



## Programme at a Glance

<b>Sunday</b> <b>2011-08-21</b>	16:00 - 20:00	Registration		
	19:00 - 21:00	Reception		
<b>Monday</b> <b>2011-08-22</b>	10:30 - 12:00	Opening Ceremony		
	12:00 - 14:00	Lunch break		
	14:00 - 15:30	Oral Session A1	Oral Session C1	
	15:30 - 16:00	Coffee/Tea break		
	16:00 - 17:30	Oral Session A2	Oral Session C2	
<b>Tuesday</b> <b>2011-08-23</b>	08:30 - 10:00	Oral Session F1	Oral Session C3	Poster session A
	10:00 - 10:30	Coffee/Tea break		
	10:30 - 12:00	Oral Session F2	Oral Session C4	
	12:00 - 14:00	Lunch break		
	14:00 - 15:30	Oral Session F3	Oral Session D1	Poster session C
	15:30 - 16:00	Coffee/Tea break		
	16:00 - 17:30	Oral Session F4	Oral Session D2	
	19:00 - 21:00	Social Event		
<b>Wednesday</b> <b>2011-08-24</b>	08:30 - 10:00	Oral Session F5	Oral Session D23	Poster session F
	10:00 - 10:30	Coffee/Tea break		
	10:30 - 12:00	Oral Session F6	Oral Session D4	
	12:00 - 14:00	Lunch break		
	14:00 - 15:30	Oral Session E1	Oral Session D5	Poster session D
	15:30 - 16:00	Coffee/Tea break		
	16:00 - 17:30	Oral Session E2	Oral Session B1	
<b>Thursday</b> <b>2011-08-25</b>	08:30 - 10:00	Oral Session E3	Oral Session B2	Poster session G
	10:00 - 10:30	Coffee/Tea break		
	10:30 - 12:00	Oral Session E4	Oral Session B3	
	12:00 - 14:00	Lunch break		
	14:00 - 15:30	Oral Session E5	Oral Session B4	Poster session B Poster session H
	15:30 - 16:00	Coffee/Tea break		
	16:00 - 17:30	Oral Session E6	Oral Session G1	
	20:00 - 23:00	Gala Dinner		
<b>Friday</b> <b>2011-08-26</b>	08:30 - 10:00	Oral Session E7	Oral Session G2	Poster session E
	10:00 - 10:30	Coffee/Tea break		
	10:30 - 12:00	Oral Session H		
	12:30 - 13:00	Closing Ceremony		

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**ISH 2011**

17<sup>th</sup> International Symposium  
on High Voltage Engineering  
August 22<sup>nd</sup> – 26<sup>th</sup> 2011  
Hannover, Germany

# 17<sup>th</sup> International Symposium on High Voltage Engineering

# Programme

<b>Topic A: Electromagnetic fields, computation, measurements, environmental effects</b>		
Session Date: 2011-08-22		
Time: 1400 – 1530		Session A1 (oral)
Paper	Authors	No.
ELECTRIC FIELD SIMULATION ALONG SILICONE RUBBER INSULATORS SURFACE	M. Talaat	A-022
DESIGN OF CORONA/ARCING RINGS WHEN REPLACING CAP-AND-PIN INSULATORS BY COMPOSITE INSULATORS	I. Gutman, J. Lundquist, V. Dubickas, L. Carlshem, R. Kleveborn	A-007
VERIFICATION OF ANALYTICAL EXPRESSIONS FOR CALCULATION OF THE RESISTANCE TO GROUND OF SINGLE CONDUCTIVE CONCRETE ENCASED GROUNDING ELECTRODES BY FEM	G. Ts. Velev, A. Weindlader, S. Tenbohlen, P. K. Petrov	A-009
THE INFLUENCE OF THE ELECTROMAGNETIC OF HIGH VOLTAGE OVERHEAD LINES ON THE HUMAN BIENGE	M.N. Al Rayes, A. Sulaiman, S. Mobadba	A-017
CFD ANALYSIS AND CLASSICAL APPROACH TO CALCULATE THE EFFICIENCY OF A RADIATOR IN POWER TRANSFORMER	S. M. Cho, C. S. Kim, J. K. Kim	A-013
ELECTRICAL-THERMAL OPTIMIZATION OF END CORONA PROTECTION SYSTEMS ON LARGE ROTATING MACHINES BY USE OF NUMERICAL OPTIMIZATION ALGORITHM BASED ON FEM	C. Staubach, S. Kempen, F. Pohlmann, F. Jenau	A-031

<b>Topic A: Electromagnetic fields, computation, measurements, environmental effects</b>		
Session Date: 2011-08-22		
Time: 1600 – 1730		Session A2 (oral)
Paper	Authors	No.
CHARACTERISTICS OF MAGNETIC FIELD DISTRIBUTION UNDER TWO DOUBLE-CIRCUIT POWER LINES	T. Matsumoto, H. Hirata, H. Tarao, N. Hayashi, K. Isaka	A-028
ELECTROMAGNETIC FIELD APPLICATION TO UNDERGROUND POWER CABLE DETECTION	P Wang, K Goddard, P Lewin S Swingler	A-011
MAGNETIC FIELD MIGRATION OF LOOP CABLE TRAY	Yunseog Lim, Kooyong Shin, Sangyun Lee, Inhyeok Choi, Dongil Lee, Injin Seo	A-006
EFFECT OF SPACER DEFECTS ON THE ELECTRIC FIELD DISTRIBUTION ON THE SURFACE OF THE SPACER IN GAS INSULATED SYSTEMS	D.Deepak Chowdary, J.Amarnath	A-003
MEASURED MAGNETIC FIELD PROFILES AT HV GAS INSULATED SUBSTATIONS (GIS), UNDERGROUND CABLES AND GENERATING STATIONS	B. Krishna, R. Sivakumara Aradhya, R. Arunjothi, D. Devendranath	A-010
CALCULATION OF INDUCED ELECTRIC FIELDS IN HUMAN MODELS EXPOSED TO ELF MAGNETIC AND ELECTRIC FIELDS	H. Tarao, N. Hayashi, L. Korpinen, T. Matsumoto, K. Isaka	A-005

**Topic A: Electromagnetic fields, computation, measurements, environmental effects**

Session Date 2011-08-23  
Time: 0830 – 1200

**Poster Session A**

Paper	Authors	No.
SPACIAL ENERGY FLOW DISTRIBUTION ON THREE-PHASE HIGH-VOLTAGE LINES	H. Grabinski, F. Wiznerowicz	A-001
METHOD OF ELECTRIC FIELD STRESS MEASUREMENT BASED ON ELECTRO – OPTIC KERR EFFCET	W. Kasprzak, Z. Nadolny	A-002
ELECTRIC FIELD MAPPING AND PARTIAL DISCHARGE ESTIMATION IN POLYMERIC INSULATORS USING FINITE ELEMENT METHOD	P.B. Vilar, E.G.Costa, T.V.Ferreira	A-004
A NEW APPROACH FOR ANALYSIS OF NONCONVENTIONAL GROUNDING INSTALLATIONS BY MEANS OF FEM	G. Ts. Velev, A. Weindläder, S. Tenbohlen, P. K. Petrov	A-008
QUANTITATIVE JUDGMENT OF CORONA DISCHARGE FOR HIGH VOLTAGE EQUIPMENT	Shu Li-chun, Yang Zhan-gang, Jiang Xing-liang, Hu Qin, Xu Lu-wen, Liu Qing-che	A-012
NUMERICAL SIMULATION OF STREAMER DEVELOPMENT IN CF3I-N2 GAS MIXTURES	D. Tanaka, A. Kumada, K. Hidaka	A-014
SINGLE AND MULTI-OBJECTIFS OPTIMIZATION WITH GENETIC ALGORITHMS OF AN INSULATOR HOOD AND STALK	D. Douffene, S. Bouazabia	A-015
SEARCH OF THE EFFICIENCY OF THE INSULATING BARRIER IN A SYSTEM POINT-INSULATING BARRIER PLAN	S. Benharat S Bouazabia	A-016
MEASUREMENT OF ELECTRIC FIELD IN A ROD PLANE CONFIGURATION USING THE CAPACITIVE PROBE WITH OPTICAL FIBER: VERTICAL ROD INSERTION EFFECT	D. Khelil, S. Bouazabia, N. Harid, A. Haddad	A-018
STUDY OF CURRENT DISTRIBUTION IN WOODEN SUPPORTING STRUCTURES USING FINITE ELEMENT METHOD	H. L. Rasara, K. L. Wong	A-019
CHARGE SIMULATION METHOD ERRORS, FIELD FACTORS AND OPTIMAL ASSIGNMENT FACTORS	G. S. Punekar, N. K. Kishore, H.S.Y.Shastry	A-020
STUDY OF OPERATION CONDITIONS FOR THE HIGH-VOLTAGE INSULATED LIGHTNING DOWNCONDUCTOR SEALING UNIT	V. Shostak, E. Shulzhenko	A-021
COMPARISON OF 2- AND 3-D METHODS FOR CALCULATING MAGNETIC FIELDS INDUCED BY TRANSMISSION LINES	R.R.Diaz, E.Nanni, J.N.Silva	A-023
3D MODELING OF ELECTRICAL FIELD AND ELECTRICAL POTENTIAL IN DIFFERENT CONTAMINATION CONDITION IN POLYMERIC INSULATOR	A. Majzoobi, I. A. Joneidi, S. Mohajer, H.Mohseni, A. A. Shayegani	A-024
ELECTROMAGNETIC FIELD ANALYSIS FOR MEDIUM VOLTAGE NETWORKS FAILURE INVESTIGATION	A. L. Schumann, S. Folchetti	A-025
THE FEASIBILITY OF USING A CORONA CAGE TO PREDICT AUDIBLE NOISE LEVELS UNDER HVDC LINES	N. Mahatho, H.A.Roets, T. Govender, N. Parus	A-026
A MODEL FOR PHOTOIONIZATION PRODUCED BY NEGATIVE CORONA PLASMA IN AIR	Yuesheng Zheng, Bo Zhang, Jinliang He, Rong Zeng	A-027
GROUNDING RESISTIVITY MEASUREMENTS ANALYSIS OF SLOPED-LAYERED SOIL	M. Nayel	A-029
TRANSIENT CHARACTERISTICS ANALYSIS OF GROUNDING ELECTRODE IN TWO-LAYER SOIL	M. Nayel	A-030
INVESTIGATION INTO HVDC CORONA: DISCUSSION AND INITIAL MODELLING RESULTS	A. G. Swanson, I. R. Jandrell	A-032

ELECTRIC FIELD AND VOLTAGE DISTRIBUTION AROUND COMPOSITE INSULATORS	E. P. Nicolopoulou, E. N. Gralista, V. T. Kontargyri, I. F. Gonos, I. A. Stathopoulos	A-033
AC TO DC LINE CONVERSION: A COMPARISON OF EMPIRICAL TESTS VERSUS THEORETICAL MODELS	N. Mahatho, A.C. Britten, P.V. Moodley, G.C. Siblant	A-034
FINITE ELEMENT SIMULATION OF ION CURRENTS FROM CORONATING HVDC OVERHEAD LINES	U. Straumann, C. M. Franck	A-035

<b>Topic B: Transient voltages: lightning, switching, repetitive impulses, surge arrester, insulation coordination, overvoltage protection</b>		
Session Date: 2011-08-24		
Time: 1600 – 1730		Session B1 (oral)
Paper	Authors	No.
SIMULATION AND MEASUREMENT OF VERY FAST TRANSIENT OVERVOLTAGE UP TO 2.5MV	Lu Zhang, Qiaogen Zhang, Shi Liu, Zhou Li, Yu Yin, Weidong Shi, Long Li, Fenglian Liu, Xin Tong, Jin Wei, Jian Huang	B-061
INVESTIGATION OF ATTENUATION BEHAVIOUR AND WAVE PROPAGATION OF GAS INSULATED TRANSMISSION LINES (GIL)	F. Goll, R. Witzmann, U. Schichler, C. Neumann	B-047
AN ENGINEERING APPROACH IN MODELING OVERVOLTAGE EFFECTS ON WIND PARKS CAUSED BY TRAVELLING WAVES	Y. Méndez Hernández, G. Drobnjak, A. Claudi, M. Kizilcay	B-022
STUDY ON LIGHTNING IMPULSE CHARACTERISTIC OF 220KV COMPOSITE INSULATOR AND PARALLEL GAP DEVICES AT HIGH ALTITUDE AREA	Xuan Ye, Qing Yang, Wenxia Sima, Tao Yuan, Chilong Jiang	B-031
VACUUM SURFACE FLASHOVER VOLTAGE INVESTIGATION BASED ON MAGNETIC FLASHOVER INHIBITION EFFECT	Liu Yu, Wang Meng, Yang Zun, Zhou Liangji, Zou Wenkang, Zhang Le, Xu Le	B-015
DEVELOPMENT OF A LIGHTNING RISK MANAGEMENT PROGRAM	T. Shindo, H. Matsubara, T. Suda, T. Miki	B-003

<b>Topic B: Transient voltages: lightning, switching, repetitive impulses, surge arrester, insulation coordination, overvoltage protection</b>		
Session Date: 2011-08-25		
Time: 0830 – 1000		Session B2 (oral)
Paper	Authors	No.
ANALYSIS OF WINDING FAULT IN TRANSFORMER WINDING USING TRANSMISSION LINE MODEL	Usha K., Jyotirmayee Dash, Usa S.	B-043
A STUDY OF SWITCHING OVERVOLTAGES IN OFFSHORE WIND FARM	A. H. Soloot, H. K. Høidalen, B. Gustavsen	B-030
TRANSFORMER MODEL REDUCTION OF LUMPED PARAMETERS MODELS USING IMPERIALIST COMPETITIVE ALGORITHM	Vahid Rashtchi, Ebrahim Rahimpour, Hamid Shahrouzi	B-028
IMPACT OF RESONANCE OVERVOLTAGES IN TRANSFORMERS ON INTERNAL INSULATION SYSTEMS	M. Florkowski, J. Furga	B-016
STEPWISE TRANSIENT RESPONSE OF WINDING STRAY CAPACITANCE	S. Kato	B-007
IMPROVEMENT AND UPGRADING OF THE PTB STANDARD MEASUREMENT SYSTEM FOR HIGH ALTERNATING VOLTAGES	M. Schmidt, J. Meisner, W. Lucas	B-011

