

2005 IEEE CEIDP

**IEEE CONFERENCE ON ELECTRICAL INSULATION AND DIELECTRIC PHENOMENA
Sheraton Nashville Downtown Hotel, Nashville, Tennessee, USA October 16-19, 2005**

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CONFERENCE INFORMATION

The 2005 Conference on Electrical Insulation and Dielectric Phenomena (CEIDP) is sponsored by the IEEE Dielectrics and Electrical Insulation Society to provide an international forum for the discussion of current research on electrical insulation, dielectric phenomena and related topics. The conference provides an opportunity for specialists from around the world to meet and to discuss ongoing research. Topics of interest to the Conference include: aging; biodielectrics; outdoor insulation; surface flashover; polarization phenomena; measurement techniques; partial discharge measurements; flow electrification; charge storage and transport; electrohydrodynamics; high-field effects; charge and field mapping; treeing; prebreakdown and breakdown in solids, liquids, gases, and vacuum.

THE WHITEHEAD LECTURE

The Whitehead Memorial Lecture is named in honor of Dr. John Boswell Whitehead, a pioneer in electrical insulation and dielectrics and a long-time contributor to the CEIDP. The Conference opens each year with the Lecture and it is the keynote session of the Conference. The 2005 Whitehead Memorial Lecture will be given by Dr. Edward A. Cherney on a topic entitled, "*Silicone Rubber Composite Dielectrics Modified by Inorganic Fillers for High Voltage Insulation*".

REGISTRATION

All Conference attendees must register for the Conference.

Registration payment on or before September 15, 2004	US \$500
Registration payment after September 15, 2004	US \$550
*Reduced registration on or before September 15, 2004	US \$300
*Reduced registration after September 15, 2004	US \$350

*Reduced registration is offered to students, IEEE life members, persons retired and not gainfully employed, and persons who are currently unemployed.

The Conference registration includes: one hardcopy and CD-ROM version of the 2005 Annual Report and the following social functions: Reception, Sunday, October 16, 2005, 1800-2100; Social hour and banquet, Tuesday, October 18, 2005, 1800-2100; Refreshments served during breaks

Extra banquet tickets may be purchased for spouses and guests.

All fees are due at registration. Payment may be made by check, money order, credit card, or wire transfer. The following credit cards are accepted: American Express, MasterCard, Visa, and Diners Club. All payments are in US dollars. Checks and money orders drawn on or payable through US banks are accepted. Make checks and money orders payable to IEEE/CEIDP. Wire transfers are payable through Fleet Bank Boston, Massachusetts, USA; IEEE Travel Services; Account Number 8459001469; ABA Number L011000138.

Registration fees are nonrefundable after September 25, 2004. There is a \$75 nonrefundable fee for cancellations received before September 25, 2005.

Printable registration form:

[Registration Form](#)

Conference registration may be submitted on-line at <https://icm3.ieee.org/eventmanager/onlineregistration.asp?eventcode=FCQ> or by using the registration form available on the Conference web site.

The Conference registration desk will be open during the following hours:

Sunday, October 16, 2005, 1600-2100;
Monday, October 17 2005, 0800-1600 and 1900-2000;
Tuesday, October 18, 2005, 0800-1200; and
Wednesday, October 19, 2005, 0800-1200

HOTEL

All sessions and activities of the 2005 IEEE/CEIDP will be held at the Sheraton Nashville Downtown Hotel, Nashville, Tennessee, USA. The conference rate is \$126.00 plus tax per night for single or double occupancy, \$156.00 for club and additional person \$10.00. To ensure this rate, your hotel reservation and deposit must be received by **September 16, 2005**.

To ensure these rates, your Hotel reservation and deposit must be received by September 17, 2004. Reservations made after September 17, 2004 will be accepted on a space and rate availability basis.

Reservations should be made directly with the Hotel at the following address:

Sheraton Nashville Downtown Hotel,
623 Union Street,
Nashville, Tennessee 37219 1345 USA
Tel: 615-259-2000 or toll free: 800-447-9825 Fax: 615-742-6057

Be sure to mention that you are attending the 2005 IEEE/CEIDP when making your reservation to receive the Conference room rates.

A hotel registration form is now available. Please mail or preferably fax the form to the hotel.

[Down-load the Hotel Registration Form](#)

Apparently faxing your reservation is slow and you may experience a delay in receiving your confirmation, so we suggest either calling in your reservation or using the newly available on-line registration web link.

On line registration is now available (we are very sorry about the delay, but unfortunately had no control over the situation). Note that the deadline has been extended to **September 23, 2005**. If you want to make your reservations on-line click on the URL below:

[On-line Hotel Registration](#)

<http://www.starwoodmeeting.com/StarGroupsWeb/booking/reservation?id=0509130380&key=9F7D2>

TOURS

Tours are subject to cancellation if there is insufficient interest. Tour fees will be refunded in the event of cancellation.

CEIDP 2005 is offering three tours. To register for these tours, please go to the website listed below and register directly with the Conference Tour Company, Key Events, and register either online or by mail or fax. Payment must be made in advance to Key Events and not the CEIDP. Please register early. If extra tickets are available, they will be sold at the hotel.

On-line Tour Registration:

<http://www.nashvilledmc.com/registration/default.asp>

1. Guided Walking Tour of Historic Downtown Nashville.

Saturday, October 15, 2005, 3:00 pm – 5:00 pm, \$9 per person

Nashville is known as Music City, USA and the home of country music. Downtown Nashville is host to many attractions important to country music but also has many other historically important places of interest. A guided walking tour will include numerous venues including Historic Market Street (now Second Avenue), Riverfront area, Printers Alley, the traditional center of Nashville's nightlife, The Men's Quarter, Downtown Presbyterian Church, one of the largest and best-preserved examples of Egyptian Revival architecture in the United States, Fifth Avenue Historic District, The Arcade, The Public Square, Davidson County Courthouse, Historic Black Business District, St. Mary's Church, Nashville's oldest standing church, The Tennessee State Museum, The Tennessee State Capitol (1845-1859), The War Memorial Building, The Hermitage Hotel which served as headquarters for both suffragist and anti-suffragist groups, Ryman Auditorium, home of the Grand Ole Opry (1943 – 1974), Hatch Show Print Shop, one of America's oldest surviving show poster printers, and the honky tonks along Broad Street which made country music famous.

Price: \$9.00/person To register: For more information and to register for this tour, you must go to the following website and register directly with the conference tour company, Key Event. Deadline for registration is October 4.

2. Technical Tour

Saturn Automobile Manufacturing Plant,
Tuesday, October 18, 2005, 1:00 – 5:00 pm, \$27.00 per person

The Saturn Corporation site encompasses 2,450 acres in the predominantly rural, farming community of Spring Hill. The plant occupies over 4.5 million square feet of manufacturing space and is one of the few integrated automobile-manufacturing facilities in the world. Considerable attention has been paid to environmental protection at Saturn with initiatives ranging from maintaining farming operations on over 1000 acres to the installation of a 320,000-CFM carbon adsorption system on the paint shop. You will see a new breed of cars in production as you ride on a tram through the vehicle systems and interior systems buildings of Saturn's manufacturing complex. The tour will show the processes and unique features of Saturn's assembly operations.

Price: \$27.00 per person, based on a maximum of 30 people. To register: For more information and to register for this tour, you must go to the following website and register directly with the conference tour company, Key Event. Deadline for registration is October 4. Please register early for this event. There is a maximum of 30 people allowed.

3. Social Tour, The Hermitage.

Home of U.S. President Andrew Jackson,
Tuesday, October 18, 2005, 1:00 – 5:00 pm, \$34.50 per person.

