2012 International Power Modulator and High Voltage Conference

June 3 - 7, 2012

San Diego, CA

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WELCOME

On behalf of the International Power Modulator and High Voltage Conference (IPMHVC) Executive Committee and the Conference and Technical Program Committees, we welcome you to the 2012 IEEE IPMHVC. This year we have received a record number of more than 300 abstract submissions from 865 authors and co-authors. Almost 60% of these were sent in from our international colleagues in 26 different countries, which emphasize the international character of this conference. Significant participation came from China, India, Japan, United Kingdom, Korea, Germany, Russia, France, and Brazil. The most popular technical topics were Solid State Modulators, Components, and Switches and Dielectrics and Breakdown followed by Biological, Medical, and Environmental Applications; High Voltage Testing and Diagnostics; High Power Microwaves, Radiating Structures, and Electromagnetic Propagation; and Compact Pulsed Power Systems. Abstracts were also collected in several other areas including Power Electronics and Power Supplies; Analytical Methods, Modeling, and Simulation; Plasma Opening and Closing Switches; High Voltage Design and Analysis; High Current Systems and EM Launchers; Accelerators, Radar, and RF Applications; Power Conditioning and Pulse Shaping; etc.

The technical program of the 2012 IEEE IPMHVC is being held at the conference hotel, the Hilton San Diego Bayfront. The Hilton Bayfront is the newest waterfront hotel on San Diego Bay and is located within minutes of several attractions including the San Diego harbor, San Diego Padre's PETCO Park stadium, Coronado island, and the vibrant Gaslamp Quarter of the downtown area which boasts more than 16 square blocks and more than 150 restaurants, shops, and nightclubs. The social program opens with the welcome reception on Sunday evening in the Exhibitors area, followed by a "night out" dinner at the USS Midway Museum on Monday evening, and a reception and conference awards banquet on Tuesday evening (Hilton Bayfront).

The conference is fully sponsored by the IEEE Dielectrics and Electrical Insulation Society and technically co-sponsored by the IEEE Nuclear and Plasma Sciences Society and the IEEE Electron Devices Society. We gratefully acknowledge the sponsorship from government, university, and industry, and the support from exhibitors. We encourage you to visit the booths and talk to the exhibitors.

We would like to express our sincere gratitude to the entire Conference Organizing Committee for all their efforts and we extend our sincere thanks to all the members of the Technical Program Committee for their hard work in reviewing the abstract submissions and defining an outstanding technical program. Finally, we thank all of the presenters and attendees for contributing to the ongoing success of this conference and we look forward to seeing you in Denver, Colorado in 2014.

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Juergen Kolb
2012 IPMHVC Technical Program Chair

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GENERAL INFORMATION

Onsite Conference Registration Desk
Sapphire West Foyer, Hilton San Diego Bayfront
Sunday, June 3, 2012 2:00 PM - 8:00 PM
Monday, June 4, 2012 7:30 AM - 5:30 PM
Tuesday, June 5, 2012 7:30 AM - 5:30 PM
Wednesday, June 6, 2012 7:30 AM - 3:30 PM

Exhibit Times
Sapphire CDGH - Exhibits Area, Hilton San Diego Bayfront
Sunday 6:00 PM - 8:00 PM
Monday 7:30 AM - 12 PM and 1:30 PM - 5:30 PM
Tuesday 7:30 AM - 12 PM and 1:30 PM - 5:30 PM
Wednesday 7:30 AM - 12 PM and 1:30 PM - 3:30 PM

Companion Program
TBD, please see the registration desk and the conference website for more information

Short Courses
Aqua 306/308, Hilton San Diego Bayfront
Thursday, June 6, 2012 8:00 AM - 2:45 PM
Breakfast for short course attendees starts at 7:15 AM

Technical Tour
General Atomics DIII-D National Fusion Facility
Thursday, June 6, 2012 1:30 PM - 4:00 PM

Social Events
Welcome Reception
Sapphire CDGH - Exhibits Area, Hilton San Diego Bayfront
Sunday, June 3, 2012 6:00 PM - 8:00 PM

Off-site dinner at the USS Midway
Monday, June 4, 2012 6:30 PM - 10:00 PM
Buses will depart from the Conference Hotel,
Level 1, starting at 6:15 PM.

Conference Awards Dinner
Tuesday, June 5, 2012, Hilton San Diego Bayfront
Reception (Sapphire CDGH) 6:30 PM - 7:30 PM
Dinner (Sapphire KLOP) 7:30 PM - 10:00 PM

For conference registrants only
Sapphire CDGH - Exhibits Area, Hilton San Diego Bayfront
Monday, Tuesday, and Wednesday
Continental Breakfast 7:15 AM - 8:15 AM
Coffee Break 9:30 AM - 10:00 AM
Afternoon Break 3:00 PM - 3:30 PM

2012 IEEE IPMHVC SCHEDULE-AT-A-GLANCE

Location: Hilton San Diego Bayfront, San Diego, CA
(unless otherwise noted)

Sunday, June 3, 2012

2:00 – 8:00 PM	Registration Sapphire West Foyer
6:00 – 8:00 PM	Welcome reception Sapphire CDGH - Exhibits Area

Monday, June 4, 2012

7:15 – 8:15 AM	Breakfast (registrants only) Sapphire CDGH - Exhibits Area
8:15 – 8:30 AM	Welcome Sapphire KLOP
8:30 – 9:30 AM	Plenary 1 Sapphire KLOP
9:30 – 10:00 AM	Break Sapphire CDGH - Exhibits Area
10:00 – 12:00 PM	Oral Session 1 Solid State Modulators, Components and Switches 1 Sapphire OP
10:00 – 12:00 PM	Oral Session 2 Dielectrics and Breakdown Sapphire KL
12:00 – 1:30 PM	Lunch (on your own)
1:30 – 3:00 PM	Poster Session 1 Solid State Modulators, Components Switches, Dielectrics, Breakdown, and Power Electronics and Power Supplies Aqua 306/308
3:00 – 3:30 PM	Break Sapphire CDGH - Exhibits Area
3:30 – 5:30 PM	Oral Session 3 Solid State Modulators, Components and Switches 2, Power Electronics and Power Supplies Sapphire OP

3:30 – 5:30 PM	Oral Session 4 Biological, Medical, and Environmental Applications Sapphire KL
6:15 PM	Starting time of the bus shuttle to the Midway. It will depart on Level 1 of the conference hotel.
6:30 – 10:00 PM	Night Out dinner at the USS Midway

Tuesday, June 5, 2012

7:15 – 8:15 AM	Breakfast (registrants only) Sapphire CDGH - Exhibits Area
8:15 – 8:30 AM	Conference Updates Sapphire KLOP
8:30 – 9:30 AM	Plenary 2 Sapphire KLOP
9:30 – 10:00 AM	Break Sapphire CDGH - Exhibits Area
10:00 – 12:00 PM	Oral Session 5 Plasma Opening and Closing Switches, Lasers and other Radiation Sources Sapphire KL
10:00 – 12:00 PM	Oral Session 6 High Voltage Testing and Diagnostics Sapphire OP
12:00 – 1:30 PM	Lunch (on your own)
1:30 – 3:00 PM	Poster Session 2 Biological, Medical, and Environmental Applications, Plasma Opening and Closing Switches, Lasers and Other Radiation Sources, High Voltage Testing and Design, Compact Pulsed Power, and Power Conditioning and Pulse Shaping Aqua 306/308
3:00 – 3:30 PM	Break Sapphire CDGH - Exhibits Area
3:30 – 5:30 PM	Oral Session 7 Compact Pulsed Power Systems Sapphire OP

3:30 – 5:30 PM	Oral Session 8 High Voltage Design and Analysis, Accelerators, Radar, and RF Applications, Reliability and Transient Suppression Sapphire KL
6:30 – 7:30 PM	Reception Sapphire CDGH - Exhibits Area
7:30 – 10:00 PM	Conference Awards Banquet Sapphire KLOP

Wednesday, June 6, 2012

7:15 – 8:15 AM	Breakfast (registrants only) Sapphire CDGH - Exhibits Area
8:15 – 8:30 AM	Conference Updates Sapphire KLOP
8:30 – 9:30 AM	Plenary 3 Sapphire KLOP
9:30 – 10:00 AM	Break Sapphire CDGH - Exhibits Area
10:00 – 12:00 PM	Oral Session 9 High Current Systems and EM Launchers Sapphire KL
10:00 – 12:00 PM	Oral Session 10 High Power Microwaves, Radiating Structures, and Electromagnetic Propagation Sapphire OP
12:00 – 1:30 PM	Lunch (on your own)
1:30 – 3:00 PM	Poster Session 3 High Voltage Design and Analysis, Accelerators, Radars, and RF Applications, Reliability and Transient Suppression, High Current Systems and EM Launchers, High Power Microwaves, Radiating Structures, and Electromagnetic Propagation, Analytical Methods, Modeling, and Simulation, Prime Power and Power Systems, Energy Storage Devices and Components, High Energy Systems Aqua 306/308

3:00 – 3:30 PM	Break Sapphire CDGH - Exhibits Area
3:30 – 5:30 PM	Oral Session 11 Analytical Methods, Modeling, and Simulations Sapphire KL
3:30 – 5:30 PM	Oral Session 12 Power Conditioning and Pulse Shaping, Energy Storage Devices and Components Sapphire OP

Thursday, June 7, 2012

7:15 – 8:00 AM	Breakfast for Short Course Attendees Aqua 306/308
8:00 – 12:00 PM	Short Course 1: An Overview of Electric Power Systems Engineering Dr. Charles A. Gross Auburn University Aqua 306A
8:00 – 12:15 PM	Short Course 2: Power Electronics Dr. Craig Burkhart SLAC National Accelerator Laboratory Aqua 308
8:00 – 2:45 PM	Short Course 3: RF and HPM Sources Dr. Bruce Carlsten Los Alamos National Laboratory Aqua 306B
11:45 – 1:15 PM	Lunch Break for Short Course 3 attendees (on your own)
1:30 – 4:00 PM	Technical Tour of the General Atomics DIII-D National Fusion Facility *Please see the registration desk and the conference website for more information*

2012 IEEE IPMHVC TECHNICAL PROGRAM

Location: Hilton San Diego Bayfront, San Diego, CA
(unless otherwise noted)

Monday, June 4, 2012

8:15 Welcome (Sapphire KLOP)

Plenary 1

Monday, June 4, 2012 8:30 – 9:30 AM (Sapphire KLOP)

Session Chair: Hulya Kirkici, Auburn University

HIGH VOLTAGE, BIOFUELS, AND CO-PRODUCTS TAKING HIGH VOLTAGE TO THE (FARM) FIELD
Robert Hebner
University of Texas, Austin

Oral Session 1: Solid State Modulators, Components and Switches 1

Monday, June 4, 2012 10:00 AM – 12:00 PM (Sapphire OP)

Session Chair: Marcel Gaudreau, Diversified Technologies, Inc.

10:00 1O1,2 (Invited)
COMPACT SILICON SGTO MODULE FOR PULSE SWITCHING BEYOND 6 KV, 100 KA
Heather O'Brien[1], Aderinto Ogunniyi[1], William Shaheen[2], Victor Temple[3], Charles Scozzie[1]
[1]U.S. Army Research Laboratory Adelphi, MD, USA, [2]Berkeley Research Associates Beltsville, MD, USA, [3]Silicon Power Corp. Clifton Park, NY, USA

10:30 1O3
SPICE ANALYSIS OF AN INNOVATIVE SOLID-STATE MARX TOPOLOGY UTILIZING A BOOST REGULATOR CIRCUIT TO GENERATE MILLISECOND PULSES WITH LOW DROOP
Christopher Yeckel, Richard Cassel
Stangenes Industries Inc. Palo Alto, CA, USA

10:45 1O4
A HIGH POWER CASCODE SWITCH FOR RAPID, EFFICIENT ENERGY TRANSFER AT HIGH REPETITION RATES
Jason M. Sanders, Andras Kuthi, Martin A. Gundersen
University of Southern California, Electrical Engineering - Electrophysics, Los Angeles, CA, USA

11:00 1O5
NEW CONCEPTS FOR PULSED POWER MODULATORS: IMPLEMENTING A HIGH VOLTAGE SOLID-STATE MARX MODULATOR
Floyd Arntz[1], Kevin Ostlund[1], Michael Kempkes[1], Jeffrey Casey[2]
[1]Diversified Technologies, Inc. Bedford, MA, USA, [2]Rockfield Research, Inc. Las Vegas, NV, USA

11:15 1O6
HIGH AVERAGE POWER HIGH VOLTAGE MODULATOR USING A DUAL PULSE TRANSFORMER CIRCUIT
Werner Hartmann[1], Norbert Grass[2], Klaus-Dieter Rohde[1], Martin Schwendner[2]
[1]Siemens AG, CT T DE HW4, Erlangen, Germany, [2]Georg-Simon-Ohm University Nuremberg, Germany