<b>Topic B: Transient voltages: lightning, switching, repetitive impulses, surge arrester, insulation coordination, overvoltage protection</b>		
<b>Session Date</b>	2011-08-25	<b>Session B3 (oral)</b>
<b>Time:</b>	1030 – 1200	
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
FAILURE RISK CALCULATION OF LIGHTNING OVER-VOLTAGES ON HIGH VOLTAGE OVERHEAD LINES USING EMTP AND MATLAB	A. Shirvani, U. Schmidt, K. Malekian, W. Schufft	B-050
CAN FERRITE MATERIALS OR RESONANT ARRANGEMENTS REDUCE THE AMPLITUDES OF VFTO IN GIS?	S. Burow, S. Tenbohlen, W. Köhler, J. Smajic, A. Tröger, W. Holaus	B-035
OVERVOLTAGE CONTROL STRATEGY AND TECHNOLOGY OF THE UHV CONTROLLED METAL OXIDE SURGE ARRESTER	Chen Xiujuan, Chen Weijiang, Shen Haibin, He Ziming	B-001
THE INFLUENCE OF AIR FLOW ON CURRENT INTERRUPTION WITH AIR-BREAK HV DISCONNECTORS	Y. Chai, P.A.A.F. Wouters, R. T. W. J. van Hoppe R. P. P. Smeets	B-025
EFFECT OF CROSS-LINKING ON THE ELECTRICAL PROPERTIES OF LDPE AND ITS LIGHTNING IMPULSE AGEING CHARACTERISTICS	N.L. Dao, P.L. Lewin, S.G. Swingler	B-039
OIL IMPREGNATED PAPER INSULATION AGING IN THE GRID OF THE FUTURE	T. L. Koltunowicz, G. Bajracharya, D. Djairam, J. J. Smit	B-032

<b>Topic B: Transient voltages: lightning, switching, repetitive impulses, surge arrester, insulation coordination, overvoltage protection</b>		
<b>Session Date</b>	2011-08-25	<b>Session B4 (oral)</b>
<b>Time:</b>	1400 – 1530	
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
INFLUENCE OF FLOATING OBJECTS ON THE DIELECTRIC STRENGTH OF AIR GAPS IN THE FRAME OF LIVE-WORKING	G. Riquel, F. Maciela, C. Pons, N. Oury	B-002
LABORATORY INVESTIGATIONS ON OPTIMIZATION OF AIR INSULATION CLEARANCES FOR 1200 KV TRANSMISSION LINE	Pradeep M. Nirgude, G. V. Rao, B. Krishna, B. Gunasekaran	B-004
VOLTAGE UPGRADING OF OVERHEAD LINES – AN INSULATION COORDINATION CHALLENGE	S. Berlijn, A. Olsen, M. Hinteregger, Th. Judendorfer, M. Muhr, M. Runde	B-040
EXPONENTIAL DISTRIBUTION OF THE CLOUD-TO-GROUND LIGHTNING FLASH DENSITY: LLS RESULTS IN CHINA'S THREE GORGES AREA IN A DECADE, 2000~2009	Han Li, Shiping Zhou, Ling Ruan, Yao Yao, Wenjun Zhou, Jianhui Yu, Dan Yang	B-024
SIMULATION OF EARTH TERMINATION SYSTEMS FOR LIGHTNING PROTECTION SYSTEMS REGARDING STEP VOLTAGES	S. Suchanek, V. Hinrichsen, R. Brocke, K. P. Müller	B-048
EARTH SURFACE POTENTIAL IN THE VICINITY OF TRANSMISSION TOWER UNDER LOW FREQUENCY AND TRANSIENT CURRENTS	M. Ahmeda, N. Harid, H. Griffiths, A. Haddad	B-058

**Topic B: Transient voltages: lightning, switching, repetitive impulses, surge arrester, insulation coordination, overvoltage protection**

Session Date 2011-08-25  
Time: 1400 – 1700

Poster B

Paper	Authors	No.
BACKFLASHOVER STUDY OF ARVANDKENAR-ABADAN 132KV DOUBLE CIRCUIT TRANSMISSION LINE BY MONTE CARLO METHOD WITH ACCURATE COMPONENTS MODELING	S. Mohajer Yami, A. Shayegani Akmal, A.Mohseni, A. Majzoobi	B-005
MODELING AND LIGHTNING PERFORMANCE STUDY OF COMPACT TRANSMISSION LINES IN EMTP-RV BY APPLICATION OF MONTE CARLO METHOD	S. Mohajer Yami, A. Shayegani Akmal, A. Mohseni, A. Majzoobi	B-006
ANALYSIS ON INDUCED LIGHTNING OF AN EXISTING DISTRIBUTION LINE AND A DISTRIBUTION LINE INCLUDING A NEUTRAL WIRE USING A DOWN SCALED SIMULATION LINE MODEL	Jeom-Sok Kim, Do-Young Kim, Yong-Beom Park, Sin-Won Kwon, Gyung-Suk Gil	B-008
MODELING AND SIMULATION OF VCB RELATED TRANSIENTS IN INDUSTRIAL INSTALLATION. CASE STUDY: ARC FURNACE TRANSFORMER	W.Piasecki, M. Ostrogorska, M. Fulczyk, M. Florkowski, O. Kouzmine, P. Werle	B-009
CALCULATION OF LIGHTNING TRANSIENT RESPONSES IN GROUNDING SYSTEMS	Weidong Shi, Yu Yin, Xiaoqing Zhang	B-010
EVALUATION OF BREAKDOWN CHARACTERISTICS UNDER THE LIGHTNING IMPULSE VOLTAGE CONDITION FOR THE DEVELOPMENT OF AIR-INSULATED ELECTRIC POWER APPARATUS	J. Y. Kim, J. T. Kim, B. Y. Seok	B-012
IMPACT OF DISCONNECTOR DESIGN ON VERY FAST TRANSIENT OVERVOLTAGES IN GAS-INSULATED UHV SWITCHGEAR	M. Szewczyk, W. Piasecki, M. Stosur, U. Riechert, J. Kostovic	B-013
USAGE OF STATISTICAL MODELING OF LIGHTNING LEADER ADVANCEMENT PROCESS IN THE LAST STROKE PHASE FOR DETERMINATION OF LIGHTNING PROTECTION SYSTEM PARAMETERS	M. Rezinkina, O. Rezinkin, C. Bean, S.R. Chalise, J. Grasty	B-014
ANALYSIS OF THE EXISTING EMPIRICAL RADIO NOISE PREDICTION MODELS PRECISION AND THE PERFORMANCE OF THESE MODELS APPLIED FOR OVERHEAD COMPACT TRANSMISSION LINES OPERATING ON 230 KV AND BELOW	E. B. F. Giudice, A.L. Senna, J. H. A. Almeida, G. C. Miranda, E. D. Freitas	B-017
EFFECTIVE PLACEMENT OF SURGE ARRESTER DURING LIGHTNING	G. Radhika, M. Suryakalavathi	B-018
OPTIMIZATION OF GRADING RINGS FOR VOLTAGE DISTRIBUTION IN 1200 KV SINGLE 'V' SUSPENSION INSULATOR STRING	A.Yellaiah, K. A. Aravind, B. Gunasekaran	B-019
A STUDY OF SWITCHING OVERVOLTAGES ON BLOCK POWER TRANSFORMER	A. Ovsyannikov, O. Shiller, Yu. Lavrov, S. Shevchenko	B-020
A STUDY OF SWITCHING OVERVOLTAGES ON SHUNT REACTORS	A. Ovsyannikov, O. Shiller	B-021
A STATISTICAL METHOD FOR THE ESTIMATION OF INDUCED-VOLTAGE FLASHOVER RATE OF UNSHIELDED OVERHEAD DISTRIBUTION LINES	P. N. Mikropoulos, T. E. Tsovilis	B-023
INFLUENCE OF GROUND CONDUCTIVITY ON HORIZONTAL ELECTRIC FIELDS ABOVE AND BELOW THE GROUND DUE TO LIGHTNING RETURN STROKE	K. Chandrasekaran, G. S. Punekar	B-026

APPLICATION OF ADAPTIVE STEP LENGTH BACTERIAL FORAGING ALGORITHM FOR PARAMETER IDENTIFICATION OF TRANSFORMER DETAILED MODEL	Vahid Rashtchi, Ebrahim Rahimpour, Hamid Shahrouzi	B-027
BACKFLASHOVER ANALYSIS FOR 132 KV TRANSMISSION LINE AND THE ASSOCIATED OVERVOLTAGES ON NEARBY GAS PIPELINE	A. B. D. Caulker, H. Ahmad, Z. Abdul-Malek	B-029
MODELLING EPOXY-MICA MOTOR INSULATION FOR ARCING EARTH FAULT STUDIES	J. M. Van Coller, P. Warner	B-033
3-D CHANNEL TORTUOSITY IN 3M ROD-TO-PLANE AIR GAP UNDER POSITIVE SWITCHING IMPULSE	Nian-wen Xiang, Wei-jiang Chen, Jia-hong Chen, Jun-jia He, Shan-qiang Gu, Heng-xin He, Shi-jun Xie	B-034
ANALYSIS OF LIGHTNING PERFORMANCE OF 132KV TRANSMISSION LINE BY APPLICATION OF SURGE ARRESTERS	S. Mohajer Yami, A. Shayegani Akmal, A. Mohseni, A. Majzoubi	B-036
LABORATORY TEST FOR GIC EFFECTS ON POWER TRANSFORMERS	D. T. Oyedokun, C. T. Gaunt, S. Tenbohlen, M. Heindl, M. Beltle, M. Reuter, D. Schneider	B-037
IMPROVEMENT OF TRANSMISSION LINES LIGHTNING PERFORMANCE BY MEANS OF EXTRA GROUND WIRE	Passos Jr., A. M., Boaventura W. C.	B-038
PLS-CADD AS TOOL FOR DETERMINING THE AIR CLEARANCES IN TOWER WHEN VOLTAGE UPGRADING	S. Berlijn, K. Kupisz, R. Jonsdottir	B-041
PREDICTION OF V-T CHARACTERISTICS OF TRANSFORMER INSULATION	S.P. Balaji, G. Krithika, S. Usa	B-042
STUDIES ON EVAPORATION OF CERAMIC SURFACES IN VACUUM CIRCUIT BREAKERS AND THE EFFECT ON DIELECTRIC PERFORMANCE	I. Gramberg, M. Kurrat, D. Gentsch	B-044
I-V CURVES FOR THE DETERMINATION OF THE IONIZATION VOLTAGE IN SOIL SAMPLES	F. E. Asimakopoulou, I. F. Gonos, I. A. Stathopoulos	B-045
FREE VIRTUAL IMPULSE GENERATOR (VIG) TO DETERMINE THE IMPULSE GENERATOR SETTINGS ONLINE	S. Krell, R. Schneider, M. Röber, S.Kahl, W. Schufft	B-046
POLARIZATION- AND DEPOLARIZATION BEHAVIOUR OF VARIOUS OIL IMPREGNATED PAPER INSULATIONS STRESSED BY VERY HIGH DC FIELD STRENGTH	R. Wiengarten, F. Jenau, B. Bakija	B-049
INVESTIGATIONS OF CURRENT INSTABILITIES BEFORE CURRENT ZERO FOR TYPICAL LOAD SWITCHING APPLICATIONS	P. Halbach, B. Baum, V. Hinrichsen, K. Ermeler, J. Teichmann	B-051
TRANSIENTS BY SWITCHING OF FILTER BANKS AT HIGH-VOLTAGE GRID	U. Schmidt, K. Malekian, W. Schufft	B-052
A STUDY OF LINE ARRESTERS APPLICATION ON HV TRANSMISSION LINES LOCATED IN HIGH RESISTIVITY SOIL AND HIGHLY EXPOSED TO LIGHTNING	Júnio C. C. Viana Ivan, J. S. Lopes	B-053
A METHOD OF CREATING GRAPHICAL THREE-DIMENSIONAL RECONSTRUCTIONS OF HIGH VOLTAGE DISCHARGE CHANNELS USING DIGITAL IMAGES	Y. C. J. Liu, K.J. Nixon, I. R. Jandrell	B-054
LIGHTNING ANALYSIS ON HVDC/HVAC HYBRID TRANSMISSION SYSTEM IN KOREA	C. K. Jung, J. W. Kang, K.Y. Shin, D. H. Kim, D. I. Lee	B-055
INVESTIGATION INTO THE DISTRIBUTION OF TIME-TO-BREAKDOWN VALUES FOR A RANGE OF ROD-ROD GAP SIZES UNDER IMPULSE CONDITIONS	H. G. P. Hunt, K. J. Nixon, I. R. Jandrell	B-056
STRESS DISTRIBUTION ON MECHANICALLY SWITCHED CAPACITOR WITH DAMPING NETWORK (MSCDN) REACTOR UNDER SWITCHING CONDITIONS	H. Abdul Hamid, N.Harid, A. Haddad	B-057

PERFORMANCE OF COMPACT AIR INSULATED SUBSTATIONS UNDER SURGE CONDITIONS	M. Albano, A. Haddad, H. Griffiths, P. Coventry	B-059
THE CHANGE OF LIGHTNING AIR TERMINAL AND TREND OF THE WORLD	Hoe-Gu Kim, Kang-Soo Lee, Young-Ki Chung Myung-Ki Beak, Il-Han Park	B-060

<b>Topic C: High voltage and high current testing techniques: test procedure, evaluation</b>		
Session Date: 2011-08-22		
Time: 1400 – 1530	Session C1 (oral)	
Paper	Authors	No.
SWITCHING IMPULSE AND DC EVALUATION OF 800KV HVDC THYRISTOR VALVE STRESS SHIELDS	M. Fu, F. Perrot, I. Fleetwood	C-046
POWER SEMICONDUCTOR SWITCHES FOR CURRENT IMPULSE GENERATORS	Th. Wietoska, V. Hinrichsen	C-048
SHORT-CIRCUIT INTERRUPTING PERFORMANCE OF DEAD-TANK TYPE GAS CIRCUIT BREAKER RATED ON 1100KV 50KA 50HZ	Ikesun Choi, Junghyeon Ryu, Seungjae Park, Kidong Song, Inkil Kim, Kernjoong Kim	C-008
ALTERNATIVE METHOD FOR SYNTHETIC MAKING TEST OF THREEPHASE HIGH-VOLTAGE CIRCUIT BREAKER	Ryu Jung-Hyeon, Choi Ike-Sun, Park Byung-Rak, Kim Kern-Joong	C-005
TEST STUDY ON DC BIAS OF LARGE POWER TRANSFORMER	Bengang Wie, Yimin Jiang, Hua Huang	C-042
THE ACHIEVABLE VOLTAGE MEASUREMENT UNCERTAINTY OF THE BUSHING TAP METHOD DURING THE INDUCED VOLTAGE TEST OF POWER TRANSFORMERS	M. Gamlin, J. Huppertz	C-003