Set on more than 600-acres of rolling middle Tennessee countryside, The Hermitage offers a commemorative tribute to one of America's most admired Presidents and great military heroes, Andrew Jackson, 7th President of the United States.. Many original furnishings, countless personal items, and beautiful landscaping and gardens are kept much as they were when the Jackson family lived. Known as "Old Hickory", he was the first president born in a log cabin and the first president to ride on a railroad train

Price: \$34.50 per person. To register: For more information and to register for this tour, you must go to the following website and register directly with the conference tour company, Key Event. Deadline for registration is October 4.

Other Nashville Attractions:

Country Music Hall of Fame

This museum highlights the history of country music from its birthplace in the Music City to present-day. Open 9-5 daily
222 Fifth Ave. S. <http://www.countrymusichalloffame.com/>

Grand Ole Opry

America's longest continuously running radio show, the Grand Ole Opry has been broadcasting since 1925 from various venues. The performance now comes to listeners from the world's largest broadcast studio, which seats an audience of 4,424. Shows are Friday and Saturday night. Obtain tickets in advance: see <http://www.opry.com/>

Belle Meade Plantation

Belle Meade Plantation represents a full 100-year span of Tennessee history and architecture. Today, 30-acres remain of the once 5,400-acre plantation, making this one of the South's most outstanding showplaces. On the National Register of Historic Places, Belle Meade Mansion had been beautifully restored to reflect the sumptuous elegance of the 19th century. Elaborately furnished with antiques and art of the period, Belle Meade brings to life true antebellum Tennessee. Visit the mansion's colossal carriage house, which is filled with restored antique carriages, and see the stables, which once housed some of horse racing's finest lineage. The garden, smokehouse, and dairy give a glimpse of the practical and pastoral side of life at one of the South's most interesting and visually rewarding showplaces. Come and meet the "Old South" at the queen of Tennessee plantations!

Belmont Mansion

Next, it is off to Belmont Mansion, located on Nashville's Belmont University Campus for a spectacular look at an 1850's Italian villa built by the savvy Adelia Acklen. A woman of great wealth, Adelia claimed extensive land holdings in Tennessee, Los Angeles and Texas. Bold and beautiful, she managed to outwit Union and Confederate troops, enabling the rare sale of cotton during the war, netting her nearly \$1 million dollars. The Grand Salon is considered to be the most elaborate domestic room built in antebellum Tennessee. The mansion contains an outstanding collection of original marble and the largest collection of 19th century cast iron garden ornaments in the United States.

The Parthenon, Nashville

The only full-size replica of the Parthenon (in Greece) in the world.
Attraction type: Monument; Landmark/point of interest; Statue

Ryman Auditorium, Nashville

One of the most famous concert halls in the history of country music, this auditorium still hosts live music events.
Attraction type: Concert; Theater

Opry Mills, Nashville

A 200-store shopping, dining and entertainment complex built on the site of the former theme park, Opryland USA.
Attraction type: Mall

General Jackson's River Cruises, Nashville

Attraction type: Group tour/boat

TRANSPORTATION

Airport shuttle service is operated by the Grayline's Downtown Airport Express. The cost is \$11.00 one-way and \$18.00 round trip (current pricing). This shuttle departs from the group transportation level of the airport every 15 minutes. For the return trip, the shuttle leaves the hotel twice every hour, at 5 and 35 minutes after each hour.

There is a flat rate for cab service from the airport and that would be \$22.00. Cabs can also be obtained at the group transportation level of the airport.

SPOUSE AND GUEST PROGRAMS

Information on local attractions will be provided at the registration desk.

AUTHOR SUPPORT

The CEIDP is able to provide limited support to authors. Inquiries should be sent to [Vishnu Lakdawala](mailto:vlakdawa@odu.edu) at vlakdawa@odu.edu, Conference Chair, by July 31, 2005.

STUDENT SUPPORT

The CEIDP provides a limited number of stipends in the amount of US \$300 to full-time students to encourage their participation in the Conference. The stipend is contingent upon the following conditions: 1) the student must be an author or coauthor of a paper accepted for presentation at the Conference, and 2) the student must present or co-present the paper at the Conference. The CEIDP reserves the right to limit the number of student stipends allocated to a single research group or institution. To apply for a student stipend, the following information should be sent by e-mail message to [Vishnu Lakdawala](mailto:vlakdawa@odu.edu), Conference Chair, by June 30, 2005.

IEEE/DEIS TECHNICAL MEETINGS

DEIS committee chairs planning to hold meetings during the Conference should contact Isidor Sauers prior to the Conference. Limited meeting space is available and requests for space will be honored in the order that they are received.

2004 ANNUAL REPORT

One copy of the 2004 Annual report is provided with the registration. While supplies last, additional copies may be obtained at the Conference at a cost of US \$ 80 each. Following the Conference, the Annual Report is available from:

IEEE Service Center
Single Publication Sales Department
445 Hoes Lane
Piscataway, NJ 08854
USA
Tel: 800-675-4333
Fax: 732-981-9667

WORKSHOP ON CRYOGENIC DIELECTRICS

Because of the increasing number of applications of high temperature superconductors, particularly in the electric power industry, there is also a growing need to obtain data on dielectrics at cryogenic temperature, primarily at 77K (LN₂) or lower. In order to bring researchers and engineers working in this area together with the dielectrics community, a workshop will be held on Sunday, October 16, 2005 on the subject of cryogenic dielectrics. Topics will include electrical measurements on dielectrics at cryogenic temperatures and design and materials issues relevant to ongoing demonstration projects.

[Workshop agenda](#)

2005 IEEE CONFERENCE ON ELECTRICAL INSULATION AND DIELECTRIC PHENOMENA

————— Sunday, October 16 —————

0900-1700 **Workshop on Cryogenic Dielectrics**

1600-2100 **Registration**

1800-2100 **Reception (Cash bar)**

————— Monday, October 17 —————

0800-0815 **Welcome**

Vishnu K. Lakdawala, Conference Chair,
Old Dominion University, USA

0815-0930 **The Whitehead Lecture**

Silicone rubber dielectrics modified by inorganic fillers for outdoor high voltage insulation applications

E. A. Cherney
University of Waterloo, Canada

0930-1000 **Break (Refreshments)**

1000-1230 **Session 1 General I (Oral)**

Chair: Masoud Farzaneh
Organizer: Raji Sundararajan, Arizona State University East, USA

1-1 **Flashover performances of a semi-conducting glazed post station insulator under icing conditions based on electric field distributions**

Vinay Jaiswal and Masoud Farzaneh
University of Quebec at Chicoutimi

1-2 **Space charge and long term performance of XLPE insulation under a high dc field**

Mahmoud Abou-Dakka, Soli Bamji, and Alexander Bulinski
National Research Council of Canada

1-3 **Detection of insulation-failure detection in BLDC motors using neuro-fuzzy systems**

Mohamed A. Awadallah² and Medhat M. Morcos¹
¹Kansas State University and ²University of Zagazig

- 1-4 Characterization of field-aged non-ceramic insulators**
Balasubramanian N. Pinnangudi, Ravi S. Gorur, and Christian D. Poweleit
Arizona State University
- 1-5 EPR lifetime under impulsive voltage stress**
Massimo Marzinotto², Carlo Mazzetti², Massimo Pompili², and Prospero Schiaffino¹
¹Nexans Norway AS and ²University of Roma "La Sapienza"
- 1-6 Characterisation of electro-thermally aged XLPE cable peelings through space charge measurements**
Antonios Tzimas, Mingli Fu, and Leonard A. Dissado
University of Leiceister

Lunch Break

1400-1600 Session 2 (Poster)