11:30 1O7
THE SLAC P2 MARX
Mark Kemp, Andrew Benwell, Craig Burkhart, David MacNair, Minh Nguyen
SLAC National Accelerator Laboratory Menlo Park, CA, USA

11:45 1O8
DESIGN OF A 20 KHZ MAGNETIC PULSE COMPRESSOR
Dongdong Zhang[1], Yuan Zhou[4], Wenfeng Li[3], Jiayu xu[3], Jue Wang[1], Yaohong Sun[1]
[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drive, Beijing, China, [3]Graduate School of Chinese Academy of Sciences Beijing, China, [4]Tianjin University of Technology and Engineering Tianjin, China

Oral Session 2: Dielectrics and Breakdown

Monday, June 4, 2012 10:00 AM – 12:00 PM (Sapphire KL)

Session Chair: Raymond Allen, Naval Research Laboratory

10:00 2O1
SURFACE FLASHOVER MECHANISM ON THE LIQUID IMMERSED DIELECTRICS
Jouya Jadidian[1], Markus Zahn[1], Nils Lavesson[2], Ola Widlund[2], Karl Borg[2]
[1]Massachusetts Institute of Technology Cambridge, MA, USA, [2]ABB Corporate Research Västerås, Sweden

10:15 2O2

THE STATISTICAL AND FORMATIVE TIMES FOR BREAKDOWN AT A POLYMER-OIL INTERFACE

Mark Wilson[1], Martin Given[1], Igor Timoshkin[1], Scott MacGregor[1], Tao Wang[1], Mark Sinclair[2], Ken Thomas[2], Jane Lehr[3]

[1]University of Strathclyde, Electronic & Electrical Engineering, Glasgow, United Kingdom, [2]AWE Aldermaston, Hydrodynamics Division, Reading, United Kingdom, [3]Sandia National Laboratories, Exploratory Pulsed Power, Albuquerque, NM, USA

10:30 2O3

INITIATION MECHANISM OF NEGATIVE PULSED DISCHARGE IN SUPERCRITICAL CARBON DIOXIDE

Tomohiro Furusato, Takeshi Ihara, Tsuyoshi Kiyan, Sunao Katsuki, Masanori Hara, Hidenori Akiyama

Kumamoto University, Graduate School of Science and Technology, Kumamoto, Japan

10:45 2O4

SPATIALLY-RESOLVED SPECTRAL OBSERVATIONS OF PULSED SURFACE FLASHOVER PLASMA IN A NITROGEN ENVIRONMENT

Andrew Fierro, George Laity, Andreas Neuber, Lynn Hatfield, James Dickens

Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA

11:00 2O5

INVESTIGATION OF VACUUM UV ABSORPTION DURING LOW-TEMPERATURE PLASMA FORMATION IN N_2/H_2 MIXTURES AT ATMOSPHERIC PRESSURE

George Laity[1], Andrew Fierro[1], Lynn Hatfield[1], Andreas Neuber[1], James Dickens[1], Klaus Frank[1,2]

[1]Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA, [2]Friedrich – Alexander University at Erlangen - Nuernberg, Erlangen Centre for Astroparticle Physics, Erlangen, Germany

11:15 2O6

SIMULATION OF HIGH-VOLTAGE DC BREAKDOWN FOR ANGLED DIELECTRIC INSULATORS INCLUDING SPACE-CHARGE AND GAS-COLLISION EFFECTS

Manuel P. Aldan[1], John P. Verboncoeur[2]

[1]University of California at Berkeley, Nuclear Engineering, Berkeley, CA, USA, [2]Michigan State University, Electrical and Computer Engineering, East Lansing, MI, USA

11:30 2O7
REINFORCED INSULATION PROPERTIES OF EPOXY RESIN/ SIO_2 NANOCOMPOSITES BY ATMOSPHERIC PRESSURE PLASMA MODIFICATION
Wei Yan[1], Toan Phung[1], Zhaojun Han[2], Kostya (Ken) Ostrikov[2]
[1]University of New South Wales, School of Electrical Engineering and Telecommunications, Sydney, Australia, [2]CSIRO Material Science and Engineering, Plasma Nanoscience Centre Australia, Lindfield, Australia

11:45 2O8
FLASHOVER PHENOMENA ACROSS SOLID DIELECTRICS IN VACUUM: MECHANISM AND SUPPRESSION
Guan-Jun Zhang, Jiang-Yang Zhan, Xue-Zeng Huang, Hai-Bao Mu
Xi'an Jiaotong University, School of Electrical Engineering, Xi'an, China

Poster Session 1: Solid State Modulators, Components Switches, Dielectrics, Breakdown, and Power Electronics and Power Supplies

Monday, June 4, 2012 1:30 – 3:00 PM (Aqua 306/308)

Session Chair: Randy Cooper, Cooper Consulting Services Inc.

1P1 FAST OPENING SWITCH APPROACH FOR HIGH-VOLTAGE VACUUM TUBE PROTECTION APPLICATION
Wolfhard Merz[1], Monty Grimes[2]
[1]DESY, MKK7, Hamburg, Germany, [2]Behlke Power Electronics LLC Billerica, MA, USA

1P2 HYBRID OPTIONS FOR UPGRADE OF THE LHC ENERGY EXTRACTION SWITCHGEAR
Knud Dahlerup-Petersen, Gert-Jan Coelingh, Bozhidar Panev
CERN, TE, Geneva, Switzerland

1P3 SENSITIVITY ANALYSIS FOR THE CLIC DAMPING RING INDUCTIVE ADDER
Janne Holma, Michael Barnes
CERN, TE/ABT/FPS, Geneva, Switzerland

1P4 DESIGN AND TEST OF A MODULAR TRIGGER GENERATOR FOR OVER-VOLTAGE TRIGGERING OF MARX GENERATORS
Martin Sack, Georg Mueller
Karlsruhe Institute of Technology, IHM, Eggenstein-Leopoldshafen, Germany

1P5 PARAMETRIC MEASUREMENTS OF SWITCHINGS LOSSES OF IGBT´S IN PULSED POWER APPLICATIONS
Claus Strowitzki, Matthias Dahlke
MLase AG, Development, Germering, Germany

1P6 A 5KV, 3MHz SOLID-STATE MODULATOR BASED ON THE DSRD SWITCH FOR AN ULTRA-FAST BEAM KICKER
Andrew Benwell[1], Craig Burkhart[1], Anatoly Krasnykh[1], Tao Tang[1], Alexei Kardo-Sysoev[2]
[1]SLAC National Accelerator Laboratory, Electrodynamics, Menlo Park, CA, USA, [2]Ioffe Physical Technical Institute St. Petersburg, Russia

1P7 SOLID STATE FAST TRANSITION KICKER MODULATOR FOR ACCELERATOR APPLICATIONS
Steven Glidden, Howard Sanders, Daniel Warnow
Applied Pulsed Power, Inc. Freeville, NY, USA

1P8 NEXT GENERATION, FAST CURRENT RISE-TIME, LASER PUMPED 5kV SILICON THYRISTOR SWITCH
Steven Glidden, Howard Sanders, Daniel Warnow
Applied Pulsed Power, Inc. Freeville, NY, USA

1P9 GROUND BASED RADAR MODULATOR SOLID-STATE UPGRADE
Sherry Hitchcock[1], Paul Holen[1], Magne Stangenes[1], Mike Garbi[1], Chris Rivers[1], Harry Anamkath[1], Randy Ross[1], Lill Runge[1], Alan Gardner[2], Jurgen Terry[2]
[1]Stangenes Industries, Inc Palo Alto, CA, USA, [2]Raytheon Technical Services El Segundo, CA, USA

1P10 AN OVERVIEW OF CONTEMPORARY SOLID-STATE MODULATOR TOPOLOGIES AND THEIR PRACTICAL PARAMETER SPACE
Sherry Hitchcock, Richard Cassel, Magne Stangenes
Stangenes Industries, Inc Palo Alto, CA, USA

1P11 OPTIMUM TERA HERTZ PULSE AMPLITUDE IN LOW TEMPERATURE GROWN GALLIUM ARSENIDE PHOTOCONDUCTIVE SWITCHES FOR POWER APPLICATIONS
Omar Ibrahim[1], Haitham Al Saif[1], Ashwani Sharma[2], Clay Mayberry[2], P. Kirawanich[3], N. E. Islam[1]
[1]University of Missouri - Columbia, Department of Electrical and Computer Engineering, Columbia, MO, USA, [2]AFRL/RSVE Albuquerque, NM, USA, [3]Mahidol University, Department of Electrical Engineering, Nakhon Pathom, Thailand

1P12 DESIGN AND TESTING OF WIDE BANDGAP CURRENT LIMITING DEVICES

Nathaniel Kinsey[1], Randy Curry[1], Robert Druce[1], Heikki Helava[2]
[1]University of Missouri, Center for Physical and Power Electronics, Columbia, MO, USA, [2]Helava Systems Inc. Deer Park, NY, USA

1P13 DEVELOPMENT OF AN AUTOMATED TEST SETUP FOR LONG TERM SYSTEMATIC EVALUATION OF EXPERIMENTAL GATE-TURN-OFF THYRISTORS IN HIGH ENERGY PULSE APPLICATIONS

Shelby Lacouture[1], Kevin Lawson[1], Stephen Bayne[1], Michael Giesselmann[1], Heather O'Brien[2], Aderinto Ogunniyi[2], Charles Scozzie[2]
[1]Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA, [2]U.S. Army Research Laboratory Adelphi, MD, USA

1P14 FIBER OPTIC SYSTEM FOR 50 MHZ BURST OPERATION OF A SILICON CARBIDE PHOTOCONDUCTIVE SEMICONDUCTOR SWITCH

Daniel Mauch, Cameron Hettler, William Sullivan III, James Dickens
Texas Tech University, Center for Pulsed Power and Electronics, Lubbock, TX, USA

1P15 DV/DT IMMUNITY AND RECOVERY TIME CAPABILITY OF 1.0 CM^2 SILICON CARBIDE SGTO

Aderinto Ogunniyi[1], Heather O'Brien[1], Charles Scozzie[1], William Shaheen[2], Anant Agarwal[3], Lin Cheng[3], Victor Temple[4]
[1]U.S. Army Research Laboratory Adelphi, MD, USA, [2]Berkeley Research Associate Beltsville, MD, USA, [3]Cree, Inc Durham, NC, USA, [4]Silicon Power Corporation Clifton Park, NY, USA

1P16 IGBT GATE DRIVER UPGRADES TO THE HVCM AT THE SNS

Dennis Solley, David Anderson, Gunjan Patel, Mark Wezensky
Oak Ridge National Laboratory, Research Accelerator Division, Oak Ridge, TN, USA

1P17 HVCM TOPOLOGY ENHANCEMENTS TO SUPPORT A POWER UPGRADE REQUIRED BY A SECOND TARGET STATION AT SNS.

Dennis Solley, David Anderson, Gunjan Patel, Mark Wezensky
Oak Ridge National Laboratory, Research Accelerator Division, Oak Ridge, TN, USA

1P18 ULTRA-COMPACT 100 KV SOLID-STATE SWITCH DEVELOPMENT FOR SUB-MICROSECOND DISCHARGES
R.J. Richter-Sand[1], G. Parker[1], M. Kostora[1], S. Heidger[2], M. Domonkos[2], E. Loree[3]
[1]SAIC Albuquerque, NM, USA, [2]AFRL Albuquerque, NM, USA, [3]Loree Engineering Albuquerque, NM, USA

1P19 AN ULTRA FAST HYBRID TOTEM POLE MOSFET/DRIVER MODULE FOR HIGH REPETITION RATE OPERATION
Tao Tang, Craig Burkhart
SLAC National Accelerator Laboratory Menlo Park, CA, USA

1P20 A COMPACT SOLID STATE MODULATOR FOR ACCELERATOR APPLICATIONS
Kongyin Gan, Hepin Hu, Tao Li, Zhiyuan Tan
Institute of the Applied Electronics, China Academy of Engineering Physics Miangyang, China

1P21 LONGEVITY OF HIGH POWER GAAS PCSS AT DC BIAS VOLTAGE
Liu Hongwei, Liu Jinfeng, Yuan Jianqiang, Zhao Yue, Li Hongtao, Xie Weiping
China Academy of Engineering Physics, The institute of Fluid Physics, Mianyang, China

1P22 DESIGN OF REPETITIVE HIGH VOLTAGE RECTANGULAR WAVEFORM PULSE ADDER
Liuxia Li, Kefu Liu, Jian Qiu
Fudan University, Institute of Electric Light Sources, Shanghai, China

1P23 ON-STATE RESISTANCE COMPARISON OF SEMI-INSULATING 6H-SIC PHOTOCONDUCTIVE SEMICONDUCTOR SWITCHES
Jianqiang Yuan, Hongwei Liu, Jinfeng Liu, Hongtao Li, Weiping Xie
China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China

1P24 PRELIMINARY RESEARCHES ON A PLANE-BOARD EXPLOSIVE OPENING SWITCH
Shirong Hao, Yingmin Dai, Minhua Wang, Nanchuan Zhang, Wenhui Han, Youcheng Wu
Hydro-physics Research Institute, Academy of Engineering Physics, Si Chuan Province, Mianyang, China

1P25 INFLUENCE OF HYDROSTATIC PRESSURE AND TEMPERATURE ON THE WATER DIELECTRIC STRENGH AND ON THE DYNAMIC PRESSURE WAVE

Justin Martin[1], Thierry Reess[1], Antoine De Ferron[1], Robert Ruscassie[1], Franck Rey-Bethbeder[2]
[1]University of Pau, SIAME, PAU, France, [2]TOTAL PAU, France

1P26 MODELING OF THE DIELECTRIC RECOVERY OF HOT AIR IN INSULATING NOZZLES

Andreas Kurz, Paul Gregor Nikolic, Daniel Eichhoff, Armin Schnettler
RWTH Aachen University, Institute for High Voltage Technology, Aachen, Germany

1P27 INVESTIGATIONS ON THE DIELECTRIC STRENGTH OF CARBON DIOXIDE AND CARBON DIOXIDE MIXTURES FOR THE APPLICATION IN GAS INSULATED SWITCHGEAR

Paul Gregor Nikolic, Andreas Kurz, Matthias Hoffacker, Armin Schnettler
RWTH Aachen University, Institute for High Voltage Technology, Aachen, Germany

1P28 THE INFLUENCE OF CONCENTRATED HEAT FLUX ON THE DIELECTRIC PROPERTIES OF SYNTHETIC AND NATURAL ESTERS.

