea Ellada, Greece; vtzikimis@gmail.com

Study on fault current suppression and commutation failure in inverter side of ±1100kV DC system

Ziyuan REN, Jiangtao LI, Jiaxin HE, Yi SUN, Yuhao LIU

Xi'an Jiaotong University, China, People's Republic of; 1697028742@qq.com

Application of a Linear Transformer Driver (LTD) to Dielectric Barrier Discharge

Xin Feng¹, Haiyun Luo², Jiangtao Li¹, Chenjie Li¹, Yifeng Wang¹

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Application of Elman Neural Network in Top Oil Temperature Prediction of Transformer

Xiaoping Su¹, Chong Pan¹, Jingxin Zou², Xiaolei Yang¹

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O-AM2: Oral session for Aging, Space Charge, and Maintenance

Time: Wednesday, 12/Sep/2018: 11:00am - 12:30pm · Location: Room 3

Session Chair: Michael Danikas

Session Chair: Joni Kluss

Rubber Bladder Puncture - A case Study

Issouf Fofana¹, Eduardo Briosso²

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Accumulation Characteristics of Surface Charge on a Cone-type Model Insulator under DC Voltage

Boya Zhang^{1,2}, Zhe Qi², Wenqiang Gao², Guixin Zhang²

¹State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Shaanxi 710049, China;

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Mapping of discharge clusters in void based on surface resistivity

Marek Florkowski¹, Barbara Florkowska², Maciej Kuniewski², Paweł Zydroń²

¹ABB Corporate Research, Kraków, Poland; ²AGH University of Science and Technology, Kraków, Poland;
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Electrical Treeing Initiation in Polypropylene under Low Temperature with Different Power Frequencies

Lewei Zhu, Boxue Du, Tao Han, Jingang Su, Zhonglei Li, Jin Li

School of Electrical and Information Engineering, Tianjin University, China, People's Republic of; duboxue@tju.edu.cn

Long-Term Performance of Switch Blade Restraint for Safe Operation during Maintenance

Joni Kluss, David Wallace, Zeeshan Ahmed

Mississippi State University, United States of America; joni@ece.msstate.edu

Impact of Thickness on Space Charge and Breakdown Field of XLPE Insulation

Zhipeng Ma, Lijun Yang, Yuan Yuan, Haoran Bian, Muhammad Shoaib Bhutta

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; cqrmzp@sina.com

O-IS4-Oil: Oral session for High Voltage Insulation Systems

Time: Wednesday, 12/Sep/2018: 11:00am - 12:30pm · Location: Room 1

Session Chair: Konstantin Papailiou

Session Chair: Rainer Patsch

AC Breakdown Characteristics of A Novel Three-Element Mixed Insulation Oil for Power Transformer

Dawei Feng¹, Jian Hao¹, Qian Wang², Xiong Liu², Ruijin Liao¹, Lijun Yang¹

¹Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; ²State Grid Chongqing Electric Power CO. LTD. Chongqing Electric Power Research Institute; josaturday@163.com

Elimination of DBDS in mineral insulating oil by sodium reagent

Yuncaï Lu¹, Dong Ding², Chao Wei¹, Jiang Zhang², Lijun Yang²

¹Electric Power Research Institute of State Grid Jiangsu Power Grid Co., Ltd., China, People's Republic of China; ²Chongqing University, China, People's Republic of China; adang91@yeah.net

Positive Streamer Initiation and Propagation in a Synthetic Ester Liquid under Lightning Impulse in Semi-uniform Field

Shuhang Shen, Qiang Liu, Zhongdong Wang

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A Comparative Study of Natural Ester and Synthetic Ester based Nanofluids with TiO₂ Nanoparticles

Vassilios Charalampakos¹, Theodoros Fanariotis², Eleytheria Pyrgioti², Georgios Peppas³, Argiris Kolokithas⁴

¹Technological Educational Institute of Western Greece, Department of Electrical Engineering, Greece; ²University of Patras, Department of Electrical and Computer Engineering, Greece; ³Raycap S.A., Greece; ⁴University of Patras, Department of Material Science, Greece; thodoris.fanariotis@gmail.com

Modelling and Measurement of the Dielectric Behavior of Mineral Oil

Hans-Peter Oeftering¹, Patrick Rumpelt², Andreas K uchler¹, Frank Jenau², Ronny Fritsche³

¹FHWS University of Applied Sciences Wuerzburg-Schweinfurt, Germany; ²TU Dortmund, Germany; ³Siemens AG, Germany; hans-peter.oeftering@fhws.de

Comparative Study on the AC Breakdown Voltage of Transformer Mineral Oil with Transformer Oil-based Al₂O₃ Nanofluids

Usama Khaled¹, Abderrahmane Beroual²

¹King Saud University, College of Engineering, Department of Electrical Engineering, Saudi Arabia; ²University of Lyon, Ecole Centrale de Lyon, AMPERE Lab CNRS UMR 5005, France; Abderrahmane.Beroual@ec-lyon.fr

O-TM6-Sponsors: Oral session for High Voltage Testing and Measurement

Time: Wednesday, 12/Sep/2018: 11:00am - 12:30pm · *Location:* Room 2

Session Chair: Jerry Walker

Session Chair: Panagiotis Svarnas

Intercomparison of reference measuring systems for lightning impulses between three National Metrology Institutes

Johann Meisner¹, Alf-Peter Elg², Jari Hällström³, Stephan Passon¹, Jussi Havunen³, Anders Bergman², Mathias Nordlund²

¹Physikalisch-Technische Bundesanstalt, Germany; ²RISE – Research Institutes of Sweden; ³VTT Technical Research Centre of Finland Ltd, Centre for Metrology MIKES; stephan.passon@ptb.de

New modular test system for testing super long cables

Thomas Steiner, Bilinski Enrico, Siebert Günther

HIGHVOLT Prüftechnik Dresden GmbH, Germany; bilinski@highvolt.de

Current Step Generation and Measurement with Nanosecond Rise Time using Coaxial Cable Generator

Muhammad Ziaur Rehman¹, Jari Hällström², Jussi Havunen²

¹Aalto University, Finland; ²VTT Mikes, Finland; muhammad.rehman@aalto.fi

Characterization and Verification of Suitability of a Digitizer for Lightning Impulses

