

2019 IEEE CEIDP IEEE CONFERENCE ON ELECTRICAL INSULATION AND DIELECTRIC PHENOMENA

October 20-23, 2019

Pacific Northwest National Laboratory (PNNL)
Richland, Washington, USA

CONFERENCE PROGRAM



2019 IEEE CEIDP SCHEDULE

	Sunday	Monday	Tuesday	Wednesday
8:15				
8:30		Welcome		
8:45				
9:00	Workshop: Discharge Phenomena in Air	Whitehead Lecture	Session 4 (Oral) (7 papers)	Session 8 (Oral) (7 papers)
9:15				
9:30				
9:45				
10:00		Break and photo	Break	Break
10:15				
10:30				
10:45	Cultural Tour: Washington Wineries	Session 1 (Oral) (6 papers)	Session 5 (Oral) (6 papers)	Session 9 (Oral) (7 papers)
11:00				
11:15				
11:30				
11:45				
12:00				
12:15		Posters Preview 1	Posters Preview 2	Remarks
12:30	DEIS AdCom	Catered Lunch and Student Social	Catered Lunch	Catered Lunch
12:45				
13:00		Session 2 (Poster)	Session 6 (Poster)	1 pm Technical Tour
13:15				
13:30		Break	Break	2 pm Technical Tour
13:45				
14:00		Session 3 (Oral) (8 papers)	Session 7 (Oral) 'Gold' Session with extended discussions (4 papers)	3 pm Technical Tour
14:15				
14:30				
14:45				
15:00				
15:15				
15:30				
15:45				
16:00				
16:15				
16:30				
16:45				
17:00				
17:15				
17:30				
17:45				
18:00	Welcome reception (The REACH Museum)	Dinner on own		
18:15				
18:30				
18:45				
19:00				
19:15				
19:30				
19:45				
20:00				
20:15				
20:30				
20:45				

Sunday, October 20, 2019

9:00-12:00 Workshop: Discharge Phenomena in Air

12:30-17:00 DEIS AdCom

12:30-20:00 Registration

18:00-20:00 Welcome Reception

Monday, October 21, 2019

8:30-8:45 Welcome

Nicola Bowler, *Iowa State University, USA*

8:45-10:00 Whitehead Lecture

Challenging Defects of High Voltage Insulation Systems

Erling Ildstad, Norwegian University of Technology and Science, Norway

10:00-10:30 Break and Photo

10:30-12:20 Session 1 (Oral) Breakdown and pre-breakdown phenomena, aging and treeing

Chair:

Co-chair:

1-1 Physics-Driven Dual-Defect Model Fits of Voltage Step-Up to Breakdown Data in Spacecraft Polymers
Andersen, Allen¹, Dennison, JR²; 1: Jet Propulsion Laboratory, California Institute of Technology; 2: Utah State University, USA

1-2 Degradation in Dielectric Behavior of Soft Epoxy Resin by Concurrent Aging with Heat and Radiation
Hiroyuki Ishii¹, Hikaru Yamaguchi¹, Keigo Mori¹, Naoshi Hirai², Yoshimichi Ohki^{1,2}; 1: Department of Electrical Engineering and Bioscience, Waseda University, Japan; 2: Research Institute for Materials Science and Technology, Waseda University

1-3 Effects of Temperature on Electrical Treeing in Epoxy/silica nanocomposites
Shin Nakamura¹, Akiko Kumada¹, Kunihiko Hidaka², Hiromitsu Hirai³, Takahiro Imai³, Takahiro Nakamura⁴, Tetsuo Yoshimitsu⁴; 1: The University of Tokyo; 2: Tokyo Denki University; 3: Toshiba Infrastructure Systems & Solutions Corporation; 4: Toshiba Mitsubishi-Electric Industrial Systems Corporation

1-4 Effect of New Voltage Stabilizers on Electrical Tree Initiation in Polyethylene Blends
Linwei Yu, Haiyan Liu, Zuojun Wei, Hao Zhou, Xiangrong Chen; Zhejiang University, China

1-5 Intermolecular Interaction and Electric Field Dependence of Reverse Micelle on Water Tree Initiation in Polyethylene
Hiroaki Uehara¹, Tatsuki Okamoto¹, Shinya Iwata², Yasuo Sekii³, Tatsuo Takada⁴, Yang Cao⁵; 1: Kanto Gakuin University; 2: Osaka Research Institute of Industrial Science and Technology; 3: Sekii PE Laboratory; 4: Tokyo City University; 5: University of Connecticut

1-6 Effect of Ester Exchange Reaction on the Breakdown Properties of Soybean Oil

Yuichi Murakami, Yuji Muramoto; Meijo University, Japan

12:00-12:30 Poster Preview 1

(Short oral introductions of the papers with the marker * in session 2)

Chair: Leo S. Fifield, *PNNL, USA*

12:30-13:45 Catered Lunch and Student Social

13:45-15:30 Session 2 (Poster)

Chair:

Co-chair:

Session 2A – Nanocomposites

2A-1 Effects of Nanoparticle Concentration and Surfactant on Dielectric Strength of Nanofluids
Daigo Komesu, Satoshi Ichimura, Hiroshi Morita; Hitachi, Ltd.

2A-2* The Dielectric Properties of PP-EVA blends Compatibilised by an Organoclay
Allison Vivienne Shaw, Alun Stuart Vaughan, Thomas Andritsch; University of Southampton, UK

2A-3 Comparing the influence of organoclay on the morphology and dielectric properties of three thermoplastic polymers
Allison Vivienne Shaw, Alun Stuart Vaughan, Thomas Andritsch; University of Southampton, UK

2A-4* Electrical and Thermal Properties of PMMA/hBN Composite Insulating Material Produced by Electrostatic Adsorption Method
Ryosuke Minami, Norikazu Hamasaki, Tomohiro Kawashima, Naohiro Hozumi, Yoshinobu Murakami; Toyohashi University of Technology, Japan

2A-5* Enhanced Energy Storage Properties of Polyetherimide Film Capacitors Filled with Boron Nitride Nanosheets
He Li^{1,2}, Lulu Ren², Ding Ai², Zongliang Xie¹, Sijia Zhu¹, Peng Liu¹, Zongren Peng¹, Qing Wang²; 1: Xi'an Jiaotong University, China; 2: The Pennsylvania State University, USA

2A-6 Effect of thickness of one-dimensional nanofibers by electrospinning on the dielectric properties of PVDF composites
Yan Qiu¹, Jun-Wei Zha^{1,2}, Zhi-Min Dang²; 1: University of Science and Technology Beijing; 2: Tsinghua University

2A-7 Enhanced permittivity and energy density in PVDF /PMMA/TiO₂ nanocomposite
Yongbin Liu, Yang Zhang, Ruifeng Yao, Tongxin Zhao, Jinghui Gao, Lisheng Zhong; Xi'an Jiaotong University, China

2A-8* Dielectric Properties of PEI/SiO₂ Nanocomposites
Fatiha Talbi¹, Eric David², David Malec³, Dominique Mary³; 1: Laboratoire de Physique et Chimie Quantique, Université Mouloud Mammeri, Tizi-Ouzou, Algeria; 2: ETS, Canada; 3: Laboratoire Plasma et Conversion d'Énergie, CNRS, UPS, INPT, Toulouse, France

2A-9* Enhanced Thermal Conductive Boron Nitride/ Silicon Carbide/ Silicone Elastomer with Nonlinear Conductive Characteristic and Partial Discharge Resistance
Yalin Wang¹, Jiandong Wu¹, Tao Han², Yi Yin¹; 1: Department of Electrical Engineering, Shanghai Jiao Tong University, China; 2: Department of Instrument Science and Engineering, Shanghai Jiao Tong University, China

2A-10 Impulse Breakdown Strength of Epoxy/ Silica Nanocomposite Prepared with Using Ultrasonic Dispersion

Process

Chiharu Kato¹, Muneaki Kurimoto¹, Toru Sawada¹, Takeyoshi Kato¹, Shigeyuki Sugimoto¹, Masaki Imanaka¹, Yasuo Suzuoki²; 1: Nagoya university, Japan; 2: Aichi Institute of Technology

2A-11 Electroluminescence of Epoxy Resin Nanocomposite under AC High Field

Kazuyuki Tohyama¹, Tomonori Iizuka², Kohei Tatsumi², Yasutomo Otake³, Takahiro Umemoto³, Takahiro Mabuchi³, Hirotaka Muto³; 1: National Institute of Technology, Numazu College, Japan; 2: Graduate School of Information, Production and Systems, Waseda University, Japan; 3: Advanced Technology Research and Development Center, Mitsubishi Electric Corporation, Japan

2A-12* Electrical and Thermal Properties of Hybrid Materials based on ZnO and BaTiO₃ Nano Particles

Ammar Mubarak Sultan Al-Gheilani, K. L. Wong, Yongxiang Li, Wayne Rowe; RMIT University, Australia

2A-13 Electric Field Reduction by Multi-layer Functionally Graded Material with controlled Permittivity and Conductivity Distribution

Ammar Mubarak Sultan Al-Gheilani, K. L. Wong, Yongxiang Li, Wayne Rowe; RMIT University, Australia

2A-14* Space Charge Distribution Analysis Before and after Drying of Micro-extruded LDPE/MgO Nanocomposites

Virginie Griseri¹, Eric David², Dominique Mary¹; 1: LAPLACE - University of Toulouse, France; 2: ETS - Montréal, Canada

2A-15 Enhanced Electrical Breakdown Strength in Nano-coatings of Polymer Composites

