ISEI 2012

Ritz-Carlton Hotel, San Juan, Puerto Rico
June 10 – 13, 2012

PRELIMINARY TECHNICAL PROGRAM – Revised May 5/12

SUNDAY, JUNE 10, 2012

SHORT COURSES

El Yunque, 8:00am – 12:00noon
Nanodielectric Material
Instructor: Michel Frechette, IREQ, Canada

El Yunque, 1:00pm – 5:00pm
Root Cause Failure of Power Transformers
Instructor: Ali Naderian, Kinectrics Inc, Canada

El Morro, 8:00am – 5:00pm
Introduction to Insulation Material
Instructor: Nancy Frost, Krempel, USA

7:00 pm – 9:00 pm
Prefunction Salon I
POSTER SESSION & RECEPTION

CABLES

101 Poster	Analytical Results of Harmonic Influenced Experimental Electrical Tree Growth Images *S. Bahadoorsingh, R. Balliram, C. Sharm, The University of the West Indies, Republic of Trinidad and Tobago; S. M. Rowland, The University of Manchester, Manchester, UK*
197 Poster	Occurrence of Partial Discharges in Low-voltage Cables at the Failure Spot *R. Cselkó, Á. Tamus, Budapest University of Technology and Economics, Budapest, Hungary*
207 Poster	On the Cross-linking Temperature Dependence of Charge Transportation Characteristics of High Voltage XLPE Cable Insulation *Y. Gao, B.X. Du, Tianjin University, Tianjin, China*
229 Poster	The Electrical Trees Initiation At Different Electric Field Strength In XLPE Cable Insulation *L. Hu, Y. Xu, X. Chen, Xi'an Jiaotong University, Xi'an, China; H. Li, Y. Feng, Z. Ren, Beijing Electric Power Supply Company, Beijing, China*
190 poster	The Relationship between Electric Tree Aging Degree and the Equivalent Time-Frequency Characteristic of PD Pulses in High Voltage Cable *W. Wang, S. Chen, K. Yang, D. He, Beijing Key Laboratory, North China Electric Power University, Beijing, China; YL Yu, Hang Zhou Electric Power Bureau, Hang Zhou, China*

ENVIRONMENTAL

046 **Poster**	Study on the Oxidative Stability of Palm Fatty Acid Ester (PFAE) as an Insulating Oil for Transformers *T. Kano, T. Suzuki, R. Oba, A. Kanetani, Chemical Research Laboratories, Lion Corporation, Tokyo, Japan; H. Kiode, Japan AE Power Systems Corporation, Chiba, Japan*
175 **Poster**	Partial Discharge Properties of Ester Oils Having Different Molecular Structures *M. Hikita, J. Tokiyoshi, M. Tsuchie, M. Kozako, Kyusyu Institute of Technology, Kitakyushu-Shi, Japan; T. Suzuki, A. Kanetani, T. Kano, Research & Development HQ, Lion Corporation, Tokyo, Japan*
213 **Poster**	Study Of Electrical And Rheological Properties Of Natural And Other Oils *M. Spohner, M. Frk, K. Liedermann, Brno University of Technology, Brno, Czech Republic*

MATERIALS

029 **Poster**	First Principles Calculations of Intrinsic Breakdown in Covalently Bonded Crystals *Y. Sun, S. Boggs, R. Ramprasad, University of Connecticut, CT, USA*
127 **Poster**	Sparkover Characteristics Of Air – CO2 Mixed Gas In Non – Uniform Field Gap *H. Mashidori, Tokyo Metropolitan College of Industrial Technology, Tokyo, Japan; T. Ogawa, Y. Izawa, K. Nishijima, Fukuoka University, Fukuoka, Japan*
234 **Poster**	Electrical Resistivity Characterizationof Silicon Carbide Powders By Various Methods *C. Vanga Bouanga, S. Savoie, M.F. Frechette, H. Couderc, IREQ, Quebec, Canada; E. David, École de Technologie Supérieure, Quebec, Canada*

NANOMATERIALS

015 **Poster**	Recovery of Hydrophobicity of a New Nano-composite Coating for Ceramic Insulators *I. Gutman, I. Djurdjevic, STRI AB, Ludvika, Sweden; J. Seifert, Lapp Insulators Europe GmbH, Wunsiedel, Germany; C. Greyling, NanoNCI, Cape Town, South Africa*
147 **Poster**	Dielectric Response Of Filled And Flexibilized Epoxy Resin *I. Preda, J. Castellon, Université Montpellier 2, Montpellier, France; H. Couderc, M. Fréchette, IREQ, Quebec, Canada; A. Krivda, ABB Switzerland Ltd., Baden-Daettwil, Switzerland*
148 **Poster**	Dielectric Properties Of UV-Cured Epoxy Films Treated With Layer-By-Layer Nanosilica Architectures *C. Vanga Bouanga , H. Couderc, M. F. Fréchette, IREQ, Quebec, Canada; G. Malucelli, G. Camino, F. Carosio, Politecnico di Torino, Torino, Italy*
171 **Poster**	Dielectric And Thermal Properties Of Boron Nitride And Silica Epoxy Composites *H. Couderc, M. Fréchette, S. Savoie, IREQ, Quebec, Canada; M. Reading, A. S. Vaughan, Tony Davies High Voltage Laboratory, University of Southampton, Southampton, UK*
248 **Poster**	Effect of TiO2 Nanofillers on Electrical, Thermal and Mechanical Parameters of Epoxy Resin *M.M. Saei Shirazi, H. Borsi, E. Gockenbach, Leibniz Universität Hannover, Hannover, Germany*