Tim Christoph Schlüterbusch¹, Stephan Passon¹, Johann Meisner¹, Zhaozhi Long²

¹Physikalisch-Technische Bundesanstalt, Germany; ²CEPRI China Electric Power Research Institute; tim-christoph.schlueterbusch@stud.hs-hannover.de

PD measurement at Large Capacitors Using a Modified HFCT

Andrei Marinescu¹, Ionel Dumbrava¹, Lucian Mandache²

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Superimposed Impulse Voltage Test for DC-Cables

Andreas Voss

Haefely Test AG, Switzerland; avoss@haefely.com

P-MD: Poster session for Monitoring and Diagnostics

Time: Wednesday, 12/Sep/2018: 1:45pm - 5:45pm · Location: Poster Area

Experimental Study of Double Partial Discharge Source Location in oil Based on Conformal Ultrasonic Array Sensor

Chengliang Wang¹, Han Wu², Si Li³, Xubi Liu¹, Xianqiang Yue¹, Jiantao Zhang²

¹Jiangsu Frontier Electric Technology co., Ltd, Nanjing 211102, Jiangsu Province, China; ²Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ³State Grid Beijing Electric Power Company Information & Telecommunication Branch, Beijing 100070, China; 1535234222@qq.com, 1347992367@qq.com, 1543546322@qq.com, 1834673464@qq.com, 1344568455@qq.com, 15176315831@163.com

Detection of furfural in oil based on surface enhanced Raman spectroscopy

Haiyang Shi, Weigen chen, Xiaobo Li, Fu Wan, Shuhua Zhang, Pinyi Wang, Jianxin Wang, Weiran Zhou

Chongqing University, China, People's Republic of; shihaiyang@cqu.edu.cn, wangjianxin16@163.com

Dissolved Gas Diffusion Coefficients and Properties in Camellia Insulating Oil

Jianfeng He¹, Jian Li¹, Jinghan Zhou¹, Gaolin Wu², Qian Wang², Yong Li², Yongfu Li², Qiang Wang³, Li Han⁴, Xinting Wu⁴

¹State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400044, China; ²State Grid Chongqing Electric Power Co. Electric Power Research Institute, Chongqing 401123, China; ³State Grid Shanxi Electric Power Company, Shanxi 030001, China; ⁴Jinzhong Power Supply Company of State Grid Shanxi Electric Power Company, Shanxi 030600, China; Heif@cqu.edu.cn

Research on Defect Pattern Recognition of GIS Equipment Based on X-ray Digital Imaging Technology

Xianhai Pang¹, Yanxun Qi², Xiaofeng Li³, Han Wu⁴, Jing Hao⁵, Qing Xie⁶

¹State Grid Hebei Electric Power Research Institute, State Grid Hebei Electric Power Supply Co., Ltd., Shijiazhuang 050000, Hebei province, China; ²Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ³State Grid Hebei Electric Power Research Institute, State Grid Hebei Electric Power Supply Co., Ltd., Shijiazhuang 050000, Hebei province, China; ⁴Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ⁵State Grid Hebei Electric Power Research Institute, State Grid Hebei Electric Power Supply Co., Ltd., Shijiazhuang 050000, Hebei province, China; ⁶Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; 1534244523@qq.com, 1429260901@qq.com, 1535234562@qq.com, 1347992367@qq.com, 1642345733@qq.com, xq_ncepu@126.com

Analysis of correlation between Internal discharge in GIS and SF6 decomposition products

Xianhai Pang¹, Han Wu², Jin Pan³, Yanxun Qi⁴, Xiaofeng Li⁵, Jiantao Zhang⁶, Qing Xie⁷

¹State Grid Hebei Electric Power Research Institute, State Grid Hebei Electric Power Supply Co., Ltd., Shijiazhuang 050000, Hebei province, China; ²Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ³State Grid Hebei Electric Power Research Institute, State Grid Hebei Electric Power Supply Co., Ltd., Shijiazhuang 050000, Hebei province, China; ⁴Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ⁵State Grid Hebei Electric Power Research Institute, State Grid Hebei Electric Power Supply Co., Ltd., Shijiazhuang 050000, Hebei province, China; ⁶Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ⁷Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; 1231241412@qq.com, 1347992367@qq.com, 1241123423@qq.com, 1429260901@qq.com, 175366435@qq.com, 143776264@qq.com, xq_ncepu@126.com

Comparison of FRA Data measured by Different Instruments with Different Frequency Resolution

Satoru Miyazaki¹, Yoshinobu Mizutani¹, Mehran Tahir², Stefan Tenbhlen²

¹Central Research Institute of Electric Power Industry, Japan; ²University of Stuttgart; m-satoru@criepi.denken.or.jp

Partial Discharge Characteristics of Surface Defect in SF6 Under Oscillating Impulse Voltage

Xutao Han, Peichuan Pang, Liang Zhang, Qian Zhang, Junhao Li

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High Frequency Alternating Current (AC) Tangent Delta Measurement Technique for Underground Power Cable System

Ahmad Basri A. Ghani¹, Chandan Kumar Chakrabarty², Agileswari K Ramasamy², Avinash Ashwin Raj¹, Huzainie Shafi A. Halim¹, Navitharshaani Permal², Michael G Danikas³

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The Simulation Study of the Influence of the Conformal Array Vector Curvature on the Direction-finding Precision of the PD Source

Junpeng Ma¹, Yanxun Qi², Zixuan Zhang³, Xianbiao Yang¹, Xubi Liu¹, Jiantao Zhang²

¹Jiangsu Frontier Electric Technology co., Ltd, Nanjing 211102, Jiangsu province, China; ²Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense, North China Electric Power University, Baoding 071003, China; ³Hengshui High School of Hebei, Hengshui 053000, Hebei province, China; 1535234222@qq.com, 1429260901@qq.com, 1543546322@qq.com, 1834673464@qq.com, 175366435@qq.com, 15176315831@163.com

Condition Assessment of XLPE Cable based on HV Lightning Impulse

Wei Zhao¹, You Fang¹, Yongsheng Duan¹, Tao Zhou¹, Minmin Wei¹, Jiamin Kong², Kai Zhou², Shilin Zhao²

¹Kunming Power Supply Bureau in Yunnan Electric Power Grid Co., Ltd.; Kunming, 650200, China; ²School of Electrical Engineering and Information, Sichuan University, Chengdu, 610065 China; freak_biq@163.com