Yifei Wang^{1,2}, Jing Xia^{1,2}, Shamima Nasreen^{1,2}, JoAnne Ronzello^{1,2}, Henry Teng⁴, Linda Jacobs⁴, Yang Cao^{1,2,3}; 1: NSF iUCRC Center on High Voltage/Temperature Materials and Structures; 2: Electrical Insulation Research Center, Institute of Materials Science, University of Connecticut, USA; 3: Electrical and Computer Engineering, University of Connecticut, USA; 4: ABB Industrial Solution, Plainville, CT 06062 USA

2A-16* Effect of Electric Field and Temperature on the Failure of Polypropylene Filled with Nanometric Natural Clay

Huseyin Recai Hiziroglu, Chuyan Zhang; Kettering University, USA

2A-17* Hybrid Fillers for Thermal Conductivity and Erosion Resistance Enhancements in Silicone Composites

Khadija Kanwal Khanum, Shesha Jayaram; University of Waterloo, Canada

2A-18* Effect of Nano-doping on Breakdown Performance of B4C/ETFE Nanodielectrics

Shusai Zheng¹, Daomin Min¹, Xiaoping Wang¹, Shengtao Li¹, Wenfeng Liu¹, Xinbin Hou², Li Wang²; 1: Xi'an Jiaotong University, China; 2: Qian Xuesen Laboratory of Space Technology, China

2A-19 Investigation of thermal conductivity of semiconducting nanofluid for transformer

Sujita Srichandana Dey, Rohith Sangineni, Niharika Baruah, Mrutyunjay Maharana, Sisir Kumar Nayak; IIT GUWAHATI, India

Session 2B –Aging and Treeing

2B-1 A Novel Methodology to Monitor Partial Discharges in Microvoids at Solid-Solid Interfaces

Emre Kantar^{1,2}, Erling Ildstad²; 1: SINTEF Energy Research; 2: Norwegian University of Science and Technology

2B-2 Contribution of wetting properties for coupling effect in oil-paper insulation

Ge Zhao, Yang Liuqing, Li Shengtao, Li Shijun, Tan Ben, Yan Wei, Cui Huize, Mao Ganlin; Xi'an Jiaotong University

2B-3* Treeing Breakdown Property in Epoxy/TiO₂ Nanocomposites

Norihiko Kodama¹, Tomohiro Kawashima¹, Naohiro Hozumi¹, Yoshinobu Murakami¹, Shigeyoshi Yoshida², Takahiro Umemoto², Takahiro Mabuchi², Hirotaka Muto²; 1: Toyohashi University of Technology, Japan; 2: Mitsubishi Electric Corporation, Japan

2B-4 The leakage current characterization on the electrical tree aging of polymer

Jiaye Xie, Qi Li, Jun Hu, Jinliang He; Tsinghua University, China

2B-5 Degradation in Mechanical and Dielectric Properties of Silicone Rubber under Severe Aging Conditions

Naoshi Hirai, Takuya Kaneko, Seitaro Ito, Takefumi Minakawa, Yoshimichi Ohki; Waseda University, Japan

2B-6* Thermal ageing effects on polypropylene properties

Abdallah HEDIR¹, Ferhat SLIMANI¹, Mustapha MOUDOUD¹, Omar LAMROUS², Sombel DIAHAM²; 1: Mouloud Mammeri University, Algeria; 2: CNRS; LAPLACE; Université de Toulouse, France

2B-7 Investigation on the Ageing Behaviour of Ester Impregnated Insulating Paper in a Hermetically Sealed System

Tobias Münster¹, Tobias Kinkeldey¹, Peter Werle¹, Kai Häme², Jörg Preusel²; 1: Leibniz Universität Hannover, Germany; 2: GRIDINSPECT GmbH, Germany

2B-8 The Evaluations of Stator Insulation for Direct-drive Wind Turbine Generators Based on Accelerated Multi-factor Aging

Qingyuan Liu¹, Xuezhong Liu¹, Yanqin Li², Meng Wang¹, Hongsheng Chen², Yong Zhao³, Yong Ma³; 1: Xi'an Jiaotong University, China; 2: CRRC Zhuzhou Electric Co.; 3: Xi'an Thermal Power Research Institute Co.

2B-9* The Influence of SPWM Frequency on the Endurance of Inverter-fed Motor Insulation

Ming Zhao¹, Qun Zhou¹, Peng Wang¹, Jiawei Zhang²; 1: Sichuan University, China; 2: Xi'an University of Technology

2B-10 Compatibility between C4F7N and Sealing Material EPDM Used in GIL

ZHEYU ZHENG¹, HAN LI¹, WENJUN ZHOU¹, JIANHUI YU¹, HANG WANG¹, JIE ZHANG², YONG JIANG², JIAN ZHAO², LIN YANG², YIBO ZHOU²; 1: School of Electrical Engineering and Automation, Wuhan University, China; 2: 3M China Limited, Shanghai, China

2B-11* Compatibility between C3F7CN and Epoxy Resin at High Temperature

Ruijun Yuan, Han Li, Wenjun Zhou, Jianhui Yu, Hang Wang; Wuhan University, China

2B-12 Study on Formation Mechanism of Thermooxidative Aging Protection Difference Among Nanoparticles in Low Density Polyethylene

Zhanxi Zhang, Youyuan Wang, Yudong Li, Yanfang Zhang; Chongqing University, China

2B-13 Study on Physicochemical Properties and Thermal Aging Characteristics of a Mixed Ester Insulating Oil

Ziyi Lou, Jian Li, Kaizheng Wang, Shengyuan Xia; Chongqing University, China

2B-14 Fundamental Investigation of Discharge-Induced Fire from Damaged Ac Power Supply Cord

Kiyoto Takenaka^{1,2}, Yusuke Ishikawa¹, Yukio Mizuno¹,

- Tomonari Kawai³, Atsushi Yoshida³; 1: Nagoya Institute of Technology, Japan; 2: Aichi Center for Industry and Science Technology, Japan; 3: Kawamura Electric Inc., Japan*
- 2B-15** Cause Analysis of Aging Ablation on Sheath of 110 kV Single Core High Voltage Cable
Yue Xin, Lei Jiang, Xiyuan Zhao, Wenbin Li, Jinghui Gao, Baofeng Xi, Lisheng Zhong, Linfeng Xia; Xi'an Jiaotong University, China
- 2B-16*** Fillers impact analysis on aging of crosslinked polyethylene for nuclear application through dielectric spectroscopy
Simone Vincenzo Suraci¹, Davide Fabiani¹, Konsta Sipilä², Harri Joki²; 1: Department of Electrical Engineering University of Bologna, Italy; 2: VTT Technical Research Centre of Finland Ltd, Espoo, Finland
- 2B-17** The Effect of the Humidity on the High Voltage Testing of VPI Insulation Systems before Impregnation
Davoud Esmaeil Moghadam, Thomas Hillmer, Christoph Herold, Rolf Zbinden, Brian George; Von Roll Institute, Switzerland
- 2B-18** Effect of moisture on electrical properties of epoxy/paper composites
Zongliang Xie, Hongliang Zhang, Siyu Zhang, He Li, Xialin Su, Peng Liu, Zongren Peng; Xi'an Jiaotong University, China
- 2B-19** Research on Thermal Aging Characteristics of Dry-type Transformer Epoxy Resin Based on Dielectric Response and Activation Energy
Junji Feng¹, Xin Zhang¹, Wei Wang¹, Wei Zhang², Peng Ren², Peng Peng²; 1: Electric Power Research Institute of State Grid Tianjin Electric Power Corporation, China; 2: North China Electric Power University, China
- 2B-20** Insulation Lifetime Characteristics of Epoxy/TiO₂ Nanocomposite with Internal Void
Takahiro Umemoto¹, Shigeyoshi Yoshida¹, Yasutomo Otake¹, Hiroataka Muto¹, Muneaki Kurimoto²; 1: Mitsubishi Electric Corporation, Japan; 2: Nagoya University, Japan
- 2B-21** Dielectric Properties of High Voltage XLPE Power Cables Taken from Service
Haoming Wang¹, Shengchen Fang¹, Zhengzheng Meng¹, Pengxian Song¹, Xu Li¹, M. Z. Zhu¹, X. H. Zhu¹, Yang Yu¹, Boxue Du²; 1: Tianjin Electric Power Research Institute, China; 2: School of Electrical and Information Engineering, Tianjin University, China
- 2B-22** Fast Calculation for Temperature Rise of Trench Laying Cables Based on Thermal Circuit Model and Assessments of the Cable Life
Xiaowen Wang, Junping Zhao, Qiaogen Zhang, Siyun Wang, Yiping Gao, Qi Ying; Xi'an Jiaotong University
- 2B-23*** Water Trees as a Dominant Deterioration Cause of 60 kV Class Dry Cured XLPE Cables
Toshihiro Takahashi, Takashi Kurihara, Tsuguhiro Takahashi, Tatsuki Okamoto; Central Research Institute of Electric Power Industry, Japan
- Session 2C – Outdoor Insulation, Surface Flashover and GIS (I)**
- 2C-1*** Electrical Performance of a New RTV Coating with Antimicrobial Agents Added
Shihao Wang¹, Zhidong Jia¹, Xilin Wang¹, Shifang Yang¹, Huan Bai²; 1: Engineering Laboratory of Power Equipment Reliability in Complicated Coastal Environment, Graduate School at Shenzhen, Tsinghua University, China; 2: China State Grid Sichuan Electric Power Company
- 2C-2** Study on partial discharge characteristics of C4F7N/CO₂ gas mixture GIL based on the integrated optical-UHF detection
Yiming Zang¹, Yong Qian¹, Wei Liu², Yongpeng Xu¹, Gehao Sheng¹, Xiuchen Jiang¹, Simeng Song¹; 1: Department of Electrical Engineering, Shanghai Jiaotong University, China; 2: Key Laboratory for Sulfur Hexafluoride Gas Analysis and Purification of SGCC, Anhui Electric Power Research Institute of SGCC, China
- 2C-3** The DC Voltage Flashover Characteristics of SF₆ insulated DC Wall bushing under Uneven Rain Conditions
Xiongjie Xie, Wei Hu, Xiaoqing Luo, Zuoming Xu, Pengbo Yin; China Electrical Power Research Institute, China
- 2C-4** TiO₂-MWCNTs Nanofiller Enhance DC Surface Flashover Characteristics of Epoxy Nanocomposites in Vacuum
Zhen Li, Shengtao Li, Haoming Xu, Farooq Aslam; Xi'an Jiaotong University, China
- 2C-5** E-field distribution and optimization on shielding electrodes for reactor in ±1100kV indoor DC yard
Zehua Wu¹, Huidong Tian¹, Jialong Wang², Shoufeng Jin¹, Peng Liu¹, Zongren Peng¹; 1: Xi'an Jiaotong University, China; 2: State Power Economic Research Institute
- 2C-6** Study on Contamination Characteristics of Insulators on UHV Transmission Lines in Southern and Northern Climates
Qianhui Li, Yujun Guo, Xueqin Zhang, Kai Liu, Guangning Wu, Zhang Xiao, Yaozhen Wang; Southwest Jiaotong University, China
- 2C-7** Electric Field Simulation of a Voltage Graded Type Insulator for DC GIL
Kejie Huang¹, Jianwei Cheng¹, Shuaibing Wang¹, Xi Chen², Zhiqiang Li², Peng Liu³, Shoufeng Jin³; 1: Electric Power Research Institute, China Southern Power Grid, China; 2: China Southern Power Grid, China; 3: Xi'an Jiaotong University
- 2C-8*** Simulation and Optimization Design of Isolating Switch in the Indoor DC Yard of ±1100 kV Converter Station
Zonghan Yang¹, Jialong Wang¹, Yujian Ding², Yan Mao², He Li¹, Peng Liu¹, Zongren Peng¹; 1: Xi'an Jiaotong University, China; 2: China Electric Power Research Institute, China
- 2C-9** Surface Functional Graded Material Considered for DC Gas-Insulated Pipeline
Guoli Wang^{1,3}, Tingting Wang^{1,3}, Wenbo Zhu^{1,3}, Mingli Fu^{1,3}, Jin Li², Hucheng Liang², Zhaoyu Ran², Boxue Du²; 1: Technology Research Center of China Southern Power Grid; 2: School of Electrical and Information Engineering, Tianjin University; 3: National Engineering Laboratory for Ultra Voltage Engineering Technology (Kunming Guangzhou)
- 2C-10** Influence of Metal Particle Contamination on Surface Charging and Flashover Characteristics of PTFE Insulator under Impulse Voltage in Vacuum
Guo-Qiang Su¹, He-Jin Liu¹, Di Fan¹, Feng Wang¹, Yang Liu¹, Yan-Bo Wang², Jun-Bo Deng², Guan-Jun Zhang²; 1: State Grid Shandong Electric Power Research Institute, China; 2: Xi'an Jiaotong University, China
- 2C-11** Influence of Flashover Initiation Process on Surface Insulation Performance for Insulators under Impulse Voltage in Vacuum
Guo-Qiang Su¹, Di Fan¹, He-Jin Liu¹, Feng Wang¹, Yang Liu¹, Yan-Bo Wang², Guan-Jun Zhang², Jun-Bo Deng²; 1: State Grid Shandong Electric Power Research Institute, China; 2: Xi'an Jiaotong University, China