<b>Topic C: High voltage and high current testing techniques: test procedure, evaluation</b>		
Session Date: 2011-08-22		
Time: 1600 – 1730	Session C2 (oral)	
Paper	Authors	No.
INFLUENCE OF HVDC COMPOSITE INSULATOR PROFILES ON POLLUTION FLASHOVER PERFORMANCE	X. D. Liang, L. Song, F. Z. Zhang, G.L.Wang, R. H. Li	C-033
EVALUATION OF THE PERFORMANCE OF POLLUTED INSULATORS UNDER DC: A STATISTICAL APPROACH	A.Pigini, R.Cortina	C-023
CIGRE ROUND ROBIN POLLUTION TEST FOR POLYMERIC INSULATORS: RESULTS IN FOUR HIGH VOLTAGE LABORATORIES	I. Gutman, K. Kondo, R. Matsuoka, R. W. Garcia	C-013
DIMENSIONING AND TESTING OF DC INSULATIONS IN AIR	I. Ovsyanko, J. Speck, S. Großmann	C-012
EVALUATION AND COMPARISON OF MEASUREMENT METHODS FOR DETERMINING THE ELECTRICAL POTENTIAL AT SURFACES BY USING THE EXAMPLE OF END CORONA PROTECTION CONFIGURATION	R. Schmerling, F. Jenau, St. Kempen, F. Pohlmann	C-044
CURRENT AND VOLTAGE DISTRIBUTION IN HORIZONTAL EARTH ELECTRODES AND A TECHNIQUE TO INCREASE EFFECTIVE LENGTH	A. Elmghairbi, M. Ahmeda, N. Harid, H. Griffiths, A. Haddad	C-043



**Topic C: High voltage and high current testing techniques: test procedure, evaluation**

Session Date 2011-08-23

Time: 1400 – 1700

Poster C

Paper	Authors	No.
PD REQUIREMENTS FOR TESTING HV DC EQUIPMENT AND THEIR IMPACT ON HV DC TEST EQUIPMENT	C.-H. Stuckenholz, P. Lequitte, M. Gamlin, R. Connell	C-002
DESIGN AND APPLICATION OF A HIGH-FREQUENCY HIGH-VOLTAGE GENERATOR	Matthias Birle, Carsten Leu, Stefan Bauer	C-006
A COASTAL INSULATOR POLLUTION TEST STATION FOR THE EVALUATION OF THE RELATIVE AGEING PERFORMANCE OF POWER LINE INSULATORS UNDER AC AND DC VOLTAGE	P.J. Pieterse, A. I. Elombo, G. N. J. Mouton, H. J. Vermeulen, J. P. Holtzhausen, W. L. Vosloo	C-007
PARAMETERS DETERMINATION OF TAIL-OSCILLATING LIGHTNING IMPULSE VOLTAGE WAVEFORM	S. Sato, S. Nishimura, Y. Okamoto, H. Shimizu, Y. Saikawa	C-010
INFLUENCE OF AIR-BORNE VOLCANO ASHES ON OUTDOOR INSULATION	I. Gutman, I. Djurdjevic, S. Berlijn, Å.J. Ellfasson, P. Söderström, L. Wallin	C-014
A NEW METHOD TO MEASURE THE SPATIAL ARC RESISTANCE DISTRIBUTION OF AN AXIAL BLOWN SWITCHING ARC	M. Hoffacker, J. Knauel, P.G. Nikolic, A. Kurz, A. Schnettler	C-015
APPLICATION OF AC TEST VOLTAGE DURING FACTORY TESTING OF SUPER LONG HVDC CABLES	P. Coors, R. Pietsch, M. Fenger, K. Gustafsson, M. Sjöberg, R. Woschitz	C-016
AGING TEST OF SILICON HYDROPHOBICITY WITH NON-IDEAL DC UNDER INFLUENCE OF VOLTAGE PARAMETERS	M. Hilbert, C. Guca, M. Kurrat	C-017
ESTIMATION OF THE FREQUENCY RANGE OF LEAST REACTIVE POWER FOR A SINGLE-PHASE TRANSFORMER	K. Moessner, J. Kremer, T. Leibfried	C-018
DIFFERENT TYPES OF WINDOWING TECHNIQUES FOR CONVOLUTION AND DECONVOLUTION IN HV TESTING SYSTEMS	T. Kato, K. Inoue	C-019
FRACTAL CHARACTERISTIC RESEARCH OF LEAKAGE CURRENT FOR INSULATORS CONTAMINATION DEGREE PREDICTION	Wie-Gen Chen, Qing Xia, Bing Luo, Li-Cheng Li	C-020
THE STUDY ON BREAKDOWN CHARACTERISTICS AND APPLICATION WAY OF DRY AIR IN 362 KV AND 170 KV GIB	Kison Han, Jinyul Yoon, HyungJun Ju	C-021
WIRE-PLANE ELECTRODE SYSTEM FOR ELECTRICAL TREE INITIATION EXPOSED TO AC AND DC VOLTAGE STRESS	A. B. Johansson, A. B. Sandberg, B. Sonerud, J. H. M. Blennow, S. M. Gubanski	C-025
UNCERTAINTY OF PEAK-VALUE MEASUREMENT OF LIGHTNING IMPULSE HIGH VOLTAGE BY NATIONAL STANDARD-CLASS MEASURING SYSTEM	S. Miyazaki, H. Goshima, T. Amano, H. Shinkai, M. Yashima, T. Wakimoto, M. Ishii	C-027
COMPARISON TEST OF TRANSDUCERS AND REFERENCE SYSTEM FOR IMPULSE CURRENT MEASUREMENT	Takayuki Wakimoto, Masaru Ishii	C-028
EVALUATION OF HUMIDITY CORRECTION FACTOR FOR DC DISRUPTIVE DISCHARGE VOLTAGES	Katsunori Miyagi, Takayuki Wakimoto	C-029
NUMBER OF SUPPLIED ELECTRONS UNDER REPETITIVE DISCHARGE IN HIGH PRESURE NITROGEN-BASED GAS MIXTURE	Isao Nagashima, Toru Iwao, Motoshige Yumoto	C-030

COMPARISON OF DIFFERENT IMPULSE CURRENT MEASUREMENT METHOD DURING LONG AIR GAP BREAKDOWN	Li ZhiZhao, Zeng Rong, Yu Zhanqing, Tian Feng, Chen She	C-034
THE ANALYSIS PARTIAL DISCHARGE DETECTOR BY EXAMINATION FOR SOLVE PROBLEME	S.Nedphograw, A.Charlansud	C-036
STAGED-FAULT TESTING FOR HIGH IMPEDANCE FAULT DATA COLLECTION AND SIMULATION SUPPORT	W. C. Santos, G. R. S. Lira, F. B. Costa, J. A. C. B. Silva, B. A. Souza, N. S. D. Brito, M. R. C. Paes Jr	C-037
INITIAL RESEARCH INTO QUANTIFYING THE EFFECT OF A SUSTAINED DC FIELD ON BREAKDOWN PHENOMENA USING HIGH-SPEED PHOTOGRAPHY	C. L. Hart, K. J. Nixon, I. R. Jandrell	C-039
TESTING LABORATORIES FOR HIGH-VOLTAGE POWER EQUIPMENT - ASPECTS AND REQUIREMENTS TO ENSURE RELIABLE ENERGY SUPPLY	M. Kuschel, M. Gerlach, J. Gorablenkow, A. Kloos	C-041
LARGE CONDUCTOR POWER CABLES – AC RESISTANCE MEASUREMENT WITH VARIABLE FREQUENCY	G. Schröder, J. Kaumanns, R. Plath	C-045
SWITCHING IMPULSE AND DC EVALUATION OF 800KV HVDC THYRISTOR VALVE STRESS SHIELDS	M. Fu, F. Perrot, I. Fleetwood	C-046
DETERMINATION OF THE BREAKDOWN VOLTAGE OF PE/PVC MATERIALS FOR APPLICATION FOR THE HIGH-VOLTAGE CABLE SHEATH	U. Schmidt, L. Xu, W. Schufft	C-047
COMPARISON OF PHYSICAL CHARACTERISTICS BETWEEN VEGETABLE AND MINERAL OILS	Punyavee Chaisiri, Anantawat Kunakorn, Thanakorn Penthong, Peerawut Yutthagowith, Bunloet Mekloy	C-049

<b>Topic D: High voltage measuring techniques - dielectric parameter, space charges, partial discharges</b>		
Session Date: 2011-08-23		
Time: 1400 – 1530		Session D1 (oral)
Paper	Authors	No.
SYMMETRIC 3-CHANNEL INDUCTIVE PD DETECTION WITH OPTIMIZED SNR FOR EXTRUDED POWER CABLES	R. Plath, K. Vaterrodt, M. Habel	D-016
COMPARISON OF PARTIAL DISCHARGE CHARACTERISTICS FROM INSULATION DEFECTS IN 11KV EPR CABLE	A. J. Reid, X. Peng, X. Hu, M. D. Judd, W. H. Siew, C. Zhou, D. M. Hepburn	D-017
CHANGES IN PD PROPERTIES WITH DECREASING VOLTAGE RISE TIME IN DIELECTRICALLY INSULATED CAVITIES	T. J. Å Hammarström, T. Bengtsson, J. Blennowand, S. M. Gubanski	D-013
ROTATING MACHINE PARTIAL DISCHARGE MEASUREMENTS VIA PREINSTALLED 80 PF LINE-COUPPLERS IN TERMS OF PICOCOLOMB (PC)	H. Elze, St. Kornhuber, M. Boltze, R. Röding, Jiping Zhang	D-066
ABOUT THE MEASUREMENT OF DC ELECTRIC FIELDS UNDER STATIONARY AND TRANSIENT OPERATION IN OIL IMPREGNATED DC INSULATION SYSTEMS	M. Rösner, H. Fiddes, M. Küstermann, M. Schenk, A. KÜchler, S. Grossmann, J. Speck	D-059
GENERATION AND MEASUREMENT OF AC RIPPLE AT HIGH DIRECT VOLTAGE	J. Meisner, M. Schmidt, W. Lucas, E. Mohns	D-010

**Topic D: High voltage measuring techniques - dielectric parameter, space charges, partial discharges**

Session Date: 2011-08-23

Time: 1600 – 1730

Session D2 (oral)

Paper	Authors	No.
DISTRIBUTION AND PROPAGATION MECHANISMS OF PD PULSES FOR UHF AND TRADITIONAL ELECTRICAL MEASUREMENTS	S. M. Hoek, M. Koch, M. Heindl	D-075
PARTIAL DISCHARGE CHARACTERISTICS DUE TO AIR AND WATER VAPOR BUBBLES IN OIL	M. Ghaffarian Niasar, H. Edin, X. Wang, R. Clemence	D-067
PARTIAL DISCHARGE CHARACTERISTICS IN OIL OF DIFFERENT ELECTRODE ARRANGEMENTS	N. Pattanadech, F. Pratomosiwi, J. Fabian, M. Muhr	D-050
PARTIAL DISCHARGE LOCATION WITHIN A TRANSFORMER WINDING USING PRINCIPAL COMPONENT ANALYSIS	M.S. Abd Rahman, L. Hao, P.L. Lewin	D-006
A CHIP TYPE UHF SENSOR APPLICABLE TO FIND THE PD LOCATION IN GAS INSULATED TRANSFORMER	J.Y. Kim, I.J.Seo, B.W.Lee, J.Y.Koo, J.T.Kim	D-035
PULSE-SEQUENCE ANALYSIS OF PARTIAL DISCHARGES IN POWER TRANSFORMERS	A. Pfeffer, St. Tenbohlen, St. Kornhuber	D-041

**Topic D: High voltage measuring techniques - dielectric parameter, space charges, partial discharges**

Session Date: 2011-08-24

Time: 0830 – 1000

Session D3 (oral)

Paper	Authors	No.
ON-LINE OPTICAL DETECTION OF PARTIAL DISCHARGES IN AN OIL FILLED HIGH VOLTAGE TRANSFORMER	Pathik Kumbhakar, Nirmal Kumar Roy, Subrata Karmakar	D-009
NEW METHODS FOR MULTISOURCE UHF-ACOUSTIC PD LOCATION ON POWER TRANSFORMERS	F. Werner, S. Coenen, S. Kornhuber	D-057
APPLICATION OF PD-LOCALIZATION SYSTEMS DURING PRODUCT RESEARCH TESTS	S. Jaufer, U. Kaminskis, B. Heinrich	D-034
FIELD TEST ON A TRANSFORMER FOR PARTIAL DISCHARGE LOCATION BY UWB-RF METHOD	S.S. Zheng, C.R. Li, Z.G. Tang, W.Z. Chang, Y.M. Jiang, W.G. He, R. Lu	D-023
PARTIAL DISCHARGE LOCALIZATION IN POWER TRANSFORMERS	Su Su Win, S. Coenen, St. Tenbohlen	D-019
UHF AND ACOUSTIC PARTIAL DISCHARGE LOCALISATION IN POWER TRANSFORMERS	S. Coenen, A. Müller, M. Bettle, S. Kornhuber	D-015

**Topic D: High voltage measuring techniques - dielectric parameter, space charges, partial discharges**

Session Date: 2011-08-24

Time: 1030 – 1200

Session D4 (oral)