Study on Vibration Distribution Characteristics of a Three-Phase Three-Limb Transformer Core

Chunhui Gu¹, Wenxiong Mo¹, Weifeng Lu², Lin Gan¹, Yuquan Liu¹, Yong Wang¹

¹Guangzhou Power Supply Co. Ltd. , China Southern Power Grid Co. Ltd. Guangzhou, China; ²State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University Xi'an, China; lwfasa@stu.xjtu.edu.cn

Transient Characteristic Parameters Monitoring and Diagnosis of the Hybrid HVDC Circuit Breaker

Han Yan¹, Lin Du¹, Yaxiong Tan¹, Xueguang Wu²

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On-site Detecting Method for the Loss Characteristic in 110kV Power Transformer

Ronglun Zhang, Shuai Wang, Haibao Mu, Guanjun Zhang, Song Huang

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Partial discharge measurements and techniques for pattern recognition and life prediction of medium voltage XLPE cables

Zeeshan Ahmed, Joni Klüss, David Wallace

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IoT Application in Transformer Fault Prognosis Using Vibration Signal

M. Bagheri², V. Nurmanova², A. Zollanvari², S. Nezhivenko², B.T. Phung¹

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High Impedance Fault Detection by Convolutional Deep Neural Network

Tharmakulasingam Sirojan, Shibo Lu, B.T. Phung, Daming Zhang, Eliathamby Ambikairajah

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Mechanical Features Extraction of On-Load Tap-Changer Based on Multi-Wavelet Transform

Xiujin Li¹, Tuoyu Gao¹, Zhixian Zhang², Jing Zhang¹

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The Influence of Sample Configuration on PD Frequency at DC Voltage

Cheng Pan, Wenbin Song, Ju Tang, Yi Luo, Xinyu Luo

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Simulation Study on the Vibration Characteristics and Vibration Fault Propagation of Insulated Metal-Enclosed Switchgear (GIS)

Qian Wang², Xiping Jiang², Jianwen Tan¹, Jian Hao¹, Zheng Liao¹, Gaolin Wu²

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Experimental Investigation on the Propagation Characteristics of UHF signals in an Actual 110kV Power Transformer

Jinchao Du^{1,2}, Chengzhi Zhu³, Weigen Chen¹, Zhixian Zhang¹, Stefan Tenbohlen²

¹Chongqing University, China; ²University of Stuttgart, Germany; ³State Grid Zhejiang Power Company, China; dujinchao@cqu.edu.cn

Correlation Characteristics Between Partial Discharge Quantity and SF6 Decomposition Component Under Negative DC

Yulong Miao¹, Dong Yang², Fuping Zeng², Ju Tang²

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Condition assessment of 230 kV cables at a power plant. Study of remaining life and life extension

Aitor Kortajarena¹, Imanol Loureiro¹, Mikel Saralegi¹, Sebastian Moreno²

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Return Voltage Measurements - a Promising Tool for the Diagnosis of the Insulation Condition of Power Transformers

Rainer Patsch

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Design and Application of an UHF Microstrip Circular Antenna for Partial Discharges Detection in Power Transformers

George Victor Rocha Xavier, Edson Guedes da Costa, Alexandre Jean René Serres, Herbet Filipe Santos Sousa, Adriano Costa de Oliveira, Luiz Augusto Medeiros Martins Nóbrega

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Instrumental Inspection Methodology to Evaluate Corrosion in Transmission Line Glass Insulator Metallic Pins

Ricardo Bezerra¹, Edemir Luiz Kowalski², Fernando Wilson Concecao¹, Jose Maria Teixeira Jr¹, Oswaldo Santos Filho¹

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A Structure for Automatically Extracting and Identifying Internal Overvoltage Measured in Distribution Networks Based on FSWT-SSAE

Xun Zhang¹, Han Zhang², Rongbin Xie¹, Zhengzheng Fu², Lijin Zhao¹, Huarong Zeng¹, Yi Wen¹, Wenxia Sima²

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Fault Diagnosis Methods for Vegetable Oil Transformers

Shiyue Du, Haoxi Cong, Qingmin Li

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Study on Residual Life Prediction Method of Basin-type Insulator Based on Activation Energy

Peng Ren¹, Haoxi Cong¹, Qingmin Li¹, Hu Jin², Ruihai Li²

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Polarisation mechanisms and their effects in cable joints

Theresa Joubert, Jerry Walker

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Application of Raman Spectroscopy for the Analysis of Methyl Acetate Dissolved In Transformer Oil

Zhaoliang Gu¹, Wenbing Zhu¹, Mengzhao Zhu¹, Di Wu², Jiabin Zhou¹, Jian Wang¹, Qingdong Zhu¹, Weigen Chen³

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Transformer Fault Diagnostics- Feature Selection for Classification (Artificial Intelligence Techniques)

Tamilalagan Natarajan

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A Temperature Monitoring System for SF6 Circuit Breaker Quenching Pot Based on Temperature Field Analysis

Chen Xingang, Li Changxin, Ma Jun

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A generalized model for wind turbine anomaly identification using combination prediction approach and information entropy

Peng Sun, Xiaokuo Kou, Gang Fu

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Transient Temperature Rise Characteristic of Oil Immersed Distribution Transformer

Hongbin Wang¹, Wenxiong Mo¹, Kuang Yin¹, Wei Cao², Yin Qin¹, Yadong Fan², Lin Gan¹, Jianguo Wang²

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Only Divide Data: Mechanical Fault Severity Diagnosis Method of High Voltage Circuit Breaker

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Research on SF6 Sulfur-containing Decomposition Components by Different Metallic Wire-type Free Conducting Particles under Positive DC Partial Discharge

Zhengqin Cao¹, Ju Tang^{1,2}, Fuping Zeng²

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Laboratory Experimental Research on Circuit Breaker Extinguishing Performance

Wei Wang¹, Zhongzheng Ning¹, Bo Zhang², Dong Wang², Xingquan Huang², Wenyan Dong¹, Da Jiang¹

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A comparative study on infrared detection and ultrasonic detection of power distribution equipment

Qian Wang, Chenjie Ji, Jinge Sun, Wen Sun

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Equivalence Analysis of Off-line Test and On-line Detection Technology Based on Data Accuracy