2C-12* A Comparative Study on the Breakdown Characteristics of SF6 and 20% C3F7CN / 80% CO2 Gas Mixture in a Coaxial Configuration
Loizos Loizou, Lujia Chen, Qiang Liu; The University of Manchester, UK

2C-13 Surface Conductivity Effects of SDBD Plasma Actuators Before Discharge Established
Wen Lu¹, Liming Wang¹, Hongwei Mei¹, Fanghui Yin¹, Xinyu Huang¹, Fuzeng Zhang²; 1: Graduate School at ShenZhen, Tsinghua University, China; 2: Institute of China Southern Power Grid Co., Ltd., China

2C-14 3D Particle Simulation of Positive Needle-to-Plane Streamer Discharge in SF6 with Field Ionization
Muhammad Farasat Abbas, Han-Wei Li, An-Bang Sun, Guan-Jun Zhang; Xi'an Jiaotong University, China

2C-15 Study on the Movement of Water Drop on the Insulators Surface under AC and DC Electric Field
Wen Cao^{1,4}, Hao Xue¹, Yan Du¹, Hao Yang¹, Long Zhao¹, Xiaoxue Guo¹, Yang Wang¹, Wei Shen², Zepeng Lv³; 1: Xi'an Polytechnic University, China; 2: State Grid Shanxi Electric Power Research Institute, China; 3: Xi'an Jiaotong University, China; 4: Northwestern Polytechnical University, China

2C-16 DC Air humidity correction factor for air external insulation revisited
Liliana Arevalo¹, Dong Wu¹, Mats Larsson²; 1: ABB Power Grids HVDC, Sweden; 2: ABB Corporate Research, Sweden

2C-17 Finite Element Method Simulation of 1100kV GIS SF6 Gas Insulated Composite Bushing
Shiling Zhang¹, Siyu Zhang², Xialin Su²; 1: State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute, China; 2: Xi'an Jiaotong University, China

2C-18 Analysis on Electric Field Distortion of Three-phase Tri-post Insulator in 220kV Compact GIL with Metal Defects
Jianwei Cheng¹, Sijia Zhu², Shoufeng Jin², Zhiqiang Li¹, Xi Chen¹, Zehua Wu², Zongren Peng²; 1: Electric Power Research Institute, China Southern Power Grid; 2: Xi'an Jiaotong University, China

2C-19* Broadening the application of the quick flashover method for RTV pre-coated glass cap-and-pin insulators sampled from service in the Italian Transmission grid
Massimo Marzinotto¹, Giovanni Mazzanti², Alessandro Panara²; 1: TERNA, Italy; 2: University of Bologna, Italy

2C-20 Optimization of Electric Field Distribution for Tri-Phase Tri-Post Insulator in 220kV GIL
Sijia Zhu¹, Peng Liu¹, Ao Gong¹, Ruizhi Hu¹, Zehua Wu¹, Haoran Wang², Zongren Peng¹; 1: Xi'an Jiaotong University; 2: China Electric Power Research Institute, State Grid Corporation of China

Session 2D – Partial Discharges and Measurement Techniques (I)

2D-1 Simulation Study on Impedance Spectroscopy of Cables of Various Aging Statuses and with Local Defects
Yuli Wang¹, Benhong Ouyang¹, Huajie Yi², Chengke Zhou², Hao Zhou³, Xiaochuan Shi³; 1: China Electric Power Research Institute Ltd., Wuhan Branch; 2: Glasgow Caledonian University, United Kingdom; 3: Wuhan Intelligent Monitoring Technology Ltd.

2D-2* Assessing the severity of partial discharges in aerospace applications
Paolo Seri, Luca Lusuardi, Andrea Cavallini, Gabriele

Neretti; Department of Electrical, Electronic and Information Engineering (DEI) - University of Bologna – Italy

2D-3 Feasibility Study on Evaluating Degree of Polymerization of Insulating Paper by Ethanol Content Dissolved in Transformer Oil

Enze Zhang, Hanbo Zheng, Yiyi Zhang, Jiefeng Liu, Chuangsheng Zhang, Guangqi Shao, Yi Li, Chaohai Zhang, Xianhao Fan; Guangxi Key Laboratory of Power System Optimization and Energy Technology, Guangxi University, China

2D-4 State evaluation of transformer paper insulation based upon dielectric response characteristic parameters
Xianhao Fan, Jiefeng Liu, Guangwei Ren, Yiyi Zhang, Hanbo Zheng, Chaohai Zhang; GXU University, China

2D-5 A Substation UHF Partial Discharge Detection Method Based on Maximum Likelihood Estimation
Nan Zhou, Lingen Luo, Hui Song, Gehao Sheng, Xiuchen Jiang; Shanghai Jiaotong University, China

2D-6 The Anti-interference Method of Michelson Optical Fiber Interferometer for GIS Partial Discharge Ultrasonic Detection

Hong-yang Zhou¹, Meng Zhang¹, Guo-ming Ma¹, Cheng-rong Li¹, Bo-yuan Cui², Yu Yin², Yu-yi Wu²; 1: North China Electric Power University, China; 2: High Voltage Department, China Electric Power Research Institute

2D-7 Simultaneous Electrical, UHF, Current and Optical PD Measurements on Floating Potential under DC Stress
Philipp Wenger¹, Michael Beltle¹, Saliha Abdul Madhar²; 1: University of Stuttgart, Germany; 2: Haefely Test AG, Basel, Switzerland

2D-8 Analysis of PD-induced Ultraviolet Signal in GIS and Comparing with Electrical Signals
Nannan Yan¹, Bengang Wei¹, Yuhao Li², Quan Wen³; 1: State Grid Shanghai Energy Interconnection Research Institute; 2: Bowdoin College; 3: State Grid Shanghai Municipal Electric Power Company

2D-9* Experimental Study on Corona Discharge Characteristics of SF6/N2 Gas Mixture in Needle-plane Model