1500-1600 Refreshments

1400-1600 2A Prebreakdown and Breakdown in Solids, Liquids, Gases, and Vacuum

Chair: Kalyan Koppisetty, Auburn University, USA
Organizers: Tony Fouracre, University of Strathclyde, UK and
Huseyin R. Hiziroglu, Kettering University, USA

- 2A-1 Onset voltage of positive corona on dielectric-coated electrodes**
Mahmoud M. El-Bahy and Mohamed A. Abou-El-Ata
Faculty of Engineering, Shubra
- 2A-2 Electron collision cross sections in mono-silane (SiH₄) molecule: An investigation and analysis**
Saeed Ul Haq
University of Waterloo
- 2A-3 Humidity effects on dielectric strength of air-gaps for indoor HV installations**
Li Ming¹, Fredrik Sahlen¹, Dong Wu², Gunnar Asplund², and Bjorn Jacobson²
¹ABB Corporate Research and ²ABB Power Technologies AB
- 2A-4 Optical emission characteristics of helium breakdown at partial vacuum for point to point electrode geometry**
Kalyan Koppisetty², Hulya Kirkici², Mert Serkan², and Daniel L. Schweickart¹
¹Air Force Research Laboratory and ²Auburn University
- 2A-5 Reduction of voltage stresses in power transformer winding due to surges**
G.R. Gurumurthy¹, Mohd.Z.A. Ansari¹, and J. Amarnath²
¹Ghousia College of Engineering and ²J.N.T University, College of Engineering
- 2A-6 Investigation on the correlation between morphology and electrical breakdown in insulating polymers by using the percolation model**
Kai Wu¹, Tatsuki Okamoto¹, and Yasuo Suzuoki²
¹Central Research Institute of Electric Power Industry (CRIEPI) and ²Nagoya University
- 2A-7 Calculation of breakdown voltages in Ar + SF₆ using an artificial neural network**
Suleyman Tezcan¹, Sezai Dincer¹ and Huseyin R. Hiziroglu²
¹Gazi University and ²Kettering University

- 2A-8 Investigations on dielectric breakdown of ceramic materials**
David Malec², Thierry Lebey², Fadila Lalam¹, and Fathia Talbi¹
¹Mouloud Mammeri University and ²Paul Sabatier University
- 2A-9 Relationship between charge injection and AC dielectric breakdown in polyethylene**
Dominique Mary and David Malec
Paul Sabatier University
- 2A-10 Mechanical stresses and some electrical properties of polymers**
Jean-Pierre Crine¹ and Eric David²
¹Consultant and ²ETS
- 2A-11 Improvement of electrical performance on silicone insulating-semiconductive interface by plasma treatment**
Bokhee Youn
LG Cable Ltd.
- 2A-12 Electric characterization of films peeled from the insulation of extruded HVDC cables**
N. Zebouchi¹, P. Carstensen¹, A.A. Farkas², A. Campus³, and Ulf H. Nilsson³
¹ABB AB, ²ABB Power Technologies AB, and ³Borealis AB
- 2A-13 Study on characteristic of partial discharge under DC condition**
Wen Shu, Jun Guo, and Guangning Wu
School of Electrical Engineering, Southwest Jiaotong University
- 2A-14 The influence of moisture absorption on the electrical breakdown and dielectric behaviour of SRBP**
Stephen J. Dodd², John Champion², Barry Ahern¹, John Pettinger¹, and Francis Waite¹
¹National Grid Transco and ²University of Southampton
- 2A-15 Identification of incipient discharges in gas insulated system using acoustic emission technique**
Ramanujam Sarathi, Vishal Dubey, M. Malarvizhi, and Y.G. Srinivasa
IIT Madras
- 2A-16 Numerical simulation of wire-to-cylinder negative corona discharge in dry air**
Agustín Fernández-Rueda, Francisco Pontiga, Carlos Soria, and Antonio Castellanos
University of Seville
- 2A-17 Ozone generation in N₂ + O₂ mixtures using negative corona discharge**
Francisco Pontiga and Antonio Castellanos
University of Seville
- 2A-18 Low-intensity discharge interactions with epoxy surfaces: Effects from various factors**
Michel Fréchette and R.Y. Larocque
IREQ
- 2A-19 A study of microscopic model of the arc plasma at equilibrium in sealed relay**
Chunyan Zang, Junjia He, Changchun Wang, Lichun Cheng, and Zhengying Li
College of Electric and Electronics Engineering, Huazhong University of Science & Technology
- 2A-20 The influence of moisture on low voltage oil-and-paper insulated distribution cables**
Miao Wang², Simon Rowland² and Nico van Luijk¹
¹EdF Energy and ²The University of Manchester

2A-21 Atmospheric pressure glow discharge in air and its application to surface modification of PP nonwovens

Guan Zhicheng and Hao Yanpeng
Graduate School at Shenzhen, Tsinghua University

2A-22 Analysis of discharge current on polycarbonate using chaos theory

Boxue Du¹, D.S. Dong¹, Yuan Tian², and Yong Liu¹
¹Tianjin University and ²University of Southampton

1400-1600 2B Surface Flashover

Chair: Dan Schweickart, Air Force Research Laboratory, USA
Organizer: Huseyin Hiziroglu, Kettering University, U.S.A

2B-1 The effect of water droplets on the hydrophobic contaminated surface under AC field voltage application

Haifeng Gao, Zhidong Jia, Zhicheng Guan, and Jie Yang
Tsinghua University

2B-2 Surface flashover characteristics and optical emission analysis of nano particle cast epoxy resin

Mert Serkan, Hulya Kirkici, and Kalyan Koppisetty
Auburn University

2B-3 Fractal analysis of creeping discharge patterns propagating at solid/liquid interfaces– Influence of the nature and geometry of solid insulators

Abderrahmane Beroual¹ and Lazhar Kebbab²
¹Ecole Centrale de Lyon and ²Ecole Centrale de Lyon

2B-4 Study on low current arcs on surfaces of dielectric materials

Fuchang Lin and Simon Rowland
University of Manchester

2B-5 Identification of winding faults in power transformers by low voltage impulse test and neutral current method using wavelet transform approach

Prem K. Navuri¹, Amarnath Jinka², and K.D. Shrivastava³
¹RVR & JC College of Engineering, ²J.N.T University Hyderabad, and ³University of British Columbia

2B-6 Computer modeling of corona streamer inception on an ice surface

Ibrahima Ndiaye, Masoud Farzaneh
Cigele/Ingivre - UQAC

1400-1600 2C Nanodielectrics

Chair: Patricia Irwin, General Electric, USA
Organizer: Michel Frechette, IREQ, Canada