Rongbin Xie¹, Chunlei Ma¹, Jing Xue¹, Yu Chen², Youyuan Wang², Leifeng Huang²

¹Guiyang power supply bureau, China Southern Power Grid; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University,; 251353878@qq.com

Fiber Optic Fabry-Perot Sensor with Stabilization Technology for Acoustic Emission Detection of Partial Discharge

Wei-chao ZHANG^{1,2}, Qi-chao CHEN¹, Li-yong ZHANG², Hong ZHAO¹

¹Harbin University of Science and Technology, Harbin, Heilongjiang Province, People's Republic of China; ²FuTong Group Co., Ltd. , Hangzhou, Zhejiang Province, People's Republic of China; weichaozhang@163.com

Research of the vibration characteristics in GIS Disconnecter under different Contact State

Yong-yong Jia¹, Bang Wu², shanyuan Sun², Jinggong Yang¹, Siqi Song¹, Junhao Li²

¹State Grid Jiangsu Electric Power Company Research Institute, China, People's Republic of; ²State Key Laboratory of Electrical Insulation and Power Equipment in Xi'an Jiaotong University; 15105168898@163.com

The Influence of Free Wire-type Conducting Particles on SF6 Sulfur-containing Decomposition Components Under Positive DC Partial Discharge

YongJian ZHOU¹, Fuping ZENG², Zhengqin CAO¹, Ju TANG^{1,2}, Qiang YAO³, Yulong MIAO³

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Instrumentation for Monitoring and Analysis of Partial Discharges: Viewer and Report Generator

Helio Amorim³, Vinicius Landeira¹, Andre Tomaz⁴, Daniel Argolo²

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Power Transformer Fault Diagnosis Model Based on Association Rules Analysis

Rongbin Xie¹, Chunlei Ma¹, Jing Xue¹, **Xuanhong Liang**², YouYuan Wang², Houying Li²

¹Guiyang Power Supply Company, China Southern Power Grid, China, People's Republic of; ²Chongqing University, China, People's Republic of; liangxh1@126.com

Generation of Reproducible Reference Insulation Defects in Experimental Tests Cells for Controlled PD monitoring

Fernando Alvarez¹, Fernando Garnacho², Ángel Ramírez², **Eduardo Arcones**¹, Pablo García¹, Carlos Alberto Vera¹

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O-AM3: Oral session for Aging, Space Charge, and Maintenance

Time: Wednesday, 12/Sep/2018: 2:00pm - 3:30pm · *Location:* Room 3

Session Chair: Issouf Fofana

Session Chair: Boxue Du

Aging Degradation of Insulation Paper in Power Transformers by XRD Method

Lei Peng, Qiang Fu, Musong Lin, yihua Qian, Wangyan Lv

Electric Power Research Institute, Guangdong Power Grid Co., Ltd., China, People's Republic of; penglei1025@whu.edu.cn

Study on the Mechanism of Thermal Aging Performance of Insulation Paper Under the Effect of Multiple Corrosive Sulfides

Minhao Zhang¹, Haoxi Cong¹, Xiang Shu¹, Shiyue Du¹, Qingmin Li¹, Hu Jin²

¹North China Electric Power University, China, People's Republic of; ²Electric Power Research Institute, China Southern Power Grid; cong haoxi@ncepu.edu.cn

Effect of different curing parameters on UV aging resistance of silicone rubber

Ying Lin¹, Liming Wang¹, Fanghui Yin¹, Masoud Farzaneh², Siming Gao¹

¹Graduate School at Shenzhen, Tsinghua University, China, People's Republic of; ²Université du Québec à Chicoutimi; dr.lynnlin@foxmail.com

Effect of thermal aging on DC conductivity of nano-CB/XLPE insulating composites

Changyou Suo, Yao Qin, Zhonghua Li

Harbin University of Science and Technology, China, People's Republic of; drzhzhi@hrbust.edu.cn

Short Time Breakdown and Long Time Electrical Aging of Nano and Micro Particles/Epoxy Composites

Zhe Li, Gehao Sheng, Xiucheng Jiang

Shanghai Jiao Tong University, China, People's Republic of China; zhe_li@sjtu.edu.cn

CFD Investigation of Temperature Distributions by Non-uniform Heat Losses inside Windings

Saeed Khandan Siar, Stefan Tenbohlen

University of Stuttgart, Germany; saeed.khandan@ieh.uni-stuttgart.de

O-IS5-Insulators: Oral session for High Voltage Insulation Systems

Time: Wednesday, 12/Sep/2018: 2:00pm - 3:30pm · *Location:* Room 1

Session Chair: Manu Haddad

Session Chair: Bo Zhang

Study on the Icing Accretion Characterization of Porcelain and Glass Insulator

Tian Liang, Zhijin Zhang, Xingliang Jiang, Lichun Shu, Jianlin Hu, Qin Hu

Chongqing University, China, People's Republic of; liangtian@cqu.edu.cn

Contamination Characteristics of Suspension Composite Insulators in Wind Tunnel under Energized Condition

Xinhan Qiao, Zhijin Zhang, Xingliang Jiang, Lichun Shu, Jianlin Hu, Qin Hu

Chongqing University, China, People's Republic of; qiaoxinhan@cqu.edu.cn

A new model for polluted insulators flashover under HVDC

Tarek Chihani¹, Abdelouahab Mekhaldi¹, Abderrahmane Beroual², Madjid Tegar¹

¹Ecole Nationale Polytechnique, Algeria; ²Ecole Centrale de Lyon, France; Abderrahmane.Beroual@ec-lyon.fr

A Study on Artificial-Natural Snow Accretion and Flashover Characteristics of 110kV Post Insulators

Jianlin HU, Wei MENG, Hongchun YANG, Ke Ke, Xingliang JIANG, Lichun SHU

College of Electrical and Electronic Engineering, Chongqing University, China, People's Republic of; 20161102063t@cqu.edu.cn

A Predictive Dynamic Model of Creeping Discharge Along Solid Insulator in Air at Atmospheric Pressure

Mohammed El Amine SLAMA¹, Abderrahmane BEROUAL², Abderrahmane HADDAD¹

¹University of Cardiff, United Kingdom; ²Ecole Centrale de Lyon, France; SlamaME@cardiff.ac.uk