OUTDOOR INSULATION

021 **Poster**	Modern Investigation of Rapid Flashover Solid Layer Pollution Testing as an Alternative To Current Standard Diagnostic Methods *I. Gutman, J. Shamsujjoha, STRI AB, Ludvika, Sweden; C. Lumb, J-M George, Corporate Technology Sediver, Saint Yorre, France; S. Roude, C.E.B. High Voltage Laboratory, Bazet, France*
053 **Poster**	A Coastal Trial Facility For High Voltage Composite Cross-Arms *C. Zachariades, I. Cotton, S.M. Rowland, V. Peesapati, P.R. Green, University of Manchester, Manchester, UK; D. Chambers, EPL Composite Solutions Ltd, Loughborough, UK; M. Queen, SSEPD plc, Perth, UK*
083 **Poster**	Study on Aging Characteristics of Silicone Rubber Insulator Sheds using FTIR *H. Zhang, Y. Tu, Z. Xu, C. Chen, Beijing Key Laboratory of High Voltage and EMC, North China Electric Power University, Beijing, China; Y. Lu, L. Xie, North China Electric Power Research Institute, Beijing, China*
192 **Poster**	Flashover Mechanism of Polluted Insulator in Intermittent High Speed Wind *J. Sun, G. Wu, G. Gao, L. Zhou, M. Li, D. Li, Southwest Jiaotong University, Chengdu, China*

235 **Poster**	Numerical Simulations of Ice-Covered EHV Post Station Insulator Performance Equipped with Booster Sheds *C. Volat, S. M. Ale Emran and M. Farzaneh, University of Quebec at Chicoutimi, QC, Canada*
236 **Poster**	Detection of AC Corona Discharges Using an Electro-Optic E-field Sensor *C. Volat, University of Quebec at Chicoutimi, QC, Canada, L. Duvillaret, G. Gaborit, IMEP-LHAC CNRS Laboratory, Le-Bourget-du-Lac, France*

PARTIAL DISCHARGE

063 **Poster**	Locating Partial Discharge Generated in PLG Type-Ground Coil for Superconducting Maglev Using Radio Interferometer System *M. Kawada, University of Tokushima, Tokushima, Japan; M. Suzuki, S. Ota, R. Ikeda, The Railway Technical Research Institute, Maglev Systems Technology Diviison, Tokyo, Japan.*
095 **Poster**	A Cost Effective Trigger Circuit For An On-Line Multi-Sensor Partial Discharge Monitoring System *M. Al Zaabi, M. Salah, M. Qasim, A. El-Hag, A. Yesildirek, American University of Sharjah, Sharja, UAE*
103 **Poster**	Study on the Failure Mechanism of Magnet Wires *Y. Luo, G. Wu, P. Wang, K. Cao, Y. Cui, L. Zhou, Southwest Jiaotong University, Cheng Du, China*
121 **Poster**	Laboratory Measurements for Power System Equipment Condition Monitoring *D.G. Kasten, S.A. Sebo, The Ohio State University, OH, USA; J.L. Lauletta, Exacter, Inc., OH, USA*
166 **Poster**	The Numerical Modelling and Experimental Validation of a Partial Discharge within an Air Filled Cavity Bound in Oil Impregnated Paper *D. J. Smith, S. G. McMeekin, B. G. Stewart, P. A. Wallace, Glasgow Caledonian University, Glasgow, UK*
168 **Poster**	Partial Discharge Pattern Classification for an Oil-Pressboard Interface *A. Abubakar Mas'ud, B.G. Stewart, S.G. McMeekin, A. Nesbitt, Glasgow Caledonian University, Glasgow, UK*
239 **Poster**	Comparison Of IEC 60270 And RF Partial Discharge Detection In An Electromagnetic Noise-Free Environment At Differing Pressures *R. Giussani, I. Cotton, R. Sloan, The University of Manchester, Manchester, UK*
240 **Poster**	Detection Of Corona With RF Methods And Spectra Analysis *R. Giussani, I. Cotton, R. Sloan, The University of Manchester, Manchester, UK*

SWITCHGEAR & TRANSMISSION LINES

064 **Poster**	Study on Identification Methodology of Instantaneous and Permanent Fault for High-voltage Overhead Transmission Line *Y. Quan, B. Zhao, Beijing Key Laboratory, North China Electric Power University, Beijing, China; S. Chen, China Electric Power Research Institute, Beijing, China; T. Xu, Baoding Power Supply, Hebei, China; L. Ji, Taikai Transformers, Shandong, China*
020 **Poster**	Performance of Flashover on the Resin Spacer Surface in N2-SF6 and SF6-Air Gas Mixture under Power Frequency *C. Wong, Y. Tu, X. Li, R. Tan, Beijing Key Laboratory, North China Electric Power University, Beijing, China*
087 **Poster**	Lightning Impulse Surface Flashover Characteristics of Insulators in SF6/N2 and SF6/Air Below 0.25 MPa *R. Tan, Y. Tu , C. Wang , X. Li, Beijing Key Laboratory of High Voltage & EMC, North China Electric Power University, Beijing, China*
162	Characteristics of Planar Capacitor Sensors with Dielectric Window for Very Fast Transient Overvoltage Measurement in Gas Insulated Switchgears *G. Ma, C. Li, Z. Sun, P. Guo, Beijing Key Laboratory, NCEPU, Beijing, China; W. Chen,UHV Department, State Grid Corporation of China, Beijing, China; Z. Li, High Voltage Research Department, China Electric Power Research Institute, Beijing, China*