Yanliang He¹, Xianjun Shao², Shaoan Wang², Zhiwei Shen¹, Xing Zhang¹, Anbang Sun¹, Guanjun Zhang¹; 1: Xi'an Jiaotong University, China; 2: Research Institute of State Grid Zhejiang Electric Power Limited Company, China

2D-10 Study on Keypoint Extraction Method of Phase-Resolved Partial Discharge Pattern in Power Transformer

Yan-Bo WANG¹, Ding-Ge CHANG¹, Xian-Jun Shao², Shao-Rui Qin³, Yu-Lun Chen¹, Guan-Jun ZHANG¹; 1: Xi'an Jiaotong University; 2: Research Institute of State Grid Zhejiang Electric Power Company; 3: State Grid Anhui Electric Power Research Institute

2D-11 Modelling the Impact of Ground Planes on Aircraft Transmission Cable Impedance

Ian Thomas Kiely, Patrick John Norman, Brian Gordon Stewart; University of Strathclyde, UK

2D-12 GIS partial discharge fault diagnosis based on numerical simulation and analysis of ultrasonic propagation characteristics

Kai Gao¹, Xinlei Qiao², Hua Huang¹, Danrui Ma², Fuchun Chen², Lijun Jin²; 1: State Grid Shanghai Electric Power Research Institute, China; 2: Tongji University, China

2D-13 Ultrasonic Detection for Partial Discharge in Transform Oil Based on Microfiber Coupler Sensor

Penghao Yu¹, Yiyi Liu¹, Xinyi Wang¹, Wenchao Wang¹,

Delin Hu²; 1: Xi'an Jiaotong University, China; 2: Suzhou Electrical Apparatus Science Research Institute Co. Ltd, China

2D-14 Development of Wireless Partial Discharge Detector based on Ultrasonic Signal

Yue Zhang¹, Zhaoyuan Fu², Ke Liu², Xiaoping Lv², Guangtao Zhang², Yong Qian¹, Weijia Yao¹; 1: Shanghai Jiao Tong University, Shanghai, China; 2: State Grid Jinan Electric Power Company, China

2D-15 Research on Diagnosis Method of Insulation Defects of Environmental-friendly GIL Chamber Based on Features of Gabor Transform

Weijia Yao¹, Yong Qian¹, Wei Liu², Yiming Zang¹, Yongpeng Xu¹, Gehao Sheng¹; 1: Department of Electrical Engineering, Shanghai Jiao Tong University, China; 2: Key Laboratory for Sulfur Hexafluoride Gas Analysis and Purification of SGCC, Anhui Electric Power Research Institute of SGCC, China

2D-16 Partial Discharge Characteristics of surface defect under Fast Rising Repetitive Square Waveforms for Power Electronics Application

Chongxing Zhang; Xi'an Jiaotong University, China

2D-17 Localization the Inter-turn Faults in Transformer Winding by using Reflection Function Measurement

Sahand Seifi^{1,2}, Mahdi Rahimbakhsh^{1,3}, Peter Werle¹, Ernst Gockenbach¹, Amir Abbas Shayegani Akmal², Hossein Mohseni², Thomas Hinriches³, Joachim de Boer³, Tobias Muenster¹; 1: Leibniz Universität Hannover, Germany; 2: University of Tehran, Iran; 3: Enercon GmbH, Germany

2D-18 Research on the temperature and flow characteristic of UHV GIL based on multi-field coupling

Shoufeng Jin¹, Huidong Tian¹, Ao Gong¹, Shiyi Zhou¹, Haoran Wang², Peng Liu¹, Zongren Peng¹; 1: Xi'an Jiaotong University, China; 2: China Electric Power Research Institute

2D-19 Simulation and experiment on discharge characteristics of indoor devices in ± 1100 kV converter station based on potential gradient equivalent method

Ran Shi¹, Yujian Ding², Jialong Wang¹, Zehua Wu¹, Shiyi Zhou¹, Zongliang Xie¹, Zongren Peng¹; 1: Xi'an Jiaotong University, China; 2: China Electric Power Research Institute

2D-20 Data-driven Severity Assessment for GIS Partial Discharge

Xiaoqi Wan¹, Hui Song¹, Zhongmin Yu², Gehao Sheng¹, Xiuchen Jiang¹; 1: Department of Electrical Engineering, Shanghai Jiao Tong University; 2: State Grid Shanghai Power Supply Company

2D-21 Investigation of Surface Discharge on PE in Air and Nitrogen under Different Pressures Based on Pockel Effect

Yan Du^{1,2}, Kai Wu², Wen Cao¹, Yongcan Zhu¹, Yuanyang Ren²; 1: Xi'an Polytechnic University, China; 2: Xi'an Jiaotong University, China

2D-22 Diagnosis of Operating Insulator Aging Status Based on Image Processing and Hyperspectral Analysis

Bin Wang, Changjie Xia, Ming Dong, Ming Ren, Tianxin Zhuang, Chenxi Guo; Xi'an Jiaotong University, China

15:30-16:00 Break

16:00-18:00 Session 3 (Oral): Advanced Materials

Chair:

Co-chair:

3-1 Impact of Nanocomposite Thin Layer on Nanoparticles

Dispersion and Their Dielectric Properties

Shakeel Akram^{1,3}, Jerome Castellon¹, Serge Agnel¹, Jean Pierre Habas², Zhou Kai³, M. Tariq Nazir⁴; 1: IES-GEM University of Montpellier, Montpellier, France; 2: ICGM, CNRS, ENSCM Equipe Ingénierie et Architectures Macromoléculaires, Université Montpellier, Montpellier, France; 3: School of Electrical Engineering and Information, Sichuan University, China; 4: School of Mechanical and Manufacturing Engineering, University of New South Wales, Sydney, Australia

3-2 Dielectric Quantum Dot Traps in Polymer Nanocomposites

Toshikatsu Tanaka; Waseda University, Japan

3-3 Effect of Plasma Modification on Dielectric Properties of Polyimide Nanocomposite Films

Juan Liu, Guangning Wu, Yan Yang, Yixin Lei, Jiang Deng; Southwest Jiaotong University, China

3-4 Enhancing Discharged Energy Density of Polymer Dielectrics at High Temperature by Nanofillers

Xin Chen, Tian Zhang, Q. M. Zhang; The PENN State Univ, USA

3-5 Influence of the Amount of Silane Coupling Agent on the Dielectric Properties of AlN/Polypropylene Nanocomposites

Xinyu Wang, Thomas Andritsch, George Chen; University of Southampton, UK

3-6 Study of Polyethylene and Polypropylene Nanocomposites for HVDC Insulation

Xuhui Duan¹, Wah Hoon Siew¹, Martin Given¹, John Liggat¹, Mark Wilson¹, Jinliang He²; 1: University of Strathclyde, United Kingdom; 2: Tsinghua University, China

3-7 Impulse Breakdown Strength of Epoxy/TiO₂ Nanocomposite Enhanced by Agglomerate Removal

Muneaki Kurimoto¹, Shigeyoshi Yoshida², Takahiro Umemoto², Takahiro Mabuchi², Hirotaka Muto²; 1: Nagoya University, Japan; 2: Mitsubishi Electric Corporation, Japan

3-8 Behavior of triple negative breast cancer MDA-MB-231 cells due to reversible breakdown of cell membrane

Jeya Shree Thulasidas^{1,2}, Gowri Sree Varadarajan¹, Ignacio Camarillo², Lakshya Mittal³, Raji Sundararajan³; 1: Division of High Voltage Engineering, Department of Electrical and Electronics Engineering, CEG campus, Anna University, Chennai, India; 2: Department of Biological Sciences, Purdue University, West Lafayette, Indiana, USA; 3: School of Engineering Technology, Purdue University, West Lafayette, Indiana, USA

Tuesday, October 22, 2019

8:15-10:00 Session 4 (Oral) Partial Discharges and Measurement Techniques

Chair:

Co-chair:

4-1 Simulation and Experimental Results of Interdigital Capacitor (IDC) Sensors to Monitor Insulation Degradation of Cables

Samuel W. Glass¹, Md. Nazmul Al-Imran², Leo S. Fifield¹, Mohammad Ali²; 1: Pacific Northwest National Laboratory, USA; 2: University of South Carolina

4-2 Fundamental Study for Quantification of Change in PD Waveform on Electrical Treeing

Tomohiro Kawashima¹, Totoh Abdul Matin¹, Yoshinobu Murakami¹, Naohiro Hozumi¹, Shigeyoshi Yoshida², Takahiro Umemoto², Takahiro Mabuchi², Hirotaka Muto²; 1: Toyohashi University of Technology, Japan; 2: Mitsubishi

Electric Corporation, Japan

4-3 Partial Discharge Measurements of DC Insulation Systems: the Influence of the Energization Transient

Paolo Seri¹, Riddhi Ghosh¹, Hadi Naderialla¹, Leonardo Cirioni¹, Gian Carlo Montanari²; 1: Department of Electrical, Electronic and Information Engineering (DEI) - University of Bologna – Italy; 2: Center for Advanced Power Systems, Florida State University, Tallahassee, USA

4-4 An Investigation on the Dielectric Properties of Thermally-Aged Polyimide and its Capability to Withstand Partial Discharges

Andrea Cavallini¹, Riccardo Succi², Tao Han³; 1: University of Bologna, Italy; 2: Techimp Srl, Zola Predosa, Italy; 3: Tianjin University, China

4-5 Experimental Study on Deterioration Characteristics of Winding Insulation State in Double-Fed Wind Generator

Jianbo Han¹, Xuezhong Liu¹, Yong Zhao², Pengfei Yuan¹, Bin Han², Yong Ma²; 1: Xi'an Jiaotong University, China; 2: Xi'an Thermal Power Research Institute CO.