- 2C-1 Effects of mica fillers on dielectric properties of polyamide nanocomposites**
Norikazu Fuse, Masahiro Kozako, Toshikatsu Tanaka, and Yoshimichi Ohki
Waseda University
- 2C-2 An empirical dielectric mixture expression and its application to composites**
Enis Tuncer¹ and Nicola Bowler²
¹Oak Ridge National Laboratories, USA
²Iowa State University
- 2C-3 Improved performance of polyhedral oligomeric silsesquioxane epoxies**
John Horwath¹, Daniel L. Schweickart¹, Guido Garcia¹, Donald Klosterman², and Mary Galaska²
¹Air Force Research Laboratory and ²University of Dayton Research Institute
- 2C-4 Effects of Nano-size MgO-filler on electrical phenomena under dc voltage application in LDPE**
Yoshinao Murata¹, Yoshinobu Murakami², Masanori Nemoto², Yoitsu Sekiguchi¹, Yoshiyuki Inoue¹, Mamoru Kanaoka¹, Naohiro Hozumi², and Masayuki Nagao²
¹J-Power Systems Corporation and ²Toyohashi University of Technology
- 2C-5 Surface erosion due to partial discharges on several kinds of epoxy nanocomposites**
Masahiro Kozako¹, Shin-ichi Kuge³, Takahiro Imai², Tamon Ozaki², Toshio Shimizu², and Toshikatsu Tanaka³
¹Kagoshima National College of Technology, ²Toshiba Corporation, and ³Waseda University
- 2C-6 Dielectric properties of polypropylene containing nano-particles**
Mahmoud Abou-Dakka, Soli Bamji, and Alexander Bulinski
National Research Council of Canada
- 2C-7 Insulation properties of nano- and micro filler mixture composite**
Takahiro Imai², Fumio Sawa², Toshiyuki Nakano², Tamon Ozaki², Toshio Shimizu², Shin-ichi Kuge³, Masahiro Kozako¹, and Toshikatsu Tanaka³
¹Kagoshima National College of Technology, ²Toshiba Corporation, and ³Waseda University
- 2C-8 Electrical characterization of polymer-layered silicate nanocomposites**
Francesco Guastavino², Andrea Dardano², Alessandro Ratto², Eugenia Torello², Pilar Tiemblo¹, Mario Hoyos¹, and José Manuel Gómez-Elvira¹
¹Instituto de Ciencia y Tecnología de Polímeros and ²University of Genova
- 2C-9 An experimental study about the surface behaviour, under electrical stress in contaminated wet conditions, of different nanostructured polymers**
Francesco Guastavino², Andrea Dardano², Eugenia Torello², Giovanni Camino¹, and Matteo Lavaselli¹
¹Centre for Engineering of Plastic Material and ²University of Genova
- 2C-10 The influence of physical and chemical linkage on the properties of nanocomposites**
Mihir Roy², J. Keith Nelson¹, Linda Schadler¹, Zou Chen³, and John Fothergill³
¹Rensselaer Polytechnic Institute, ²Rensselaer Polytechnic Institute, and ³University of Leicester

- 2C-11 Study of polarisation and conduction phenomena in nano-structured polypropylene**
M. Ambid¹, Gilbert Teysedre¹, D. Mary¹, Christian Laurent¹, and Gian Carlo Montanari²
¹Paul Sabatier University and ²University of Bologna
- 2C-12 The slow polarization phenomena of interfaces between particles of micro-SiO₂ or nano-SiO_x and low-density polyethylene**
Zhe Li, Yi Yin, Xiaobin Dong, and Dengming Xiao
Shanghai Jiao Tong University
- 2C-13 Improving thermal endurance properties of polypropylene by nanostructuring**
A. Motori¹, F. Patuelli¹, A. Saccani¹, G. C. Montanari¹, R. Mulhaupt²
¹Università di Bologna and ²University of Frieberg

1600-1900 Dinner Break

1900-2100 Session 3 (Poster)

1900-2100 Refreshments

1900-2100 3A Aging

Chair: Prathap Basappa, Norfolk State University, USA
Organizer: Ravi Gorur, Arizona State University, USA

- 3A-1 Leakage current based assessment of degradation of MOSA using an alternative technique**
Chandana Karawita and M.R. Raghuveer
University of Manitoba
- 3A-2 Space charge in submicron cavities by quantum electrodynamics?**
Thomas Prevenslik and Thomas Prevenslik
Consultant
- 3A-3 Effect of repetitive impulse voltage on models of EHV transformer winding to determine ageing of paper insulation**
Bhoomaiah Anugula, Bhoomaiah Anugula, Suvir Mukherje, Suresh C Gupta, Murthy S. Turumella, and Birendra Prasad Singh
BHEL Corp. R&D
- 3A-4 A supportive approach into life testing and characterization of PVC and XLPE-insulated cable materials**
M.A. Morsy and M.H. Shwehdi
KFUPM
- 3A-5 PD breakdown process of fatigue-failure-type in a micro gap**
Kuniharu Imai
Nagoya University
- 3A-6 Changes of dielectric properties evoked by extreme stress conditions**
Vaclav Mentlik, Eva Kucerovala, Vaclav Bocek, Pavel Sebik, Frantisek Matejka, and Radek Polansky
University of West Bohemia
- 3A-7 On the electrical properties of insulation oils**
Alun S. Vaughan², Ian L. Hosier², and Simon J. Sutton¹
¹National Grid Transco and ²University of Southampton

- 3A-8 Chemical and physical properties of aged dodecylbenzene insulating oil**
Alun Vaughan² and Simon J. Sutton¹
¹National Grid Transco and ²University of Southampton
- 3A-9 Comparison of the accelerated aging under different thermal cycles and voltage impulses in XLPE cables**
Jorge L. Ramírez², Elizabeth Da Silva², Javier Sanz¹, Juan Bermúdez², and Juan C. Rodríguez²
¹Universidad Carlos III de Madrid and ²Universidad Simón Bolívar
- 3A-10 Dissipation current waveform observation of water tree deteriorated LDPE**
Suguru Masuda², Shingo Tsuboi², Ayano Fujita², Kazuyuki Tohyama², Tomoaki Imai¹, Yoshinao Murata¹, and Mamoru Kanaoka¹
¹J-Power Systems Corporation and ²Numazu National College of Technology
- 3A-11 GC-MS and FTIR analysis of LDPE and XLPE deteriorated by partial discharge**
Yasuo Sekii, Hidenori Oguma, Takeo Hagiwara, and Kazuki Yamauchi
Chiba Institute of Technology
- 3A-12 Reliability of the adjustable speed drives in power electronic waveform environment**
Vaclav Mentlik, Eva Kucerova, Vaclav Bocek, Pavel Sebik, and Pavel Trnka
University of West Bohemia
- 3A-13 A study on TSC of aging composite insulators**
Lijian Ding², Ying Liang², Chengrong Li², Yuping Tu², Linjie Zhao², Kun Yang², and Han Wu¹
¹Kunming Power Supply Company and ²North China Electric Power University
- 3A-14 Study on effect of voltage distortion on insulation of variable-frequency adjustable-speed traction motor**
Wen Shu¹, Jun Guo², and Guangning Wu²
¹Institute of Monitoring and Fault Diagnosis, Southwest Jiaotong University, P.R.China and ²School of Electrical Engineering, Southwest Jiaotong University
- 3A-15 In situ monitoring of the degradation of insulating oil under AC voltage**
Thomas Aks Ngnui, Messaoud Benounis, Nicole Jaffrezic-Renault, and Abderrahmane Beroual
CEGELY
- 3A-16 Modeling of the low-frequency dielectric response of rotating machine stator insulation system**
Eric David¹ and Laurent Lamarre²
¹ETS and ²IREQ
- 3A-17 Thermal aging of polyvinyl chloride**
M. Nedjar², Abderrahmane Beroual¹, and M. Bournane²
¹Centre de Génie Electrique de Lyon and ²University of Tizi-Ouzou
- 3A-18 Long term electrical and mechanical properties of XLPE cable insulation system for subsea applications at very high temperatures**
Sverre Hvidsten², Randi Floden¹, Kjell Olafssen¹, Liv Lundegaard¹, and Bjorn Melve³
¹Nexans Norway AS, ²SINTEF Energy Research AS, and ³Statoil ASA
- 3A-19 A new dynamic model for propagation of characteristic gases in transformers oil-cellulose structure due to temperature variations**
Ahmad Shahsiah, Robert Degeneff, and J. Keith Nelson
Rensselaer Polytechnic Institute

3A-20 Application of dielectric response techniques for the condition assessment of power transformers

Bernard Noirhomme², Eric David¹, Hassan Gharbi¹, and Marie-Claude Lessard²
¹ETS and ²IREQ