Paper	Authors	No.
A NOVEL METHOD TO MEASURE RATIO AND NON-STANDARD PHASE DISPLACEMENTS OF SPECIAL TRANSFORMERS USING A SINGLE-PHASE SUPPLY AND MERITS OF USING HIGHER TEST VOLTAGE	R. Kuppuswamy, R. Schomper	D-001
RECOGNITION OF CORONA DISCHARGES OCCURRING ON THE WET SURFACE OF HIGHVOLTAGE OHL PHASE CONDUCTORS	M. Babuder, I. Kobal	D-055
WIDE FRQUENCY BAND UHV BUNDLE CONDUCTOR CORONA CURRENT MEASUREEMNT SYSTEM BASED ON GPS SNCHRONOUS CLOCK	Liu Yunpeng;, Zhu lei, You Shaohua, Lv Fangcheng	D-021
ACCURACY CONSIDERATIONS WHILE PERFORMING LOSS MEASUREEMNTS ON SHUNT REACTORS	R.M. Schomper, S. Widmer	D-002
DEFECT LOCATION AND CHARACTERISATION IN AN EPR MV CABLE USING TDOA AND THERMAL TECHNIQUES	A. J. Reid, X. Hu, M. D. Judd, W. H. Siew	D-060
RAIN TESTS: A SPECIFICATION PROPOSAL	A. Pigini, P.Cardano, G.Testin	D-020

**Topic D: High voltage measuring techniques - dielectric parameter, space charges, partial discharges**

Session Date: 2011-08-24

Time: 1400 – 1530

Session D5 (oral)

Chairman:

Paper	Authors	No.
IMPROVED PERFORMANCE OF SILICONE RUBBER COMPOSITE INSULATORS BY MICRO-VARISTOR FILLED COMPONENTS	J. Debus, V. Hinrichsen, J. M. Seifert	D-076
EFFECTS OF PLASMA MODIFICATION OF NANOFILLERS ON INSULATION PROPERTIES OF EPOXY RESIN/SIO2 NANOCOMPOSITES	W. Yan, B. T. Phung, Z.J. Han, K. Ostrikov	D-068
DETERMINATION OF THE CONDITION OF TRANSFORMER OIL USING DIELECTRIC RESPONSE ANALYSIS	M. Koch, S. Raetzke, S. Tenbohlen	D-053
DIELECTRIC STRENGTH AND CONDUCTIVITY BEHAVIOUR OF OIL-PAPER-INSULATION	K. Backhaus, J. Speck, S. Großmann, R. Fritsche, T. Fritze, M. Schenk	D-032
INFLUENCE OF GAP LENGTH ON DISCHARGE CHANNEL PROPAGATION AND BREAKDOWN MECHANISM IN AIR	H.Kojima, K.Hotta, T.Iwata, N.Hayakawa, N.Yanagita, T.Kato, T.Rokunohe, H.Okubo	D-037
INFLUENCE OF SURFACE-CONDUCTIVITY DISTRIBUTION ON CHARGE ACCUMULATION OF GIS INSULATOR UNDER DC FIELD	H. Iwabuchi, T. Donen, S. Matsuoka, A. Kumada, K. Hidaka, M. Takei, Y. Hoshina	D-031

**Topic D: High voltage measuring techniques - dielectric parameter, space charges, partial discharges**

Session Date: 2011-08-24

Time: 1400 – 1700

Poster Session D

UNCERTAINTIES CALCULATION OF REAL ELECTROSTATIC DISCHARGE CURRENT MEASUREMENTS	P. S. Katsivelis, G. N. Psarros, I. F. Gonos, I. A. Stathopoulos	D-003
FUNDAMENTAL APPROACH TO ESTIMATING THE ACTUAL CHARGE OF A PARTIAL DISCHARGE IN A GIS USING A THREE-DIMENSIONAL ELECTROMAGNETIC ANALYSIS	T. Hoshino, S. Maruyama, T. Nakajima	D-004
PATTERNS OF MOISTAND SYNTHETIC ESTER MIDEL 7131 USING THE FDS TECHNIQUEURE CONTENT IN INSULATION OF PAPER TECHNIQUE	J. Gielniak, A. Graczkowski, H. Moranda, P. Przybylek, K. Walczak, H. Moscicka-Grzesiak	D-005
EXPERIMENTAL DETERMINATION OF DIELECTRIC PROPERTIES OF CRYOFLEX IN HIGH PRESSURE COLD HELIUM GAS	L. Graber, H. Rodrigo, F. Salmhofer, D. Knoll, D. Willen, D.G. Crook	D-007
THE COMPARISON OF SENSITIVITY BETWEEN THE UHF AND ULTRASONIC METHODS FOR PARTIAL DISCHARGE DETECTING IN GIS	Bibo Geng, Chengrong li, Bo Qi, Le Yu, Jinxin Gao	D-008
RELATIONSHIP BETWEEN UHF SIGNALS AND APPARENT CHARGE OF PARTIAL DISCHARGE DEFECTS IN GIS MODEL	Xiaoxing Zhang, Junzhong Tang, Ju Tang, Yang Chen, Yanbin Xie	D-011
EVALUATION OF THE EFFECT OF FIRING PHASE ON THE POROSITY OF CERAMIC DISC INSULATORS DURING THE MANUFACTURING PROCESS THROUGH ADVANCED PARTIAL DISCHARGE ANALYSIS	Pradeep. A, Santa Saha, Moutusi Paul, K.V Ravi Shankar	D-012
A COMPARATIVE STUDY OF MOISTURE AND TEMPERATURE EFFECT ON THE FREQUENCY DIELECTRIC RESPONSE BEHAVIOUR OF PRESSBOARD IMMERSSED IN NATURAL ESTER AND MINERAL OIL	Jian Hao, Zhiqin Ma, Ruijin Liao, George Chen; Lijun Yang	D-014
BREAKDOWN STRENGTH MEASUREMENTS OF BIODEGRADABLE INSULATING OILS UNDER ELEVATED POWER FREQUENCY VOLTAGE	E. P. Pyrgioti, V. P. Charalambakos , P. Svarnas, G. Paparoidamis	D-018
NEWTON ITERATIVE ALGORITHM BASED ON GAUSS METHOD FOR LOCATING PARTIAL DISCHARGE IN TRANSFORMERS	Bing. Zhou, C.R. Li, S.S.Zheng	D-022
MEASURING AND MODELING OF BALANCED AND UNBALANCED SINGLE-CIRCUIT LINES	W. de Villiers , R. Luxenburger	D-024
PARTIAL DISCHARGES OF THERMALLY AGED INSULATION	Josef Pihera, Rainer Haller, Vaclav Mentlík, Pert Mráz	D-025
ANALYSIS OF CUMULATIVE FREQUENCY AND POLARITY OF CREEPING DISCHARGES PROPAGATING OVER SOLID / GAS INTERFACES SUBMITTED TO AC VOLTAGE	F. Sadaoui, A. Beroual	D-026
CHARACTERISTICS OF INSULATION DIAGNOSIS AND FAILURE IN GENERTAOR STATOR WINDINGS	Hee-Dong Kim, Tae-Sik Kong, Young-Ho Ju	D-027
COMPARISON OF UHF PARTIAL DISCHARGE SENSOR CALIBRATION SYSTEMS	Chen-Li Fan, Wenlie Liang, Minghui Chung, Martin Judd	D-028
STUDY ON AC CREEPAGE DISCHARGE PATTERNS AT THE INTERFACE OF NATURAL ESTER AND SOLID INSULATIONS	X. Yi, Z.D. Wang	D-029
DIRECTLY HIGH VOLTAGE MEASURING SYSTEM BASED ON POCKELS EFFECT	A. Kumada, K. Hidaka	D-030

EXPERIMENTAL RESEARCH ON THE TRANSFORMER WINDING INTER-TURN DISCHARGE CAUSED BY CORROSIVE SULPHUR	Ming Chen, Yangchun Cheng, Changjin Diao	D-033
ANALYSIS OF 3 PHASE PARTIAL DISCHARGE CHARACTERISTICS IN POWER CABLES INCLUDING 3 PHASE TRANSFORMER	Jeongtae Kim, Jaecheol Jeong, Dongwook Kim, Jayoon Koo	D-036
STUDY ON THE EFFECTS OF SPACE CHARGE AND CONDUCTION CURRENT BY PVDF/PZT (PIEZO SENSOR)	Minwoo Gwak, Jongmin Kim, Seung Hwangbo1, June-Ho Lee	D-038
USE OF KRAMERS-KROING RELATIONSHIP FOR DIELECTRIC DIAGNOSIS	B. Hemalatha, Y.P. Singh, V G Rau	D-039
INFLUENCES OF PD LOCATION AND FREQUENCY RANGES ON MEASURED APPARENT CHARGES	A. Pfeffer, St. Tenbohlen, St. Kornhuber	D-040
SHACK-HARTMANN TYPE LASER WAVEFRONT SENSOR FOR ELECTRON DENSITY MEASUREMENT	Y. Inada, S. Matsuoka, A. Kumada, H. Ikeda, K. Hidaka	D-042
STREAMER PROGRESS IN DIELECTRIC LIQUIDS	A. Elzein, M. Fekry	D-043
A COMPARATIVE STUDY OF PARTIAL DISCHARGE BEHAVIOUR IN OIL IMPREGNATED INSULATION SYSTEMS	W. G. Ariastina, B. T. Phung, T. R. Blackburn	D-044
DESIGN AND TESTING OF A NOVEL CALIBRATION SYSTEM FOR UHF SENSORS FOR GIS	D. Gautschi, P. Bertholet	D-045
STUDY ON VOLTAGE MEASUREMENT BASED ON LEAKAGE CURRENT OF CAPACITIVE EQUIPMENT	Du Lin, Huang Xu	D-046
MANUAL/AUTOMATIC PARTIAL DISCHARGE MEASUREMENTS ON A PERIODIC /CONTINUOUS BASE, COMPARISON AND SOME RESULTS	Muhannad Al-Suhaily, Sander Meijer, Johan J. Smit, Peter Sibbald, Jos Kanters	D-047
SYNCHRONOUS OPTICAL AND ELECTRICAL PD MEASUREMENTS	S. Behrend, W. Kalkner, G. Heidmann, H. Emanuel, R. Plath	D-048
QUANTIFICATION OF CORONA IN POLYMERIC INSULATORS DIAGNOSIS WITH ULTRAVIOLET CAMERA	Barros, Warner P. P., Costa, Edson G., Ferreira, Tarso V., Araujo, Diego B.	D-049
DEVELOPMENT OF UHF SENSOR FOR PARTIAL DISCHARGE DIAGNOSIS OF POWER TRANSFORMER	K. R. Hwang, E.T. Ryu, J. R. Jung, M. S. Kim, H. J. Yang	D-051
PARTIAL DISCHARGE CHARACTERISTICS FOR DELAMINATION DEFECT OF EPOXY CAST RESIN POWER APPARATUS	Diaa-Eldin A. Mansour, Hiroki Kojima, Naoki Hayakawa, Masahiro Hanai, Hitoshi Okubo	D-052
PARTIAL DISCHARGE TESTING OF DEFECTIVE THREE-PHASE PILC CABLE UNDER RATED CONDITIONS	J. A. Hunter, L. Hao, D. J. Swaffield, P. L. Lewin, C. Walton, M. Michel	D-054
ON-SITE REFURBISHMENT AND HV TESTS OF LARGE POWER TRANSFORMERS IN THE HUNGARIAN TRANSMISSION GRID	Bálint Németh, István Szén, Gusztáv Csépes	D-056
BEHAVIOR OF PAPER OIL INSULATION OF TRANSFORMERS UNDER COPPER CORROSION	J. Sundara Rajan, C. J. Naidu, A. Akshatha, N. Rudranna	D-058
THE AGING DIAGNOSIS OF HFPD USING THE DELTA-F REFORMATION FOR THE MOBILE MONITORING SYSTEM	Jang-seob Lim, Seong-ho Noh, Kun-ho Lee	D-061
SIGNAL PROCESSING FOR PARTIAL DISCHARGE PULSE DETECTION USING WAVELET ANALYSIS	S. Matsumoto, Y. Shibuya, R. Ogura	D-062
PARTIAL DISCHARGE EVALUATION OF 800KV HVDC THYRISTOR VALVE STRESS SHIELDS	M. Fu, F. Perrot, I. Fleetwood, R. Macklinlay	D-063
LOCALIZATION OF PARTIAL DISCHARGES IN POWER TRANSFORMERS BY COMBINED ACOUSTIC AND ELECTRIC MEASUREMENTS	U. Broniecki, C. Balkon, M. Hannig, W. Kalkner, W. Koltunowicz, A. Obralic, R. Plath	D-064
AUTOMATED DETERMINATION OF FREQUENCY PARAMETERS FOR OPTIMAL SEPARATION OF MULTIPLE PD SOURCES AND DISTURBANCES	C. Balkon, U. Broniecki, W. Kalkner, W. Koltunowicz, A. Obralic, R. Plath	D-065

UHF SENSORS SENSITIVITY IN DETECTING PD SOURCES IN A TRANSFORMER	H.H. Sinaga, B.T. Phung, A.P. Ao, T.R. Blackburn	D-069
AN INVESTIGATION OF SPACE CHARGES ACCUMULATED WITHIN THE INSULATION AND ADJUSTABLE SPEED DRIVES PULSES	R. Rostaminia , A. Akbari, S. Shokri, M. Shadmand	D-070
SIMULATION OF UHF SIGNAL PROPAGATION IN TRANSFORMER AND A NOVEL ALGORITHM FOR PARTIAL DISCHARGE LOCALIZATION	Nader Shirdel, Asghar Akbari, Mohammad Sadegh, Abrishamian Hassan, Reza Mirzaei	D-071
TUNED MEDIUM BAND UHF PD MEASUREMENT METHOD FOR GIS	St. M. Hoek, St. M. Neuhold	D-072
EXPERIMENTAL RESEARCH ON THE TRANSFORMER WINDING INTER-TURN DISCHARGE CAUSED BY CORROSIVE SULPHUR	Ming Chen, Yangchun Cheng, Changjin Diao	D-073
MEASUREMENT OF PD CURRENT WAVEFORMS IN SF6 GAS WITH A SUPER HIGH FREQUENCY WIDE BAND MEASUREMENT SYSTEM	S. Ohtsuka, K. Fukuda, A. Sogabe	D-074
RETURN VOLTAGE – AS A DIAGNOSTIC TOOL FOR HIGH VOLTAGE EQUIPMENT	Z. Á. Tamus, B. Németh, G. Csépes	D-077
K-FACTOR VALUES WITH LARGE-SIZED MODELS FOR LIGHTNING IMPULSE TEST WAVEFORM OF UHV EQUIPMENTS	S. Okabe, T. Tsuboi, G. Ueta, T. Nakajima2,	C-009

### Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated

Session Date: 2011-08-24

Time: 1400 – 1530

Session E1 (oral)