Pawel Rozga
Technical University of Lodz, Institute of Electrical Power Engineering, Lodz, Poland

1P29 INVESTIGATION OF AC DISCHARGES WITH WATER DROPLETS ON SOLID DIELECTRIC LAYERS

Alper Kara, Ozcan Kalenderli, Kevork Mardikyan
Istanbul Technical University, Electrical-Electronics Faculty, Istanbul, Turkey

1P30 ON THE MEASUREMENTS OF THE DIELECTRIC CONSTANT AND DISSIPATION FACTOR OF VARIOUS ELASTOMERS

L. Nastrat[1], R.M. Sharkawy[2]
[1]South Valley University, Electrical Power and Machines Engineering, Aswan, Egypt, [2]AASTMT, Electrical and Control Engineering, Cairo, Egypt

1P31 CONDUCTION AND BREAKDOWN IN SYNTHETIC AND NATURAL ESTER FLUIDS

Igor Timoshkin[1], Yi Jing[1], Martin Given[1], Mark Wilson[1], Tao Wang[1], Scott MacGregor[1], Jane Lehr[2]
[1]University of Strathclyde, EEE, Glasgow, United Kingdom, [2]Sandia NL Albuquerque, NM, USA

1P32 PULSED HIGH-VOLTAGE BREAKDOWN OF THIN FILM PARYLENE-C
Juan Elizondo-Decanini, Evan Dudley
Sandia National Laboratories Albuquerque, NM, USA

1P33 HIGH FIELD CONDUCTION IN HEAT RESISTANT POLYMERS AT ELEVATED TEMPERATURE
Janet Ho, T. Richard Jow
US Army Research Laboratory Adelphi, MD, USA

1P34 ELECTRICAL CHARACTERISTICS OF MICROPLASMA DEVICES WITH CARBON-NANOTUBES (CNT) AS THE CATHODE
Huirong Li, Chung-Nan Tsai, Hulya Kirkici
Auburn University, Electrical and Computer Engineering, Auburn, AL, USA

1P35 SURFACE FLASHOVER OF NANODIELECTRICS WITH VARYING ELECTRODE ARCHITECTURES IN PARTIAL VACUUM
Zhenhong Li, Huirong Li, Hulya Kirkici
Auburn University, Electrical and Computer Engineering, Auburn, AL, USA

1P36 TO ELECTRICALLY LOCATE GATE-OXIDE DEFECTS IN DUAL-GATE TECHNOLOGIES FOR VARIOUS HIGH-VOLTAGE DOMAINS
Lieyi Sheng, John Leith, Eddie Glines
ON Semiconductor, Quality, Pocatello, ID, USA

1P37 MECHANISM FOR STIMULATED ACOUSTIC EVENTS ASSOCIATED WITH PARTIAL DISCHARGE
Aleta T. Wilder
The University of Texas, Cockrell School of Engineering, Austin, TX, USA

1P38 HIGH TEMPERATURE CAPACITORS WITH HIGH ENERGY DENSITY
Chen Zou, Nanyan Zhang, Douglas Kushner, Raymond Orchard, Charles Mi, Shihai Zhang
Strategic Polymer Sciences, Inc., Capacitor Division, State College, PA, USA

1P39 EXPERIMENTAL STUDY ON SURFACE FLASHOVER CHARACTERISTICS OF INSULATING METERIAL IN VACUUM
Ling Dai, Fuchang Lin, Xiangyu Shi, Zhiwei Li, Cheng Su
Huazhong University of Science and Technology , State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Wuhan, China

1P40 SPACER FLASHOVER CHARACTERISTICS IN SF_6 UNDER REPETITIVE NANOSECOND-PULSES

Huijuan Ran [1], Tao Wang [1], Jue Wang [1], Chengyan Ren [1], Ping Yan [1], Dongdong Zhang[1]
[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Graduate University of Chinese Academy of Sciences Beijing, China, [3]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drive, Beijing, China

1P41 STUDY ON SURFACE FLASHOVER AND GAS DESORPTION OF SOLID INSULATION MATERIALS IN VACUUM

Chengyan Ren[1], Li Xiao[1], Jue Wang[1], Ping Yan[1], Dongdong Zhang[1], Yaohong Sun[1], Tao Shao[1], Tao Wang[1]
[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drive, Beijing, China

1P42 EXPERIMENTAL STUDY OF NANOSECOND-PULSE DIELECTRIC BARRIER DISCHARGE IN OPEN AIR

Tao Shao[12], Cheng Zhang[1], Yang Yu[1], Ping Yan[1], Edl Schamiloglu[2]
[1]Institute of Electrical Engineering, Chinese Academy of Science Beijing, China, [2]Department of Electrical & Computer Engineering, University of New Mexico Albuquerque, NM, USA

1P43 STUDY ON THE DC SPACE CHARGE CHARACTERISTICS OF THE MULTI-LAYER OIL-PAPER INSULATION MATERIAL USED IN POWER TRANSFORMER

Chao Tang
College of Engineering and Technology, Southwest University, Chongqing, China

1P44 POLLUTION FLASHOVER PERFORMANCE OF INSULATORS WITH SEMICONDUCTIVE SIR

Xiaoxing Wei, Zhidong Jia, Zhenting Sun, Zhicheng Guan
Tsinghua University, Graduate School at Shenzhen, Shenzhen, China

1P45 FLASHOVER PERFORMANCE ALONE POLLUTED SURFACE OF 220KV GLASS INSULATOR STRINGS COVERED WITH NON UNIFORM PRTV COATINGS

Chuyan Zhang[1], Shuwei Wan[1], Bao Feng[2], Zhiyong Wang[2], Liming Wang[1], Zhicheng Guan[1]
[1]Tsinghua University, Graduate School at Shenzhen, Shenzhen, China, [2]Guangdong Power Grid Company, China Southern Power Grid, Zhongshan Power Grid Corporation, Zhongshan, China

1P46 NANOSECOND-PULSE DIFFUSE DISCHARGE AT ATMOSPHERIC PRESSURE

Cheng Zhang[1], Tao Shao[12], Victor F. Tarasenko[3], Hao Ma[1], Dongdong Zhang[1], Ping Yan[1], Edl Schamiloglu[2]
[1]Institute of Electrical Engineering, Chinese Academy of Science Beijing, China, [2]Department of Electrical & Computer Engineering, University of New Mexico Albuquerque, NM, USA, [3]Institute of High Current Electronics, Russian Academy of Sciences Tomsk, Russia

1P47 RESEARCH ON SURFACE FLASHOVER PROPERTIES OF POLYMER MODIFIED BY ION IMPLANTATION

Rong Xu[1], Ping Yan[1], Jue Wang[1], Chengyan Ren[1], Tao Shao[1], Yaohong Sun[1], Dongdong Zhang[1]
[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drives, Beijing, China

1P48 THEORETICAL ANALYSIS OF TREEING PROCESS IN MICRO AND NANO COMPOSITE INSULATORS

Kavitha Dhinesh[1], Sindhu T Krishnan[2], T N Padmanabhan Nambiar[1]
[1]Amrita Vishwa Vidyapeetham, Electrical and Electronics Engineering, Coimbatore, India, [2]National Institute of Technology Calicut, Electrical Engineering, Kozhikode, India

1P49 PERFORMANCE IMPROVEMENT OF GAS INSULATED SUBSTATIONS BY REDUCING THE CONTAMINATED METALLIC PARTICLE MOVEMENT

Parthasarathy P.[1], Amarnath Jinka[2], Singh B.P.[3]
[1]Guru Nanak Engineering College, Department of Electrical and Electronics Engineering, Hyderabad, India, [2]JNTUH College of Engineering, Department of Electrical and Electronics Engineering, Hyderabad, India, [3]St.Martin's Engineering College , Department of Electrical and Electronics Engineering, Hyderabad, India

1P50 IMAGE CHARGE EFFECT ON METALLIC PARTICLE MOVEMENT IN A SINGLE PHASE GAS INSULATED BUSDUCT (GIB) WITH DIELECTRIC COATED ENCLOSURE USING CHARGE SIMULATION METHOD

Narapareddy Ramarao[1], Jinka Amarnath[2]
[1]Nigama Engineering College, Department of Electrical and Electronics Engineering, KARIMNAGAR, India, [2]JNTUH College of Engineering, Department of Electrical and Electronics Engineering, HYDERABAD, India

1P51 ESTIMATION OF LIFT OFF FIELD OFF AND MAXIMUM MOVEMENT PATTERN OF METALLIC CONTAMINANTS IN A 600 KV THREE PHASE COMMMON ENCLOSURE GAS INSULATED BUSDUCT USING MONTE-CARLO TECHNIQUE

P*admavathi Devasetty*[1], *Kamakshaiah Saprams*[2], *Amarnath Jinka*[3], *Mani Kuchibhatla*[4]
[1]*Vignana Bharathi Institute , EEE, Hydeabad, India,* [2]*JNTUH, EEE, Hyderabad, India,* [3]*JNTUH, EEE, Hyderabad, India,* [4]*Vignana Bharathi Institute of Technology, EEE, Hyderabad, India*

1P52 HIGH VOLTAGE POWER AMPLIFIER UTILIZING SERIES-CONNECTED TRANSISTORS TO CONTROL THE OUTPUT

J.F. Tooker, P. Huynh
P.O. Box 85608, General Atomics, San Diego, CA, USA

1P53 A CAPACITIVE LEVEL-SHIFTER FOR HIGH VOLTAGE (2.5KV)

Thomas Andersen, Michael A. E. Andersen, Ole C. Thomsen
Technical University of Denmark, Elektro, Lyngby, Denmark

1P54 BATTERY POWERED HIGH OUTPUT VOLTAGE BI-DIRECTIONAL FLYBACK CONVERTER FOR LINEAR DEAP ACTUATOR

Lina Huang, Prasanth Thummala, Zhe Zhang, Michael Andersen
Technical University of Denmark, Electrical Engineering, Kongens Lyngby, Denmark

1P55 ANALYSIS OF DIELECTRIC ELECTRO ACTIVE POLYMER ACTUATOR AND ITS HIGH VOLTAGE DRIVING CIRCUITS

Prasanth Thummala, Lina Huang, Zhe Zhang, Michael Andersen
Technical University of Denmark, Electrical Engineering, Kongens Lyngby, Denmark

1P56 COMPACT HIGH-VOLTAGE CAPACITOR CHARGER

SungRoc Jang[1], *HongJe Ryoo*[1], *Gennadi Goussev*[1], *SukHo Ahn*[2], *SeungBok Ok*[2]
[1]*Korea Electrotechnology Research Institute , Electric Propulsion Research Center, Changwon, Korea,* [2]*University of Science & Technology , Dept. of Energy Conversion Technology, Daejeon, Korea*

1P57 DEVELOPMENT OF THE INVERTER HVPS FOR MODULATOR SYSTEM AT PAL-XFEL

Soung-soo Park, Sang-hee Kim, Sei-jin Kwan, Byeong-jun Lee, Yong-jo Moon, Heung-su Lee, Heung-sik Kang, Jung-yun Hwang
Pohang Accelerator Laboratory, Accelerator, Pohang, Korea

1P58 NEW 13-SPACE VECTOR DIAGRAM FOR THE THREE-PHASE SIX-SWITCHES VOLTAGE SOURCE INVERTER

Mohamed Saied
Abu Qir Fertilizers & Chemical Industries Company (AFC) Alexandria, Egypt

1P59 AN ADJUSTABLE HVDC POWER SUPPLY USING INTEGRATED HIGH VOLTAGE TRANSFORMER WITH SOME PROTECTIVE & CONTROLLING FEATURES.