3A-21 Suitability of thermoplastic polymer used as insulator for HV gas insulated substation insulator

Yannick Kieffel², Serge Etienne³, Abdesselam Dahoun³, Jean-Marie Hiver³, Heinz Aeshbach¹, Fedor Braueuer¹, Isabelle Huet², Jean-Luc Bessedé², and Karsten Pohlink¹
¹AREVA-TD - SEH, ²AREVA-TD SA, and ³LPM, UMR CNRS 7556 Ecole des Mines de Nancy

1900-2100 3B Outdoor Insulation

Chair: Luiz Meyer, University of Blumenau, BRAZIL
Organizers: Vijendra Agarwal, University of Wisconsin, USA

3B-1 Diagnosis of hydrophobic condition of silicone rubber using dielectric measurement and image analysis

Tetsuro Tokoro, Satoshi Yanagihara, and Masamitsu Kosaki
Gifu National College of Technology

3B-2 The improvement on the measuring precision of detecting fault composite insulators by using electric field mapping

Ming Li, Chengrong Li, and Yangchun Chen
North China Electric Power University

3B-3 Numerical simulation of lightning-caused inrush currents in power distribution transformers

M.R. Raghuvver and Zeqing Song
University of Manitoba

3B-4 Flashover voltage prediction of outdoor insulators subjected to road salt contamination

Sreeram Venkataraman and Ravi S. Gorur
Arizona state university

3B-5 Artificial and natural ageing tests of 275-kV class full scale insulator strings

Tetsuya Hirayama, Boonruang Marungsri, Hiroyuki Shinokubo, and Ryosuke Matsuoka
Chubu University

3B-6 Cold-wet-switch-on characteristics of semiconducting glaze insulators

Shigeki Matsumura, Basanta K. Gautam, Kenji Sakanishi, and Ryosuke Matsuoka
Chubu University

3B-7 Lifetime evaluation of EVA insulator for distribution system by accelerated salt-fog test

Hirofumi Yamamoto³, Masafumi Fujimoto³, Yong Zhu³, Kenichi Haji³, Takuma Miyake³, Chikahisa Honda³, Masahisa Otsubo³, Osamu Takenouchi¹, and Akinori Oono²
¹Civil Aviation College, ²Kyushu Electric Power Co., Inc., and ³University of Miyazaki

3B-8 Prediction of leakage current of composite insulators in salt fog test using neural network

Ali Naderian, Ayman El-Hag, Shesha H. Jayaram, and Edward A. Cherney
University of Waterloo

3B-9 Effect of acid on RTV coating in inclined plane tests

Ali Naderian, Ayman El-Hag, Shesha H. Jayaram, and Edward A. Cherney
University of Waterloo

- 3B-10 An analytic model to simulate electrical behavior of snow deposited on a HV insulator**
Hamid Javadi, Masoud Farzaneh, and Hossein Hemmatjou
UQAC
- 3B-11 Insulator pollution processes under winter conditions**
Naivonirina Ravelomanantsoa², Masoud Farzaneh², and William A. Chisholm¹
¹Kinectrics and ²NSERC / Hydro-Quebec / UQAC CIGELE AND INGIVRE
- 3B-12 Impulse voltage performance of ice-covered post insulators**
Tatiana Guerrero, Masoud Farzaneh, and Jianhui Zhang
CIGELE-UQAC
- 3B-13 AC arc characteristics on a snow-covered cylinder**
Hossein Hemmatjou¹, Masoud Farzaneh¹, and Issouf Fofana¹
¹UQAC
- 3B-14 Characterization of leakage current of a post station insulator covered with ice with various surface conductivities**
Fethi Meghnefi, Masoud Farzaneh, and Christophe Volat
University of Quebec at Chicoutimi
- 3B-15 Estimating erosion of polymeric materials using a laser based model**
Luiz Meyer¹, Shesha H. Jayaram², and Edward A. Cherney²
¹FURB and ²University of Waterloo
- 3B-16 Influence of acid rain + multistress conditions on the long term performance of 28kV polymeric insulators**
Claudia Olave¹, Ignacio Molina¹, and Rajeswari Sundararajan²
¹Arizona State University East and ²ASU East

1900-2100 3C Cryogenic Dielectrics

Chair: Enis Tuncer, Oak Ridge National Laboratories, USA
Organizer: Isidor Sauers, Oak Ridge National Laboratories, USA

- 3C-1 Partial discharge inception and breakdown characteristics of LN₂/polypropylene laminated paper composite insulation system for HTS cables**
Naoki Hayakawa, Kengo Sahara, Hiroki Kojima, Fumihiro Endo and Hitoshi Okubo
Nagoya University
- 3C-2 Breakdown characteristics of liquid nitrogen under composite voltages**
R.K Sahu, M.K. Pradhan and Ramanujam Sarathi
IIT Madras
- 3C-3 Thermal bubble dynamics and breakdown in cryogenic liquids under non-uniform electric fields on superconducting power apparatus**
Ping Wang, David J. Swaffield, Paul L. Lewin, and George Chen
University of Southampton
- 3C-4 Long-term high voltage tests of the conductor insulation of a superconducting magnet**
Stefan Fink and W. H. Fietz
Institut für Technische Physik

- 3C-5 Insulation design method of cold dielectric type superconducting power cable and its verification tests**
Toshihiro Takahashi¹, H. Suzuki¹, M. Ichikawa¹, Tatsuki Okamoto¹, N. Ishii², S. Mukoyama², and A. Kimura²
¹Central Research Institute of Electric Power Industry (CRIEPI) and ²The Furukawa Electric Co., Ltd.
- 3C-6 PD inception characteristics of polypropylene laminated paper / liquid nitrogen composite insulation system under local heating**
Toshihiro Takahashi, H. Suzuki, M. Ichikawa, and Tatsuki Okamoto
Central Research Institute of Electric Power Industry (CRIEPI)

————— **Tuesday, October 18** —————

0800-1000 Session 4 General II (Oral)

Chair: Hulya Kirkici, Auburn University, USA
Organizer: Raju Gorur, University of Windsor, Canada

- 4-1 Acoustic measurement at voltage impulse test**
Eva Müllerová², Petr Martínek², Jiří Laurenc², and Jan Hrůza¹
¹ETD s.r.o., Division of Transformers and ²University of West Bohemia
- 4-2 Computational investigations on the Kohlrausch empirical law in interacting systems**
Markus Kuehn, Bjoern Martin, and Herbert Kliem
Institute of Electrical Engineering Physics
- 4-3 Simulated pulse response of intracellular structures in biological cells exposed to high-intensity sub-microsecond pulsed electric fields**
Ross M. Campbell, Richard A. Fouracre, Bruce H. Crichton, and Martin D. Judd
University of Strathclyde
- 4-4 The effect of the thermal history on the space charge accumulation in HVDC crosslinked polyethylene cables**
P. Carstensen¹, A.A. Farkas², A. Campus³, and Ulf H. Nilsson³
¹ABB AB, ²ABB Power Technologies AB, and ³Borealis AB
- 4-5 Phenomenon of an anomalous discharge on HV external insulation and methods of its control**
Alexander Valdman
EHV Laboratory
- 4-6 Study of PD behaviors on a crossing sample of magnet-wire with repetitive bipolar impulses for inverter-fed motor coil insulation**
Ken Kimura, Sojiro Ushirone, Takahiro Koyanagi, Yuki Iiyama, Shinya Ohtsuka, and Masayuki Hikita
Kyushu Institute of Technology

1000-1030 Break (Refreshments)

1030-1230 Session 5 (Poster)

1030-1230 5A Partial Discharge Measurements

Chair: M. Nagao, Toyohashi University, Japan
Organizer: Shesha Jayaram, University of Waterloo, Canada