4-6 UHF-PD Measurement and High-Speed-Imaging of Firefly Motion at the Positive Electrode in HVDC-GIS

Philipp Wenger¹, Michael Beltle¹, Stefan Tenbohlen¹, Uwe Riechert²; 1: University of Stuttgart, Germany; 2: ABB Switzerland Ltd, Switzerland

4-7 DC Component Effect on Electrical Ageing Tests

Eugenia Torello, Francesco Guastavino, Luca Briano, Federico Gallesi; University of Genoa, Italy

10:00-10:30 Break

10:30-12:00 Session 5 (Oral) Outdoor Insulation, Surface Flashover and Gas Insulation

Chair:

Co-chair:

5-1 Effects of Surface Nonlinear Conductive Coatings on Surface Charge Behavior of Alumina-Filled Epoxy Resin Spacers

Jian-Yi Xue, Jun-Hong Chen, Han Wang, Bao-Hong Guo, Jun-Bo Deng, Guan-Jun Zhang; Xi'an Jiaotong University, China

5-2 Flashover Voltage of Outdoor Insulators in the Presence of Multiple Drybands

Meghana Ramesh, R. S. Gorur; University of Alabama in Huntsville, USA

5-3 Composition Analysis of Operating Insulator Pollution Based on Hyperspectral Analysis

Changjie Xia, Chenxi Guo, Ming Ren, Ming Dong, Bin Wang, Jiacheng Xie, Siyun Wang, Ran Duan; Xi'an Jiaotong University, China

5-4 Electric Field Computation for HVDC GIS/GIL Spacer under Superimposed Impulse Conditions

Cong Thanh VU, Frank JACQUIER, Alain GIRODET; SuperGrid Institute, France

5-5 Effect of Surfactant on Dielectric and Thermal Properties of Silicone Nanocomposites

Khadija Kanwal Khanum, Arathi Mohan Sharma, Shesha Jayaram; University of Waterloo, Canada

5-6 A Computational Model for Pre-breakdown Phenomena in Gas Insulated Switchgear

Qasim Khan^{1,2}, Shady S Refaat², Haitham Abu-Rub², Hamid Toliyat¹; 1: Texas A&M University, College Station, TX, 77840, USA; 2: Texas A&M University at Qatar, Qatar

12:00-12:30 Poster Preview 2

(Short oral introductions of the papers with the marker * in session 6)

Chair: Chair: Leo S. Fifield, PNNL, USA

12:30-13:45 Catered Lunch

13:45-15:30 Session 6 (Poster)

Chair:

Session 6A – Polarization, Charge Storage and Transport

6A-1* Thermally Stimulated Depolarization Current Analysis of Stored Charge in LDPE and XLPE

Roger Walker¹, Hossein Hamed¹, William H. Hunter Woodward², Ramakrishnan Rajagopalan¹, Michael Lanagan¹; 1: Penn State, University Park, Pennsylvania, USA; 2: Dow Chemical, Midland, MI, USA

6A-2* Relation Between the Glass Transition and Dielectric Properties in Bisphenol A and F Epoxy Resins

Keigo Mori¹, Naoshi Hirai², Yoshimichi Ohki^{1,2}, Yasutomo Otake³, Takahiro Umemoto³, Hiroataka Muto³; 1: Department of Electrical Engineering and Bioscience, Waseda University; 2: Research Institute for Materials Science and Technology, Waseda University; 3: Advanced Technology Research and Development Center, Mitsubishi Electric Corporation

6A-3 Electric Field Assisted Transport of the Crosslinking Byproducts in Low-Density Polyethylene

Hossein Hamed¹, Roger Walker¹, William H. Hunter Woodward², Ramakrishnan Rajagopalan¹, Eugene Furman¹, Michael T. Lanagan¹; 1: Penn State, University Park, Pennsylvania, USA; 2: The Dow Chemical Company, Midland, MI, USA

6A-4 Dielectric charging of polyetheretherketone insulation used in spacecraft superimposed dc voltage

Wen Bu, Weiwang Wang, Shusai Zheng, Shengtao Li; Xi'an Jiaotong University, China

6A-5* Space charge measurements under a scaled equivalent thermal gradient in HVDC mini-cables

Giuseppe Rizzo¹, Pietro Romano¹, Guido Ala¹, Eleonora Riva Sanseverino¹, Roberto Candela², Vincenzo Li Vigni²; 1: Università di Palermo, Italy; 2: Prysmian Electronics - Prysmian Group

6A-6 A deeper insight in predicting the effect of voltage polarity reversal on HVDC cables

Antonio Battaglia¹, Massimo Marzinotto¹, Giovanni Mazzanti²; 1: TERNA, Italy; 2: University of Bologna, Italy

6A-7 Evaluation of Energy Level Distribution in Nanocomposite Based on Polarization Current

Guiyue Zhou, Jiandong Wu, Chang Dai, Yu Zhang, Yi Yin; Department of Electrical Engineering, Shanghai Jiao Tong University, China

6A-8* Effect of Sinewave Electric Field on Space Charge Distribution in Ethylene-Propylene Rubber

Chang Dai, Jiandong Wu, Guiyue Zhou, Linxin Miao, Yi Yin; Shanghai Jiaotong University, China

6A-9 Dielectric Response and Charge Injection Behavior for Cu/PMMA/Pt and Cu/PMMA/n-Si

Cesar A Nieves¹, Michael T Lanagan^{2,3}; 1: Materials Science and Engineering, The Pennsylvania State University, USA; 2: Engineering Science and Mechanics, The Pennsylvania State University, USA; 3: Materials Research Institute, The Pennsylvania State University, USA

6A-10 Polarization and Depolarization Processes of Polyimide Based on a Non-Invasive Surface Potential Measurement