Paper	Authors	No.
COMPREHENSIVE UNDERSTANDING OF TREEING V-t CHARACTERISTIC OF EPOX NANOCOMPOSITES	Toshikatsu Tanaka	E-008
TREEING GROWTH AND LIFETIME OF EPOXY FILLED WITH 26% OF SILICA NANOPARTICLES AT 50 HZ AC-VOLTAGE	C. Hoffmann, J. Weidner, T. Muth, F. Jenau	E-004
IMPACT OF SIO2 NANOPARTICLES ON THE PROPERTIES OF SYNTACTIC FOAM	A. Strauchs, A. Mashkin, A. Schnettler	E-011
EPOXY ALUMINA NANO-DIELECTRICS: A PROMISING MATERIAL FOR HIGH VOLTAGE INSULATION?	J. Samuel, M. Fu, F. Perrot	E-067
NANOTECHNOLOGY IN HIGH VOLTAGE INSULATION SYSTEMS FOR TURBINE GENERATORS – FIRST RESULTS	J. R. Weidner, F. Pohlmann, P. Gröppel, Th. Hildinger	E-088
PARTIAL DISCHARGE INCEPTION VOLTAGE AND BREAKDOWN VOLTAGE OF AL2O3 NANOCOMPOSITE AFTER THERMAL AGING	M. M. Saei Shirazi, H. Borsi, E. Gockenbach	E-005

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date: 2011-08-24

Time: 1600 – 1730

Session E2 (oral)

Paper	Authors	No.
ELECTRODE AREA EFFECT ON DIELECTRIC BREAKDOWN STRENGTHS OF MINERAL OIL AND ESTERS	X. Wang, Z.D. Wang	E-047
INVESTIGATION ON NATURAL ESTER FLUIDS CONCERNING GASSING AND COMPATIBILITY WITH TRANSFORMER MATERIALS	K. Zafeiris, Y. Bertrand, G. Hipszki, M. Kuffel, C. Rehorek, S. Seidel, I. Atanasova-Hoehlein	E-037
TRANSMITTANCE CHARACTERISTICS OF VARIOUS INSULATING OILS EVALUATED BY TERAHERTZ SPECTROSCOPY	Ryuichi Ogura, Nobuaki Nishimura, Satoshi Matsumoto, Maya Mizuno, Kaori Fukunaga	E-045
INFLUENCE OF MAGNETIC NANO PARTICLES ON THE BREAKDOWN VOLTAGE OF TRANSFORMER OIL	W. H. Lee, W. S. Lee, J. C. Lee	E-080
INVESTIGATION OF THE ELECTRICAL DISCHARGE BEHAVIOUR OF INSULATORS IMMERSSED IN LIQUID NITROGEN	M. Blaz, M. Kurrat	E-038
COMBINED EFFECT OF DIFFERENT FIELDS ON THE MOTION CHARACTERISTICS OF DUST PARTICLES AROUND THE INSULATORS	Jing Wang, Xi-dong Liang, Lin-hua Chen, Yu Liu	E-034

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date: 2011-08-25

Time: 0830 – 1000

Session E3 (oral)

Paper	Authors	No.
EXPERIMENTAL INVESTIGATION OF EFFECT OF UV RADIATION ON FLASHOVER VOLTAGE OF POLYMERIC INSULATORS WITH AND WITHOUT CONTAMINATION	A. Majzoobi, I. A. Joneidi, S. Mohajer, H. Mohseni, A. A. Shayegani	E-064
ELECTRICAL AND MECHANICAL PROPERTIES OF NEW RECYCLABLE POWER CABLE INSULATION MATERIALS BASED UPON POLYETHYLENE BLENDS	C.D. Green, A.S. Vaughan, G.C. Stevens, S.J. Sutton, T. Geussens, M.J. Fairhurst	E-039
A NEW 5000 H MULTI-STRESS TEST PROCEDURE FOR SILICONE RUBBER INSULATORS BASED ON CONTAMINATION AND HYDROPHOBICITY CHANGE SIMULATION	LIANG Xidong, ZHANG Yibo, LI Zhenyu, YIN Yu	E-092
CORONA MODELING FOR POLYMER INSULATORS UNDER SERVICE CONDITIONS	A. L. Souza, I. J. S. Lopes	E-046
PERFORMANCE OF HTV SILICONE RUBBER UNDER ARTIFICIAL AC AND DC CORONA/OZONE TEST	Bin Ma, Jiafu Wang, Henrik Hillborg, Stanislaw M. Gubanski	E-036
PVDF/NICKEL COMPOSITES AND THEIR CHARACTERIZATION	S.M. Lebedev, O.S. Gefle	E-010

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date 2011-08-25  
Time: 1030 – 1200

Session E4 (oral)

Paper	Authors	No.
ALTERNATIVES TO SF6 GAS INSULATED SUBSTATIONS - A STUDY OF EQUIPMENT DIMENSIONS	Xiaolei Cai, Ian Cotton	E-068
PARTIAL DISCHARGE PHENOMENON AROUND A TRIPLE JUNCTION UNDER DC VOLTAGE IN SF6	Takashi Miyamoto, Takao Tsurimoto, Hiroataka Muto, Manabu Yoshimura	E-087
FABRICATION AND SIMULATION TECHNIQUES OF PERMITTIVITY GRADED MATERIALS FOR GAS INSULATED POWER EQUIPMENT	H. Okubo, J. Shimomura, Y. Fujii, N. Hayakawa, M. Hanai, K. Kato	E-095
INSULATION PERFORMANCE OF THICKLY COATED CONDUCTOR JOINT AND SUPPORT MODELS FOR GAS/SOLID HYBRID INSULATION SYSTEM WITH SF6 SUBSTITUTE	H. Goshima, H. Shinkai, M. Yashima	E-007
INVESTIGATIONS ON MICROVARISTORS AS FUNCTIONAL FILLERS IN INSULATION SYSTEMS FOR HVDC APPLICATIONS	M. Tenzer, V. Hinrichsen	E-072
A TRIAL INSTALLATION OF HIGH VOLTAGE COMPOSITE CROSS-ARMS	C. Zachariades, S. M. Rowland, I. Cotton, P. R. Green, C. A. Veerappan, D. Chambers	E-059

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date 2011-08-25  
Time: 1400 – 1530

Session E5 (oral)

Paper	Authors	No.
EXPERIMENTAL INVESTIGATION THE IMPACT OF ELECTRIC DISCHARGE ON ICE ACCRETION	Zhicheng GUAN, Zhihai XU, Zhidong JIA, Xiangyang PENG, Shenjing YAO	E-056
STUDY ON CRITICAL FLASHOVER CHARACTERISTICS OF INSULATOR STRING COVERED WITH ICE	Zhou Li, Qiaogen Zhang, Lu Zhang, Fenglian Liu, Haibo Xi, and Hu Wang	E-062
AC FLASHOVER PERFORMANCE OF ICE-COVERED INSULATOR STRINGS ADOPTED IN 500KV TRANSMISSION LINES BASED ON UPAND-DOWN METHOD	Xinzhe Yu, Jun Zhou, Bo Liu, Zhiyi Su, Ruiping Huang	E-094
THE EFFECT OF UV LASER IRRADIATION ON SURFACE FLASHOVER	Le Xu, JianJun Deng, Meng Wang	E-057
ELECTRICAL TREEING IN SILICONE RUBBER	I. L. Hosier, N. A. Freebody, A. S. Vaughan, S. G. Swingler, G. Moss	E-006
ACCELERATED AGING PHENOMENA OF 15 KV EPR CABLE ENERGIZED BY ELVATED AC VOLTAGE WITH SWITCHING IMPULSES SUPERIMPOSED	S. Grzybowski, L. Cao, A. Zanwar	E-015

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date 2011-08-25  
Time: 1600 – 1730

Session E6 (oral)

Paper	Authors	No.
ACID GENERATION STUDY OF NATURAL ESTER	N. Azis, Z. D. Wang	E-048
INSULATION CONDITION MONITORING OF AN ALTERNATIVE TRANSFORMER DIELECTRIC FLUID USING PDC MEASUREMENT TECHNIQUE	M. Shareghi, B.T. Phung, M.S. Naderi, T.R. Blackburn	E-074
INVESTIGATIONS ON THE COMPRESSIBILITY AND THE DIELECTRIC BREAKDOWN STRENGTH OF HOLLOW MICROSPHERE FILLED SILICONE GEL UNDER ASPECTS OF HIGH VOLTAGE TECHNOLOGY	O.Belz, A. Austermühl, A. Claudi	E-070
DIELECTRIC STRENGTH AND INSULATING PROPERTY ON SURFACE OF SPACER FOR PARTICLE CONTAMINATION UNDER SF6/N2 MIXTURE	D.H. Jeong, S. Y. Woo, K. B. Seo, J. H. Kim	E-026
CREEPING DISCHARGE CHARACTERISTICS IN SF6/N2 GAS MIXTURES UNDER SINGLE PULSE VOLTAGE WITH STEEP WAVE FRONT	H. Ueno, H. Shimada, S. Ka, H. Nakayama	E-040
ELECTRODE AREA EFFECTS OF ELECTRICAL BREAKDOWN IN HIGH-PRESSURE CO2	Takanori Yasuoka, Masayuki Sato, Yoshikazu Hoshina, Akira Shimamura	E-020

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date 2011-08-26  
Time: 0830 – 1000

Session E7 (oral)

Paper	Authors	No.
ON A COMPARATIVE EVALUATION OF THE RETENTION OF THE HYDROPHOBICITY AND THE TRACKING RESISTANCE OF SILICONE ELASTOMERS UNDER AC AND DC STRESSES	C. Bär; R. Cervinka, R. Bärsch, J. Seifert, J. Lambrecht, H.-J. Winter	E-028
A STUDY OF THE CONTAMINATION FLASHOVER AT ACTUAL HIGH ALTITUDE	Zhou Jun, Li Jian, Huang Ruiping, Liu Bo, Yu Xinzhe	E-053
EXTERNAL INSULATION CHARACTERISTIC OF LONG ROD PORCELAIN INSULATOR IN HVDC TRANSMISSION LINE	L. Yang, Y. P. Hao, J. F. Min, Y. M. Zhao, L. C. Li	E-058
APPLICATION TECHNOLOGY OF COMPOSITE INSULATORS FOR ±800KV UHVDC STRAIN TOWERS	Yong Zhu, Zhuqing Xie, Yuming Zhao, Jie Yu	E-093
NEGATIVE DC CORONA INCEPTION ON LARGE ELECTRODES IN A LARGE AIR-GAP	Li Ming, Mats Larsson, Andrew Maxwell, Håkan Faleke, Dong Wu, Björn Jacobson	E-013
NEW GRADING MATERIAL ENABLES OPTIMIZED DESIGN OF END CORONA PROTECTION FOR LARGE ROTATING MACHINES	S. Kempen, S. Lang, F. Pohlmann	E-083

**Topic E: Advanced materials and insulation systems: outdoor, indoor, gas insulated**

Session Date 2011-08-26

Time: 0830 – 1200

Poster Session E

Chairman:

Paper	Authors	No.
OUTDOOR INSULATORS AND HOUSINGS BREAKDOWNS CAUSED BY POLLUTION	K.L. Chrzan, R. Znaidi	E-001
CONDUCTIVITY OF SOLID LAYERS POLLUTION ON SILICONE RUBBER IN HUMID AIR	K. L. Chrzan	E-002
EVALUATION OF INSULATOR STRING'S ICING STATUS BASED ON LEAKAGE CURRENT	Huafeng Su, Zhidong Jia, Zhicheng Guan, Licheng Li	E-003
BREAKDOWN VOLTAGE EVALUATION OF HOMOGENEOUS INSULATING SYSTEMS WITH DIELECTRIC BARRIERS	Mona Ghassemi, Hossein Mohseni, Kaveh Niayesh, Amir Abbas Shayegani	E-009
IMAGE CHARGE EFFECT ON METALLIC PARTICLE IN SINGLE PHASE GAS INSULATED BUS DUCT (GIB)	K B V S R Subrahmanyam, J.Amarnath	E-012
MOVEMENT OF METALLIC PARTICLE IN AN ISOLATED CONDUCTOR GAS INSULATED BUSDUCT(GIB) WITH CHARGE SIMULATION METHOD	Narapareddy Rama Rao, J. Amarnath	E-014
INFLUENCE OF UNBALANCED VOLTAGES ON THE MOVEMENT OF METALLIC PARTICLE IN A THREE PHASE COMMON ENCLOSURE GAS INSULATED BUSDUCT	Nagabhushan, J.Amarnath, D.Subbarayudu	E-016
EFFECT OF RESIN CONTENT ON ELECTRICAL PROPERTIES OF POLYMER CONCRETE INSULATION	M. K. Moghadam, S.Rezanejad, B. Elmdoust	E-017
INVESTIGATION ON AGING IN DIFFERENT PARTS OF A SILICONE INSULATOR	M.K. Moghadam, M. Keramati, H. Beirami, M. Ehsani	E-018
A STUDY ON EFFECT OF GROUNDING GRID CONFIGURATION ON GROUND POTENTIAL RISE OF GAS INSULATED SUBSTATION INSTALLATIONS DURING FAULT CONDITIONS	M. Mohana Rao, Moutusi Paul, H.S. Jain	E-019
ELECTRICAL AND TEMPERATURE CHARACTERISTICS OF POLYMER SURGE ARRESTER WITH THERMAL MECHANICAL STRESS AND MANUFACTURING CONDITIONS	Han-Goo Cho, Kwang-Yong KIM, Jung-Yun Heo	E-021
METALLIC PARTICLE CONTAMINATION IN A GAS INSULATED BUSDUCT (GIB) WITH SF6 AND SF6+N2 GAS MIXTURES	M.Raghavendra Rao, J.Amarnath	E-022
INFLUENCE OF THE FILLING DEGREE OF MICROSPHERES ON THE BREAKDOWN VOLTAGE OF SYNTACTIC FOAM	C. Roggendorf, A. Strauchs, A. Mashkin, A. Schnettler	E-023
MODIFICATION OF THE MECHANICAL PROPERTIES OF EPOXY RESIN WITH POLYMERIC MICROSPHERES	C. Roggendorf, M. Kessler, A. Schnettler	E-024
INVESTIGATIONS ON AC BREAKDOWN FIELD STRENGTH OF SYNTACTIC FOAM AT CRYOGENIC TEMPERATURE	D. Winkel, A. Schnettler	E-025
THE INFLUENCE OF THE MANUFACTURING PROCESS ON THE ELECTRIC BREAKDOWN STRENGTH OF SILICONE GEL-INSULATIONS	G. Finis, A. Austermlühl, A. Claudi	E-027
CHARACTERISATION OF A NAPHTHENIC BASED UNINHIBITED VIRGIN TRANSFORMER OIL AND THE USE OF SYNTHETIC ANTIOXIDANTS.	V. Dukhi, A. Bissessur , C. J. Ngila; N. Ijumba	E-029
DETERMINING INSULATION LEVELS FOR 220KV TRANSMISSION LINES IN NAMIBIA USING THE IST SOFTWARE	G. Heger , I. Gutman, W. L. Vosloo	E-030