TRANSFORMERS

036 Poster	Study on the Methodology of Detection for Transformer Winding Insulation Defects Based on Applied Voltage Test *Y. Quan, Z. Ning, W. Li, Key Laboratory of High Voltage & EMC, Beijing, China; S. Chen, China Electric Power Research, Beijing, China; T. Xu, Baoding Power Supply, Hebei, China*
061 Poster	Study on the Methodology Monitoring Insulation Defects of High-voltage Bushing *Y. Quan, Z. Ning, Beijing Key Laboratory, North China Electric Power University, Beijing, China; S. Chen, China Electric Power Research Institute, Beijing, China; T. Xu, Baoding Power Supply, Hebei, China; Y. Zhou, Taikai Transformers, Shandong, China*
065 Poster	Forecasting The Remaining Life of Transformers after Overheating Based on Catastrophe Theory *Y. Quan, B. Wang, Z. Ning, Key Laboratory of High Voltage and EMC, North China Electric Power University, Beijing, China; S. Chen, China Electric Power Research Institute, Beijing, China; T. Xu, Baoding Power Supply, Hebei, China*
117 Poster	Glass Transition Temperature and Mechanical Properties in Amorphous Region of Transformer Insulation Paper by Molecular Dynamic Simulations *Y. Wang, T. Yang, J. Li, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, College of Electrical Engineering, Chongqing University, Chongqing, China*
134 Poster	Improvements of the Transformer Insulation XY Model Including Effect of Contamination *J. Cheng, P. Werelius, M. Ohlen, Megger, Taby, Sweden; D. Robalino, Megger, TX, USA*
209 Poster	The Analysis of the Impact Point of the Power Transformer Core of Torsional Load on the Measured Parameters of the Vibroacoustics Signals *S. Borucki, A. Cichoń, T. Boczar, P. Frącz, Opole University of Technology, Opole, Poland*
210 Poster	Diagnostics of Power Transformer Cores Using a Modified Vibroacoustic Method *S. Borucki, T. Boczar, P. Frącz, D. Zmarzly, Opole University of Technology, Opole, Poland*
211 Poster	Detection Of Defects In On-Load Tap-Changers Using Acoustic Emission Method *A. Cichoń, T. Boczar, P. Frącz, D. Zmarzly, Opole University of Technology, Opole, Poland*
169 poster	Preliminary Study on Infrared Spectral Characteristics of Mineral Oil Impregnated Polymer Materials under Electro-thermal Aging *D. He, W. Wang, K. Yang, S. Chen, Beijing Key Laboratory of High Voltage & EMC, North China Electric Power University, Beijing, China; C. Yue, Liaocheng Electric Power Bureau, Liaocheng, China*

MONDAY, JUNE 11, 2012

7:00 AM – 4:00 PM REGISTRATION
7:00 AM – 8:00 AM BREAKFAST

PLENARY SESSION

8:00 am – 9:15 am
Salons I, II & III

Opening Remarks – Conference Chair

Introduction of Dakin Awardee - Dr. Steven Boggs

Address by 2012 Dakin Awardee
A Perspective on On-line Partial Discharge Monitoring to Assess the Insulation Condition of Rotating Machine Stator Winding Insulation
Dr. Greg Stone
Iris Power–Qualitrol, Mississauga, Canada

9:15 AM – 9:40 AM – REFRESHMENT BREAK

9:40 AM – 11:40 NOON

S1 - ROTATING MACHINES 1 – SALON I

156 KN	High Voltage Machines Operating at High Altitude – Dielectric Considerations *T. Klamt, Alstom (Switzerland) Ltd, Birr, Switzerland*
215 Oral	Root Cause Analysis of Generator Failures *C. Hudon, M. Lévesque, D.-H. Nguyen, C. Millet, F. Truchon, IREQ, Québec, Canada*
107 Oral	Comparative AC VET On New Bars And On Bars Previously Subjected To DC VET *C. Millet, M. Bélec, C. Guddemi, Hydro-Quebec, Quebec, Canada*
024 Oral	Comparison Of Transient Time-Domain And Harmonic Quasi-Static Solution Of Electrical And Thermal Coupled Numerical Stress Grading Calculations For Large Rotating Machines *C. Staubach, F. Pohlmann, Siemens AG Energy Sector, Germany; F. Jenau, Technical University of Dortmund, Germany*
042	Evaluation of Induction Warming Stator Cores for Coil Removal L.F. Dreisilke, and H.W. Penrose, Dreisilker Electric Motors Inc, IL, USA

9:40 AM – 11:40 AM

S2 – TRANSFORMERS 1 – Salon II

089 Keynote	Evaluation Of Underground Submersible Distribution Transformers Through Oil Analysis *B. Noirhomme, IREQ, Quebec, Canada; J.* Côté*, Hydro-Quebec, Quebec, Canada*
249 Oral	Gases Dissolved in Natural Ester Fluids Under Thermal Faults in Transformers *Y. Liu, J. Li, Z. Zhang, Chongqing University, Chongqing, China*
247 Oral	Engineering of Enhanced Performance Insulating Cellulose Papers for Application in Distribution Transformers *K. Biggie, W. Ernst, M. Franchek, A. Levin, Weidmann Electrical Technology, Inc, VT, USA*
159 Oral	Failure of Service Aged 230 kV Current Transformers *W. McDermid, T. Black, Manitoba Hydro, Manitoba, Canada*
145 Oral	Localizing Partial Discharge In Power Transformers By Combining Acoustic And Different Electrical Methods *S.M. Hoek, A. Kraetge, R. Hummel, OMICRON electronics GmbH, Klaus, Austria; O. Kessler, Omicron Energy Solutions GmbH, Berlin, Germany; P. Winter, Omicron Electronics Corp, USA; U. Broniecki, B. Kästner, Berlin University of Technology, Berlin, Germany*