Muhammad Muktadir Rahman
American Intl. University- Bangladesh, Electrical and Electronic Engineering, DHAKA, Bangladesh

1P60 A REPETITIVE MICROSECOND-PULSE GENERATOR FOR PLASMA JET APPLICATION

Wenfeng Li[1], Tao Shao[12], Weiming Huang[1], Cheng Zhang[1], Dongdong Zhang[1], Edl Schamiloglu[2]
[1]Institute of Electrical Engineering, Chinese Academy of Science Beijing, China, [2]Department of Electrical & Computer Engineering, University of New Mexico Albuquerque, NM, USA

1P61 HIGH-FREQUENCY HIGH-VOLTAGE DC POWER SUPPLY BASED ON PARALLEL RESONANT TECHNOLOGY AND PHASE SHIFTED CONTROL

Kun Liu[1], Yinghui Gao[1], Ping Yan[2], Dongdong Zhang[1], Yaohong Sun[1]
[1]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China, [2]Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China

1P62 AN EFFICIENT ALL SOLID-STATE NANOSECOND PULSED GENERATOR FOR PULSED DISCHARGES

Junfeng Rao, Kefu Liu, Jian Qiu
Fudan University, Institute of Electric Light Sources, Shanghai, China

1P63 RESEARCH ON THE RELIABLE THERMAL DESIGN OF HIGH FREQUENCY HIGH VOLTAGE CHARGING POWER SUPPLY

Xiaoxia Shi[1], Yinghui Gao[1], Dongdong Zhang[1], Yaohong Sun[1], Ping Yan[1]
[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drive, Beijing, China

1P64 DC POWER SOURCE OF ONLINE MONITORING EQUIPMENTS FOR OVERHEAD CONDUCTORS

Ji Yang
Chongqing Electrical Power Company, Dianjiang Branch, Chongqing, China

1P65 R&D OF 14KV/25A DC HIGH VOLTAGE POWER SUPPLY FOR TETRODE AMPLIFIER

Wei Wang
Nanjing Institute of Electronic Technology, Nanjing, China

1P66 OUTPUT FAULT PROTECTION AND INTERMEDIATE OVERLOAD DIAGNOSIS IN A "REGULATED HIGH VOLTAGE POWER SUPPLY" (80 KV, 130A)

Paresh Patel[1], Sumod C. B.[1], D. P. Thakkar[1], L. N. Gupta[1], V. B. Patel[1], L. K. Bansal[1], K. Qureshi[1], V. Vadher[1], N. P. Singh[2], U .K. Barua[1]
[1]Institute for Plasma Research, Neutral Beam Injector Group, SST-1, Gandhinagar, India, [2]ITER-India, Power Supply Group, ITER, India, Gandhinagar, India

1P67 REDUCED COMMON MODE VOLTAGE IN DIRECT TORQUE CONTROLLED INDUCTION MOTOR DRIVES USING NEAR STATE PWM TECHNIQUE

Vuyyuru Anantha Lakshmi[1], T. Bramhananda Reddy[1], Munagala Surya Kalavathi[2], VC Veera Reddy[3]
[1]G.Pulla Reddy Engineering College, E.E.E , Kurnool, India, [2]J.N.T.U College of Engineering, E.E.E , Hyderabad, India, [3]S.V.U College of Engineering, E.E.E , Tirupathi, India

1P68 A NOVEL HYBRID PWM ALGORITHM FOR REDUCED COMMON MODE VOLTAGE IN DIRECT TORQUE CONTROLLED INDUCTION MOTOR DRIVES

Vuyyuru Anantha Lakshmi[1], T. Bramhananda Reddy[1], Munagala Surya Kalavathi[2], VC Veera Reddy[3]
[1]G.Pulla Reddy Engineering College, E.E.E, Kurnool, India, [2]J.N.T.U College Of Engineering, E.E.E, Kurnool, India, [3]S.V.U College Of Engineering, E.E.E, Kurnool, India

1P69 IMPLEMENTATION OF DIRECT TORQUE CONTROL OF INDUCTION MOTOR WITH SPACE VECTOR MODULATION

Sushama Malaji
JNTU Hyderabad, Electrical & Electronics Engineering, Hyderabad, India

1P70 REDUCTION OF COMPUTATIONAL COMPLEXITY IN "EKF" FOR SENSORLESS INDUCTION MOTOR DRIVE

Kamal Basha[1], B.Ravindhra Nath Reddy[2], Suryakalavathi Muganal[3]
[1]MITS, EEE, Madanapalle, India, [2]JNTUH, EE, Hyderabad, India, [3]JNTUH, Electrical, Hyderabad, India

1P71 PERFORMANCE EVALUATION OF CLASSICAL AND FUZZY LOGIC CONTROL TECHNIQUES FOR BRUSHLESS DC MOTOR DRIVE

M. Surya Kalavathi[1], C. Subba Rami Reddy[2]
[1]JNTU Hyderabad, Electrical and Electronics Engineering, Hyderabad, India, [2]K.S.R.M College of Engineering, Electrical and Electronics Engineering, Kadapa, India

1P72 FAULT DIAGNOSIS AND TESTING OF INDUCTION MACHINE USING BACK PROPAGATION NEURAL NETWORK

Rajeswaran Nagalingam[1], Madhu Tenneti[2], Suryakalavathi Munagala[3]
[1]SNS College of Technology, ECE, Coimbatore, India, [2]Swarnandhra Institute of Engineering and Technology, PRINCIPAL, Narasapur, India, [3]Jawaharlal Nehru Technological University, EEE, Hyderabad, India

Oral Session 3: Solid State Modulators, Components and Switches 2, Power Electronics and Power Supplies

Monday, June 4, 2012 3:30 – 5:30 PM (Sapphire OP)

Session Chair: Werner Hartmann, Siemens AG

15:30 3O1

PERFORMANCE AND OPTIMIZATION OF A 30 KV SILICON CARBIDE PHOTOCONDUCTIVE SEMICONDUCTOR SWITCH FOR PULSED POWER APPLICATIONS

Cameron Hettler, William Sullivan III, James Dickens, Andreas Neuber
Texas Tech University, Department of Electrical and Computer Engineering, Lubbock, TX, USA

15:45 3O2

REDUCING TURN-ON DISSIPATION OF RSD FROM APPLICATION

Lin Liang, Quan Wei, Wu Hong, Xueqing Liu, Yuehui Yu
Huazhong University of Science & Technology, Department of Electronic Science & Technology, Wuhan, China

16:00 3O3

ENHANCED VOLTAGE RECOVERY OF HIGH VOLTAGE SEMICONDUCTOR SWITCHES

J. R. Cooper[1], E. Loree[2], T. Konopelski[3], M. Hope[3], R. D. Curry[4]

[1]Cooper Consulting Services, Inc. San Diego, CA, USA, [2]Loree Engineering Albuquerque, NM, USA, [3]M7 Electro-optics St. Louis, MO, USA, [4]The University of Missouri Columbia, MO, USA

16:15 3O4

THE EFFECTS OF SUB-CONTACT NITROGEN DOPING ON SILICON CARBIDE PHOTOCONDUCTIVE SEMICONDUCTOR SWITCHES

W. W. Sullivan III, C. Hettler, J. Dickens

Texas Tech University, Electrical and Computer Engineering, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA

16:30 3O5

PULSE-TO-PULSE VOLTAGE REPRODUCIBILITY EFFICIENT PREDICTION METHOD FOR HIGH PRECISION KLYSTRON MODULATOR DESIGN

Rudi Soares, Davide Aguglia

CERN - European Organization for Nuclear Research, Technology Dept., Geneva, Switzerland

16:45 3O6

DESIGN OF AN 80KV, 40A RESONANT SWITCHMODE POWER CONVERTER FOR PULSED POWER APPLICATIONS

Paul Nonn, Andrew Seltzman, Jay Anderson

University of Wisconsin, Physics, Madison, WI, USA

17:00 3O7

DESIGN OF A COMPACT, BATTERY-POWERED REP-RATE CHARGER FOR A 88-KJ CAPACITOR BANK FOR EML APPLICATIONS

Brett Huhman, Jesse Neri

US Naval Research Laboratory, Plasma Physics Division, Washington, DC, USA

17:15 3O8

REGULATED HIGH VOLTAGE POWER SOURCES UTILISED FOR FAST DYNAMIC LOADS LIKE NEUTRAL BEAMS, RF HEATING SYSTEMS AND FAST ACCELERATORS

Paresh Patel[1], Sumod C.B.[1], D.P. Thakkar[1], L.N. Gupta[1], V.B. Patel[1], L.K. Bansal[1], K. Qureshi[1], V. Vadher[1], N.P. Singh[2], U.K. Barua[1]

[1]Institute for Plasma Research, Power Supplies and DAC division, Neutral Beam Injector Group, Gandhinagar, India, [2]ITER, India, Power Supply Group, Gandhinagar, India

Oral Session 4: Biological, Medical, and Environmental Applications

Monday, June 4, 2012 3:30 – 5:30 PM (Sapphire KL)

Session Chair: Allen Garner, General Electric

15:30 4O1,2 (invited)

COMPARISON BETWEEN MONOPOLAR AND BIPOLAR µs RANGE PULSED ELECTRIC FIELDS IN ENHANCEMENT OF APPLE JUICE EXTRACTION

Paula S. Brito[1], Hiren Canacsinh[1], João Mendes[1], Luís M. Redondo[1], Marcos T. Pereira[2]

[1]Instituto Superior de Engenharia de Lisboa, ADESPA, Lisbon, Portugal, [2]Lusoforma, Industria e comercio d embalagens Mem Martins, Portugal

16:00 4O3

HIGH VOLTAGE PULSE GENERATOR BASED ON TPI-THYRATRONS FOR PULSED ELECTRIC FIELD MILK PROCESSING

Victor Bochkov[1], Dmitry Bochkov[1], Igor Gnedin[1], Yaroslav Makeev[1], Gleb Vasiliev[2], Sergey Zhdanok[2]

[1]Pulsed Technologies Ltd. Ryazan, Russia, [2]A.V. Luikov Heat & Mass Transfer Institute National Academy of Sciences of Belarus Minsk, Belarus

16:15 4O4

CHARACTERISTICS OF CAVITATION BUBBLES AND SHOCK WAVES GENERATED BY PULSED ELECTRIC DISCHARGES WITH DIFFERENT VOLTAGE AMPLITUDES

Daiki Oshita[1], S.H.R Hosseini[2], Yuta Okuda[1], Yuta Miyamoto[1], Hidenori Akiyama[1,2]

[1]Kumamoto Univercity, Graduate school of science and technology, Kumamoto, Japan, [2]Kumamoto Univercuty, Bioelectrics research center, Kumamoto, Japan

16:30 4O5

PULSED ELECTRIC FIELD INDUCED DIELECTRIC EVOLUTION OF MAMMALIAN CELLS

Jie Zhuang[1,2], Yu Jing[1], Juergen F. Kolb[2]
[1]Frank Reidy Research Center for Bioelectrics, Old Dominion University Norfolk, VA, USA, [2]Leibniz Institute for Plasma Science and Technology Greifswald, Germany

16:45 4O6

INVESTIGATING THE ROLE OF PULSE REPETITION RATE IN MODULATING CELLULAR RESPONSE TO HIGH VOLTAGE, NANOSECOND ELECTRIC PULSES

Stefania Romeo[1], Luigi Zeni[1], Anna Sannino[2], Maria Rosaria Scarfì[2], P. Thomas Vernier[3], Olga Zeni[2]
[1]Second University of Naples, Department of Information Engineering, Aversa, Italy, [2]National Research Council, Institute for Electromagnetic Sensing of Environment - IREA, Napoli, Italy, [3]University of Southern Californiano, Ming Hsieh Department of Electrical Engineering, Los Angeles, CA, USA

17:00 4O7

NON-THERMAL AND TRANSIENT THERL EFFECT OF PULSED ELECTRIC FIELDS ON HELA CELLS

Kazunori Mitsutake[1], Shinya Moriyama[1], Yumi Kishita[1], Sunao Katsuki[2], Hidenori Akiyama[1], Tsuyoshi Shuto[3], Hirofumi Kai[3]
[1]Kumamoto University, Graduate School of Science and Technology, Kumamoto, Japan, [2]Kumamoto University, Bioelectrics Research Center, Kumamoto, Japan, [3]Kumamoto University, Faculty of Life Science,, Kumamoto, Japan

17:15 4O8

ANALYSIS OF CORONA DISCHARGES IN CYLINDRICAL TOPOLOGY AND PARTICLE CHARGING MECHANISMS FOR OPTIMISATION OF PRECIPITATION EFFICIENCY

Igor Timoshkin, Athanasios Mermigkas, Martin Given, Tao Wang, Mark Wilson, Scott MacGregor
University of Strathclyde, EEE, Glasgow, United Kingdom

Tuesday, June 5, 2012

8:30 Conference Updates (Sapphire KLOP)

Plenary 2

Tuesday, June 5, 2012 8:30 – 9:30 AM (Sapphire KLOP)

Session Chair: Craig Burkhart, SLAC National Accelerator Laboratory

THE EVOLUTION OF PULSED MODULATORS FROM THE MARX GENERATOR TO THE SOLID STATE MARX MODULATOR AND BEYOND
Richard Cassel
Stangenes Industries Inc.