The Influence of Kraft Papers and Mica Insertion on the Insulator Leakage Current of Coaxial Electrodes

Hadi Suyono, Moch Dhofir, Rini Nur Hasanah, Rifka Agustina, Sinta Dwiferma

Faculty of Engineering - Brawijaya University, Indonesia; hadis@ub.ac.id

O-TM7-PD: Oral session for High Voltage Testing and Measurement

Time: Wednesday, 12/Sep/2018: 2:00pm - 3:30pm · Location: Room 2
Session Chair: Davide Fabiani

Study on Interference of Partial Discharge Test of 750kV Shunt Reactor in Substation

Jiaxin He, Jiangtao Li, Ziyuan Ren, Yi Sun, Yuhao Liu

Xi'an Jiao Tong University, China, People's Republic of; 270295557@qq.com

De-noising of GIS partial discharge signal corrupted with narrow-band noise using Shannon wavelet

Yulong Miao¹, Siyuan Zhou², Ju Tang², Xiaying Zhang², Fuping Zeng², Yin Zhang²

¹Electric Power Research Institute, State Grid Chongqing Electric Power Company, Chongqing 401123, China; ²wuhan university, China, People's Republic of; 13527526963@163.com

Partial Discharges and Breakdown of Protrusion in GIS under Oscillating Lightning Impulses

Liang Zhang, Xutao Han, Cong He, Junhao Li

Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, China, People's Republic of; zhanqliang129@stu.xjtu.edu.cn

Background Noise of Partial Discharge Detection and Its Suppression in Complex Electromagnetic Environment

Chenxi Ma, Han Li, Wenjun Zhou, Jianhui Yu, Lingzhi Wang, Shuai Yang, Shizhuo Hu

School of Electrical Engineering, Wuhan University, China, People's Republic of; li_han@whu.edu.cn

Effect of Fluorination and Isothermal Crystallization on Polypropylene Electret Fiber Films for Transformer-oil Filtration

Feipeng Wang, Chunxiang Wan, Jian Li, Zhengyong Huang, Fan Fan, Gang Wen

Chongqing University, China, People's Republic of; fpwang@cqu.edu.cn, wan_cx@cqu.edu.cn

Streamer Mode Effect on Impulse Breakdown Characteristics in Mineral Oil Gap

Tao Zhao^{1,2}, Xiangrui Cheng^{1,2}, Yunpeng Liu^{1,2}, Fochi Wang^{1,2}, Fangcheng Lv^{1,2}, Nijie Chao^{1,2}

¹Hebei Provincial Key Laboratory of Power Transmission Equipment Security Defense; ²North China Electric Power University, People's Republic of China; T.Zhao@ncepu.edu.cn

O-AM4: Oral session for Aging, Space Charge, and Maintenance

Time: Wednesday, 12/Sep/2018: 4:00pm - 5:30pm · Location: Room 3
Session Chair: Yasuhiro TANAKA

Effect of Low Molecular Weight Acids and Moisture on Space Charge of Oil Impregnated Paper Insulation

Zhou Mu, S.Y Matharage, Zhongdong Wang, Qiang Liu

The University of Manchester, United Kingdom; qiang.liu@manchester.ac.uk

Effect of Thermally Induced Self-assembly of β Nucleating Agents on Space Charge in Isotactic Polypropylene

Ling Zhang^{1,2}, Zhaowei Peng¹, Yuanxiang Zhou^{1,3}, Yonggang Guan¹

¹State Key Laboratory of Control and Simulation of Power Systems and Generation Equipment, Department of Electrical Engineering, Tsinghua University, Beijing 100084, China; ²State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an 710049, China; ³School of Electrical Engineering, Xinjiang University, Urumqi 830047, China; zhangling15@tsinghua.edu.cn

Empirical Conductivity Equation for the Simulation of Space Charges in Polymeric HVDC Cable Insulations

Christoph Joergens, Markus Clemens

UNIVERSITY OF WUPPERTAL, Germany; joergens@uni-wuppertal.de

Influence of Field Strength and Temperature on the Space Charge Distribution in Epoxy under DC Stress

Thomas Wendel¹, Josef Kindersberger¹, Maria Hering²

¹Technical University of Munich - Chair of High Voltage Engineering and Switchgear Technology, Germany; ²Siemens AG, Energy Management Division, Germany; thomas.wendel@tum.de

PEA Space Charge Performance of HTV Silicone Rubber in the Process of Water Permeation

Tingyu Jiang, Xidong Liang, Shaohua Li, Weining Bao, Qian Wang

Tsinghua University, China, People's Republic of; qwang16@mails.tsinghua.edu.cn

High Repetition Rate Space Charge Measurement of Heat-treated Low-density Polyethylene at Prebreakdown

Ling Zhang^{1,2}, Zekai Lu³, Zixia Cheng³, Yuanxiang Zhou^{1,4}, Xiaoyang Cui⁵

¹State Key Laboratory of Control and Simulation of Power Systems and Generation Equipment, Department of Electrical Engineering, Tsinghua University, Beijing 100084, China; ²State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an 710049, China; ³School of Electrical Engineering, Zhengzhou University, Zhengzhou 450001, China; ⁴School of Electrical Engineering, Xinjiang University, Urumqi 830047, China; ⁵Department of Chemical Engineering, Tsinghua University, Beijing 100084, China; zhangling15@tsinghua.edu.cn

O-IS6: Oral session for High Voltage Insulation Systems

Time: Wednesday, 12/Sep/2018: 4:00pm - 5:30pm · *Location:* Room 1
Session Chair: Masoud Farzaneh

Micro Structural and Electrical properties of Liquid Silicone Rubber Used for External Insulation

Sijiao Wang¹, Zhimin Dang¹, Junwei Zha²

¹Tsinghua University, China, People's Republic of; ²University of Science and Technology Beijing, People's Republic of China;
WANGSIJIAO9999@163.COM

Pin-Pex Insulation for AAAC Conductor of a 20-kV Medium-Voltage Power Network System

Rini Nur Hasanah, Moch Dhofir, Hadi Suyono, Unggul Wibawa, Lunde Ardhenta, Rizki Adhi Priawan

Faculty of Engineering - Brawijaya University, Indonesia; rini.hasanah@ub.ac.id

Effect of Nano-Al₂O₃ Doping Modification on AC/DC Superimposed Breakdown Characteristics of Insulating Paper