9:40 AM – 12:00 NOON

S3 – CABLES 1 – Salon III

200 KN	The Influence Of Voltage Source And Withstand Duration For Identifying Lifelimiting Defects In Newly Laid HV & EHV XLPE Cable Systems *M. Fenger, Kinectrics Inc, ON, Canada*
030 Oral	How Much Does Studying Polyethylene Tell Us About XLPE *D. Wald, Eifelkabel, Villmergen AG, Switzerland and N. Hampton, Neetrac, GA, USA*
049 Oral	Use Static Inverters for Performing Field Testing on HVAC Cables *J. Rickmann, D. Kremer, Phenix Technologies Inc, MD, USA*
071 Oral	Quantifying The Operational Benefits Of New HV Cable Systems In Terms Of Dielectric Design Parameters *J. A. Pilgrim, P. L. Lewin, A. S. Vaughan, Tony Davies High Voltage Laboratory, Tony Davies High Voltage Laboratory, University of Southampton, Southampton, UK*
150 Oral	Water Tree Growth of Wet XLPE Cables Stressed with DC and High Frequency AC Voltage Superimposed *F. Mauseth, M. Amundsen, Norwegian University of Science and Technology, Trondheim, Norway; H. Faremo, SINTEF Energy Research AS, Trondheim, Norway*

082 **Oral**	The Effect of Water Ingress on Dielectric Properties of Polyethylene Cable Insulation *S. Bernier, J-F Drapeau, D. Jean, IREQ, Quebec, Canada; É. David, École de Technologie Supérieure, Quebec, Canada*

12 NOON – 1:30 PM – LUNCH – Vista Mar Terrace

1:30 PM – 2:50 PM

S4 – ROTATING MACHINES 2 – Salon I

008 **Oral**	Proposed Maintenance Hipot Levels for Generator Rotor Windings *G.C. Stone, Iris Power-Qualitrol, Mississauga, Canada; R. Ilie, Israel Electric Corporation, Israel*
014 **Oral**	Comparison Of EMI Signatures To Improve Condition Assessment Of Generator Stator Insulation *J.E. Timperley, Doble Engineering, Galloway, USA; J.M. Vallejo, Universal Star Energy Services, TX, USA*
017 **Oral**	End-Winding Vibration Monitoring And Interpretation *M.R. Bissonnette, VibroSystM Inc, QC, Canada*
048 **Oral**	Flexible Medium Voltage Stator Coil Insulation System for On-site Winding *S. Ul Haq, R. Omranipour, G. Hanna, GE Energy Management, Ontario, Canada; W. Lucas, Power Generation Services, AZ, USA; M. Znidarich, GE Energy Services, WA, Australia*

1:30 PM – 2:50 PM

S5 – TRANSFORMERS 2 – Salon II

133 **Oral**	Dielectric Frequency Response Measurements and Dissipation Factor Temperature Dependence *P. Werelius, J. Cheng, M. Ohlen, Megger, Täby, Sweden; D.M. Robalino, Meggar, TX, USA*
244 **Oral**	FRA vs. Short Circuit Impedance Measurement in Detection of Mechanical Defects within Large Power Transformer *M. Bagheri, M. Salay Naderi, T. Blackburn, T. Phung, University of New South Wales, Sydney, Australia*
184 **Oral**	Diagnostic Evaluation Of Power Transformers By An Expert System *C. Vörös, B. Németh, S. Szabo, I. Berta, Budapest University of Technology and Economics, Budapest, Hungary*
122 **Oral**	Study of Parameters Influencing the Performance of Connectors Used for Load and Temperature Tests on Transformers *S. Magdaleno-Adame, Instituto Tecnologico de Morelia, Michoacan, Mexico; J. C. Olivares-Galván, Universidad Autonoma Metropolitana, Ciudad de Mexico, Mexico; I. Fofana, L. Loiselle, Université du Québec à Chicoutimi, Québec, Canada; P. Georgilakis, National Technical University of Athens, Greece*

1:30 PM – 2:50 PM

S6 – CABLES 2 – Salon III

009 **Oral**	Cable System Aging Management for Nuclear Power Plants *G.J. Toman and A. Mantey Nuclear Sector, Electric Power Research Institute, NC, USA*
031 **Oral**	Comparison of Parametric Partial Discharge and Dissipation Factor Characteristics of the MV PILC Cables *I. Mladenovic, C. Weindl, C. Freitag, University of Erlangen-Nuremberg, Germany*
057 **Oral**	Defect Investigation in Medium-Voltage EPR Cable *A. J. Reid, Glasgow Caledonian University, Glasgow, UK; X. Hu, M. D. Judd, W.H. Siew, University of Strathclyde, Glasgow, UK*
090 **Oral**	Axial Water Ingress In Watertight MV XLPE Cable Designs *K.B. Liland, S.M. Helleso, S. Hvidsten, SINTEF Energy Research AS, Trondheim, Norway; K.M. Bengtsson, Nexans Norway AS, Halden, Norway; A. Ryen, Nexans Norway AS, Namsos, Norway*