Oral Session 5: Plasma Opening and Closing Switches, Lasers and other Radiation Sources

Tuesday, June 5, 2012 10:00 AM – 12:00 PM (Sapphire KL)

Session Chair: Chunqi Jiang, University of Southern California

10:00 5O1,2 (Invited)
DESIGN AND PERFORMANCE OF A HIGH-PRESSURE, FLOWING LIQUID DIELECTRIC PEAKING SWITCH
Rainer Bischoff
French-German Research Institute of Saint-Louis (ISL) Saint-Louis, France

10:30 5O3
TRIGGERED OPERATION OF A CORONA CONTROLLED CASCADE SWITCH AT ELEVATED PRESSURES
Martin J Given[1], Long Li[1], Mark P Wilson[1], Igor V Timoshkin[1], Tao Wang[1], Scott J Macgregor[1], Jane M Lehr[2]
[1]Strathclyde University, Electronic and Electrical Eng, Glasgow, United Kingdom, [2]Sandia National Laboratories Albuquerque, NM, USA

10:45 5O4
LOW JITTER, HIGH VOLTAGE, REPETITIVE LASER TRIGGERED GAS SWITCHES
Frank Hegeler[2], Matthew C. Myers[1], Matthew F. Wolford[1], John D. Sethian[1], Andrew M. Fielding[2], John L. Giuliani[1]
[1]Naval Research Laboratory, Plasma Physics Division, Washington, DC, USA, [2]Commonwealth Technology, Inc. Alexandria, VA, USA

11:00 5O5
DISCUSSION OF BREAKDOWN MECHANISM IN TRIGATRON SPARK GAP
Li Cai, Fuchang Lin, Lee Li, Xiangdong Qi, Chaobing Bao
HuaZhong University of Science and Technology (HUST), State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Wuhan, China

11:15 5O6
PERFORMANCE OF A CORONA-STABILISED SWITCH ACTIVATED BY FAST-RISING TRIGGER PULSES
Mark Wilson[1], Igor Timoshkin[1], Martin Given[1], Scott MacGregor[1], Tao Wang[1], Jane Lehr[2]
[1]University of Strathclyde, Electronic & Electrical Engineering, Glasgow, United Kingdom, [2]Sandia National Laboratories, Exploratory Pulsed Power, Albuquerque, NM, USA

11:30 5O7
EFFECT OF CURRENT PULSE WIDTH ON THE XENON Z-PINCH DISCHARGE PLASMA FOR EXTREME ULTRAVIOLET SOURCE
Peng Lu, Tetsuya Watanabe, Sunao Katsuki, Takashi Sakugawa, Hidenori Akiyama
Kumamoto university, Graduate School of Science and Technology, Kumamoto, Japan

11:45 5O8
X-RAY EMISSION FROM A TABLE-TOP X-PINCH DEVICE
Ran Zhang, Xinlei Zhu, Shen Zhao, Haiyun Luo, Xiaobing Zou, Xinxin Wang
Tsinghua University, Department of Electrical Engineering, Beijing, China

Oral Session 6: High Voltage Testing and Diagnostics

Tuesday, June 5, 2012 10:00 AM – 12:00 PM (Sapphire OP)

Session Chair: Dan Schweickart, US Air Force Wright Patterson

10:00 6O1
EXPERIMENTAL IMPULSE RESPONSE OF GROUNDING SYSTEMS
Malone Castro, Euler Macedo, Edson Costa, Raimundo Freire, Maria Rodrigues, Luana Gomes
Campina Grande Federal University , Electrical Engineering, Campina Grande, Brazil

10:15 6O2

THE EFFECTS OF TEMPERATURE, MOISTURE, TESTING VOLTAGE AND TIME DURATION ON DIELECTRIC RESPONSE OF TRANSFORMER INSULATION OIL

Maziar Shareghi, Toan Phung, Mohammad Salay Naderi, Trevor Blackburn
The University of New South Wales, School of Electrical Engineering and Telecommunications, Sydney, Australia

10:30 6O3

A LASER DIAGNOSTIC FOR DETECTING INTERNAL ELECTRIC FIELD AND MECHANICAL STRAIN IN A RESONANT PIEZOELECTRIC TRANSFORMER

Peter Norgard[1], Scott Kovaleski[1], Greg Dale[2]
[1]University of Missouri, Electrical and Computer Engineering, Columbia, MO, USA, [2]Los Alamos National Laboratory Los Alamos, NM, USA

10:45 6O4

THE EVOLUTION OF IEC 60034-18-41 FROM TECHNICAL SPECIFICATION TO STANDARD: PERSPECTIVES FOR MANUFACTURERS AND END USERS

Gian Carlo Montanari[1], Andrea Cavallini[1], Luca Fornasari[2]
[1]University of Bologna, DEI, Bologna, Italy, [2]Techimp HQ Spa, R&D, Zola Predosa, Italy

11:00 6O5

RADIOMETRIC LOCATION OF ELECTRICAL DISCHARGE ACTIVITY

Martin Judd[1], Rachel Harris[1], Alistair Reid[2]
[1]University of Strathclyde, Department of Electronic and Electrical Engineering, Glasgow, United Kingdom, [2]Glasgow Caledonian University, School of Engineering and Built Environment, Glasgow, United Kingdom

11:15 6O6

A FILTER BANK APPROACH FOR EXTRACTING FEATURES FOR THE CLASSIFICATION OF PARTIAL DISCHARGE SIGNALS IN HIGH VOLTAGE XLPE CABLES

R. Ambikairajah, B. T. Phung, J. Ravishankar, T. R. Blackburn
University of New South Wales, School of Electrical Engineering & Telecommunications, Sydney, Australia

11:30 6O7
GENERATION, MEASUREMENT AND APPARENT CHARGE ESTIMATION OF PARTIAL DISCHARGE SIGNALS
Diego Araújo[1], Euler Macêdo[1], Edson Costa[1], Raimundo Freire[1], José Maurício Neto[1], Waslon Lopes[1], Warner Barros[1], Ian Glover[2]
[1]Federal University of Campina Grande, Electrical Engineering and Informatic Center, Campina Grande, Brazil, [2]University of Strathclyde, Department of Electronic and Electrical Engineering, Glasgow, Scotland

11:45 6O8
APPLICATION HILBERT-HUANG TRANSFORM ON PARTIAL DISCHARGE PATTERN RECOGNITION OF GAS-INSULATED SWITCHGEAR
Hong-Chan Chang[1], Feng-Chang Gu[1], Cheng-Chien Kuo[2]
[1]National Taiwan University of Science and Technology, Electrical Engineering, Taipei, Taiwan, [2]Saint John's University, Electrical Engineering, Taipei, Taiwan

Poster Session 2: Biological, Medical, and Environmental Applications, Plasma Opening and Closing Switches, Lasers and Other Radiation Sources, High Voltage Testing and Design, Compact Pulsed Power, and Power Conditioning and Pulse Shaping

Tuesday, June 5, 2012 1:30 – 3:00 PM (Aqua 306/308)

Session Chair: Hao Chen, Cymer Inc.

2P1 OZONE PRODUCTION BY BARRIER DISCHARGE TYPE CONCENTRIC CYLINDER ELECTRODE USING PULSED DISCHARGE
Fumiaki Fukawa, Yuuya Satoh, Kotaro Rokkaku, Susumu Suzuki, Haruo Itoh
Chiba Institute of Technology, Electrical, Electronics and Computer Engineering, Narashino, Japan

2P2 INVESTIGATION OF NON-HEATING STERILIZATION METHOD OF PACKED FRESH FOODS BY PULSED ELECTRIC FIELD
Takato Higuchi, Yasushi Minamitani
Graduate School of Science and Engineering, Yamagata University, 4-3-16 Jonan Yonezawa, Yamagata 992-8510, Japan

2P3 INVESTIGATION OF QUANTITY OF ACTIVE SPECIES GENERATED BY PULSED STREAMER DISCHARGES IN THE AREA WITH DROPLETS FOR WATER TREATMENT

Takashi Saito, Yasushi Minamitani
Graduate School of Science and Engineering, Yamagata University, 4-3-16 Jonan, Yonezawa, Yamagata 992-8510, Japan

2P4 SPECTROSCOPIC OBSERVATION OF MICRO PLASMA JETS GENERATED BY PULSED POWER

Makoto Inokuchi, Takashi Sakugawa, Hidenori Akiyama
Kumamoto University, Graduate School of Science and Technology, Kumamoto, Japan

2P5 BURST ELECTROMAGNETIC WAVE FOCUSING SYSTEM FOR MEDICAL APPLICATION

Hidetoshi Ishizawa, Masanori Hashimoto, Takashi Tanabe, Hammid Hosseini, Sunao Katsuki, Hidenori Akiyama
Kumamoto University, Guraduate School of Science and Technology, Kumamoto, Japan

2P6 INVESTIGATION OF OZONE PRODUCTION USING NANOSECOND PULSED POWER FOR DENSE OZONE

Ryo Mabuchi, Tatsuya Kageyama, Kenji Teranishi, Naoyuki Shimomura
The University of Tokushima, Department of Electrical and Electronic Engineering, Tokushima, Japan

2P7 DECOMPOSITION OF HUMATE USING PULSED DISCHARGE IN BUBBLES

Yuuya Satoh, Fumiaki Fukawa, Kotaro Rokkaku, Susumu Suzuki, Haruo Itoh
Chiba Institute of Technology, Electrical, Electronics and Computer Engineering, Narashino, Japan

2P8 DEVELOPMENT OF TECHNIQUES APPLYING NANOSECOND PULSE ELECTRIC FIELDS ON SOLID TUMOR

Naoyuki Shimomura, Yoshihiro Magori, Masataka Nagahama, Kenji Teranishi, Yoshihiro Uto, Hitoshi Hori
The University of Tokushima, Institute of Technology and Science, Tokushima, Japan

2P9 APPLICATION TO WATER TREATMENT OF PULSED HIGH-VOLTAGE GENERATOR USING SEMICONDUCTOR OPENING SWITCH

Taichi Sugai[1], Akira Tokuchi[1], Weihua Jiang[1], Yasushi Minamitani[2]
[1]Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan, [2]Yamagata University, Department of Electrical Engineering, Yonezawa, Japan

2P10 PORE DYNAMICS INDUCED BY nsPEF: A COMPARISON BEETWEEN EXPERIMENTAL AND THEORETICAL RESULTS

Patrizia Lamberti[1], Stefania Romeo[3], Maria Rosaria Scarfi[2], Vincenzo Tucci[1], Olga Zeni[2]
[1]University of Salerno, Dept. of Electronic and Computer Engineering, Fisciano (SA), Italy, [2]CNR, Institute for Electromagnetic Sensing of Environment (IREA), Napoli, Italy, [3]Second University of Naples, Dept. of Information Engineering, Aversa (CE), Italy

2P11 NON-INVASIVE PULSED ELECTRIC FIELD FOOD PROCESSING: PROOF-OF0PRONCIPLE EXPERIMENTS

Bucur Novac[1], Fahd Banakhr[1], Ivor Smith[1], Laurent Pecastaing[2], Robert Ruscassie[2], Antoine de Feron[2], Pascal Pignolet[2]
[1]Loughborough University, School of Electronic, Electrical and Systems Engineering, Loughborough, United Kingdom, [2]University de Pau, SIAME, Equipe Genie Electrique, Heliopare Pau, France

2P12 HIGH BLOOD SUGAR CONCENTRATION RESPONSE TO 850 MHz ELECTROMAGNETIC RADIATION USING GTEM CELLS

Nattaphong Boriraksantikul[1], Naz Islam[1], Kiran Bhattacharyya[2], John Viator[2], Phumin Kirawanich[3]
[1]University of Missouri-Columbia, Department of Electrical and Computer Engineering, Columbia, MO, USA, [2]University of Missouri-Columbia, Department of Biological Engineering, Columbia, MO, USA, [3]Mahidol University, Department of Electrical Engineering, Nakhon Pathom, Thailand

2P13 COMPACT PULSER POWER FOR PLATELET AGGREGATION AND GROWTH FACTOR RELEASE

Yeong-Jer Chen, Barbara Hargrave, Shu Xiao, Karl Schoenbach
Old Dominion University, Bioelectrics, Norfolk, VA, USA

2P14 MODELING OF DELIVERY OF SUBNANOSECOND ELECTRIC PULSES INTO BIOLOGICAL TISSUES

Shu Xiao[12], Fei Guo[1], Fei Li[2], Jiang Li[2], Gene Hou[3]
[1]Old Dominion University, Frank Reidy Research Center for Bioelectrics, Norfolk, VA, USA, [2]Old Dominion University, Department of Electrical and Computer Engineering, Norfolk, VA, USA, [3]Old Dominion University, Department of Mechanical and Aerospace Engineering, Norfolk, VA, USA