Chao Wei¹, Yang Mo², Yuncai Lu¹, Ruijin Liao², Lijun Yang², Yuan Yuan², Lihua He²

¹Electric Power Research Institute of State Grid Jiangsu Power Grid Co., Ltd., Nanjing, China; ²Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; moyang_cqu@163.com,
rjliao@cqu.edu.cn

Dielectric Properties and 3D Printing Fesibility of UV Curable Polymer Composites

Wen-Dong Li, Li-Yuan Zhang, Chao Wang, Xiao-Ran Li, Man Xu, Guan-Jun Zhang

Xi'an Jiao tong University, China, People's Republic of; wendongli0211@163.com

Analysis of Morphology and Electrical Insulation of 3D Printing Parts

Xiaoran Li, Jia Guo, Wendong Li, Liyuan Zhang, Chao Wang, Baohong Guo, Guanjun Zhang

Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, China, People's Republic of;
lixiaoran1996@foxmail.com

Factors affecting the water droplet behavior on mica sheets under the influence of homogeneous electric fields

S. Maslougkas¹, Michael Danikas¹, R Sarathi², Ahmad Basri A. Ghani³

¹Democritus University of Thrace, Greece; ²IIT Madras; ³TNB Research Sdn. Bhd., 43000 Kajang, Selangor, Malaysia;
mdanikas@ee.duth.gr

O-EM1: Oral session for Electromagnetic Fields

Time: Thursday, 13/Sep/2018: 9:00am - 11:30am · Location: Room 3

Session Chair: Ioannis Stathopoulos

Session Chair: Aydogan Ozdemir

Application of Multiple Modelling Techniques for Analysis of Very Fast Transient Overvoltages in GIS

Jonathan James¹, Maurizio Albano¹, Manu Haddad¹, Dongsheng Guo²

¹Cardiff University; ²National Grid House; jamesj33@cardiff.ac.uk

Conductive Interference Analysis in Photovoltaic Installations with Neighboring Pipelines

Theofilos Papadopoulos¹, Andreas Chrysochos², Konstantinos Pavlou², George Georgallis², Katia Damianaki³, Ioannis Gonos³

¹Democritus University of Thrace, Greece; ²Cable Hellenic Cables S.A., Viohalco Group; ³National Technical University Of Athens; thpapad@ee.duth.gr, katiadamianaky@msn.com

Research on Dynamic Response of Power Transformer Windings under Short Circuit Condition

Shuang Wang, Shuhong Wang, Ting Zhu, Naming Zhang, Hailin Li, Hao Qiu

State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China, People's Republic of; shwang@xjtu.edu.cn, 501520956@qq.com

Development of Nanosecond Pulse Generator Based on Dual-Driver

Jianhao MA, Shoulong DONG, Hongmei Liu LIU, Jianwen TAN, Chenguo YAO

State Key Laboratory of Power Transmission Equipment & System Security and New Technology Chongqing University Chongqing 400044 China; majianhao@cqu.edu.cn, dsl@cqu.edu.cn

Static Voltage Distribution of a Multi-Break Mechanical Switch for Hybrid HVDC Breaker

Daochun Huang, Xuezhong Wang, Zhibin Qiu, Jiangjun Ruan, Qiuyu Yang

School of Electrical Engineering, Wuhan University, China, People's Republic of; huangdc99@163.com

Simulation Study on the Cause of Diameter Distribution of Contamination Particle on Porcelain Insulator Surface in High Voltage Electrostatic Field

Yunpeng Jiang¹, Lee Li¹, Rumeng Wang¹, Ming Lu², Yiwen Jiang¹, Zehui Liu²

¹State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science & Technology, China, People's Republic of; ²State Grid Henan Electric Power Research Institute; jiangyunpeng@hust.edu.cn, leeli@hust.edu.cn

A Static Field Equivalence Method for Simulation of Fitting Surface Electric Field of ±500 kV DC Yards in Converter Stations

Yiming Xie¹, Shuo Jin¹, Zhiye Du¹, Yu Shi², Zhibin Qiu¹, Yongqing Deng¹, Sheng Zhou³

¹School of Electrical Engineering, Wuhan University, China, People's Republic of; ²College of Electrical and Information Engineering, Anhui University of Science and Technology, Huainan, China, People's Republic of; ³Technical Training Center of State Grid Hubei Electric Power Co., Ltd. Wuhan 430072, China; xieyiming@whu.edu.cn

Design of Grading Ring for Composite Cross-arm in 500 kV Single-Circuit Transmission Tower

Penglong He¹, Zhenhua Yu², Qingzhou Yang², Bo Zhang¹

¹Tsinghua University, China, People's Republic of; ²Hubei Electric Engineering Corporation, Wuhan, China, People's Republic of; shizbcn@tsinghua.edu.cn

Optimization of Corona Radio Interference Levels in HVDC Transmission Lines

Carlos Tejada-Martinez¹, Fermin P. Espino-Cortes¹, Suat Ilhan², Aydogan Ozdemir²

¹Instituto Politécnico Nacional, Mexico; ²Istanbul Technical University, Turkey; carlos.tejada179@gmail.com

Study on the Electromagnetic Field Distortion in HVDC/AC Hybrid Submarine Cable Tunnel

Ting Zhu, Shuhong Wang, Naming Zhang, Ze Guo, Shuyu Wang

Xi'an Jiaotong University, China, People's Republic of; 13787006747@163.com, shwang@mail.xjtu.edu.cn

O-IS7: Oral session for High Voltage Insulation Systems

Time: Thursday, 13/Sep/2018: 9:00am - 11:30am · Location: Room 1

Session Chair: Pantelis N. Mikropoulos

Session Chair: Yushun Zhao

Impregnation Efficiency of Selected Dielectric Liquids Assessed on the Basis of Capillary Effect

Pawel Rozga

Lodz University of Technology, Institute of Electrical Power Engineering, Poland; pawel.rozga@p.lodz.pl

Effects of Temperature on Partial Discharge and Breakdown Characteristics of an Ester Liquid under AC stress