2:50 PM – 3:10 PM – REFRESHMENT BREAK

3:10 PM – 4:30 PM

S7 – ROTATING MACHINES 3 – Salon I

198 **Oral**	A Review of New Insulation Development for Wind Generator Applications *W. Chen, G. Gao, TECO-Westinghouse, TX, USA*
230	Simulating Insulation Systems Under Various Environmental Conditions in the Laboratory *D.L. McKinnon, PdMA Corporation, FL, USA*
016	Development of a Finite-Element-Model for Transient Thermal Analysis of Thermal Cycle Tests on Stator Bars for Large Rotating Machines *C. Staubach, Siemens AG Energy Sector, Germany; C. Foelting, A.T. Anvari, F. Jenau, Technical University of Dortmund, Germany*
104	Effect of Mineral Charge with High Relative Permittivity in Impregnation Varnish on the Life Expectancy of Electrical Machines D. Cozonac, S. Duchesne, G. Velu, Universite Lille Nord de France, UArtois, LSEE, Lille, France

3:10 PM – 4:30 PM

S8 – TRANSFORMERS 3 – Salon II

056 **Oral**	Use Of An Electronic Nose To Estimate Paper Insulation Degradation *M-C Lessard, B. Noirhomme, G. Larocque, M. Vienneau, IREQ, Quebec, Canada*
051 **Oral**	A Comparative Study on the Electrical Properties of Hydrogenated Transformer Oil and Napthenic Transformer Oil *Y. Quan, Y. Lin, Guangdong Power Grid Corporation Electric Power, Guangzhou, China; H. Wu, Y. Huang, Z. Zhong, South China University of Technology, Guangzhou, China*
114 **Oral**	A Methodology to Predict the Lightning Insulation Strength for Distribution Transformers by Applications of Reduced Lightning Standard Impulse Voltages *G. P. Lopes, M. L. B. Martinez, R. Salustiano, I. P. Faria, V. G. C. Telles, Federal University of Itajubá, Itajubá, Brazil*
069 **Oral**	A New Technique for a Better Sweep Frequency Response Analysis Interpretation *E. Al Murawwi, B. Barkat, The Petroleum Institution, Abu Dhabi, UAE*

3:10 PM – 4:30 PM

S9 - CABLES 3 – Salon III

132 **Oral**	Partial Discharge Diagnostics of Defective MV Three-Phase PILC Cables *J.A. Hunter, L. Hao, P.L. Lewin, University of Southampton, UK; C. Walton, PPA Energy, Guildford, UK; M. Michel, United Kingdom Power Networks, Crawley, UK*
174 **Oral**	Electrical Conductivity Of Medium Voltage XLPE Insulated Cables *O.L. Hestad, SINTEF Energy Research, Trondheim, Norway; F. Mauseth, R.H. Kyte, Norwegian University of Science and Technology, Trondheim, Norway*
177 **Oral**	Magnetic Probing of Concentric Neutrals in Energized Underground Power Distribution Cables *I. Paprotny, M. Seidel, C. Morris, T. Nora Czamanski, R.M. White, P.K. Wright, University of California, CA, USA*
226 **Oral**	Initiation of Vented Water Trees from the Conductor Screen of MV XLPE Insulated Cables *H. Faremo, M. Selsjord, S. Hvidsten, SINTEF Energy Research, Trondheim, Norway; K.M. Bengtsson, A. Ryen, NEXANS, Norway*

TUESDAY, JUNE 12TH

7:00 AM – 4:00 PM REGISTRATION
7:00 AM – 8:00 AM BREAKFAST

8:00 AM – 10:00 AM

S10 - OUTDOOR INSULATION 1 – Salon I

022 **KN**	Partial Discharge On-Line Monitoring of Outdoor Insulators *I.Y. Shurrab, A. El-Hag, K. Assaleh, American University of Sharjah, Sharjah, UAE; R. Ghunem, University of Waterloo, Canada*

152 **Oral**	Developments of High Voltage Porcelain Post-Insulators *T. Morocutti, T. Berg, M. Muhr, Graz University of Technology, Graz, Austria; G. Gödel, PPC Insulators Austria GmbH, Frauental, Austria*
178 **Oral**	AC and Transient Electric Field Distributions Along a 380 kV Vee String Insulator *S. Ilhan, A. Ozdemir, Istanbul Technical University,Turkey; S.H. Jayaram, E.A. Cherney, University of Waterloo, ON, Canada*
013 **Oral**	Added Critical Flashover Voltage By Fiberglass Crossarm To 15 KV Polymer Suspension Insulator *S. Grzybowski, S. Talabathula, Mississippi State University, MS, USA; R. Ward, Aluma-Form Inc, TN, USA*
091 **Oral**	Consideration into CIGRE Round Robin Contamination Tests of Polymer Insulators *R. Matsuoka, K. Sakanishi, Chubu University, Aichi, Japan*