- 5A-1 The influence of electrical connection structures on the spectra of radiated partial discharge signals**
Carlos Ramirez and Philip J. Moore
University of Strathclyde
- 5A-2 A statistical method of improving the resolution of time-delay of UHF signals for PD location in transformer**
Tang Zhiguo, Li Chengrong, Cheng Xu, Wang Wei, and Li Jun
North China Electric Power University
- 5A-3 Partial discharge measurements -- Frequency related considerations**
Donald G. Kasten³, Xin C. Liu³, Stephen A. Sebo³, Ross Caldecott³, Dennis Grosjean², and Daniel L. Schweickart¹
¹Air Force Research Laboratory, ²Innovative Scientific Solutions, Inc., and ³Ohio State University
- 5A-4 The effect of space charge on phenomenology of partial discharges in insulation cavities**
Andrea Cavallini², Gian Carlo Montanari², and Fabio Ciani¹
¹TechImp Srl and ²University of Bologna
- 5A-5 Partial discharge identification using a support vector machine**
Liwei Hao, Paul L. Lewin, Yuan Tian, and Stephen J. Dodd
University of Southampton
- 5A-6 A study about partial discharge measurements performed applying to insulating systems square voltages with different rise times**
Francesco Guastavino, Gianfranco Coletti, Alessandro Ratto, and Eugenia Torello
University of Genova
- 5A-7 Partial discharge patterns of magnet wire samples under voltage stresses**
Stanislaw Grzybowski, Ashwini Mani, and Clayborn D. Taylor
Mississippi State University
- 5A-8 Partial discharge inception and degradation characteristics of inverter-fed motor sample under surge voltage condition**
Masato Morikawa, Naoki Hayakawa, and Hitoshi Okubo
Nagoya University
- 5A-9 Fourier series method on eliminating narrow frequency noise in partial discharge detection**
Cheng YangChun³, Li Chengrong¹, and Wang Wei²
¹Beijing Key Laboratory of High Voltage and EMC, ²Key Laboratory of Power System Protection and Dynamic Security Monitoring and Control, and ³North China Electric Power University
- 5A-10 Aging investigation of motor winding insulation subjected to PWM-supply through PD measurements**
Davide Fabiani¹, Andrea Cavallini¹, and Gian Carlo Montanari¹
¹University of Bologna

- 5A-11 PD detection of XLPE cables accessories on UHF**
Wei Wang, Bin Zheng, Chengrong Li, and Lu Hua Zhang
North China Electric Power University
- 5A-12 Testing a statistical package for identifying pulse height distribution for a data acquisition system for partial discharges**
G. Gerdin², V.K. Lakdawala², P. Basappa¹, and K. Agarwal¹
¹Norfolk State University and ²Old Dominion University
- 5A-13 Power transformer asset management: On-line partial discharge measurement – A new approach**
Raja Kuppuswamy and Patrick Coquelin
AREVA-TD
- 5A-14 PD localization based on fuzzy theory using ae detection techniques**
Boxue Du¹, Yuhang Lu¹, Guozhong Wei¹, and Yuan Tian²
¹Tianjin University and ²University of Southampton

1030-1230 5B Electrohydrodynamics

Chair: G. Touchard, University of Poitiers, France
Organizer: Christian Laurent, Paul Sabatier University, France

- 5B-1 Controlling the electrospinning process by jet current and Taylor cone**
Yang Ying, Jia Zhidong, Li Qiang, and Guan Zhicheng
Tsinghua University
- 5B-2 Effect of relative humidity on the curing and dielectric properties of polyurathane-based composites**
Nicola Bowler and Eric R. Abram
Iowa State University
- 5B-3 Electrohydrodynamic gas flow regime map in a wire-plate electrostatic precipitator under positive coronas**
Jen-Shih Chang¹, Jaroslaw Dekowski², Janusz Podlinski², Drazena Brocilo¹, and Jerzy Mizeraczyk²
¹McMaster University and ²Polish Academy of Sciences
- 5B-4 On the dimensionless magnitudes in the problem of a dielectric interface under unipolar injection**
Francisco Vega¹ and Antonio Castellanos²
¹Georgetown University and ²University of Seville
- 5B-5 About the kinetic power induced by AC and DC discharges**
Eric Moreau and Gérard Touchard
University of Poitiers
- 5B-6 Major factors influencing static electrification in aged transformers**
Takayuki Kobayashi², Kouji Yajima², Shigeyuki Tsukao², Yoshihito Ebisawa³, and Noboru Hosokawa¹
¹Mitsubishi Electric Corporation, ²Tokyo Electric Power Company, and ³Toshiba Corporation

- 5B-7 Modelling of near corona wire electrohydrodynamic flow in a wire-plate electrostatic precipitator**
 Young N. Chun¹, Drazena Brocilo², Jerzy Mizeraczyk³, Jen-Shih Chang², and Alexander Berezin²
¹Chosun University, ²McMaster University, and ³Polish Academy of Sciences
- 5B-8 Comparison between two methods of measurement of the surface tension in presence of electric charges**
 Pierre Baudel¹, Christophe Louste², Hubert Romat², and André Agneray³
¹Laboratoire d'Etudes Aerodynamiques, ²Laboratoire d'Etudes Aerodynamiques, and ³Technocentre Renault
- 5B-9 Transformer fault diagnosis using fuzzy logic and neural network**
 Surya K. Munagala², Surya K. Munagala², Ravindranath R. Bumanapalli², and Birendra Prasad Singh¹
¹BHEL Corp. R&D and ²J.N.T University Hyderabad
- 5B-10 A parametric study of surface corona discharge along an insulating flat plate in atmospheric pressure**
 Alexandre labergue, Eric Moreau, and Gérard Touchard
 University of Poitiers
- 5B-11 Experimental study of electrohydrodynamic pumping through conduction phenomenon using various fluids**
 S.R. Mahmoudi and M. Ashjaee
 University of Tehran
- 5B-12 Weighting of charge in PIC codes for unstructured meshes in cylindrical coordinates: Application to charged jets**
 P.A. Vázquez and A. Castellanos
 University of Seville, Spain

1030-1230 5C Polarization Phenomena

Chair: Glenn Gerdin, Old Dominion University, USA
 Organizer: Noriyuki Shimizu, Meijo University, Japan

- 5C-1 Thermally stimulated polarization and depolarization currents in polyethylene terephthalate succinate**
 Yoshimichi Ohki², Yasumasa Maeno², Toshikatsu Tanaka², Masanori Kohtoh¹, and Shigemitsu Okabe¹
¹Tokyo Electric Power Company and ²Waseda University
- 5C-2 Space charge and electric field characteristics of polymeric-type MV-size DC cable joint models**
 Riccardo Bodega³, Gabriele Perego², Peter H.F. Morshuis³, Ulf H. Nilsson¹, and Johan J. Smit³
¹Borealis AB, ²Pirelli Cavi e Sistemi Energia S.p.A., and ³TU Delft
- 5C-3 Range analysis of biological cells subjected to pulsed electric fields**
 Vincenzo Tucci, Biagio De Vivo, Nunzianta Citro, and Giovanni Spagnuolo
 University of Salerno
- 5C-4 Charge injection into enamelled wires studied by thermally stimulated depolarization current (TSDC)**
 Saeed Ul-Haq¹, Shesha H. Jayaram¹, Edward A. Cherney¹, and Gorur G. Raju²
¹University of Waterloo and ²University of Windsor

1030-1230 5D Treeing

Chair: Kazuyuki Tohyama Numazu, College of Technology, Japan
Organizer: Mahmoud Abou-Dakka, National Research Council, Canada