MATERIAL TESTS FOR TEXTURED SILICONE RUBBER SAMPLES	P.Charalampidis, R.T.Waters, A.Haddad, H.Griffiths, N.Harid, P.Sarkar	E-031
DRY-BAND DISCHARGES ON SILICONE RUBBER INSULATION	P.Charalampidis, M.Albano, R.T.Waters, A.Haddad, H.Griffiths, N.Harid	E-032
EVALUATION OF ELECTRICAL TRACKING OF POLYMERIC INSULATOR HOUSING	Darcy R. de Mello, Pedro Paulo Gonçalves, Márcio Antonio Sens	E-033
DYNAMIC MODELING OF THE DIELECTRIC BARRIER EFFECT FOR HIGH VOLTAGE APPARATUS	Mona Ghassemi, Hossein Mohseni, Kaveh Niayesh, Amir Abbas Shayegani	E-035
OPTIMISATION OF AC DIELECTRIC STRENGTH OF A NON-UNIFORM FIELD ELECTRODE SYSTEM AIR GAP BY INSERTION OF MULTIPLE BARRIERS	R. Boudissa, N. Harid, R. Baersch	E-041
EFFECT OF SURFACE CONDITION AND ISOLATION MODE ON THE EFFICIENCY OF A BARRIER INSERTED IN NON-UNIFORM ELECTRIC FIELD UNDER AC VOLTAGE	R. Boudissa, N. Harid, R. Baersch	E-042
A NOVEL TECHNIQUE OF INCLINED PLANE TRACKING AND EROSION TEST SUPERIMPOSED WITH UV RADIATION	S.Ganga, N.Vasudev, Lalitha Pai, V.Asai Thambi, A.Sudhindra	E-043
AN EFFECT OF INSULATION COVER ON SPARKOVER VOLTAGE IN DRY AIR	A. Kumada, T. Takewa, S. Matsuoka, K. Hidaka, N. Inoue, S. Sato, T. Takeuchi	E-044
INVESTIGATION OF SILICA AEROGEL AS A HIGH VOLTAGE INSULATOR	I. W. Serukenya, L. Chetty, N.M. Ijumba	E-049
NUMERICAL AND EXPERIMENTAL INVESTIGATION ON SALT-FOG AGING OF SILICONE INSULATORS	S. Gharazi, M. Moghadam, M. Mehdikhani	E-050
DEVELOPMENT OF AC FLASHOVER VOLTAGE MODEL FOR HYDROPHOBIC CYCLOALIPHATIC EPOXY RESIN INSULATOR	G. Haddad, K. L. Wong	E-051
MODELLING OF POSITIVE CORONA INCEPTION IN THE COAXIAL CYLINDRICAL ELECTRODE ARRANGEMENT UNDER VARIABLE AIR DENSITY	P. N. Mikropoulos, V. N. Zagkanas	E-052
RAMAN MICROPROBE ANALYSIS OF ELECTRICAL TREEING IN SILICONE RUBBER	N. A. Freebody, I. L. Hosier, A. S. Vaughan	E-054
THE EFFECT OF RESISTANCE OF SEMICONDUCTING SIR COATING ON INSULATORS	Xiaoxing Wei, Zhicheng Guan, Zhenting Sun, Yu Deng, Zhidong Jia	E-055
PERFORMANCE OF SILICONE RUBBER POLYMERIC OUTDOOR INSULATOR MATERIAL UNDER AC AND DC CORONA	Joseph Vimal Vas, M. Joy Thomas	E-060
EXPERIMENTAL AND MATHEMATICAL MODELING OF THE EFFECT OF POLLUTION CONSTITUTION ON DC FLASHOVER OF HIGH VOLTAGE INSULATORS	M. El-A. Slama, A. Beroual, H. Hadi	E-061
INFLUENCE OF THE POLLUTION NATURE ON THE DIELECTRIC BEHAVIOUR OF HIGH VOLTAGE INSULATOR	B. Moula, A. Mekhaldi, M. Tegar	E-063
PRODUCTION METHODS AND QUALIFICATION OF HOLLOW CORE INSULATORS FOR UHV BUSHINGS	A. Merten, A. Langens	E-065
IMPROVEMENT CHARACTERISTICS OF HIGH VOLTAGE CAPACITORS USING NEW NANOCOMPOSITE MATERIALS	A. Thabet, S. Abozeid	E-066
EXTERNAL INSULATION CHARACTERISTIC OF LONG ROD PORCELAIN INSULATOR IN HVDC TRANSMISSION LINE	L. Yang, Y. P. Hao, J. F. Min, Y. M. Zhao, L. C. Li	E-069
INVESTIGATIONS OF ULTRA VIOLET INFLUENCE ON THE SURFACE OF SILICONE RUBBER INSULATOR	I.A. Joneidi, A. Ghorbandaeipour, A.R. Majzobi, A.A. Shayegani, H. Mohseni	E-071
ANALYSIS ON STREAMING ELECTRIFICATION OF VEGETABLE OIL EXPOSED TO ACCELERATED AGING	Sun-Ho Choi, Joong-Il Jung, Chang-Su Huh	E-073

EFFECTS OF MICROVARISTORS IN THE INSULATION OF IVERTER FED DRIVES	S. Blatt, V. Hinrichsen	E-075
PARATION AND TEST OF CRYOGENIC DIELECTRIC TEST FACILITIES FOR EXTRA HIGH VOLTAGE SUPERCONDUCTING ELECTRIC EQUIPMENT	W. J. Shin, Umer A. Khan, J. K. Seong, S. H. Oh, J.Y. Koo, B. W. Lee	E-076
WATER SATURATION LIMITS AND MOISTURE EQUILIBRIUM DIAGRAMS OF ALTERNATIVE INSULATION MATERIALS	M. Jovalekic, St. Tenbohlen, L. Bates, R. Szewczyk	E-077
STUDY ON LEAKAGE CURRENTS' FREQUENT AND PHASE CHARACTERISTICS OF ICE-COVERED INSULATORS	Jiang Xingliang, Xia Yunfeng, Dong Lina, Hu Jianlin, Shu Lichun	E-078
AC AND DC CORONA POWER LOSSES IN AN INDOOR CORONA CAGE	N.M. Ijumba, M. J. Lekganyane, A. C. Britten, L. Chetty, A. Saha, E. Chikuni	E-079
DYNAMIC NONLINEAR MODEL FOR POLLUTED OUTDOOR INSULATORS	R. Abd-Rahman, A. Haddad, N. Harid	E-081
EVALUATION OF MECHANICAL PROPERTIES OF UHMWPE/LLDPE POLYMER-POLYMER BLENDS	S.M. Lebedev, O.S. Gefle, V.A. Volokhin, M.V. Semenikhin, A.E. Strizhkov	E-082
INFLUENCE OF TWO TYPICAL TEST METHODS ON AC AND DC POLLUTION FLASHOVER PERFORMANCE OF INSULATORS FOR UHV POWER SYSTEM	Jiang Xingliang, Bi Maoqiang, Zhang Fuzeng, Zhang Zhijin, Luo Bing, Hu Jianlin	E-084
THE EFFECT OF ULTRAVIOLET (UV) RADIATION AND HUMIDITY STRESS ON SILICONE RUBBER INSULATOR BEHAVIOUR	M.Bayani, M. Ehsani, A. Mehdikhani	E-085
AN INVESTIGATION OF THE EFFECT OF NANO ALUMINA ON THE ELECTRICAL AND THERMAL PROPERTIES AND MORPHOLOGICAL BEHAVIOR OF THE CAST EPOXY NANO COMPOSITE	Z. Farhadinejad, M. Ehsani, S. Momen-Bellah, S. M.B. Allavi, M.M. Saeishirazi, H. Borsi	E-086
AGEING OF SILICONE RUBBER INSULATORS UNDER HIGH VOLTAGE DIRECT CURRENT: PRELIMINARY RESULTS OF INCLINED PLANE TESTING	N. Mahatho, I.R.Jandrell, J.P. Reynders, T. Govender, N. Parus	E-089
GLASS CAP-AND-PIN INSULATOR STRINGS UNDER HVDC CONDITIONS: PRELIMINARY RESULTS OF INVESTIGATIONS INTO THE INFLUENCE OF SHATTERED DISCS ON INSULATION STRENGTH	N. Parus, N. Mahatho, T. Govender, E. Marshall, P.V. Goosen, E. Greyling, G.C Sibilant	E-090
PARTIAL DISCHARGE INCEPTION VOLTAGE OF TIO2 NANOCOMPOSITE AFTER APPLYING SEVERAL THERMAL SHOCKS	M. M. Saei Shirazi, H. Borsi, E. Gockenbach	E-091
INVESTIGATION OF SILICA AEROGEL AS A HIGH VOLTAGE INSULATOR	I. W. Serukenya, L. Chetty, N.M. Ijumba, A. Saha	E-096

<b>Topic F: Monitoring and diagnostics: evaluation procedures, knowledge rules, data mining, applications</b>		
<b>Session Date</b>	<b>2011-08-23</b>	<b>Session F1 (oral)</b>
<b>Time:</b>	<b>0830 – 1000</b>	
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
STATISTICAL FEATURES USED FOR RECOGNITION OF PARTIAL DISCHARGE UNDER AC-DC COMBINED VOLTAGES	Tianyan Jiang, Jian Li, Stanislaw Grzybowski, Zhiman He, Ruijin Liao	F-085
A NEW METHOD FOR AUTOMATIC MULTIPLE PARTIAL DISCHARGE CLASSIFICATION	L. Hao, A. Contin, J. A. Hunter, P. L. Lewin, D. J. Swaffield, C. Walton , M. Michel	F-021
NOVEL FREQUENCY DOMAIN FEATURES FOR THE PATTERN CLASSIFICATION OF PARTIAL DISCHARGE SIGNALS	R. Ambikairajah, B. T. Phung, J. Ravishankar , T. R. Blackburn, Z. Liu	F-044
IDENTIFICATION OF INSULATION DEFECT BY SEQUENTIAL MEASUREMENT OF PARTIAL DISCHARGE IN GIS	Masanobu Yoshida , Keisuke Suzuki , Hiroki Kojima, Naoki Hayakawa , Masahiro Hanai , Hitoshi Okubo	F-052
CORRELATION BETWEEN UHF ELECTROMAGNETIC WAVEFORMS AND PARTIAL DISCHARGE CURRENT WAVEFORMS IN GIS	K.Suzuki, M.Yoshida, H.Kojima, N.Hayakawa, M.Hanai, H.Okubo	F-045
HYPERGRAPH BASED PROBABILISTIC NEURAL NETWORK FOR PARTIAL DISCHARGE PATTERN CLASSIFICATION	S. Venkatesh, S. Gopal , K. Kannan	F-040

<b>Topic F: Monitoring and diagnostics: evaluation procedures, knowledge rules, data mining, applications</b>		
<b>Session Date</b>	<b>2011-08-23</b>	<b>Session F2 (oral)</b>
<b>Time:</b>	<b>1030 – 1200</b>	
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
DETECTION OF PARTIAL DISCHARGE AND ELECTRICAL TREE DEVELOPMENT IN SOLID DIELECTRIC INSULATORS BY RADIATED ELECTRO-MAGNETIC WAVES	H. Ueno, Y.Kuroishi , Y. Hashiba	F-034
EVOLUTION OF SPECTRAL CONTENT OF CAVITY DISCHARGES IN SOLID POLYMER DIELECTRICS	C. Nyamupangedengu, I. R. Jandrell	F-030
APPARENT CHARGE MAGNITUDE IN ON-LINE PD DIAGNOSTICS ON MEDIUM-VOLTAGE POWER CABLES	P. A. A. F. Wouters, Y. Li, S. Mousavi Gargari, P. Wagenaars, E.F. Steennis	F-001
FIBRE-OPTIC SENSORS FOR EARLY DAMAGE DETECTION IN PLASTIC INSULATIONS OF HIGH-VOLTAGE FACILITIES	W. R. Habel, U. Buchholz, G. Heidmann, M. Hoehse , C. Lothongkam	F-069
USE OF HIDDEN MARKOV MODEL FOR PARTIAL DISCHARGE-LED FAILURE MODELLING	D. Zhou, C.R. Li , Z.D.Wang	F-036
VISIBLE CORONA TESTING OF INSULATOR ASSEMBLIES AND LINE HARDWARE FOR HVDC APPLICATION	Z. Li, I. Boev, J. Kuffel, E. Kuffel	F-002

<b>Topic F: Monitoring and diagnostics: evaluation procedures, knowledge rules, data mining, applications</b>		
<b>Session Date</b>	<b>2011-08-23</b>	<b>Session F3 (oral)</b>
<b>Time:</b>	<b>1400 – 1530</b>	
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
QUANTITATIVE RELATION BETWEEN AGEING CONDITION OF PRESSBOARD IMPREGNATED IN MINERAL OIL AND ITS FREQUENCY DIELECTRIC RESPONSE	Hua Wen, Jian Hao, Ruijin Liao, Yaolong Wang, Lei Chen	F-020
INTERPRETATION OF THE DIELECTRIC RESPONSE OF INSTRUMENT TRANSFORMERS, BUSHINGS, CABLES, ROTATING MACHINES AND POWER TRANSFORMERS	M. Koch, S. Raetzke , M. Krueger	F-083
NOISE AND DENOISING METHODS FOR MEASURED FREQUENCY RESPONSE SIGNALS OF POWER TRANSFORMERS	D. A. K. Pham, J. L. Velasquez, T. M. T. Pham, V. N. C. Ho, H. Borsi, E. Gockenbach	F-079
TRANSFORMER MODELING BASED ON STANDARD FREQUENCY RESPONSE MEASUREMENTS	M. Heindl, S. Tenbohlen , R. Wimmer	F-076
PROPAGATION PROPERTY OF PARTIAL DISCHARGE INDUCED ELECTROMAGNETIC WAVE IN POWER TRANSFORMER AND COMPARISON OF UHF SENSOR CHARACTERISTICS	Norio Morita, Masahiro Kozako, Masayuki Hikita	F-008
NEW APPROACH TO ASSESS THE INSULATION CONDITION OF INSTRUMENT TRANSFORMERS	S. Raetzke, M. Koch , M. Krueger	F-063