8:00 AM – 9:40 AM

S11 – ENVIRONMENTAL 1 – Salon II

202 **KN**	Development Of A Low Viscosity Insulating Fluid Based On Vegetable Oil *Y. Bertrand, EDF R&D, Moret sur Loing, France*
146 **Oral**	Charge Behavior in Palm Fatty Acid Ester Oil (PFAE) / Pressboard Composite Insulation System under Voltage Application *H. Kojima, N. Hayakawa, H. Okubo, Nagoya University, Nagoya, Japan; K. Kato, Niihama National College of Technology, Niihama, Japan; K. Kawanischi, H. Koide, Fuji Electric Co. Ltd, Ichihara, Japan*
153 **Oral**	Comparative Experimental Study Of Dielectric Strength Of Oil-Cellulose Insulation For Mineral And Vegetable-Based Oils *D. Vukovic, M. Jovalekic, S. Tenbohlen, University of Stuttgart, Germany; J. Harthun, H. Fink, Alstom Grid-Power Transformer, Monchengladbach, Germany; C. Perrier, M.L. Coulibaly, Alstom Grid-Power Transformer, Villeurbanne, Massy, France*
216 **Oral**	Understanding the Properties and Aging Characteristics of Natural Esters for Applications in Fluid Filled Electrical Apparatus *A. W. Lemm, Cooper Power Systems, WI, USA*

8:00 AM – 10:00 AM

S12 – PARTIAL DISCHARGE 1 – Salon III

032 **KN**	Automatic Separation of Multiple PD Sources Using an Amplitude-AutoCorrelation Relation Diagram *A. Contin and S. Pastore, DIII University of Trieste, Italy*
058 **Oral**	Simultaneous Measurement of Partial Discharge using TEV, IEC60270 and UHF Techniques *A.J. Reid, Glasgow Caledonian University, Glasgow, UK; M.D. Judd, G. Duncan, University of Strathclyde, Glasgow, UK*
128 **Oral**	A Feature Based Method for Partial Discharge Source Classification *P.L. Lewin, L.A. Petrov, Tony Davies High Voltage Laboratory, University of Southampton, Southampton, UK; L. Hao, GE Global Research, NY, USA*
096 **Oral**	FEA Modelling Of A Water Droplet Vibrating In An Electric Field *Q. Li, R. Shuttleworth, I. Dupere, G. Zhang, S.M. Rowland, The University of Manchester, Manchester, UK; R.S. Morris, National Grid UK, Warwick, UK*
143 **Oral**	Emission and Propagation Mechanisms of PD Pulses for UHF and Traditional Electrical Measurements *S.M. Hoek, M. Koch, A. Kraetge, OMICRON Electronics GmbH, Klaus, Austria; P. Winter, OMICRON Electronics Corp, USA; M. Heindl, University of Stuttgart, Stuttgart, Germany*

10:00 AM – 10:20 AM REFRESHMENT BREAK

10:20 AM – 12 NOON

S13 – OUTDOOR INSULATION 2 – Salon I

161 **Oral**	Inclined Plane Initial Tracking Voltage for AC, +DC and -DC *R.A. Ghunem, S.H. Jayaram, E.A. Cherney, University of Waterloo, ON, Canada*
054 **Oral**	3D Electric Field Computation of a Composite Cross-Arm *V. Peesapati, C. Zachariades, Q. Lin, S.M. Rowland, I. Cotton, P.R. Green, University of Manchester, Manchester, UK; F. Allison, UMIP, University of Manchester, Manchester, UK; D. Chambers, EPL Composite Solutions Ltd, Loughborough, UK*
084 **Oral**	Influence of the Electric Field on TSC Characteristics of 110kV Silicone Rubber Insulator Sheds in Service *H. Zhang, Y. Tu, J. Chen, C. Chen, Beijing Key Laboratory of High Voltage and EMC, North China Electric Power University, Beijing, China; Y. Lu, L. Xie, North China Electric Power Research Institute, Beijing, China*
129 **Oral**	Association Between Hydrophobicity And Dry Band Arcing On ADSS Fiber Optic Cables And Dampers *K. Prabakar, G.G. Karady, Arizona State University, AZ, USA*
023 **Oral**	Water Absorption And Water Vapor Permeation Characteristics Of HTV Silicone Rubber Material *B. Lutz, Z. Guan, L. Wang, Tsinghua University, Shenzhen, China; F. Zhang, Z. Lu, China Southern Power Grid Co. Ltd, Guangzhou, China*

10:20 AM – 11:20 AM

S14 – ENVIRONMENTAL 2 – Salon II

123 **Oral**	Stability of Environmental Friendly Fluids under Electrical and Thermal Stresses *L. Loiselle, I. Fofana, Université du Québec à Chicoutimi, Quebec, Canada; J. C. Olivares-Galvan, E. Campero, Universidad Autonoma Metropolitanta, Ciudad de Mexico, Mexico*
245 **Oral**	Behaviour Of Alternative Insulating Liquids At Cold Temperatures *W. Lick, H. M. Muhr, Graz University of Technology, Graz, Austria; M. Stössl, R. Schwarz, G. Pukel, Siemens Transformers Austria GmbH & Co KG, Weiz, Austria*
163 **Oral**	Gassing Behavior Of Various Alternative Insulating Liquids Under Thermal And Electrical Stress *M. Jovalekic, D. Vukovic, S. Tenbohlen, University of Stuttgart, Germany*