- 5D-1 Electrical treeing in EVA-layered silicate nanocomposites**
Francesco Guastavino³, Gianfranco Coletti³, Andrea Dardano³, Gian Carlo Montanari², Giovanni Camino¹, and Margherita Di Lorenzo del Casale⁴
¹Centre for Engineering of Plastic Material, ²University of Bologna, ³University of Genova, and ⁴University of Palermo
- 5D-2 DC tree and grounded DC tree in XLPE**
Yasuo Sekii, Hiroshi Kawanami, Mitsugu Saito, Kazuyuki Suzi, and Isao Komatsu
Chiba Institute of Technology
- 5D-3 Electrical tree propagation along mica barriers in dependence on the resin components**
Tilman Weiers, Ruben Vogelsang, Walter Caseri, and Klaus Fröhlich
Swiss Federal Institute of Technology Zurich
- 5D-4 Spectrum change of electroluminescence with degradation in XLPE**
Motoo Watanabe, Atushi Tanida, Yuji Muramoto, and Noriyuki Shimizu
Meijo University
- 5D-5 A new diagnosis of the XLPE insulation with water treeing by coupling space charge measurements with the thermal step method and water nuclear magnetic resonance imaging**
Jerome Castellon¹, Serge Agnel¹, Alain Toureille¹, Gerard Platbrood², Yvan Tits², Peter Adriaensens³, Robert Carleer³, and David Vangulick⁴
¹Laboratoire d'Electrotechnique de Montpellier, ²Laborelec, ³Limburgs Universitair Centrum, and ⁴Netmanagement
- 5D-6 Inception of electrical tree from water tree degradation-Effect of impulse voltage application and drying of water tree**
Yasuo Suzuoki², Tomohide Saito², Fumitaka Komori³, and Katsumi Uchida¹
¹Chubu Electric Power Co., ²Nagoya University, and ³Toba National College
- 5D-7 Percolative breakdown model for ceramics based on a random grain-boundary network**
G. Zhao, R.P. Joshi, and V.K. Lakdawala
Old Dominion University
- 5D-8 Tree growth in a propylene/ethylene copolymer: Relationships between electrical activity during growth and the structure, chemistry and properties of the trees that result**
Alun S. Vaughan², Stephen J. Dodd², and Averil M. Macdonald¹
¹University of Reading and ²University of Southampton

1230-1400 Lunch Break

1300-1700 Tours

1800-1900 Social Hour (Cash bar)

1900-2100 Banquet

————— **Wednesday, October 19** —————

0800-1000 Session 6 General III (Oral)

Chair: Yasuo Suzuoki, Nagoya University, Japan
Organizers: Teruyoshi Mizutani, Nagoya University, Japan

6-1 Effect of physical dimension of cavities on charging behavior and time-temperature stability of a new family of polymeric cellular electrets

Gian Carlo Montanari², Davide Fabiani², Fabio Ciani¹, and Mika Paajanen³
¹TechImp Srl, ²University of Bologna, and ³VTT Processes

6-2 Flow electrification in power transformers: Electrical Modeling

Juan Martin Cabaleiro, Thierry Paillat, and Gérard Touchard
Laboratoire d'Etudes Aérodynamiques, Université de Poitiers

6-3 Observation of dynamic behavior of PD-generated SF₆ decompositions using carbon nanotube gas sensor

Weidong Ding, Ryota Hayashi, Junya Suehiro, Kiminobu Imasaka, and Masanori Hara
Kyushu University

6-4 Identification of partial discharge defects in transformer oil

Rogier A. Jongen, Peter H.F. Morshuis, Sander Meijer, and Johan J. Smit
Delft University of Technology

6-5 Exploring relationships between chemical species and electrical properties in crosslinked polyethylene

Gary C. Stevens and Henryk Herman
University of Surrey

6-6 Non-linear dielectric testing at high AC voltages using waveforms and harmonics

Jan Obrzut and Kenji Kano
National Institute of Standards and Technology

1000-1030 Break (Refreshments)

1030-1230 Session 7 (Poster)

1030-1230 7A Measurement Techniques

Chair: Andreas Farkas, ABB Power Technologies AB, SWEDEN
Organizers: Ken Stricklett, NIST, USA

7A-1 Wavelet technique for noise separation in the neutral current of a power transformer during impulse test

Bhoomaiah Anugula¹, Birendra Prasad Singh¹, Mohan Rao Manadava¹, Sreelatha Gajjala², Sarvesh B. ², Appala Naidu P. ², and Appala Naidu P. ²
¹BHEL Corp. R&D and ²J.N.T University Hyderabad

7A-2 Application of wavelets to identify faults during impulse tests

S.N. Fernando¹ and M.R. Raghuv²
¹Manitoba Hydro and ²University of Manitoba

- 7A-3 In situ space charge measurement of PCB insulations during the ageing test**
Kaori Fukunaga², Takashi Maeno², Hidesato Tanaka³, Yoshimichi Ohki³, and Kenji Okamoto¹
¹Fuji Electric AT, ²National Institute of Information and Communications Technology, and
³Waseda University
- 7A-4 Accurate spectroscopic studies of streamer discharges. 1. Experimental results**
Yuri V. Shcherbakov and Leonid I. Nekhamkin
High-Voltage Research Center
- 7A-5 Accurate spectroscopic studies of streamer discharges. 2. Theoretical background and analysis**
Yuri V. Shcherbakov and Leonid I. Nekhamkin
High-Voltage Research Center
- 7A-6 Material enthalpy – The classifier of curing of dielectrics containing epoxy resins**
Vaclav Mentlik, Josef Pihera, and Radek Polansky
University of West Bohemia
- 7A-7 Modelling of transformer internal short circuit faults using neural network techniques**
Surya K. Munagala², Surya K. Munagala², and Birendra Prasad Singh¹
¹BHEL Corp. R&D and ²J.N.T University Hyderabad
- 7A-8 Lifetime characteristics of magnet wires under multistress conditions**
Stanislaw Grzybowski and Naga P Kota
Mississippi State University
- 7A-9 Three-dimensional temperature measurement with micro-capsulated thermo-chromic liquid crystal for assessment of dielectric and insulation materials**
Yukihiisa Suzuki², Kaori Fukunaga¹, Madoka Baba², Masao Taki², and Soichi Watanabe¹
¹National Institute of Information and Communications Technology and ²Tokyo Metropolitan University
- 7A-10 Interpretation of transformer FRA measurement results using winding equivalent circuit modelling technique**
Dahlina Sofian², Zhongdong Wang², and Paul Jarman¹
¹National Grid Transco and ²University of Manchester
- 7A-11 Parametric modeling of concentric fringing electric field sensors**
Xiaobei Li, Valerie Inclan, and Alexander Mamishev
University of Washington
- 7A-12 Stress grading materials for cable terminations under fast rise time pulses**
Fermin P. Espino Cortes, Shesha H. Jayaram, and Edward A. Cherney
University of Waterloo
- 7A-13 Studies of online monitoring of the pressure in vacuum circuit breaker by Penning discharge**
Huiyong Mao and Yi Wang
Electrical Engineering School of Beijing Jiaotong University
- 7A-14 Dielectric characterization of printed wiring board materials: A comparison of ring and T-resonator based measurement methods**
Janne-Matti Heinola, Kare-Petri Lähti, and Pertti Silventoinen
Lappeenranta University of Technology

1030-1230 7B Charge Storage and Transport

Chair: Elizabeth Da Silva, Simon Bolivar University, Venezuela
Organizers: Mike Arnold, Industrial Research Limited, New Zealand