Yiming Huang, Qiang Liu, Zhongdong Wang

School of Electrical & Electronic Engineering The university of Manchester, United Kingdom;

yiming.huang@postgrad.manchester.ac.uk

Sealed Vessel Tests of Plain Kraft to Determine Arrhenius Curve Parameters

Kevin James Rapp¹, Alan Sbravati¹, Patrick McShane¹, John Luksich²

¹Cargill, Inc, United States of America; ²Luksich - Consultant; kevin_rapp@cargill.com

Estimation of Switching Surge Flashover Rate for a 1200 kV UHVAC Transmission Line by Considering Switching Overvoltage Waveshape

Ramchandra Reddy Annadi, Chandra Sekhar Pasta

Mahatma Gandhi Institute of Technology; arcreddy13@gmail.com

Surface Electrical Performance of Epoxy Resin and Polytetrafluoroethylene under Arc Ablation

Ze Yin, Wenxia Sima, Potao Sun, Qianqiu Shao, Hang Xu

Chongqing University, China, People's Republic of; cquyinze@cqu.edu.cn

Electric properties and dielectric spectra of epoxy-based nanocomposites

Marlene Stuefer, Josef Kindersberger

Technical University Munich TUM, Germany; marlene.stuefer@tum.de

Study on Thermal and Electrical Properties of Epoxy Resin chain extension for Basin-type insulators

Kerong Yang¹, Yushun Zhao¹, Weijiang Chen², Xuepei Wang¹, Yuanhan He¹

¹Hefei university of technology, China, People's Republic of; ²China Electric Power Research Institute, China, People's Republic of; yushunzhao@126.com

Study on Residual Stress of Epoxy Resin under Different Cooling methods

Yushun Zhao, Tianqi Zheng, Kerong Yang, Xuepei Wang, Yuanhan He

Hefei university of technology, China, People's Republic of; yushunzhao@126.com

Influence of Electric Field Type and Its Intensity on Contamination Accumulation Characteristics of Glass Specimen

Hongwei Mei¹, Mingzhe Li¹, Liming Wang¹, Zhicheng Guan¹, Song Gao², Jie Chen²

¹Graduate School at Shenzhen, Tsinghua University, China, People's Republic of; ²Jiangsu Electric Power Company Research Institute; runnermhw@163.com

O-TE1: Oral session for Transients and EMC

Time: Thursday, 13/Sep/2018: 9:00am - 11:30am · Location: Room 2

Session Chair: Alexandre Piantini

Session Chair: Peter Wouters

Resistive Coupling Effect to Customer Premises Equipment (CPE) due to Non-equipotential Earthing System

Annuar Ramli, Norazlin Jamlus, Azmi Ibrahim, Fadzil Amiruddin

TELEKOM MALAYSIA, Malaysia; annuar@tmrnd.com.my

Effect of Concentrated Tower Grounding System Modeling on the Minimum Backflashover Current and BFR of 150 and 400 kV Overhead Transmission Lines

Zacharias G. Datsios, Pantelis N. Mikropoulos, **Thomas E. Tsovilis**, Sofia I. Angelakidou

High Voltage Laboratory, Aristotle University of Thessaloniki, Greece; tsovilis@ee.auth.gr

Zero missing effect transient analysis on the 150 kV AC interconnection between Crete and Peloponnese

Dimosthenis Spathis¹, Thekla Boutsika¹, John Prousalidis², Konstantinos Tsirekis³, John Kabouris³, Athanasios Georgopoulos³

¹PROTASIS, Greece; ²NTUA; ³ADMIE; dspathis@protasis.net.gr

220 kV Circuit Breaker Modeling and Its Parameter Determination Based KAMA Arc Model

Xun Zhang¹, Kai Dai², Lijin Zhao¹, **Zhengzheng Fu**², Huarong Zeng¹, Yi Wen¹, Rongbin Xie³, Xiaohong Ma¹, Wenxia Sima²

¹Electric Power Research Institute of Guizhou Power Grid Co. Ltd, Guiyang 550002, China; ²State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400044, China; ³Guiyang Power Supply Bureau, Guiyang 550002, China; 1945283808@qq.com

Calculation and Site Tests on Artificial Grounding Experiments of UHVDC Transmission Lines

Bing LUO, **Jian Shi**, Fuzheng ZHANG, Fusheng ZHOU, Wei XIAO, Yifan LIAO, Lei JIA, Ruixian LI, Yi ZHANG

Electric Power Research Institute, CSG, China, People's Republic of; shijian@csg.cn

Lightning Induced Overvoltages in the Electric Network of a Ship

Eleni Nicolopoulou, Ioannis F. Gonos, Ioannis Stathopoulos

National Technical University of Athens; hveleni@mail.ntua.gr

Research on DC Component Decay Time Constant of 1000 kV AC Filter Circuit Breakers in UHV Converter Station

Zhengqiang Li^{1,2}, Mian FAN^{1,2}, Zhipeng ZHA^{1,2}, Peihong ZHOU^{1,2}

¹State Key Laboratory of Power Grid Environmental Protection, China, People's Republic of; ²China Electric Power Research Institute, China, People's Republic of; 113630004@qq.com

Accuracy of Switching Transients Measurement with Open-air Capacitive Sensors near Overhead Lines

Peter Wouters¹, Fani Barakou¹, Shima Mousavi Gargari², Jacco Smit², Fred Steennis³

¹Eindhoven University of Technology, Netherlands; ²TenneT TSO B.V., Netherlands; ³DNV GL, Netherlands; p.a.a.f.wouters@tue.nl

Measuring Transient and Steady State Electric Field Emissions of Space Equipment for EMC and Cleanliness Purposes

Christos D. Nikolopoulos, Anargyros T. Baklezos, Christos N. Capsalis

National Technical University of Athens, Greece; chris.d.nikolopoulos@gmail.com

High Frequency Transients Suppression at Substation

Sergey Korobeynikov, Nikolay Ilyushov, Yury Lavrov, Stanislav Shevchenko, Valentin Loman

Novosibirsk State Technical University, Russian Federation; korobeynikov@corp.nstu.ru

P-TM: Poster session for High Voltage Testing and Measurement

Time: Thursday, 13/Sep/2018: 9:00am - 12:30pm · Location: Poster Area

Research of Grading Ring for High Altitude 500 kV Compact Transmission Line

Cao Jing¹, Quan Shanshan¹, Liang Jinxiang¹, Wu Xiong¹, Peng Zongren²

¹China electric power research institute; ²State Key Laboratory of Electrical Insulation and Power Equipment (Xi'an Jiaotong University) Xi'an 710049 China; 4302245@qq.com