10:20 AM – 12:00 NOON

S15 - PARTIAL DISCHARGE 2 – Salon III

006 **Oral**	The Influence Of Test Voltage Waveforms On Partial Discharge Activity In XLPE *A. Cavallini, G.C. Montanari, University of Bologna, Bologna, Italy; L.E. Mariut, Transilvania University of Brasov, Brasov, Romania*
142 **Oral**	Comparative Study of PD Characteristics and Degradation of PET Insulation with a Self-contained Void, Void with Closed Channel and Void with Vented Channel *D. Adhikari, D M Hepburn, B G Stewart, Glasgow Caledonian University, Glasgow, UK*
066 **Oral**	Evaluation of FDTD Modelling as a Tool for Predicting the response of UHF Partial Discharge Sensor *A.M. Ishak, M.D. Judd, W.H. Siew, P.C. Baker, University of Strathclyde, Glasgow, UK; A.M. Ishak, Universiti Pertahanan Nasional Malaysia, Kuala Lumpur, Malaysia*
120 **Oral**	A Novel Sensing Device for Power System Equipment Condition Monitoring *J.L. Lauletta, Exacter, Inc., OH, USA; S.A. Sebo, The Ohio State University, OH, USA*
072 **Oral**	Detection And Location Of PD Activities Using An Array Of Fiber Laser Sensors *P. Kung, L. Wang, QPS Photronics, Quebec, Canada; M.I. Comanici, L.R. Chen, McGill University, Quebec, Canada*

12 NOON – 1:30 PM – LUNCH – Vista Mar Terrace

1:30 PM – 3:10 PM

S16 – MATERIALS 1 – Salon I

222 KN	Breakdown and Tracking Properties of Rubber Materials for Wind Turbine Blades *A. Candela Garolera, J. Holboell, M. Henriksen, Technical University of Denmark, Lyngby, Denmark*
131 Oral	Influence of Insulation Thickness on the Electric Properties of Unfilled µm-sized Thermosets *S. Azer, Haefely Test AG, Basel, Switzerland; C. Fölting, M. Gamlin, D. Peier, Technische Universität Dortmund, Germany*
112 Oral	Investigation of the Physical Properties of Elastic Syntactic Foams *M. Kessler, C. Roggendorf, A. Schnettler, RWTH Aachen University, Aachen, Germany*
206 Poster	Effect of Gamma-Ray Irradiation on Surface Charge Decay through Bulk of Epoxy Resin Y. Gao, B.X. Du, Tianjin University, Tianjin, China

1:30 PM – 3:10 PM

S17 – SWITCHGEAR & TRANSMISSION LINES – Salon II

183 KN	Face Protection Investigation Against Electric Field On Live Line Workers *G. Gocsei, B. Nemeth, Z.A. Tamus, I. Kiss, Budapest University of Technology and Economics, Budapest, Hungary*
097 Oral	On Calculating Surface Potential Gradient of Overhead Conductors *Q. Li, R. Shuttleworth, G. Zhang, S.M. Rowland, The University of Manchester, Manchester, UK; R.S. Morris, National Grid UK, Warwick, UK*
026 Oral	Thermal Grading around Overhead Transmission Line Under Various Environments and Its Influence to Load Capacity *L. Chen, Z. Zheng, Beijing Key Laboratory, North China Electrical Power University, Beijing, China;* *S. Liu, L. Guo, C. Dun, North China Electrical Power Research Institute, Beijing, China*
228	Determination of Optimum Resistor Sequence in a Ballistic Breaker *R. W. Faulkner, Ballistic Breaker Corporation, MS, USA; C. Taylor Jr, High Voltage Laboratory, Mississippi State University, MS, USA*

1:30 PM – 3:10 PM

S18 – PARTIAL DISCHARGE 3 – Salon III

005 Oral	The Influence Of Oil Speed And Temperature On PD Phenomena In Transformer Insulation *C.G. Azcarraga, A. Cavallini, G.C. Montanari, University of Bologna, Bologna, Italy*
078 Oral	On-site Transformer Partial Discharge Diagnosis *D. W. Gross, M. Soeller, Power Diagnostix Systems GmbH, Aachen, Germany*
045 Oral	On-line Partial Discharge Testing of In-Service Rotating Machines in Ex Hazardous Environments by Employment of Central Monitoring Solutions *L. Renforth, S. Goodfellow, M. Foxall, HVPD Ltd, Manchester, UK; D. Clark, R. Shuttleworth, University of Manchester, Manchester, UK*
136 Oral	Alarm Management in Permanent PD Monitoring for Generators *L. Fornasari, Techimp HQ Spa, Bologna, Italy; G.C. Montanari, A. Cavallini, University of Bologna, Italy*
52	Partial Discharge Detection During Electrical Aging of Generator Bar Using Acoustic Technique *S. Ahmadi, M.R. Naghashan, Power and Water University of Technology, Tehran, Iran; M. Shadmand, Pars Generator Co, Tehran, Iran*

3:10 PM – 3:30 – REFRESHMENT BREAK

3:30 PM – 4:50 PM

S19 - MATERIALS 2 – Salon I

170 Oral	Effect Of High Field On Dielectric Relaxation Properties Of Polycarbonate *H. Couderc, M. Fréchette, S. Savoie, IREQ, Quebec, Canada; E. David, École de Technologie Supérieure, Quebec, Canada*

154 **Oral**	Investigations On The Dielectric Strength Of Syntactic Foam At Cryogenic Temperature And The Impact Of The Filler Material On The Volume Shrinkage *D.Winkel, A. Schnettler, RWTH Aachen University, Aachen, Germany*
070 **Oral**	Bio-Based Engineering Plastics for Low Voltage Applications *L. Petersson, H. Martini, ABB AB, Västerås, Sweden; M. Chiaravalli, P. Faure Ragani, ABB S.p.A, Vittuone, Italy*
047 **Oral**	The Mechanism of Clearing in Metalized Film Capacitors *S. Qiu, S. Ma, S.A. Boggs, University of Connecticut, CT, USA*