- Lu Fan¹, Yalin Wang¹, Enke Yu², Yi Yin¹, Jiandong Wu¹; 1: Shanghai Jiaotong University, China; 2: Zhoushan Power Supply Company, State Grid Zhejiang Electric Power Co., Ltd., China*
- 6A-11 Space Charge and Conduction Current in Polypropylene Based Material Added Inorganic Filler under DC High Stress
Kouta Hashimoto¹, Takehiro Kanai¹, Yasuhiro Tanaka¹, Hiroaki Miyake¹, Yoitsu Sekiguchi²; 1: Tokyo City University, Japan; 2: Sumitomo Electric Industries, Ltd, Japan
- 6A-12 Effect of filler amount on relative permittivity and deformation rate of TiO₂ / silicone elastomer composite
Ryosuke Fujihara¹, Muneaki Kurimoto¹, Kento Naya¹, Takeyoshi Kato¹, Masaki Imanaka¹, Shigeyuki Sugimoto¹, Yasuo Suzuoki²; 1: Nagoya University; 2: Aichi Institute of University
- 6A-13 Acoustic Wave Behavior in a Multilayer Specimen Containing an Air Void Defect
Antonino Imburgia, Pietro Romano, Guido Ala, Graziella Giglia, Giuseppe Rizzo, Fabio Viola; University of Palermo, Italy
- 6A-14 Influence of Silicone Oil and Gold Coating during the Space Charge Measurements on Epoxy Resin Specimens
Xialin Su¹, Siyu Zhang¹, Peng Wei², Zongliang Xie¹, Peng Wu², Liangliang Pan³, Peng Liu¹, Zongren Peng¹, Shiling Zhang⁴; 1: Xi'an Jiaotong University, China; 2: State Grid Ningxia Electric Power Company Maintenance Company; 3: State Grid Ningxia Electric Power Company; 4: State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute
- 6A-15 Space Charge Measurements on flat sample and cable specimens made by P-Laser Technology
Antonino Imburgia¹, Pietro Romano¹, Guido Ala¹, Marco Albertini², Luca De Rai², Stefano Franchi Bononi², Eleonora Riva Sanseverino¹, Giuseppe Rizzo¹, Srini Siripurapu²; 1: University of Palermo, Italy; 2: Prysmian Group, Milan, Italy
- 6A-16 Space Charge in Electron-Beam Irradiated Cross-Linked Polyethylene (XLPE): Implantation and Release from the Bulk
Cherif MOUCHACHE¹, Virginie GRISER², Nadia SAIDI-AMROUN¹, Gilbert TEYSSÉDRE², Sarah MOUACI¹, Mohamed SAIDI¹; 1: University of Sciences and Technology Houari Boumediène (USTHB), Algeria; 2: LAPLACE, Université de Toulouse and CNRS, France
- 6A-17 High Electric Field Conduction of Polymers at Ambient and Elevated Temperatures
Chao Wu^{1,2}, Zongze Li^{1,2}, Lihua Chen³, Ajinkya Deshmukh⁴, Yifei Wang², Rampi Ramprasad³, Gregory Sotzing⁴, Yang Cao^{1,2}; 1: Department of Electrical and Computer Engineering, University of Connecticut, USA; 2: Electrical Insulation Research Center, Institute of Materials Science, University of Connecticut; 3: School of Materials Science and Engineering, Georgia Institute of Technology; 4: Polymer Program, University of Connecticut
- 6A-18 Study on space charge behavior of insulations for high temperature applications
Mohamadreza Arab Baferani¹, Tohid Sahsavarian¹, Xin Wu², Charles Lents², Yang Cao¹; 1: University of Connecticut, USA; 2: United Technologies Research Center
- 6A-19 Effect of Electron Beam Irradiation on Epoxy and Its Stability
Mingru Li¹, Huan Niu¹, Yin Huang¹, Shengtao Li¹, Daomin Min¹, Ye Liu², Zhexuan Zhao¹; 1: Xi'an Jiaotong University, China; 2: State Grid Zhejiang Electric Power Co., Ltd., China
- 6A-20 Modeling and Band Offset of PE/ Fluorinated layer interface: A first Principle Study
Xuefeng Zhao¹, Xi Chen², Wei Duan¹, Haofei Sun¹, Junbo Deng², Guanjun Zhang²; 1: Electric Power Research Institute of State Grid Shaanxi Electric Power Company; 2: Xi'an Jiaotong University
- 6A-21 Dielectric Properties of EPDM/SiC Composite under Huge Temperature Gradient
Pengxian Song¹, Zehui Zhang², Haoming Wang¹, Shengchen Fang¹, Yang Yu¹, Zhengzheng Meng¹, Xu Li¹, M. Z. Zhu¹, X. H. Zhu¹, Boxue Du³; 1: Tianjin Electric Power Research Institute, China; 2: Laiwu Power Supply Company of State Grid Shandong Electric Power Company, China; 3: School of Electrical and Information Engineering, Tianjin University, China
- Session 6B – High Field Effects and Breakdown**
- 6B-1 Tests and Simulation Research on Control Value of Electric Field Intensity for Valve Hall Fittings
Jianwei Cheng¹, Shuaibing Wang¹, Kejie Huang¹, Linjie Zhao¹, Xi Chen¹, Zongliang Xie², Peng Liu²; 1: Southern Electric Power Research Institute, CSG; 2: Xi'an Jiaotong University
- 6B-2 Investigation on the Lightning Impulse Strength of Special Layered Silicone Dielectrics for HVDC Applications
Mirnes Aganbegovic, Peter Werle; Leibniz Universität Hannover, Germany
- 6B-3 Tuning the Potential Distribution of DC Cable Joints with Nonlinear Material
Xiaolei Zhao, Xiao Yang, Jun Hu, Chao Yuan, Qi Li, Jinliang He; Tsinghua University, China
- 6B-4 Effects of Types and Amounts of Additive Polymers on Resistivity and Dielectric Strength of Pure Water
Norimitsu Takamura, Nobutaka Araoka, Takuya Otsubo, Masahiro Hanai; Fukuoka University, Japan
- 6B-5 Void-less epoxy and silicone insulation systems
Andrej KRIVDA, Sergey PANCHESHNYI; ABB Switzerland Ltd, Corporate Research, Baden-Daettwil, Switzerland
- 6B-6* Structure of Paper–Oil Insulation for Mass-Impregnated HVDC Cables
Gunnar Håkonseth^{1,2}, Knut Magne Furuheim¹, Erling Ildstad²; 1: Nexans Norway AS, Norway; 2: Norwegian University of Science and Technology, Norway
- 6B-7 Fundamental study for breakdown characteristic of slush nitrogen as a coolant in superconducting coil
Kazuki Yamada, Tomohiro Kawashima, Yoshinobu Murakami, Naohiro Hozumi; Toyohashi University of Technology, Japan
- 6B-8 Simulation Study on Plugged Joint for 10kV Cable
Ruifeng Yao¹, Xiyuan Zhao¹, Lei Jiang¹, Ran Hu², Qida Zhong³, Jinghui Gao¹; 1: Xi'an Jiaotong University, China; 2: Shenzhen Power Supply Bureau Co. LTD, China; 3: Guangdong Annuo New Material Co. LTD, China
- 6B-9* Deformation of bubbles in silicon gel insulation under an alternating electric field
Giuseppe Rizzo¹, Pietro Romano¹, Guido Ala¹, Thomas Hammarström²; 1: Università di Palermo, Italy; 2: Chalmers University of Technology, Sweden
- 6B-10* Lightning Impulse Breakdown Characteristics in Epoxy Resin Filled with Precipitated ZnO Varistor Granules
Yuki Sasaki, Nobutaka Araoka, Norimitsu Takamura, Shota Yamasaki, Masahiro Hanai; Fukuoka University, Japan

- 6B-11 AC Breakdown Characteristics of Mineral Oil with Nitrogen Fine Bubbles under Nitrogen Gas Atmosphere
Tomohiro Tsutsumi, Norimitsu Takamura, Nobutaka Araoka, Takuya Otsubo, Yuki Sasaki, Seiya Kamohara, Masahiro Hanai; Fukuoka University, Japan
- 6B-12 Lightning Impulse Breakdown Characteristics of Pure Water with Nitrogen Ultrafine Bubbles Using Pore Type Generator
Takuya Otsubo, Takamura Norimitsu, Nobutaka Araoka, Yuta Hino, Masahiro Hanai; Fukuoka University, Japan
- 6B-13*** The Effect of Type of Voltage (Sinusoidal and Square Waveform) and the Frequency on the Performance of Nonlinear Field-Dependent Conductivity Coatings for Electric Field Control in Power Electronic Modules
Maryam Mesgarpour Tousi, Mona Ghassemi; Virginia Polytechnic Institute and State University, USA
- 6B-14 Electric Field Optimization of Cast Resin Dry-Type Transformer under Lightning Impulse
Ruizhi Hu¹, Zhili Zhang², Shuo Wang¹, Yu Lu¹, Lilan Liu¹, Sijia Zhu¹, Zongren Peng¹; 1: Xi'an Jiaotong University, Xi'an, China; 2: NARI Group Co.,Ltd, Nanjing, China
- 6B-15 Influence of Temperature on Ionization Coefficient of Helium at 300-20 K
Jie Wu, Chengqian Yi, Linzhen Fan, Wei Wang, Youping Tu, Sichen Qin; North China Electric Power University, China
- 6B-16 DC breakdown properties in large oil gaps with and without pressboard interface
Lin Feng Xia¹, Qinxue Yu¹, Songlin Jiang¹, Xiaoyuan Song¹, Mingbang Guo², Lisheng Zhong¹, Baofeng Xi¹, Yue Xin¹; 1: Xi'an Jiaotong University, China; 2: Guangdong JOOYN new material technology co.,LTD
- 6B-17 Interfacial Potential Barrier Induced Constriction and Stepwise Transition of a Dynamic Arc Root
Jindong Huo¹, Yang Cao^{1,2}; 1: Electrical Insulation Research Center, Institute of Materials Science, University of Connecticut, USA; 2: Electrical and Computer Engineering, University of Connecticut, USA
- 6B-18 Thermoelectric coupling study of three-core XLPE submarine cable by Finite element simulation
Zhaohui Wang, Weiwang Wang, Zhen Li, Shengtao Li; Xi'an Jiaotong University, China
- 6B-19*** Insulation Properties of Liquid C6F12O for the Use in Eco-Friendly Transmission Equipmen
RUI QIU, WENJUN ZHOU, JIANHUI YU, HAN LI, HANG WANG; School of Electrical Engineering and Automation, Wuhan University, China
- 6B-20 Thermal Evaporation of Different Copper Nanotip Structures under High Electric Field Based on Electrodynamics – Molecular Dynamics Simulations
Xinyu Gao, Bing Xiao, Ziang Jing, Nan Li, Qi Ying, Guodong Meng, Yonghong Cheng; Xi'an Jiaotong University, China
- 6B-21*** High electric field prebreakdown aging in polymer dielectric thin films
Zongze Li^{1,2}, Chao Wu², Alex Rontey², Michael Sotzing², Yang Cao^{1,2}; 1: Department of Electrical and Computer Engineering, University of Connecticut; 2: Electrical Insulation Research Center, Institute of Materials Science, University of Connecticut
- 6B-22 Study on accumulation effect of multiple lightning impulse on vegetable oil-paper insulation
Jianfeng He¹, Jian Li¹, Gangwen Xie², Xiong Liu², Yongfu Li Li², Rui Yang², Jing Zhao², Xiao Ren²; 1: Chongqing University, China; 2: State Grid Chongqing Electric Power

Co. Electric Power Research Institute, China

Session 6C – Outdoor Insulation, Surface Flashover and GIS (II)