2P15 CONCRETE SURFACE SCRAPING WITH HIGH VOLTAGE PULSED POWER GENERATOR

Alexander Nashilevskiy[1], Gennady Kanaev[2], Vladimir Kukhta[3], Vladimir Lopatin[1], Gennady Remnev[1], Kensuke Uemura[3], Ivan Egorov[1]
[1]National Research Tomsk Polytechnic University, Institute of High-Technology Physics, Tomsk, Russia, [2]National Research Tomsk Polytechnic University, Institute of Physics and Technology, Tomsk, Russia, [3]Nagata Seiki Co., Ltd. Niigata,Tsubame , Japan

2P16 STUDY OF THE EFFICIENCY OF A PULSED ELECTRIC FIELD SYSTEM FOR LIQUID STERILIZATION: A STATISTICAL APPROACH

Eduardo Araujo, Ivan Lopes
Federal University of Minas Gerais , Electrical Engineering , Belo Horizonte, Brazil

2P17 EXPERIMENTAL STUDY ON CHARGES TRANSPORTATION IN NANOSECOND-PULSED SURFACE DIELECTRIC BARRIER DISCHARGE

Hui Jiang[1], Tao Shao[12], Cheng Zhang[1], Wenfeng Li[1], Ping Yan[1], Edl Schamiloglu[2]
[1]Institute of Electrical Engineering, Chinese Academy of Science Beijing, China, [2]Department of Electrical & Computer Engineering, University of New Mexico Albuquerque, NM, USA

2P18 HYDROPHOBIC IMPROVEMENT OF PMMA SURFACE TREATED BY A NANOSECOND-PULSE PLASMA JET

Zheng Niu[1], Cheng Zhang[1], Tao Shao[12], Jiayu Xu[1], Ping Yan[1], Edl Schamiloglu[2]
[1]Institute of Electrical Engineering, Chinese Academy of Science Beijing, China, [2]Department of Electrical & Computer Engineering, University of New Mexico Albuquerque, NM, USA

2P19 A NOVEL METHOD TO CALCULATE THE SHOCK WAVE PROPAGATION AND OPTIMIZATION OF PRESSURE RELIEF IN SF_6 CIRCUIT BREAKERS

Mahdi Khanali[1], Kaveh Niayesh[2]
[1]University of Waterloo, ECE, Waterloo, ON, Canada, [2]University of Tehran, ECE, Tehran, Iran

2P20 A HIGH CURRENT LOW INDUCTANCE MULTI-GAP MULTI-CHANNEL SWITCH FOR MICROSECOND LINEAR TRANSFORMER DRIVER, WORKING UNDER ATMOSPHERIC DRY AIR INSULATION AT 80KV, 250KA LEVEL

Francis Lassalle, Bernard Roques, Arnaud Loyen, Alain Morell
CEA DAM GRAMAT, F-46500, Gramat, France

2P21 DEVELOPMENT OF A HIGH CURRENT GAS-SWITCH FOR THE MAGNETIC HORN OF THE FAIR P-BAR-EXPERIMENT

Christian Hock, Marcus Iberler, Joachim Jacoby, Gregor Loisch, Andreas Schönlein, Jörg Wiechula
Goethe University , Institute of Applied Science, Frankfurt, Germany

2P22 RESEARCH AND DEVELOPMENT OF DRIVERS FOR PSEUDOSPARK SWITCHES

Victor Bochkov[1], Dmitry Bochkov[1], Yaroslav Makeev[1], Piotr Bak[2], Alexey Panov[2], Chris Pihl [3], Sam Andreason[3]
[1]Pulsed Technologies Ltd. Ryazan, Russia, [2]Budker Institute of Nuclear Physics Novosibirsk, Russia, [3]Pulse Power Solutions LLP Mill Creek, WA, USA

2P23 POWER TRIGGERED VACUUM SWITCH FOR 50 HZ NETWORKS

Vladimir Sidorov, Dmitriy Alferov, Roman Bunin, Dmitriy Evsin, Valeriy Ivanov
Russian Electrotechnical Institute Moscow, Russia

2P24 PARALLEL OPERATION OF FOUR SPARK GAPS IN A PULSER SYSTEM

Hasibur Rahaman[1], Byung-Joon Lee[1], Jong Woo Nam[1], Sang Hoon Nam[1], Jae Woon Ahn[2], Seung Whan Jo[2], Hae Ok Kwon[2]
[1]POSTECH, Pohang Accelerator Laboratory, Pohang, South Korea, [2]Hanwha Corporation, R & D Department, Gumi, South Korea

2P25 CRITICAL CIRCUIT PARAMETERS IN PRODUCING A TOROIDAL AIR PLASMA

Adam Lodes[1], Randy Curry[1], W. Brown[2], M. Schmidt[2]
[1]University of Missouri, Center for Physical and Power Electronics, Columbia, MO, USA, [2]Applied Research Associates Arlington, VA, USA

2P26 SELECTIVELY GROWN CARBON NANOTUBES (CNTs): CHARACTERIZATION AND FIELD EMISSION PROPERTIES

Chung-Nan Tsai, Hulya Kirkici
Auburn University, Electrical and Computer Engineering, Auburn, AL, USA

2P27 NONLINEAR FOWLER-NORDHEIM PLOTS OF CARBON NANOTUBES UNDER VACUUM AND PARTIAL PRESSURES

Rujun Bai, Hulya Kirkici
Auburn University, Electrical and Computer Engineering, Auburn, AL, USA

2P28 AN ATMOSPHERIC PRESSURE GAS SWITCH TRIGGERED BY ARRAY MICROHOLLOW CATHODE DISCHARGE
Yaqing Teng, Kefu Liu, Jian Qiu
Fudan University, Institute of Electric Light Sources,, Shanghai, China

2P29 EXPERIMENTAL RESEARCH OF HIGH STABILITY GAS DISCHARGING SWITCH
Xueling Yao, Jingliang Chen, Yingbiao Shao
Xi'an Jiaotong University, Electrical Engineering, Xi'an, China

2P30 EXPERIMENTAL RESEARCH OF ROD-SHAPED GAS DISCHARGING SWITCH
Xueling Yao, Jingliang Chen, Yuxi Wang
Xi'an Jiaotong University, Electrical Engineering, Xi'an, China

2P31 DEVELOPMENT OF A COLLIDING PLASMA EXPERIMENT AS AN UV/VUV RADIATION SOURCE
Andreas Schönlein, Christian Hock, Marcus Iberler, Joachim Jacoby, Johanna Otto, Tim Rienecker, Christian Teske, Sero Zaehter
Goethe University, Institute of Applied Physics, Frankfurt, Germany

2P32 X-RAY BACKLIGHTING OF SINGLE-WIRE AND MULTI-WIRE Z-PINCH
Xinlei Zhu, Ran Zhang, Haiyun Luo, Shen ,Zhao, Xiaobing Zou, Xinxin Wang
Tsinghua University, Department of Electrical Engineering, Beijing, China

2P33 TIMING OF THE X-RAY BURST FROM PARALLELED X-PINCHES
Shen Zhao, Haiyun Luo, Xinlei Zhu, Ran Zhang, Xiaobing Zou, Xinxin Wang
Tsinghua University, Department of Electrical Engineering, Beijing, China

2P34 EVALUATION OF TAPE-BASED STRESS GRADING COATINGS BY INFRARED THERMOGRAPHY
Fermin P. Espino-Cortes, Tomas I. Asiain Olivares, Pablo Gomez
Instituto Politecnico Nacional, SEPI ESIME Electrical Department , Mexico City, Mexico

2P35 DETECTION AND LOCATION OF ARCING FAULTS IN DISTRIBUTION NETWORKS USING A NON-CONTACT APPROACH

Rachel Harris[1], Philip Moore[2], Martin Judd[1]
[1]University of Strathclyde, High Voltage Technologies Research Group, Glasgow, United Kingdom, [2]Elimpus Ltd Bellshill, United Kingdom

2P36 ASSESSMENT OF DIELECTRIC DEGRADATION BY MEASUREMENT, PROCESSING AND CLASSIFICATION OF PARTIAL DISCHARGES

Euler C. T. Macedo[1], Juan M. Villanueva[2], Diego B. Araujo[2], Edson G. da Costa[2], Raimundo C. S. Freire[2], José M. R. de Souza Neto[2], Ian A. Glover[3]
[1]Para´ıba Federal University, Alternative and Renewable Energy Center, João Pessoa, Brazil, [2]Campina Grande Federal University , Electrical Engineering and Informatics Center, Campina Grande, Brazil, [3]University of Strathclyde, Department of Electronic and Electrical Engineering, Glasgow, Scotland

2P37 ITAIPU´S EXPERIENCE IN THE ACCEPTANCE TESTS FACTORY CARRIED OUT ON HIGH VOLTAGE ELECTRICAL EQUIPMENTS (EMPHASIS ON TRANSFORMERS AND BUSHINGS): RELEVANT FACTS OCCURRED DURING VFT - VERY FAST TRANSIENT TEST, PARTIAL DISCHARGES MEASUREMENT, DISPLACEMENT/DEFORMATION CORE OF POWER TRANSFORMER AND GENERAL CONDITIONS OF HIGH VOLTAGE LABORATORIES

Cláudio Morais[1], Domingues Gonzalez[2], Juliano Silva[3], Luiz Pisa[3]
[1]Itaipu Binacional, Inspection, Foz do Iguaçu, Brazil, [2]Itaipu Binacional, Engineering, Ciudad del Este, Paraguay, [3]Itaipu Binacional, Engineering, Foz do Iguaçu, Brazil

2P38 PERFORMANCE EVALUATION OF A NEW SYSTEM GROUNDING

Maria Alice Rodrigues, Edson Costa, Malone Castro
Federal University of Campina Grande (PB-Brazil), Electrical Engineering Department, Campina Grande, Brazil

2P39 A STUDY ON RELIABILITY BASED ASSESSMENT ALGORITHM FOR HIGH VOLTAGE INDUCTION MOTOR STATOR WINDINGS

Chang Jeong-Ho[1], Lee Heung-Ho[2]
[1]Korea Water Resources Coraporation, Green Technology Research Center, Daejeon, Korea, [2]Chungnam National University, Electrical Engineering, Daejeon, Korea

2P40 DETERMINING ECONOMIC LIFE CYCLE FOR POWER TRANSFORMER BASED ON LIFE CYCLE COST ANALYSIS

Sun Hun Lee[1], An Kyu Lee[1], Jin O Kim[2]
[1]Korea Water Resources Corporation, K-Water Institute, Deajeon, Korea, [2]Hanyang University, Dept. of Electrical Engineering, Seoul, Korea

2P41 REAL-TIME INSULATION STATUS ASSESSMENT OF UNDERGROUND CABLE JOINTS BASED ON STANDARD DEVIATION

RuayNan Wu, ChienKuo Chang
National Taiwan University of Science and Technology, Electrical Engineering, Taipei, Taiwan

2P42 DETERIORATION TREND ON ELECTRICAL TREEING OF UNDERGROUND CABLE INSULATION

RuayNan Wu, ChienKuo Chang
National Taiwan University of Science and Technology, Electrical Engineering, Taipei, Taiwan

2P43 RESEARCH OF NANOSECOND PULSE RESISTIVE DIVIDER

Jingliang Chen, Xueling Yao, Shaolin He, Tianyu Lin
[1]Xi'an Jiaotong University, Electrical Engineering, Xi'an, China

2P44 RESEARCH ON ROGOWSKI COIL FOR MEASURING 10/350MS PULSE CURRENT

Jingliang Chen[1], Xueling Yao[1], Antong Chen[2], Xiaoqing Xu[1]
[1]State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Electrical Engineering, Xi'an, China, [2]Vanderbilt University, Electrical Engineering and Computer Science, Nashville, TN, USA

2P45 RESEARCH OF TRANSFORMER CONDITION ASSESSMENT SYSTEM BASED ON RISK EVALUATION

Lu Guo-jun, Li Gang, Qin Yu, Huang Yan-guang
Guangzhou Power Supply Bureau, Tests and Research Institute, Guangzhou, China

2P46 MEASUREMENT AND ANALYSIS OF INSULATION RESISTANCE OF METALIZED POLYPROPYLENE FILM CAPACITOR UNDER HIGH ELECTRIC FIELD

Hua Li, Zhiwei Li, Fuchang Lin, Yaohong Chen, De Liu
Huazhong University of Science and Technology, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Wuhan, China

2P47 A STUDY OF OVER-VOLTAGE MONITORING DEVICE BASED ON COUPLING CAPACITANCE SENSORS

Qi Wang[1], Chen-guo Yao[1], Yan Mi[1], Jian Wang[2]
[1]Chongqing University, State Key Laboratory of Transmission & Distribution Equipment and Power System Safety and New Technology, Chongqing, China, [2]State Gird Corporation of China, EHV Transmission &Substation Company, Chengdu, China