3:30 PM – 4:30 PM

S20 – ROTATING MACHINES 4 – Salon II

185 **Oral**	Qualification Test Results on Stator Bars of Large Hydro Generators *R. Soltani, L. Lafortune, R. Draper, Andritz Hydro Ltd, ON, Canada; A. Khosravi, BC Hydro, BC, Canada*
137	Study of Wire Distribution in a Slot of a Motor Fed by Steep Fronted Pulses for Lifetime Extension S. Duchesne, V. Mihaila, G. Velu, D. Roger, Universite Lille Nord de France, UArtois LSEE, Lille, France
043 **Oral**	Study of Insulation Resistance Profiling Use on Random and Form Wound Machines Under 6kV *H.W. Penrose, Dreisilker Electric Motors Inc, IL, USA*

6:30 PM – 9:00 PM - CONFERENCE BANQUET – VISTA MAR TERRACE

WEDNESDAY, JUNE 13

7:30 AM – 8:30 AM BREAKFAST

8:30 AM – 10:10 AM

S21 – CABLES 4 – Salon I

194 **Oral**	The Effect Of Hydrostatic Pressure On Electrical Treeing In Silicone Cable Joints *G. Berg, H.H. Sæternes, J. Aakervik, S. Hvidsten, SINTEF Energy Research, Trondheim, Norway*
199 **Oral**	Sensitivity Assessment for HV & EHV Field Partial Discharge Measurements via Laboratory Testing *M. Fenger, Kinectrics Inc, ON, Canada; J.P. Levine, HydroOne Networks, ON, Canada*
223 **Oral**	A Comparison of Partial Discharge Detection with 50Hz and 0,1Hz at XLPE Cables *C. Sumereder, Graz University of Technology, Graz, Austria*
238 **Oral**	Water Tree Initiation And Growth In XLPE Cables Under Static And Dynamic Mechanical Stress *S. Hellesø, J.T. Bejaminsen, M. Selsjord, S. Hvidsten, Electric Power Technology, SINTEF Energy Research, Trondheim, Norway*
242 **Oral**	Water Treeing of XLPE Cables during Dynamic Mechanical Tension *E. Ildstad, T.A. Lindseth, Norwegian University of Science and Technology, Trondheim, Norway; H. Faremo, SINTEF Energy Research, Trondheim, Norway*

8:30 AM – 10:50 AM

S22 – NANOMATERIALS 1 – Salon II

149 **KN**	Surface Resistance Of Epoxy-Based Composites To Electrical Discharge *M.F. Fréchette, S. Savoie, H. Couderc, IREQ, Quebec, Canada; M. Reading, A. S. Vaughan, University of Southampton, Southampton, UK; J. Castellon, L. Banet, Universite Montpellier 2, Montpellier, France*

155 **Oral**	Dielectric Relaxation Spectroscopy Of Epoxy Resins With Tio_2, Al_2o_3, Wo_3 And Sio_2 Nanofillers *M. Klampar, K. Liedermann, Brno University of Technology, Czech Republic*
224 **Oral**	Dielectric Response Of LLDPE/Clay Nanocomposite Melt Compounded From A Masterbatch *E. David, C. Daneau, B. Zazoum, A.D. Ngo, École de Technologie Supérieure, Quebec, Canada; M.F. Fréchette, S. Savoie, IREQ, Quebec, Canada*
180 **Oral**	DC Electrical Properties Of XLPE Insulation With Nanostructured-Coating *D. Fabiani, G. C. Montanari, F. Palmieri, M. Toselli, A. Saccani, University of Bologna, Italy*
135 **Oral**	Effect of Nanoparticles on Electrical Characteristics of Transformer Oil-Based Nanofluids Impregnated Pressboard *Y. Zhou, Y. Zhong, M. Chen, S. Zhang, Y. Du, Y. Lv, C. Li, Beijing Key Laboratory of High Voltage & EMC, North China Electric Power University, Beijing, China; T. Liu, National Engineering Laboratory for Ultra High Voltage Engineering Technology Kunming, Guangzhou, China*
237 **Oral**	Influence of the Surrounding Medium on the Dielectric Strength Measurement of LLDPE/Clay Nanocomposites *C. Daran-Daneau, É. David, École de Technologie Supérieure, Quebec, Canada; M.F. Fréchette, S.Savoie, IREQ, Quebec, Canada*

8:30 AM – 11:10 AM

S23 - IEEE Standards - Salon III

160 **Oral**	IEEE Guide for the Measurement of Partial Discharges in AC Electric Machinery *W. McDermid, Manitoba Hydro, Manitoba, Canada*
	Reports from Working Group Chairs IEEE Standard 43, Ian Culbert, Iris Power-Qualitrol, Canada IEEE Standard 56 and IEEE Standard 95 Dave McKinnon, PdMA, USA IEEE Standard 117, Nancy Frost, Krempel, USA IEEE Standard 1434, Bill McDermid, Manitoba Hydro, Canada IEEE Standard 1719, Glenn Mottershead, HDR/DTA, Canada IEEE Standard 1799, Remi Tremblay, Hydro Quebec, Canada New Turn Insulation Endurance Spec, Joe Williams, Electrolock, Inc, USA

END OF CONFERENCE

PRELIMINARY PROGRAM
PREPARED APRIL 11, 2012
SUBJECT TO CHANGE
REV – APRIL 18, 2012
REV – MAY 2, 2012
REV – MAY 5, 2012