<b>Topic F: Monitoring and diagnostics: evaluation procedures, knowledge rules, data mining, applications</b>		
<b>Session Date</b>	<b>2011-08-23</b>	<b>Session F4 (oral)</b>
<b>Time:</b>	<b>1600 – 1730</b>	
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
LIFE ASSESSMENT MODEL OF THE POWER TRANSFORMERS BASED ON CONDITION ASSESSMENT	Z.L. Liu, L.H. Yang, H. Huang, C.Z. Fu, X. Zhang , E. Gockenbach	F-065
AGEING-CONDITION ASSESSMENT OF 400 KV OIP GENERATOR TRANSFORMER BUSHINGS	M. Zink, F. Berger, V. Klipfel, A. Kuchler	F-051
OBTAINING OF ESTIMATING CRITERIA OF CONTROLLED PARAMETERS AND THEIR TRENDS VIA STATISTICAL ANALYSIS OF OPERATING DATA	I. Davidenko	F-082
APPLICATION OF MACHINE LEARNING TECHNIQUES FOR AUTOMATIC ASSESSMENT OF FRA MEASUREMENTS	J. L. Velásquez Contreras, M.A. Sanz-Bobi, S. Banaszak , M. Koch	F-060
IDENTIFICATION AND TREATMENT OF OUTLIERS IN FAILURE DATASETS – PRACTICAL ASPECTS OF STATISTICAL ANALYSIS	L. Chmura, P.H.F. Morshuis, E. Gulski, J.J. Smit , Anton Janssen	F-047
INSULATION POLLUTION ESTIMATION IN THE FIELD: ULTRASOUND AND AUTO-ASSOCIATIVE ARTIFICIAL NEURAL NETWORKS	T. V. Ferreira, A. D. Germano, E. G. Costa, M. R. B. Pereira, R. N. Dias	F-010



**Topic F: Monitoring and diagnostics: evaluation procedures, knowledge rules, data mining, applications**

Session Date 2011-08-24

Time: 0830 – 1200

Poster Session F

Paper	Authors	No.
OPTIMISED TOOL FOR THE MEASUREMENT OF WINDING RESISTANCES ON POWER TRANSFORMERS	M. Müller	F-003
BUBBLE EFFECT IN BUSHING INSULATORS WITH INSULATION MANUFACTURED FROM DIFFERENT MATERIALS	P. Przybyłek, H. Mor,a , H. Moscicka-Grzesiak	F-004
THE INFLUENCE OF CHOSEN FACTORS ON THERMAL CONDUCTIVITY OF PAPER USED AS TRANSFORMER WINDINGS INSULATION	R. Lopatkiewicz, Z. Nadolny , P. Przybyłek	F-006
TRANSFER CAPABILITY COMPUTATIONS IN DEREGULATED POWER SYSTEM USING RADIAL BASIS FUNCTION NEURAL NETWORK APPROACH	K.Suneeta, J.Amarnath, S.Kamakshaiah	F-007
AN EFFICIENT METHOD FOR CALCULATION OF TRANSFER CAPABILITY IN DEREGULATED POWER SYSTEM	J.Namratha Manohar, J.Amarnath	F-009
INVESTIGATIONS ON ASSESSING MECHANICAL INTEGRITY OF TRANSFORMER WINDINGS	M. Pramella, Pradeep M. Nirgude	F-011
DIAGNOSTIC OF CABLE USED IN NUCLEAR POWER PLANT THROUGH VOLUME ELECTRICAL RESISTIVITY AND INDENTER	C. S. Goo, I. Y. Kim, Y. D. Shin, J. H. Lee , S. C. Jeong	F-012
PRELIMINARY RESEARCH OF TEMPERATURE EFFECT ON SURFACE LEAKAGE CURRENT OF INSULATORS	Hanqi, D., Hongwei, M., Liming, W., Zhicheng, G.	F-013
A STUDY ON THE APPLICATION OF LOW FREQUENCY TECHNIQUE FOR ASSESSMENT OF STATOR WINDING INSULATION	B. Nageshwar Rao, J. Sundara Rajan, A. Sudhindra , B. Ramachandra	F-016
TRANSFORMER CONDITION AND OPERATIONAL RISK EVALUATION	C. Sumereder, R. Schmid, S. Kornhuber, T. Friedrich, G. Valtin , H. Filipot	F-017
DEVELOPMENT OF ON-LINE PD DIAGNOSTIC ALGORITHM FOR SINGLE-PHASE GIS AND THREE-PHASE GIS	S. I. Kim, Y. C. Choi, , C. Y. Hong	F-018
PRELIMINARY RESEARCH OF TEMPERATURE EFFECT ON SURFACE LEAKAGE CURRENT OF INSULATORS	D. Hanqi, M. Hongwei, W. Liming, G. Zhicheng	F-024
APPLYING TIME-TEMPERATURE-MOISTURE SUPERPOSITION (TTMSP) METHOD TO IMPROVE THE LIFETIME MODEL ON THERMAL AGING OF OIL-PAPER	Lijun Yang, Bangfei Deng, Ruijin Liao, Jian Hao	F-025
INFLUENCE OF THE EXISTENCE OF THE EPOXY SPACER ON THE PROPAGATION PROPERTIES OF PARTIAL DISCHARGE INDUCED ELECTROMAGNETIC WAVE IN STRAIGHT 154 KV GIS TANK MODEL	Umar Khayam, Masayuki Hayashi, Masahiro Kozako, Masayuki Hikita	F-026
ALGORITHMIC CODE DIFFERENTIATION APPROACH TO SOLVE JACOBIAN ELEMENTS IN POWER FLOW EQUATIONS	A. Prasad Raju, J. Amarnath, D. Subbarayudu, M. Ramesh Reddy	F-027
PD STUDY ON TRANSFORMER WINDINGS BY USING MTL MODEL	S. M. H. Hosseini, M. Ghaffarian Niasar, M. Vakilian	F-028
MONITORING OF LEAKAGE CURRENT AND WEATHER CONDITIONS TO EVALUATE PERFORMANCE OF INSULATING SYSTEMS IN THE FIELD	L. H. Meyer,G. E. Cardoso, C. R. Oliboni, M. Pessoa, T.I. Mustafa, H.D. Almaguer, F. H. Molina, G. Cassel	F-029

RESEARCH ON THE FIBER-OPTIC ON-LINE MONITORING SYSTEM FOR ELECTRICAL EQUIPMENTS BASED ON LabVIEW	Liu Yung-peng, Jia Dong-ming, Han Guang , Wang Xiaohui	F-031
INVESTIGATING AND OVERCOMING THE NOISE AND DATA SIZE PROBLEMS IN LONG TERM FIELD LEAKAGE CURRENT MONITORING	D. Pylarinos, K. Siderakis, E. Pyrgioti, E. Thalassinakis , I. Vitellas	F-032
WIRELESS SENSOR NETWORK APPLIED TO ZnO SURGE ARRESTERS	E. C. T. Macedo, J. G. ALira, E. G. Costa , M.J.A Maia	F-033
ESTIMATION OF MOISTURE IN PRESSBOARD OF POWER TRANSFORMER USING MOISTURE DYNAMIC MEASUREMENT IN TRANSFORMER OIL	V. Sarfi, A.A. Shayegani, H. Mohseni	F-035
A LABORATORY INVESTIGATION ON DGA USING THE DIFFERENT EXISTING DEGASSING AND ANALYTICAL TECHNIQUES	F. Scattigio, G. Dobianer, M.Hahn	F-037
EVALUATION OF MEASUREMENT PARAMETERS ON FRA CHARACTERISTICS FOR TRANSFORMERS	Takahiro Sano , Katsunori Miyagi	F-038
A NOVEL HYBRID CONTINUOUS DENSITY HIDDEN MARKOV MODEL- PROBABILISTIC NEURAL NETWORK FOR MULTIPLE SOURCE PARTIAL DISCHARGE PATTERN RECOGNITION	S. Venkatesh, S. Gopal , K. Kannan	F-039
BEHAVIOUR OF PD IN IMPULSE AGED INSULATION: A THEORETICAL STUDY	M. M. C. Mampane , C. Nyamupangedengu	F-041
DESIGN AND CONSTRUCTION HIGH VOLTAGE HIGH FREQUENCY TRANSFORMER RATED 500 kV 250 kHz	S. Nedphograw	F-042
RISK EVALUATION OF PARTIAL DISCHARGE DEFECT ON OIL-IMPREGNATED PAPER	Yangchun Cheng, Ming Chen, Yang Xue, Chengrong Li, Wei Wang	F-043
MEASUREMENT OF TEMPERATURE IN XLPE INSULATION OF POWER CABLES USING ULTRASONIC DIAGNOSIS	G. Brammer, A. Schnettler	F-046
THE APPLICATION OF STATISTICAL TOOLS FOR THE ANALYSIS OF POWER TRANSFORMER FAILURES	L. Chmura, P.H.F. Morshuis, E. Gulski, J.J. Smit , A. Janssen	F-048
PROCESS DATA VALIDATION IN HV SYSTEMS OF POWER STATIONS	R. Prochazka , S. Boucek	F-050
EXPERIMENTAL AND X-Y MODEL SIMULATION INVESTIGATION ON THE FREQUENCY DOMAIN DIELECTRIC SPECTROSCOPY OF OIL-PAPER INSULATION SYSTEM	Xianping Zhao, Zhiqin Ma, Ruijin liao, Yaolong Wang, Guochao Qian	F-053
FREQUENCY DOMAIN SPECTROSCOPIC MEASUREMENTS OF OIL IMPREGNATED PAPER INSULATION SYSTEM UNDER THERMAL RUNAWAY	H. Hemmatjou , I. Fofana	F-054
PARAMETERS AFFECTING THE FORMATION OF CORROSIVE SULPHIDE DEPOSITION ON COPPER CONDUCTORS	J. S. N'cho, I. Fofana A. Beroual , T. Aka-Ngnui	F-055
HIGH IMPEDANCE FAULT DETECTION	F.B.Costa, G.R.S.Lira, W.C.Santos, J.A.C.B.Silva, B.A.Souza, N.S.D.Brito, M.R.C.Paes Jr	F-056
POWER TRANSFORMERS EVALUATION USING A DIGITAL MODEL OBTAINED FROM TERMINAL IMPEDANCE MEASUREMENTS	L. M. de A. Coutinho , H. J. A. Martins	F-057
EFFECTS OF TRANSIENTS, IN POWER AUTOTRANSFORMER, DUE TO SUBSTATION SWITCHINGS – ANALYSIS BY ACOUSTIC EMISSION	M. B. Trindade , H. J. A. Martins	F-058
NOVEL METHOD FOR OVERALL CONDITION ASSESSMENT OF POWER TRANSFORMERS	J. L. Velásquez Contreras, M.A. Sanz-Bobi, W. De Villiers , Markus Pütter	F-059
INFRARED EMISSION CHARACTERISTICS OF OVERHEAD LINES AND THEIR INTERSTICES OF THE SURFACE WIRES	Ph. Pretis, St. Jauffer, J. Fabian, M. Muhr	F-061

EVALUATION SYSTEM FOR PRACTICAL AC RESISTANCE TO THE 6SEGMENTED ENAMEL COATED POWER CABLE	H.J. Kwak, C.S. Go, H.S. Jo, R.E.Choi, H.D. Park, K.D. Kim	F-062
CONDITION MONITORING OF POWER TRANSFORMERS – WHAT INFORMATION CAN WE GET FROM RETURN VOLTAGE MEASUREMENTS	R. Patsch	F-064
INTEGRATED AXIAL WINDING CLAMPING FORCE MONITORING SYSTEM FOR POWER TRANSFORMERS	A. Marinescu	F-066
DISSOLVED GAS ANALYSIS OF ALTERNATIVE DIELECTRIC FLUIDS UNDER THERMAL AND ELECTRICAL STRESS	M. Jovalekic, D. Vukovic , S. Tenbohlen	F-067
FUZZY LOGIC AND TRANSFORMER STATUS INDICATOR BASED EXPERT SYSTEM FOR DGA ANALYSIS	Balint Németh, Szilvia Laboncz, Csaba Vörös, István Kiss	F-068
ASSESSMENT OF OIL ANALYSIS DATA FOR MEDIUM VOLTAGE DISTRIBUTION TRANSFORMERS	A. Müller, M. Jovalekic, S. Tenbohlen	F-070
INVESTIGATIONS ON ARC ROTATION IN VACUUM CIRCUIT BREAKERS BY EXTERNAL MAGNETIC FIELD SENSORS	T. Rettenmaier, V. Hinrichsen, A. Lawall, J. Teichmann	F-074
THE ESTIMATION OF AGING CONDITION OF THE OUTDOOR INSULATOR USING THE WEIBULL DISTRIBUTION AND THE CHAOS/FRACTAL MATHEMATICS	Jang-seob Lim, Seong-ho Noh, Kun-ho Lee, Jae-gang Sim	F-075
INVESTIGATION OF GIC RELATED EFFECTS ON POWER TRANSFORMERS USING MODERN DIAGNOSTIC METHODS	M. Heindl, M. Bettle, M. Reuter, D. Schneider, St. Tenbohlen, D. T. Oyedokun , C. T. Gaunt	F-077
INSTRUMENTATION FOR MONITORING AND ANALYSIS OF PARTIAL DISCHARGES IN ROTATING MACHINES – BRAZILIAN EXPERIENCE	H. Amorim, A. Levy,A. Tomaz , T. Baptista	F-078
A NOVEL METHOD TO LOCATE A FAULTY OR NOISY DIRECTIONAL SENSOR IN A LIGHTNING LOCATION NETWORK IMPROVES POWER LINE OUTAGE	Vladimir Djurica, Goran Milev, Rok Mandeljc	F-081
THE CHARACTERISTICS OF TRANSFER FUNCTIONS FOR DETECTING WINDING DISPLACEMENTS BY IMPULSE METHOD	K. H. Kim, C. H. Shon, S. H. Yi, H. J. Lee, D. S. Kang	F-086
MONITORING OF PARTIAL DISCHARGES IN OIL-PAPER INSULATION IN A LABORATORY ENVIRONMENT FOR DIAGNOSTICS	M. Fischer, E. Gockenbach	F-087
PRACTICAL ASPECTS OF DIFFERENT NEW DIAGNOSTIC METHODS FOR THE CONDITION ASSESSMENT OF POWER TRANSFORMERS	P. Werle	F-088