2P48 THE LIGHTNING PROTECTION TESTS FOR THE RADOME IN Z11 HELICOPTER OF CHINA

Duan Zemin
Hefei Hangtai Electrophysics Co.,Lt Hefei, China

2P49 PROTECTION OF 132 KV TRANSFORMER AGAINST LIGHTNING BY EFFECTIVE PLACEMENT OF SURGE ARRESTER

Radhika Goru[1], Suryakalavathi Mungala[2]
[1]Vnr Vjiet, Eee, Hyderabad, IN, India, [2]Jntuh, Eee, Hyderabad, IN, India

2P50 A COMPACT LOW INDUCTANCE PULSE ENERGY DRIVER SYSTEM FOR PULSE POWER APPLICATIONS

Kum Sang Low[1], Albert Ng[1], Chee Hoong Low[1], Chin Yang Chia[1], Kum Wan Low[1], David Mahadevan[1]
[1]Specscan Sdn. Bhd. Petaling Jaya, Malaysia, [2]University of Malaya, Department of Physics, Kuala Lumpur, Malaysia

2P51 GENERATORS OF HIGH-POWER HIGH-FREQUENCY PULSES BASED ON SEALED-OFF DISCHARGE CHAMBERS WITH HOLLOW CATHODE

Victor Bochkov[1], Vladmir Ushich[1], Alexander Dubinov[2], Inna Kornilova[2], Igor L'vov[2], Sergey Sadovoy[2], Victor Selemir[2], Dmitry Vyalykh[2], Victor Zhdanov[2]
[1]Pulsed Technologies Ltd. Ryazan, Russia, [2]Russian Federal Nuclear Center – All-Russian Research Institute for Experimental Physics Sarov, Russia

2P52 SOLID-STATE PULSED POWER SYSTEM FOR GAS TREATMENT APPLICATIONS

Seung-Bok Ok[1], Hong-Je Ryoo[2], Sung-Roc Jang[2], Gennadi Goussev[2]
[1]University of Science and Technology, Energy Conversion Technology, Daejeon, South Korea, [2]Korea Electrotechnology Research Institute, Electric Propulsion Research Center, Changwon, South Korea

2P53 COMPACT HV HIGH POWER CAPACITOR CHARGER

Willy Debache, Michael Teboul
TECHNIX, Development, CRETEIL, France

2P54 COMPACT 600 KV MULTI-PRIMARY WINDINGS RESONANT TRANSFORMER TO DRIVE AN ELECTROMAGNETIC SOURCE

Romain Pecquois[1], Laurent Pécastaing[1], Marc Rivaletto[1], Antoine de Ferron[1], Jean-Marc Duband[2], Laurent Caramelle[2], René Vézinet[3]
[1]Université de Pau, SIAME EGE, Pau, France, [2]HI PULSE Pont de Pany, France, [3]DAM, CEA GRAMAT, Gramat, France

2P55 HIGH REPETITION RATE PICOSECOND FID PULSE GENERATORS FOR UWB APPLICATIONS

Vladimir Efanov, Mikhail Efanov, Alexander Komashko, Pavel Yarin
FID GmbH Burbach, Germany

2P56 DEVELOPMENT OF A RF BURST PULSE GENERATOR USING A NON-LINEAR TRANSMISSION LINE FOR CANCER TREATMENT

Yuichi Abe, Yasushi Minamitani
Graduate School of Science and Engineering, Yamagata University, Department of Electrical Engineering, 4-3-16 Jonan, Yonezawa, Yamagata 992-0026, Japan

2P57 A 600V, 1KA COMPACT LTD MODULE USING POWER MOSFETS

Pravin Iyengar[1], Tee Chong Lim[1], Stephen Finney[1], Mark Sinclair[2]
[1]University of Strathclyde, Electronic and Electrical Engineering, Glasgow, United Kingdom, [2]Atomic Weapons Establishment, Pulsed Power Group, Aldermaston, United Kingdom

2P58 STATUS OF PROTOGEN THE FIRST INTEGRATION OF GENESIS TECHNOLOGIES

Steven Glover[1], Forest White[2], Gary Pena[1], Peter Foster[3], Larry Schneider[1]
[1]Sandia National Laboratories Albuquerque, NM, USA, [2]SAIC Albuquerque, NM, USA, [3]Defense Nuclear Facilities Safety Board Washington, DC, USA

2P59 STATUS AND EXPERIMENTS WITH THE 1-MA WATER-INSULATED MYKONOS LTD VOLTAGE ADDER

Michael Mazarakis[1], Mark Savage[1], William Fowler[1], William Stygar[1], Scott Roznowski[1], Alexander Kim[2]
[1]Sandia National Laboratories, 1671, Albuquerque, NM, USA, [2]High Current Electronic Institute, Pulsed Power, Tomsk, Russia

2P60 LINEAR TRANSFORMER DRIVER (LTD) WITH SQUARE PULSE OUTPUT

Michael Mazarakis[2], Alexander Kim[1], Alexander Sinebbryukhov[1], S. Volkov[1], S. Kondratief[1], Frederic Bayol[3], Gauthier Demol[3], V. Alexcenco[1], William Stygar[2]
[1]Institute of High Current Electronics, Russian Academy of Sciences ,Pulsed Power, Russian Academy of Sciences, Tomsk 634055, Russia, [2]Sandia National Laboratory, 1671, Albuquerque, NM, USA, [3]3International Technologies for High Pulsed Power, Pulsed Power, Thegra 46500, France

2P61 MODIFICATIONS TO A COMPACT MARX GENERATOR

Kim Morales
NSWC Dahlgren, Q, Dahlgren, VA, USA

2P62 RAPID CAPACITOR CHARGING POWER SUPPLY FOR AN 1800J PFN

Travis Vollmer, Michael Giesselmann
Texas Tech University, Center for Pulsed Power & Power Electronics, Lubbock, TX, USA

2P63 A SHORT-RISE-TIME PULSE GENERATOR USING LASER TRIGGERED SPARK GAP SWITCH

Yuan Li, Jin Li, Xin Li, Debiao Chen, Hui He, Zhi Zhou, Mao Chen, Fuxin Zhou
Institute of Fluid Physics, Department of Accelerator Physics and Applications, Mianyang, China

2P64 DEVELOPMENT OF BRAUNBECK COILS FOR PULSED MAGNETIC FIELD GENERATOR FOR BIOMEDICAL EXPOSURE

Yan Mi, Chun Jiang, Longxiang Zhou, Chenguo Yao, Chengxiang Li
Chongqing University, State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing, China

2P65 THE PERFORMANCE OF A PHOTOCONDUCTIVE SEMICONDUCTOR SWITCH TRIGGERED BY A LASER DIODE

Baojie Wang, Kefu Liu, Liuxia Li, Jian Qiu
Fudan University, Electric Light Sources, Shanghai, China

2P66 AN NS RISETIME GAS SWITCH WITH A MOVABLE ELECTRODE AND A FIXED ELECTRODE

Xiaobing Zou, Kun Huang, Xinxin Wang, Ran Zhang, Xinlei Zhu, Shen Zhao
Tsinghua University, Department of Electrical Engineering, State Key Laboratory of Control and Simulation of Power System and Generation Equipment, Beijing, China

2P67 EXPERIMENTS ON COMPACT PULSE FORMING LINE USING WATER DIELECTRIC HELICAL TRANSMISSION LINE
Pankaj Deb, Surender Sharma, Biswajit Adhikhari, Rohit Shukla, T. Prabaharan, Partha Banerjee, Rishi Verma, Anurag Shyam
Bhabha Atomic Research Centre, Department of Atomic Energy, Vishkapatnam, India

2P68 OPERATIONAL RESULTS OF PULSE SHAPING TECHNIQUES FOR THE HIGH VOLTAGE CONVERTER MODULATOR
Gunjan Patel, David Anderson, Dennis Solley, Mark Wezensky
Oak Ridge National Laboratory, Spallation Neutron Source, Oak Ridge, TN, USA

2P69 DESIGN AND TEST OF INDUCTION VOLTAGE ADDER DERIVED BY 3 BLUMLEIN PFLS
Hoon Heo[1], Oh Ryoung Choi[1], Sang Hoon Nam[1], Jong Won Yang[2], Jong Hyo Won[3]
[1]Pohang Accelerqator Laboratory Pohang, Korea, [2]ADD Daejeon, Korea, [3]LIG Nex1 Seongnam, Korea

2P70 HIGH-VOLTAGE VACUUM ELECTRONIC SWITCHES FOR POWER ELECTRONICS
Vladimir Perevodchikov, Pavel Stalkov, Ivan Trukhachev, Valentina Shapenko, Alexander Scherbakov
Federal State Unitary Enterprise "All-Russian Electrotechnical Institute named after V.I.Lenin" (FGUP VEI) Mosow, Russia

2P71 ELECTRIC EXPLOSIVE OPENING SWITCH TECHNOLOGY
Wu Youcheng, Hao Shirong, Yang Yu, Geng Lidong, Wang Minhua, Zhang Nanchuan
Institute of Fluid Physics, High Pulsed Power Technology and Application, Mianyang, China

Oral Session 7: Compact Pulsed Power Systems

Tuesday, June 5, 2012 3:30 – 5:30 PM (Sapphire OP)

Session Chair: Mike Mazarakis, Sandia National Laboratories

15:30 7O1,2 (invited)
COMMISSIONING AND POWER FLOW STUDIES OF THE 2.5-MEV URSA MINOR LTD
Josh Leckbee[1], Tim Pointon[1], Steve Cordova[1], Bryan Oliver[1], Martial Toury[2], Michel Caron[2]
[1]Sandia National Laboratories, Advanced Radiographic Technologies, Albuquerque, NM, USA, [2]Commissariat a l'Energie Atomique Pontfaverger, Moronvilliers, France

16:00 7O3

SOLID-STATE LTD TECHNOLOGY FOR COMPACT PULSED-POWER DEVELOPMENT

Weihua Jiang, Akira Tokuchi
Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan

16:15 7O4

DEVELOPMENT OF THE 1 MV/100 kA FAST LTD GENERATOR

Lin Chen, Wenkang Zou, Liangji Zhou, Meng Wang, Weiping Xie
Institute of Fluid Physics, Pulsed Power Laboratory, Mianyang, China

16:30 7O5

REPETITIVE TESLA-CHARGED PFL AND BLUMLEIN PULSED POWER GENERATORS

Bucur Novac, Ivor Smith, Peter Senior
Loughborough University, School of Electronic, Electrical and Systems Engineering, Loughborough, United Kingdom

16:45 7O6

SOLID DIELECTRIC TRANSMISSION LINES FOR PULSED POWER

Matt Domonkos[1], Susan Heidger[1], Darwin Brown[2], Tommy Cavazos[2], Alan Devoe[3], Fatih Dogan[4], Don Gale[2], Jim O'Loughlin[1], Jerald Parker[2], Dan Sandoval[2], Kirk Slenes[5], Wayne Sommars[2], Jack Watrous[6]
[1]AFRL Kirtland AFB, NM, USA, [2]SAIC Albuquerque, NM, USA, [3]Presidio Components San Diego, CA, USA, [4]Missouri University of Science and Technology Rolla, MO, USA, [5]TPL, Inc. Albuquerque, NM, USA, [6]NumerEx, LLC Albuquerque, NM, USA

17:00 7O7

A COMPACT, PHASEABLE MW-CLASS HIGH POWER MICROWAVE SYSTEM USING AN INTEGRATED PHOTOCONDUCTIVE SWITCH AND NONLINEAR TRANSMISSION LINE

Cameron Hettler, James-William Bragg, William Sullivan III, Daniel Mauch, James Dickens, Andreas Neuber
Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA

17:15 7O8

COMPACT PICOSECOND PULSE GENERATORS WITH GIGAWATT PEAK POWER

Vladimir Efanov, Mikhail Efanov
FID GmbH Burbach, Germany

Oral Session 8: High Voltage Design and Analysis, Accelerators, Radar, and RF Applications, Reliability and Transient Suppression

Tuesday, June 5, 2012 3:30 – 5:30 PM (Sapphire KL)

Session Chair: Andreas Neuber, Texas Tech University

15:30 8O1
PRELIMINARY NUMERICAL STUDY ON DIELECTRIC MIXTURES UNDER LIGHTNING IMPULSE CONDITIONS
Enis Tuncer, Chris Calebrese, Weijun Yin
GE Global Research, Dielectrics & Electrophysics Lab, Niskayuna, NY, USA

15:45 8O2
EVOLUTION OF PLASMA DENSITY GENERATED BY HIGH POWER MICROWAVES
Sterling Beeson, James Dickens, Andreas Neuber
Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA

16:00 8O3
BEHAVIOR OF HV CABLE AT SHORT CIRCUIT AND RELATED PHENOMENA
Alex Pokryvailo, Cliff Scapellati
Spellman High Voltage Electronics Corp. Hauppauge, NY, USA