Determination of Estimated, Consumed and Remaining Lifetimes of Paper - Oil Transformers Insulation Based on Winding Insulation Resistance

Petru Notingher¹, Gabriel Tanasescu²

¹University POLITEHNICA of Bucharest, Romania; ²SIMTECH INTERNATIONAL Bucharest, Romania; petrunot@elmat.pub.ro

Numerical Modelling of Guarded Conductivity Measurement Setups: Identification of Fringing Influences and Design Recommendations

Claudius Freye, Lukas Höttecke, Frank Jenau

TU Dortmund University, Germany; claudius.freye@tu-dortmund.de

Effect of Surface Charges on the Surface-breakdown Characteristics of Polytetrafluoroethylene

Wenxia Sima, Hang Xu, Potao Sun, Qianqiu Shao, Ze Yin

Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New, China, People's Republic of; xuhang@cqu.edu.cn

An online monitoring device for pantograph catenary arc temperature detect based on atomic emission spectroscopy

Zheng Xu, Guoqiang Gao, Zefeng Yang, Wenfu Wei, Guangning Wu

Southwest Jiaotong University .Chengdu High-tech zone,Sichuan Province,China; wfwei@home.swjtu.edu.cn

CaSO₄ Content in Contamination Influence on AC Pollution Flashover Characteristics of XWP2-160 Porcelain Insulator String

Daochun Huang, Wei Lu, Yongqing Deng, Jiangjun Ruan, Ziteng Xiong

School of Electrical Engineering, Wuhan University, China, People's Republic of; huangdc99@163.com

Simulation Study on Interturn Short Circuit of Rotor Windings in Generator by RSO Method

Tianhui Li¹, Boyan Jia¹, Bin Ding¹, Hui Fan¹, Ming Tang², Xiaofeng Li¹, Chi Dong¹, Tianran Li¹, Lu Sun¹, Zhen Liu¹, Ersong Chen¹

¹State Grid Hebei Electric Power Research Institute, People's Republic of China; ²CYG CONTRON CO.,LTD, People's Republic of China; wldth826@gmail.com

Kelvin probe for surface potential measurements on epoxy insulator for HVDC applications

Michael Schueller¹, Robin Gremaud², Matthias Bauer², Lorenz G. Herrmann², Jasmin Smajic¹

¹University of applied sciences Rapperswil / Institute of Energy Technology (IET), Switzerland; ²ABB Cooperate Research Ltd, Switzerland; mschueller@hsr.ch

Experimental Study of Live Working Safety Distance on UHV DC Transmission Line by Helicopter Hanging Basket

Yujian Ding¹, Weidong Liu², Yi Wu², Xiuyuan Yao¹

¹CHINA ELECTRIC POWER RESEARCH INSTITUTE, China, People's Republic of; ²State Grid General Aviation Company, China, People's Republic of; dinyuji@epri.sgcc.com.cn

Investigation of MV Power Cable Lines Using DAC Method for Assessment of the Technical Conditions of the Lines

Slawomir Noske¹, Aleksandra Rakowska², Krzysztof Siodla²

¹Energa Operator S.A.; ²Poznan University of Technology; krzysztof.siodla@put.poznan.pl

Metrology for very fast current transients

Stephan Passon¹, Jussi Havunen², Johann Meisner¹, Michael Kurrat³

¹Physikalisch-Technische Bundesanstalt, Germany; ²VTT Technical Research Centre of Finland Ltd; ³TU-Braunschweig, elenia; stephan.passon@ptb.de

Discussion and overvoltage analysis of NSDD in the capacitive current switching test of vacuum circuit-breaker

Guangwei FAN, Haojun LIU, Yuqiang SHI

Xi'an High Voltage Apparatus Research Institute Co., Ltd., China, People's Republic of; 273720853@qq.com

Research on Calibration System for Electronic Transformer in Alpine region

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Research and Application of Performance Verification Platform and Evaluation System for Partial Discharge Detector

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A New model of Metal Oxide Arresters and the Recognition of Model Parameters

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A Study of Partial Discharge Behavior of Multiple Cavity Defects in Epoxy Insulation Material

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Effects of Airflow on Atmospheric Pressure Surface Dielectric Barrier Discharge

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Procedure for Determining the Growth of Water Trees in Cable Samples during 500 Hz Accelerated Ageing

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Effect of moisture on breakdown strength of oil-paper insulation under different voltage types

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Study on Time-Frequency Entropy Method to Make Feature Extraction for DC PD Pulse Waveshapes

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Partial Discharge Growth Characteristics of Transformer Insulation Board Under AC-DC Compound Electric Field

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Integration Wiring Design of Routine Tests for 1000 kV Power Transformers

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Analysis of Partial Discharge Signals from Generator Propagation in Excitation Transformer by EMTP

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Research on Moisture Content Evaluation Algorithm of Transformer Oil-Paper Insulation System

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Displaced neutral on woodpole structures with a 300 kV BIL

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Cable Condition Diagnosis Based on Cable Surface Temperature

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Leakage Current Patterns Observed in Polymeric Insulators Rotating Subjected to Wheel and Dip Test

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The Effect of an Electrostatic Probe on Measurement of the Surface Charge

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Multi frequency ultrasonic detection of water content in transformer oil with GA-BPNN

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Research on the Multiple Status Parameter Detection Technology of the Substation Equipment

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Effect of Humidity on the Detection of Dissolved Gases in Transformer Oil for Tin Oxide Based Gas Sensor

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The On-site Measurement Research of Converter Transformer Harmonic Losses Based on Harmonic Power Source

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The poster features a background image of a high-voltage laboratory with various electrical equipment. The text is overlaid on this image. At the top, there is a solid orange horizontal bar. Below it, the main title 'ICHVE 2018' is written in large, bold, white sans-serif font. Underneath the title, the subtitle '2018 IEEE International Conference on High Voltage Engineering and Application' is written in a smaller, white sans-serif font. At the bottom of the poster, there is a dark grey rectangular area containing the dates '10-13 SEP' with a calendar icon, and the location 'DIVANI CARAVEL HOTEL ATHENS • GREECE' with a location pin icon. A solid orange horizontal bar is at the very bottom of the poster.

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