- 6C-1 Effect of Charge Transport on Surface Flashover
Shaoming Pan^{1,2}, George Chen², Xiaoping Wang¹, Shengtao Li¹; 1: Xi'an Jiaotong University, China; 2: University of Southampton, UK
- 6C-2*** Role of Interfacial Molecular Structure on Surface Flashover in Vacuum
Chao Wang, Wen-Dong Li, Jia Guo, Zhi-Hui Jiang, Xiao-Ran Li, Guan-Jun Zhang; Xi'an Jiaotong University, China
- 6C-3 Experimental analysis of characteristics of saturation pollution on high voltage insulator in North China
Yi Lu¹, Xu Zhang¹, Xin Wang¹, Shuochao Fan¹, Yanfeng Gao¹, Yuan Chen¹, Shuyuan Wang², Hui Wang², Jifei Zhang², Bin Su²; 1: State Grid Jibei Electric Power Co. Ltd. Research Institute, North China Electric Power Research Institute Co. Ltd., Beijing, China.; 2: State Grid Jibei Electric Power Co. Ltd. Beijing, China.
- 6C-4 Transient Overvoltage Simulation Analysis of Long Distance Gas Insulated Metal Enclosed Transmission Lines
Ao Gong, Zehua Wu, Shoufeng Jin, Peng Liu, Zongren Peng, Pengfei Zhang, Xialin Su; Xi'an Jiaotong University, China
- 6C-5 Numerical Simulation on Surface Charge Accumulation of Solid Dielectrics with Needle to Plane Electrode under Nano-Second Impulse Voltage
Yu Gao, Zheng Song, Jing Li, Tao Han, Yong Liu, Boxue Du; Tianjin University, China
- 6C-6*** Design and Optimization of Particle Traps in DC GIL Based on the Capture Effect Analysis
Yanan Chang¹, Chuanghua Liu², Jin He³, Jian Wang¹, Jingrui Wang¹, Hanwen Ren¹, Qingmin Li¹; 1: Beijing Key Laboratory of High Voltage & EMC (North China Electric Power University), China; 2: State Grid Tianjin Electric Power Company, China; 3: Electric Power Research Institute, Tianjin Electric Power Company, China
- 6C-7*** Study on Adsorption Law of Metal Powder near the Basin-type Insulator in DC GIL
Ruixue Liang¹, Qi Hu¹, Yuyan Man², Yanan Chang¹, Jian Wang¹; 1: North China Electric Power University, China; 2: Electric Power Research Institute, Tianjin Electric Power Company
- 6C-8 Study on the effect of dielectric film on gap breakdown voltage under DC voltage in air, SF6 and SF6/N2 mixture
Wei Wei¹, Jian Wang², Jingrui Wang², Yanan Chang², Qi Hu², Xiaoru Ni², Ruixue Liang², Li Zhang¹; 1: School of Electrical Engineering, Shandong University; 2: State Key Lab of Alternate Electrical Power System with Renewable Energy Sources, North China Electric Power University, China
- 6C-9 The Accumulation Characteristics of Surface Charges on GIL Tri-post Insulator under DC Voltage in SF6
Weiguo Li¹, Chunjia Gao², Hao Han², Bo Qi², Changhong Zhang¹, Xu Yang¹, Zhongkang Huang¹, Qi Wang¹, Meng Huang²; 1: Maintenance & Test Center of EHV Power Transmission Company, China Southern Power Grid, China; 2: State Key Laboratory of Alternate Electrical Power System with Renewable Energy Sources, North China Electric Power University, China
- 6C-10 Influence of Defects on the Electric Field Distribution of ±800kV Butt-type DC Wall Bushing

Shiyi Zhou¹, Ran Shi¹, Wei Li², Huidong Tian¹, Shoufeng Jin¹, Liangliang Pan², Lei Shi², Peng Liu¹; 1: Xi'an Jiaotong University, China; 2: State Grid Ningxia Power Co. Ltd.

6C-11 Surface Flashover Properties of the 220 kV Epoxy Insulator in C4F7N/CO2 Mixtures
Zhichuang Li, Yue Li, Zhongbo Zheng, YiShu Liu, Yanan Wang, Weidong Ding; Xi'an Jiaotong University, China

6C-12 Influence of the Contact Form of the Electrode and the Insulator in C4F7N-CO2 Mixture
Zhongbo Zheng, Zhichuang Li, Yue Li, Yishu Liu, Weidong Ding; Xi'an Jiaotong University, China

6C-13 Surface charge accumulation behavior on Al2O3-filled epoxy composites with rough surface under DC voltages
Bao-Quan Wan¹, Jian-Ben Liu¹, Jian-Yi Xue², Jun-Bo Deng², Guan-Jun Zhang²; 1: State Key Laboratory of Power Grid Environmental Protection, China Electric Power Research Institute Wuhan Branch; 2: Xi'an Jiaotong University

6C-14* Effect of Mineral Oil on Electrical Properties of HTV Silicone Rubber under Thermal and AC Corona Aging
Yan Yang; Southwest Jiaotong University, China

6C-15 Influence of Defects on Electric Field Distribution of GIS Insulator
XI YANG¹, HESHUN JIANG², JIAN ZHANG², KUN JI², JIANLIN LI², JIA XIE², SHAORUI QIN³; 1: Hefei University of Technology; 2: State Grid Anhui Electric Power Company Limited; 3: State Grid Anhui Electric Power Company Limited Research Institute

6C-16 Simulation Research on the Influence of Secondary Emission Yield Distribution on Vacuum Flashover
Shu ZHANG, Guangyu SUN, Baohong GUO, Baipeng SONG, Haibao MU, Guanjun ZHANG; Xi'an Jiaotong University, China

6C-17 Optimization of Insulation Structure for GIS Insulator with Multi-Objective Algorithm
Shenglong Zhu¹, Wei Yang¹, Yanguo Ke², Guobao Zhang¹, Hengyang Zhao¹, Dongbo Song¹, Xi Yang³; 1: State Grid Anhui Electric Power Company Limited Research Institute; 2: State Grid Anhui Electric Power Company Limited; 3: Hefei University of Technology

6C-18 Research on Infiltration Characteristics of Moisture in the Polyurethane Perfusion Post Insulator
Hongwei Mei¹, Xiyuan Guan¹, Fanghui Yin¹, Jun Zhou², Liming Wang¹; 1: Graduate School of Shenzhen, Tsinghua University, Shenzhen, China; 2: China Electric Power Research Institute, Beijing, China

Session 6D – Partial Discharges and Measurement Techniques (II)

6D-1 Partial Discharge Signal Propagation in T-Structured GIS
Ahmad Darwish¹, Shady Refaat², Hamid Toliyat¹, Haitham Abu-Rub², Qasim Khan²; 1: Texas A&M University, College Station, USA; 2: Texas A&M University at Qatar, Doha, Qata

6D-2* Investigation for influence of space charge accumulation in motor winding coating material on partial discharge inception voltage
Tokihiko Narita¹, Maimi Mima¹, Hiroaki Miyake¹, Yasuhiro Tanaka¹, Masahiro Kozako², Masayuki Hikita²; 1: Tokyo City University, Japan; 2: Kyushu Institute of Technology, Japan

6D-3 Transformer Fault Diagnosis Method via Approximation Relations in Approximation Space
Tong-lei Wang¹, Yao-Yu Xu², Yuan Li², Guan-Jun Zhang²; 1:

State Grid Jiangsu Electric Power Research Institute, China; 2: Xi'an Jiaotong University, China

6D-4 Effect of mechanical vibration on surface discharge along epoxy resin under AC electric field
Siyun Wang, Ming Ren, Ming Dong, Xinyi Ma, Changjie Xia, Tianxin Zhuang, Ran Duan; Xi'an Jiaotong University, China

6D-5 Insulation monitoring of oxidative aged nonedible ester based dielectric fluid by suitable dissolved gas analysis
Mrutyunjay Maharana¹, Niharika Baruah¹, Sisir Kumar Nayak¹, Kai Wu²; 1: Centre for Energy and Dept. of Electronics and Electrical Engineering, IIT Guwahati, Assam, INDIA; 2: Xi'an Jiaotong University, China

6D-6* Behavioural assessment of aged natural ester based nanofluid using statistical technique
Niharika Baruah, Mrutyunjay Maharana, Sujita Srichandana Dey, Sisir Kumar Nayak; Indian Institute of Technology, Guwahati, India

6D-7 Partial Discharge Inception Voltage Characteristics for Nano-micro Composites under Impulse Voltage in SF6 Gas
Kazuma Abe¹, Kotaro Ohzuno¹, Masahiro Kozako¹, Masayuki Hikita¹, Hiroshi Mitsudome², Hironori Yanase², Kenji Okamoto²; 1: Kyushu Institute of Technology, Japan; 2: Fuji electric Co., Ltd

6D-8 The Partial Discharge Behavior of Different Materials under DC Periodic Stress
Pietro Romano¹, Roberto Candela², Carlo Consolazione¹, Giuseppe Rizzo¹, Guido Ala¹; 1: Palermo University, Palermo, Italy; 2: Prysmian Group, Milan, Italy

6D-9 The Effect of the Harmonic Content generated by AC/DC Modular Multilevel Converters on HVDC cable systems
Pietro Romano¹, Guido Ala¹, Jorgen Blennow², Massimo Bongiorno², Christian Grasso¹, Thomas Hammarström², Antonino Imburgia¹, Giuseppe Rizzo¹, Yuriy Serdyuk²; 1: Palermo University, Palermo, Italy; 2: Chalmers University of Technology, Gothenburg, Sweden

6D-10 Thermal Profiles of High-voltage Capacitor Units
Calum J. Mackinnon, Brian G. Stewart; University of Strathclyde, UK

6D-11* Partial discharge studies on high-temperature insulation materials for hybrid compulsion systems
Tohid Shahsavarian¹, Mohamadreza Arab Baferani¹, Xin Wu², Charles Lents², Yang Cao¹; 1: University of Connecticut, USA; 2: United Technologies Research Center

6D-12 Electrochemical Impedance Spectroscopy Measurement of Lithium Battery Based on Lock-in amplifier
Guanghao Xu, Ran Duan, Ming Dong, Ming Ren, Jiacheng Xie, Yizhuo Hu; Xi'an Jiaotong University, China

6D-13 Time-domain dielectric response characteristics of XLPE cable insulation under different water content
Xuefeng Zhao¹, Jiarui Han², Haofei Sun¹, Wei Duan¹, Xi Chen², Junbo Deng²; 1: Electric Power Research Institute of State Grid Shaanxi Electric Power Company; 2: Xi'an Jiaotong University

6D-14 Design method of high frequency current sensor based on neural network
Chuan Chen¹, Xin Liu¹, Wei Wang², Lin Wang³; 1: Global energy interconnection research institute, China; 2: North China electric power university, China; 3: Beijing power company, China

6D-15* Multi-band Ultrasonic Detection Analysis of the Evolution Process of Point Discharge Under Power Frequency Voltage

Ran Duan, Guanghao Xu, Ming Ren, Ming Dong, Xuze Gao, Changjie Xia; Xi'an Jiaotong University, China