- 7B-1 Evaluation of quantity of stored charge in electric double layer capacitor by pulsed electro acoustic method**
Daisuke Tashima, Kenji Kurosawatsu, Masahisa Otsubo, Youl M. Sung, and Chikahisa Honda
University of Miyazaki
- 7B-2 Surveying into some aspects of internal resistance of super capacitor**
Dandan Zhang and Man Luo
Huazhong University of Science & Technology
- 7B-3 Maxwell stress and some electrical properties of polymers**
Jean-Pierre Crine
Consultant
- 7B-4 Analysis of electron behaviour in polymeric films during electronic irradiation**
Virginie Griseri⁴, Charlotte Perrin¹, Kaori Fukunaga², Takashi Maeno², Denis Payan¹, Leon Levy³, and Christian Laurent⁴
¹Centre National d'Etudes Spatiales, ²National Institute of Information and Communications Technology, ³Office National d'Etudes et de Recherches Aérospatiales, and ⁴Université Paul Sabatier
- 7B-5 Observation and numerical analysis of space charge behavior in low-density polyethylene formed by ultra-high DC stress**
Yasuhito Tanaka, Hiroyuki Aoyama, Kohei Matsui, and Tatsuo Takada
Musashi Institute of Technology
- 7B-6 Effects of Electrodes on Space Charge in Polypropylene**
Emi Nakane², Kazue Kaneko², Teruyoshi Mizutani², Hiroshi Takino¹, and Mitsugu Ishioka¹
¹Japan Polyethylene Co. Ltd. and ²Nagoya University
- 7B-7 Effects of absorbed water on space charge and conduction phenomena in polyimide films**
Kazue Kaneko, Takashi Ozaki, Emi Nakane, and Teruyoshi Mizutani
Nagoya University
- 7B-8 Computer simulation of space charge distribution in an XLPE-EPR sandwich**
S. Le Roy³, F. Boufayed⁴, Gilbert Teyssedre⁴, Christian Laurent⁴, P. Ségur⁴, Riccardo Bodega¹, Peter H.F. Morshuis¹, Gian Carlo Montanari², and Leonard A. Dissado⁵
¹Delft University of Technology, ²Department of Electrical Engineering, University of Bologna, ³Department of Electrical Engineering, University of Leicester, and ⁴Institut de Génie Electrique, Electronique et Plasmas, Université Paul Sabatier, Toulouse
- 7B-9 Confirmation of a model for the piezoelectricity of ferroelectrets**
Joachim Hillenbrand, Gerard M. Sessler, and Xiaoqing Zhang
University of Technology Darmstadt
- 7B-10 Piezoelectricity in multi-air voids electrets**
Ruy Alberto C. Altafim, Heitor C. Basso, Luiz Gonçalves Neto, Leandro Lima, Ruy Alberto P. Altafim, and Cláudio V. Aquino
University of São Paulo

1030-1230 7C High-Field Effects

Chair: Randy James, Oak Ridge National Laboratory, USA

Organizers: Reimund Gerhard-Multhaupt, University of Potsdam, Germany

- 7C-1 Fabrication and prediction techniques for FGM (Functionally Graded Materials) application to solid insulators**
Hideki Shumiya, Katsumi Kato, and Hitoshi Okubo
Nagoya University
- 7C-2 A probabilistic model to evaluate characteristics of lightning channels in two-layer soils and application**
Zeqing Song and M.R. Raghuvver
University of Manitoba
- 7C-3 An experimental study on SF₆ gas decomposition by high-voltage pulsed discharge**
Atsushi Nagai and Ryu-ichiro Ohyama
Tokai University
- 7C-4 A fundamental characteristic on photochemical adsorption of carbon dioxide to calcium hydroxide**
Daisuke Ai and Ryu-ichiro Ohyama
Tokai University
- 7C-5 An Experimental Study on Vacuum-Ultraviolet Photochemical Reaction to Non-Thermal Plasma Oxidized SF₆ Gases**
Yusuke Nanjo and Ryu-ichiro Ohyama
Tokai University
- 7C-6 An experimental study on photochemical effect of UV light on NO_x decompositions**
Ryosuke Sakuma¹ and Ryu-ichiro Ohyama¹
¹Tokai University
- 7C-7 Transient response of various kinds of high field alternating signals for low density polyethylene**
Shingo Tsuboi², Ayano Fujita², Suguru Masuda², Kazuyuki Tohyama², Tetsuro Tokoro¹, Masamitsu Kosaki¹, and Masayuki Nagao³
¹Gifu National College of Technology, ²Numazu National College of Technology, and ³Toyohashi University of Technology
- 7C-8 Considerations for conduction mechanisms under AC high field for low density polyethylene**
Ayano Fujita³, Shingo Tsuboi³, Suguru Masuda³, Kazuyuki Tohyama³, Yoshinao Murata², Tetsuro Tokoro¹, Masamitsu Kosaki¹, and Masayuki Nagao⁴
¹Gifu National College of Technology, ²J-Power Systems Corporation, ³Numazu National College of Technology, and ⁴Toyohashi University of Technology
- 7C-9 The features of high voltage motor interruption by vacuum circuit breaker with different cable lengths**
Syed A. Naveed², Amarnath Jinka², Venu G. Rao³, S. Kamakshiah², and Birendra Prasad Singh¹
¹B.H.E.L, ²J.N.T University Hyderabad, and ³J.N.T University Hyderabad
- 7C-10 FEA analysis of classic defects in impulse storage capacitor**
Zhang Xueqin and Wu Guangning
Southwest Jiaotong University

1230-1400 Lunch Break

1400-1600 Session 8 Nanodielectrics (Oral)

Chair: Clive Reed, Retired, USA

Organizers: Michel Fréchet, IREQ, Canada

8-1 Multi-core model for nanodielectrics as fine structures of interaction zones

Toshikatsu Tanaka

Waseda University

8-2 The piezoelectric effect

Thomas J. Lewis

University of Wales, Bangor

8-3 Dielectric properties of alumina-polymer nanocomposites

Gary C. Stevens and Chao Zhang

University of Surrey

8-4 Dielectric relaxation and dielectric mixtures: Similarities

Enis Tuncer

Oak Ridge National Laboratories, USA

8-5 Nanodielectric surface performance when submitted to partial discharges in compressed air

Michel Fréchet², R.Y. Larocque², M.L. Trudeau², R. Veillette², K.C. Cole¹, and M.-T. Ton That¹

¹IMI and ²IREQ

8-6 Nanocomposites for high voltage applications: Effect of sample preparation on AC breakdown statistics

Christopher D. Green and Alun S. Vaughan

University of Southampton

1600-1615 Closing

	Sunday October 16	Monday October 17	Tuesday October 18	Wednesday October 19
0800		Welcome		
0900		The Whitehead Lecture	Session 4 General II (Oral)	Session 6 General III (Oral)
1000	Workshop on Cryogenic Dielectrics 0900-1700	Break	Break	Break
1100		Session 1 General I (Oral)	Session 5 (Poster) 5A Partial Discharge Measurements 5B EHD 5C Polarization Phenomena 5D Treeing	Session 7 (Poster) 7A Measurement Techniques 7B Charge Storage and Transport 7C High Field Effects
1200				
1300		Lunch	Lunch 1230-1400	Lunch
1400		Session 2 (Poster) 2A Solids, Liquids, Gases, and Vacuum 2B Surface Flashover 2C Nano Dielectrics	Tours 1300 - 1700	Session 8 Nanodielectrics (Oral)
1500				
1600				Closing
1700	Registration 1600 - 2100	Dinner		
1800			Social Hour (Cash bar) 1800-1900	
1900	Reception (cash bar) 1800-2100	Session 3 (Poster) 3A Aging 3B Outdoor Insulation 3C Cryogenic Dielectrics	Banquet 1900-2100	
2000				
2100				