**Topic G: High voltage systems: asset management, smart grids, life line working, maintenance and on site repair**

Session Date 2011-08-25  
Time: 1600 – 1730

Session G1 (oral)

Paper	Authors	No.
LEARNING FROM FAILURES IN RISK-BASED TRANSFORMER ASSET MANAGEMENT	Hongzhi Ding, Richard Heywood, John Lapworth ,Simon Ryder	G-027
ASSESSMENT OF POWER TRANSFORMER RELIABILITY	St. Tenbohlen, F. Vahidi, J. Gebauer, M. Krüger , P. Müller	G-026
ASSET MANAGEMENT OF POWER TRANSFORMER, PRACTICAL EXPERIENCE IN THAILAND	Thanapong Suwanasri, Rattanakorn Phadungthin, Cattareeya Suwanasri	G-011
TRANSMISSION TRANSFORMER END-OF-LIFE MODELLING: INCORPORATING INSULATING PAPER'S THERMAL LIFETIME ANALYSIS WITH ORDINARY STATISTICAL ANALYSIS	D. Y. Feng, W. Wu, Z. D. Wang , P. Jarman	G-006
OPTIMIZATION OF ASSET MANAGEMENT OF TRANSFORMERS BASED ON A PREDICTIVE HEALTH MODEL OF PAPER DEGRADATION	G. Bajracharya, T. Koltunowicz, R. R. Negenborn, D. Djairam, B. De Schutter, J. J. Smit	G-002
PARTIAL DISCHARGE PROBLEMS WITH TRANSFORMERS IN SERVICE: NEW PERSPECTIVES ON HYDROGEN AND MOISTURE	M. Boltze, Hongzhi Ding ,S. Ryder	G-012

**Topic G: High voltage systems: asset management, smart grids, life line working, maintenance and on site repair**

Session Date 2011-08-26  
Time: 0830 – 1000

Session G2 (oral)

Paper	Authors	No.
THE INFLUENCE OF DIAGNOSIS QUALITY ON THE ECONOMIC FEASIBILITY OF MAINTENANCE STRATEGIES FOR HV COMPONENTS	Wen Cao, Qikai Zhuang, Kai Wu, Dhiradj Djairam, Johan J. Smit	G-020
LIFE ESTIMATION OF HIGH VOLTAGE SF6 CIRCUIT BREAKERS	X. Zhang, E. Gockenbach	G-017
RELIABILITY OF AIR INSULATED SUBSTATIONS AS ADDITIONAL INFORMATION FOR PRIORITY DRIVEN MAINTENANCE	C. Hille, S. Federlein, A.Schnettler ,B. Rusek	G-010
MONITORING OF OVERHEAD LINES WITH AUTONOMOUS FLYING PLATFORMS	A. Claudi, C. Willim, R. Meyer, J. Lamprecht	G-015
TOWARDS THE GRID OF THE FUTURE: BUILDING ON AND EXPANDING THE CAPACITY OF THE EXISTING NETWORK	K. Kopsidas, S. M. Rowl,,I. Cotton	G-028
INTEGRATING HTS COMPONENTS INTO THE FUTURE TRANSMISSION GRID OF THE NETHERLANDS	R. Zuijderduin, O. Chevchenko, J. J. Smit, G. Aanhaanen, I. Melnik, A. Geschiere	G-025

**Topic G: High voltage systems: asset management, smart grids, life line working, maintenance and on site repair**

Session Date 2011-08-25  
Time: 0830 – 1200

Poster G

Paper	Authors	No.
EVALUATION OF THE USE OF INSULATION COVERS FOR VULTURE	G. Chitungo, C. Nyamupangedengu, J. Van Coller	G-001
INVESTIGATION OF THE EFFECTS OF THE PRESENCE OF LARGE BIRDS ON OVERHEAD LINE STRUCTURES IN BRAZIL	R. W. S. Garcia	G-003
A STUDY FOR THE WIND FORCE COEFFICIENT OF A TRANSMISSION TOWER FRAME USING WIND TUNNEL	K.Y. Shin, J.S. Lim, Y.H. Kim, I.H. Choi , K.S. Hwang, Y.S. Kil	G-004
EFFECT OF CORONA RING DESIGN OF POLYMER INSULATORS FOR UHV TRANSMISSION LINE	Yunseog Lim, Ho-sung An, Kooyong Shin, Sangyoon Lee, Inhyuk Choi, Injin Seo	G-005
AC 154 kV SUBMARINE INTERCONNECTION SYSTEM BETWEEN HWAWON AND ANJWA ISLAND IN KOREA	Jongmin Park, Inho Lee, Youngguk Kwon, Jungnyun Kim, Seungik Jeon	G-007
FIRE AND HVDC LINES	T. Govender, N. Parus, N. Mahatho, H. Vosloo, H.A. Roets	G-008
INVESTIGATION OF CORONA INDUCED FIRE IN HIGH VOLTAGE DC LINES	C Siame L. Chetty, N.M. Ijumba	G-009
DEVELOPMENT OF A 1200KV UHVAC TRANSFORMER	R. Wimmer, J. Hoppe, M. Rösner, M. Schenk	G-013
A NOVEL METHOD FOR COST-BENEFIT EVALUATION OF LIGHTNING PROTECTION IN DISTRIBUTION NETWORKS USING FLASH DENSITY MOMENTS	J. Kosmac, G. Lakota Jericek, Z. Toros G. Omahen	G-014
LIFE ESTIMATION OF HIGH VOLTAGE POWER TRANSFORMERS	X. Zhang, E. Gockenbach	G-016
STATISTICAL FAILURE ANALYSIS OF HIGH VOLTAGE SF6 CIRCUIT BREAKERS	X. Zhang, E. Gockenbach	G-018
AN INFLUENCE OF FAR THUNDERSTORM ON LIVE WORKING SAFETY	A. Ovsyannikov, E. Frolkin	G-019
INVESTIGATION OF ECONOMIC FEASIBILITY OF MAINTENANCE STRATEGIES UNDER REGULATORY RESTRICTIONS	Qikai Zhuang, Wen Cao, Kai Wu, Dhiradj Djairam, Johan J. Smit	G-021
UTILISING LOAD FORECASTING FOR ENERGY MANAGEMENT IN A HIGH VOLTAGE SYSTEM	C. S. Carlson, W. A. Cronjé ,M. A. van Wyk	G-022
STUDY OF DECISION SUPPORT PROGRAMS AND EVALUATION MODEL FOR MAINTENANCE STRATEGY OF ELECTRIC POWER EQUIPMENT	T. Takahashi, T. Kuraishi, T. Okamoto , E. Gockenbach	G-023
A NEW METHOD OF WINDING TURN DETERMINATION FOR WINDINGS OF POWER TRANSFORMERS	S. Schreiter, O. Kouzmine , P. Werle	G-024
ICE-MELTING METHODS AND COMPARISON WITH AC AND DC CURRENTS	Jiang Xingliang, Hu Jianlin, Zhang Jiwu, Shu Daisong, Gong Xiaowei, Yi Tianzhi	G-029
TOWARDS A SMART GRID: A SOUTH AFRICAN PERSPECTIVE ON THE ENABLEMENT OF GRID INTELLIGENCE TO ADDRESS DEMAND RESPONSE CHALLENGES	H. Madhoo, A. Khatri, K. Subramoney, N.Parus, W. Cronje	G-030
DESIGNING 400KV AND 765KV LINES OVER CANE FIELDS	R. Vajeth, S. Narain ,R. Moodley	G-031
CIRCUIT BREAKER LIFE ASSESSMENT BASED ON THE DEFECT STATISTICS AND COST ANALYSIS	Kai Gao, Zhaolin Liu, Linghui Yang, X. Zhang , E. Gockenbach	G-032

EXAMINATION OF ELECTRIC FIELD EXPOSURE OF LIVE LINE WORKERS	Z. Á. Tamus, B. Németh, B. Novák, A. Kimpián, I. Kiss, L. Szúcs, I. Berta	G-033
ELECTRICAL PERFORMANCE AND POLLUTION ANALYSIS OF IN-SERVICE HVDC GLASS DISCS	T. Govender, N. Mahatho, N. Parus, E. Greyling, H. A. Roets	G-034
PRELIMINARY RESULTS OF AN INVESTIGATION INTO THE EFFECTS OF FLOATING OBJECTS ON THE ELECTRICAL BREAKDOWN OF AIR UNDER HIGH VOLTAGE DIRECT CURRENT STRESS	N. Parus, I.R. Jandrell, J.P. Reynders, N. Mahatho, T. Govender, H. A. Roets	G-035

<b>Topic H: System and Materials Aspects</b>		
<b>Session Date</b> 2011-08-26		
<b>Time:</b> 1030 – 1200		<b>Session H (oral)</b>
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
AGING PROPERTIES OF 765KV POLYMER INSULATORS IN A CONTAMINATED COASTAL ENVIRONMENT	Yunseog Lim, Andrew J. Phillips, Christian Engelbrecht, Sangyoon Lee, Kooyong Shin, Dongil Lee	H-002
HIGH VOLTAGE ENDWINDING DESIGN OF LARGE HYDROGEN COOLED TURBO GENERATORS	M. Lerchbacher, D. Imamovic, G. Lemesch, F. Ramsauer, M. Muhr	H-009
THERMAL-HYDRAULIC INVESTIGATION OF A LARGE POWER STEP UP TRANSFORMER	A. Weinläder, N. Schmidt, S. Tenbohlen, J.Harthun , H.Fink , S. Chen	H-015
A NEW MODEL OF TRANSFORMER WITH COAXIALLY INSULATED WINDINGS FOR TRANSIENTS STUDIES	F. Karimzadeh, A. Akbari, M. Ardebili	H-014
REMOTELY OPERATED HIGH VOLTAGE LABORATORY FOR PARTIAL DISCHARGE MEASUREMENT	Nirmal Kumar Roy, Pathik Kumbhakar, Subrata Karmakar	H-018
EFFECT OF CHANGE IN THE LOAD PROPERTIES ON THE RECTANGULAR PULSE WAVEFORM OF THE PULSED ELECTRIC FIELDS SYSTEM	Chen Jie, Zhang Ruobing, Xiao Jianfu, Wang Liming, Guan Zhicheng	H-017

<b>Topic H: System and Materials Aspects</b>		
<b>Session Date</b> 2011-08-25		
<b>Time:</b> 1400 – 1700		<b>Poster H</b>
<b>Paper</b>	<b>Authors</b>	<b>No.</b>
EXPERIMENTAL STUDY OF PARTIAL ARC PROPAGATION PROCESS AND FLASHOVER CHARACTERISTICS ALONG THE CONTAMINATED INSULATOR STRING	Li Yawei ,Zhang Qiaogen, Xi Haibo, Liu Fenglian	H-001
MODELLING OF BREAKDOWN AND PREBREAKDOWN PHENOMENA IN LIQUID DIELECTRICS	V. P. Charalambakos, E. Pyrgioti, G. Peppas, G. Laskos, A. Theocharis	H-003
GROUNDING GRIDS ANALYSIS OF ENERGIZED SUBSTATIONS	A. D. Dias , G. V. de Andrade Jr. , E. G. da Costa , F. P. F. de Sousa , E. C. T. Macedo , L. V. Gomes , S. A. G. Nóbrega Neto, F. C. L. Brasil	H-004
EARTH SURFACE POTENTIAL FOR SCALED VERTICAL ROD INTO TWO LAYER SOIL MODEL	S. S. Dessouky, S.S. Ghoneim, S.A. Mohamed	H-005
INFLUENCE FACTORS ON TRANSFER CURRENT EXPERIMENTAL RESULTS FOR FUSE COMBINATION SWITCH	Menglei Zheng, Ji Hoon Ma, Lyun Ru	H-006
EFFECT OF USING PAPERS REGARDING TO HIGH VOLTAGE SURGE ARRESTERS ON ENGINEERING EDUCATION	Shingo Shirakawa	H-007

EXPERIMENTAL STUDY OF CORONA DISCHARGE IN WIRE-PLATE ELECTROSTATIC PRECIPITATORS	K. Usama, R.Prochazka; J. Tlusty	H-008
EFFECT OF CIRCUIT PARAMETERS AND WIRE PROPERTIES ON ENERGY DEPOSITION OF EXPLODING AN AL WIRE IN WATER	Qing Zhou, Qiao-gen Zhang, Lei Pang, Jun Zhang, Jun-ping Zhao, Jia-sen Chang, Hu Wang	H-010
POLARITY EFFECT OF REPETITIVE NANOSECOND PULSE DISCHARGE ON SYMMETRIC ELECTRODE IN THE SUBSONIC AIRFLOWS	Lei Pang, Qiaogen Zhang, Qing Zhou, Kun He, Baozhong Ren; Shi Liu	H-011
DESIGN OF A HYBRID MATRIX FAULT CURRENT LIMITER USING LOWPOWER PTC RESISTORS AND FAST SWITCHES FOR MEDIUM VOLTAGE	M. M. Arabshahi, K. Niayesh	H-012
OPTIMIZATION OF THE DESIGN OF A WIDEBAND 1000 KV RESISTIVE REFERENCE DIVIDER	A.-P. Elg, J. Hällström, A. Bergman	H-013
EFFECTS OF GROUND RESISTANCE ON OVERVOLTAGE CAUSED BY LINE TO NEUTRAL FAULTS IN A 22.9 KV UNDERGROUND SYSTEM	S. K. Choi, B. S. Lee, G. S. Kim, J. K. Choi, M. H. Choi	H-016
IMPACT OF PARAMETES VARIATION ON DETERIORATION PHENOMENA DUE TO WATER DROPLETS ON POLYMERIC SURFACES	S.S. Dessouky, R.A. Abd El-Aal, K.A.Helal	H-019