6D-16* Experimental and Numerical Investigation on the Electric Charge Deposition in a Dielectric Barrier Discharge
Andrea Cristofolini, Gabriele Neretti, Arturo Popoli, Anna Chiara Ricchiuto, Paolo Serì; Department of Electrical, Electronic and Information Engineering, University of Bologna

6D-17 Corona resistant insulating systems characterization for low voltage rotating machines
Eugenia Torello, Francesco Guastavino, Luca Briano, Federico Gallesi; University of Genoa, Italy

6D-18 Power Transformer Condition Monitoring by 2FAL Content – a Fuzzy Logic Approach
Samuel EKE¹, Thomas AKA-NGNUI¹, Guy CLERC¹, Issouf Fofana²; 1: Univ. Lyon-Ampère (CNRS UMR 5005), Ecole Centrale Lyon, Univ. Claude Bernard Lyon 1, INSA de Lyon, France; 2: University of Quebec at Chicoutimi (UQAC), Canada

6D-19 Precise Positioning of the Underground Power Cable by Magnetic Field Detection
Xuancheng Huang¹, Wei Wang², Zepeng Lv², Chao Yuan², Jianbao Feng²; 1: Jiangsu Fangtian Electric Technology Co. Ltd, China; 2: Xi'an Jiaotong University, China

Session 6E – Functional Dielectrics

6E-1 Investigation on the Breakdown Strength of Aged Special Layered Silicone Dielectrics under DC Stress
Mirnes Aganbegovic, Peter Werle; Leibniz Universität Hannover, Germany

6E-2* Flash Sintering of 8YSZ Ceramics under AC Field
Jieming Liu, Yuchen Zhu, Xilin Wang, Zhidong Jia, Liming Wang; Tsinghua University, China

6E-3 Enhancement of dielectric constant of aromatic polyimides by introducing 4,5-diazafluorene structure
Liuqing Yang, Ben Tan, Shijun Li, Yang Feng, Zhao Ge, Lihao Jiang, Ganlin Mao; Xi'an Jiaotong University, China

6E-4 Reading Local Structure for Ferroelectric Ceramic by Convergent Beam Electron Diffraction and Artificial Intelligence Method
Zhixin He, Wenbo Yan, Jingzhe Xu, Yan Wang, Tongxin Zhao, Jinghui Gao; Xi'an Jiaotong University, China

6E-5* Effect of Micron Thermal Conductive Filler on Thermal Conductivity and Electrical Properties of Epoxy Composites
RUI TUO¹, YIRAN ZHANG¹, WEI YANG², SHAOJIAN HE¹, QING XIE¹, XINGMING BIAN¹; 1: North China Electric Power University, China; 2: State Key Laboratory of Advanced Transmission Technology, Global Energy Interconnection Research Institute, Co., Ltd, China

6E-6 Cryogenic Characteristics and Relaxation Polarization Mechanism of NaCl Aqueous Solutions
Xiaoyuan Song, Lisheng Zhong, Jiayi He, Minchen Qiu, Jinghui Gao, Qinxue Yu; Xi'an Jiaotong University, China

6E-7* Global Proteomic Analysis of Breast Cancer Cell Plasma Membrane Electroporation
Lakshya Mittal, Uma K. Aryal, Ignacio G. Camarillo, Raji Sundararajan; Purdue University, USA

15:30-16:00 Break

16:00-18:00 Session 7 (Oral): Gold Session with Extended Discussions

Chair: Thomas Andritsch, University of Southampton, UK
Co-chair:

7-1 Effect of Core-shell Particles on the Dielectric Properties of Epoxy Nanocomposites

Sunny Chaudhary, Thomas Andritsch, Alun Vaughan; University of Southampton, UK

7-2 The Role of Nano-sized Alumina Tri-hydrate and Fumed Silica on the Erosion of Silicone Rubber under DC Voltage
Alhaytham Yousef J Alqudsi¹, Refat Atef Ghunem^{1,2}, Eric David¹; 1: École de technologie supérieure; 2: National Research Council Canada

7-3 Discharge Behavior of the Nanostructured Insulation Material for High Torque Density Electrical Propulsion
Hiep Nguyen¹, Yifei Wang¹, JoAnne Ronzello¹, Jack Chapman², Yang Cao¹; 1: Univ. of Connecticut, USA; 2: Electric Boat, A General Dynamic Company, Groton, CT, USA

7-4 A Non-destructive Testing Method for Moisture Content of Oil-paper Insulation Based on Terahertz Dielectric Response
Hanqing Wang, Jing Yin, Li Cheng, Ruijin Liao, Lijun Yang; Chongqing University, China

18:30-21:00 Banquet

Wednesday, October 23, 2019

8:15-10:00 Session 8 (Oral) Numerical Analysis and Simulation

Chair:

Co-chair:

8-1 Investigation of Charge Stability in Amorphous Fluorinated Polymer Using Quantum Chemical Analysis
Seonwoo Kim, Yucheng Zhang, Kuniko Suzuki, Yuji Suzuki; The University of Tokyo, Japan

8-2 Estimation of Electron Trap in Hydrocarbon-Based Thermosetting Resin/Fullerene Composite by Computational Science
Kotaro Ohzuno¹, Kazuma Abe¹, Masahiro Kozako¹, Masayuki Hikita¹, Nobuhito Kamei²; 1: Kyushu Institute of Technology, Japan; 2: RIMTEC Corporation

8-3 First-Principle Based Modeling of Electron and Hole Transfer in Amorphous Polyethylene Terephthalate Oligomer
Masahiro Sato, Akiko Kumada, Kunihiko Hidaka; The University of Tokyo, Japan

8-4 Heat Transfer in BNNT-Polymer Nanocomposites from Non-equilibrium Molecular Dynamics
Yuanyang Ren, Yang Wu, Zheng Zong, Xin Yang, Bing Xiao, Kai Wu; Xi'an Jiaotong University, China

8-5 Identification a Unique Set of Parameter for the Charge Transport Model in LDPE Based on Inverse Methods and Experimental Data

Khaled Hallak¹, Fulbert Baudoin¹, Virginie Griseri¹, Florian Bugarin², Stéphane Segonds²; 1: LAPLACE - University of Toulouse, France; 2: ICA - University of Toulouse, France

8-6 A Study of Diffusion of O₂ in Polyethylene Poly (Urea Formaldehyde) Composites Using Molecular Dynamics Simulations
Yanfang Zhang, Youyuan Wang, Zhanxi Zhang, Yudong Li; Chongqing University, China

8-7 The influence of the Cathode Radius on Microgap Breakdown in Air Based on PIC/MCC Simulation
Guodong Meng, Qi Ying, Kejing Wang, Xinyu Gao, Yonghong Cheng; Xi'an Jiaotong University, China

10:00-10:30 Break

10:30-12:15 Session 9 (Oral) HVDC Insulation and Space Charges

Chair:

Co-chair:

- 9-1 Influence of Shish-Kebab Crystal on Electrical and Mechanical Properties for Polypropylene/Elastomer Blends
Yu Gao, Jing Li, Zheng Song, Tao Han, Yong Liu, Boxue Du; Tianjin University, China
- 9-2 Tailoring Polymeric Insulation Materials for DC Cable Dielectrics
Mattewos Tefferi^{1,2}, Lihua Chen^{1,3}, Shamima Nasreen¹, Hiroaki Uehara⁴, Rampi Ramprasad^{1,3}, Yang Cao^{1,2}; 1: NSF Industrial University Collaborative Research Center on High Voltage/Temperature Materials and Structures; 2: Department of Electrical and Computer Engineering, University of Connecticut, USA; 3: School of Materials Science and Engineering, Georgia Institute of Technology, USA; 4: Department of Science and Engineering Kanto Gakuin University Yokohama, Japan
- 9-3 Implantation of Electrons in Gamma Irradiated PET Films at Different Doses
Sarah MOUACI¹, Nadia SAIDI-AMROUN¹, Virginie GRISER², Laurent BERQUEZ², Gilbert TEYSSÉDRE², Nassiba BELKAHLA¹, Mohamed SAIDI¹; 1: Material Physics Laboratory, Physics Faculty, University of Sciences and Technology (USTHB), Algeria; 2: LAPLACE, Université

de Toulouse and CNRS, France

- 9-4 Electric Field Enhancements due to Space Charge in Thin Polyimide Film
Kunihiko Tajiri¹, Hirotaka Muto¹, Flora Carrasco², Laurent Berquez², Didier Marty-Dessus², Marie-Laure Locatelli², Sombel Diahm², Virginie Griser², Thierry Lebey², Gilbert Teysse²; 1: Mitsubishi Electric Corporation, Japan; 2: LAPLACE, CNRS, INPT, UPS Toulouse, France
- 9-5 The Conductivity Characteristics of Different Oils and Papers and Their Effects on the Interface Charge of Oil-paper
Yajie Fan, Kai Wu, Chuanhui Cheng; Xi'an Jiaotong University, China
- 9-6 Dynamic Space Charge Oscillations and Charge Packets in Poly(ethylene oxide)
Kapil Faliya, Herbert Kliem; Institute of Electrical Engineering Physics, Saarland University, Germany
- 9-7 Space Charge Accumulation Characteristics in Super Engineering Plastics under DC Stress at High Temperature
YUKI TANAKA, MAIMI MIMA, YUKI NARITA, HIROAKI MIYAKE, YASUHIRO TANAKA; Tokyo City University, Japan

12:15-12:30 Remarks

12:30-16:00 Catered Lunch and Technical Tours

12:45-17:00 CEIDP Board Meeting

SEE YOU NEXT YEAR!