16:15 8O4
FLEXIBLE 50-OHM HIGH-VOLTAGE NANOSECOND PULSE GENERATOR
Sophie Kohler, Saad El Amari, Vincent Couderc, Delia Arnaus-Cormos, Philippe Leveque
University of Limoges, XLIM UMR 6172 CNRS, Limoges, France

16:30 8O5
COMPACT 110-MW MODULATOR FOR C-BAND HIGH GRADIENT ACCELERATOR
Takahiro Inagaki[1], Chikara Kondo[1], Katsutoshi Shirasawa[1], Tatsuyuki Sakurai[1], Yuji Otake[1], Tsumoru Shintake[2]
[1]RIKEN, SPring-8 Center, Hyogo, Japan, [2]OIST Okinawa, Japan

16:45 8O6
SOME CONSIDERATIONS TO THE ITER SNUBBERS
Ge Li
Institute of Plasma Physics, Chinese Academy of Sciences Hefei, China

17:00 8O7
A NEW TRIGGERING TECHNOLOGY BASED ON INDUCTIVE TRANSFORMER FOR LTD SWITCHES
Yu Lei, Kefu Liu, Jian Qiu, Zhuolin Tu
Fudan University, Electric Light Sources, Shanghai, China

17:15 8O8
SUSCEPTIBILITY OF ELECTRO-EXPLOSIVE DEVICES TO HIGH PULSED ELECTRIC FIELDS
David Reale, John Mankowski, James Dickens
Texas Tech University, Center for Pulsed Power & Power Electronics, Lubbock, TX, USA

Wednesday, June 6, 2012

8:15 Conference Updates (Sapphire KLOP)

Plenary 3

Wednesday, June 6, 2012 8:30 – 9:30 AM (Sapphire KLOP)

Session Chair: Juergen Kolb, INP Greifswald

PLS-II AS THE LEADING KOREAN ACCELERATOR PROJECT AND ITS ROLE FOR MEGA-SCIENCE ACCELERATOR PROJECTS IN KOREA
Sang Hoon Nam
Pohang Accelerator Laboratory, Pohang, Korea

Oral Session 9: High Current Systems and EM Launchers

Wednesday, June 6, 2012 10:00 AM – 12:00 PM (Sapphire KL)

Session Chair: Brett Huhman, Naval Research Laboratory

10:00 9O1
THE COLLIDING TORI FUSION REACTOR: PROOF OF PRINCIPLE EXPERIMENT
Michael Anderson[1], Vitaly Bystritskii[1], Ivan Isakov[1], Vasily Matvienko[1], Francesco Giammanco[2], Tommaso Del Rosso[2], Michl Binderbauer[1], Lucia Bonelli[3], Hiroshi Gota[1], Frank Jauregui[1], Cheryl Johnson[1], Enrico Paganini[3], Mark Rouillard[1], George Strashnoy[1], William Waggoner[1], Kurt Walters[1]
[1]Tri Alpha Energy, Inc., Pulsed Power Physics, Foothill Ranch, CA, USA, [2]University of Pisa, Physics, Pisa, Italy, [3]ENEL Pisa, Italy

10:15 9O2

ATMOSPHERIC ELECTROMAGNETIC PLASMADYNAMIC SYSTEM FOR INDUSTRIAL APPLICATIONS

Yuri Chivel[1], Victor Bochkov[2], Dmitry Bochkov[2], Yury Gryshin [3], Valery Suslov [3], Vladimir Vermel [4]
[1]MerPhotonics Saint Etienne, France, [2]Pulsed Technologies Ltd. Ryazan, Russia, [3]Pulsed Technologies Ltd. Ryazan, Russia, [4]Bauman University Moscow, Russia, [5]Bauman University Moscow, Russia, [6]TsAGI Moscow, Russia

10:30 9O3

PROGRESS TOWARD A SELF-CONTAINED RAPID CAPACITOR CHARGER FOR A SMALL RAILGUN IN BURST MODE OPERATION AT 3 RPS

Raymond Allen[1], Craig Boyer[2], Jesse Neri[1], Michael Veracka[3], Brett Huhman[1]
[1]Naval Research Laboratory, Plasma Physics Division, Washington, DC, USA, [2]L3 Communications/Titan Group Reston, VA, USA, [3]Naval Research Laboratory, Tactical Electronic Warfare Division, Washington, DC, USA

10:45 9O4

ANALYSIS AND SIMULATION OF ELECTROMAGNETIC COIL LAUNCH SYSTEM

Jiange Zhang[1], Zan Lu[1], James E. Thompson[2], Naz E. Islam[1]
[1]University of Missouri-Columbia, Electrical & Computer Engineering, Columbia, MO, USA, [2]University of Missouri-Columbia, College of engineering, Columbia, MO, USA

11:00 9O5

MEASUREMENT OF SOLID ARMATURE'S IN-BORE VELOCITY USING B-DOT PROBES IN AUGMENTED RAILGUN

Song Shengyi, Cheng Cheng, Guan Yongchao, He Yong
Institute of Fluid Physics, CAEP, Laboratory for Pulsed Power Technology, Mianyang, China

11:15 9O6

EXPERIMENTAL RESULTS FROM THE DESTRUCTIVE TESTING OF MULTI-LAYER PZT FERROELECTRIC GENERATORS

Allen Stults
US Army, AMRDEC, Redstone Arsenal, AL, USA

11:30 9O7
EXPERIMENTAL AND THEORETICAL STUDIES OF A FLYER-PLATE ELECTROMAGNETIC ACCELERATOR
Kaashif Omar[1], Neal Graneau[1], Mark Sinclair[1], Bucur Novac[2], Ivor Smith[2], Peter Senior[2]
[1]AWE, Hydrodynamics Department, Aldermaston, United Kingdom, [2]Loughborough University, School of Electronic, Electrical and Systems Engineering, Loughborough, United Kingdom

11:45 9O8
OPTIMIZATION OF NONUNIFORM TRANSMISSION LINE WITH A GAUSSIAN IMPEDANCE PROFILE BY CIRCUIT SIMULATION
Rui Zhang, Chongyang Mao, Kun Hunag, Xiaobing Zou, Xinxin Wang
Tsinghua University, Department of Electrical Engineering, Beijing , China

Oral Session 10: High Power Microwaves, Radiating Structures, and Electromagnetic Propagation

Wednesday, June 6, 2012 10:00 AM – 12:00 PM (Sapphire OP)

Session Chair: Steve Calico, Lockheed Martin

10:00 10O1
VIRTUAL PROTOTYPING A MEGAWATT CLASS CONVENTIONAL MAGNETRON
Michael Lambrecht, Timothy Fleming, Peter Mardahl
Air Force Research Laboratory, Directed Energy Directorate, Kirtland AFB, NM, USA

10:15 10O2
RECIRCULATING PLANAR MAGNETRON EXPERIMENTS AND SIMULATIONS
Ronald Gilgenbach[1], Matthew Franzi[1], Yue-Ying Lau[1], David Chalenski[1], David Simon[1], Brad Hoff[2], David French[2], Geoff Greening[2], John Luginsland[3]
[1]University of Michigan, Nuclear Eng. & Radiological Sciences , Ann Arbor, MI, USA, [2]Air Force Research Lab, Directed Energy Directorate, Kirtland AFB, NM, USA, [3]Air Force Office of Scientific Research, Plasma & Electroenergetic Physics, Arlington, VA, USA

10:30 10O3

SERIAL ARRANGEMENT OF FERRIMAGNETIC NONLINEAR TRANSMISSION LINES

James-William Bragg, Christopher Simmons, James Dickens, Andreas Neuber
Center for Pulsed Power and Power Electronics, Texas Tech University, Department of Electrical and Computer Engineering, Lubbock, TX, USA

10:45 10O4

GENERATING OSCILLATING PULSES USING NONLINEAR CAPACITIVE TRANSMISSION LINES

Ngee Siang Kuek[1], Ah Choy Liew[1], Edl Schamiloglu[2], Jose Osvaldo Rossi[3]
[1]National University of Singapore, Department of Electrical & Computer Engineering, Singapore, Singapore, [2]University of New Mexico, Department of Electrical & Computer Engineering, Albuquerque, NM, USA, [3]National Institute for Space Research, Associated Plasma Laboratory, Sao Jose dos Campos, Brazil

11:00 10O5

3D FDTD SIMULATION OF A NLTL USING FERROELECTRIC MATERIALS IN RECTANGULAR WAVEGUIDE

Byron Caudle, Michael Baginski, Hulya Kirkici
Auburn University, Electrical and Computer Engineering, Auburn, AL, USA

11:15 10O6

GAS EVOLUTION OF NICKEL, STAINLESS STEEL 316, AND TITANIUM ANODES IN VACUUM SEALED TUBES

Jonathan Parson, James Dickens, Andreas Neuber, John Walter, Magne Kristiansen
Texas Tech University, Electrical and Computer Engineering, Lubbock, TX, USA

11:30 10O7

THREE-DIMENSIONAL PARTICLE-IN-CELL SIMULATION OF SUB-TERAHERTZ HIGH-POWER GYROTRON

Koyu Ito, Weihua Jiang
Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan

11:45 10O8

A DIELECTRIC RESONATOR ANTENNA BASED ON HIGH DIELECTRIC CONSTANT COMPOSITES FOR HIGH POWER, UHF ANTENNA APPLICATIONS

Kevin O'Connor, Randy Curry
University of Missouri-Columbia, Center for Physical and Power Electronics, Columbia, MO, USA

Poster Session 3: High Voltage Design and Analysis, Accelerators, Radars, and RF Applications, Reliability and Transient Suppression, High Current Systems and EM Launchers, High Power Microwaves, Radiating Structures, and Electromagnetic Propagation, Analytical Methods, Modeling, and Simulation, Prime Power and Power Systems, Energy Storage Devices and Components, High Energy Systems

Wednesday, June 6, 2012 1:30 – 3:00 PM (Aqua 306/308)

Session Chair: David Wetz, University of Texas, Arlington

3P1 PULSED VOLTAGE DRIVEN ELECTROSPRAY
Daichi Obata[1], Asuki Nakamura[1], Sunao Katsuki[2], Hidenori Akiyama[1]
[1]Kumamoto University, Graduate School of Science and Technology, Kumamoto, Japan, [2]Kumamoto University, Bioelectrics Research Center, Kumamoto, Japan

3P2 OPTIMIZATION OF CORONA RING DESIGN FOR COMPOSITE INSULATOR STRINGS USING KRIGING METAMODELING AND DIRECT ALGORITHMS
Hanyu Ye, Markus Clemens
Universität Wuppertal, Chair of Electromagnetic Theory, Wuppertal, Germany

3P3 DEVELOPMENT OF SMALL DIMENSION HIGH-VOLTAGE ELECTRONIC VACUUM DEVICES
Victor Bochkov[1], Dmitry Bochkov[1], Vladimir Nicolaev[1], Vasiliy Teryoshin[1], Piotr Panov[1], Alexandr Batrakov[2], Konstantin Karlik[2], Grigory Ozur[2], Dmitry Proskurovsky[2]
[1]Pulsed Technologies Ltd Ryazan, Russia, [2]Institute of High Current Electronics RAS Tomsk, Russia

3P4 OPTIMIZATION OF A CATHODE CONFIGURATION IN GAS INSULATED SWITCHGEAR WITH A PERMITTIVITY GRADED INSULATOR
Chi-Wuk Gu, Jae-Ho Rhee, Heung-Jin Ju, Kwang-Cheol Ko
Hanyang University, Dept. of Electrical Engineering, Seoul, South Korea

3P5 INTERRUPTING CAPABILITY OF VACUUM INTERRUPTER BY VARIOUS PARAMETERS
Chi-Wuk Gu[1], Kun-A Lee[1], Heung-Jin Ju[1], Kwang-Cheol Ko[1], Cheol-Kyou Lee[2]
[1]Hanyang University, Dept. of Electrical Engineering, Seoul, South Korea, [2]Vitzrotech Co., Ltd. Ansan, South Korea

3P6 EFFECTS OF CAPACITIVE VERSUS RESISTIVE LOADING ON HIGH TRANSFORMATION RATIO PIEZOELECTRIC TRANSFORMERS FOR MODULAR DESIGN CONSIDERATIONS

James VanGordon[1], Brady Gall[1], Peter Norgard[1], Scott Kovaleski[1], Emily Baxter[1], Baek Kim[1], Jae Kwon[1], Gregory Dale[2]

[1]University of Missouri, Electrical and Computer Engineering, Columbia, MO, USA, [2]Los Alamos National Laboratory, Accelerator Operations and Technology - High Power Electrodynamics, Los Alamos, NM, USA

3P7 DEVELOPMENT OF 100kV BIPOLAR CAPACITOR CHARGING SYSTEM

Yinghui Gao[1], Kun Liu[1], Yaohong Sun[1], Dongdong Zhang[1], Ping Yan[1]

[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drive, Beijing, China

3P8 DESIGN AND TEST OF 2250KV SEMI-FLEXIBLE SF_6 INSULATED HIGH VOLTAGE IMPULSE TRANSMISSION LINE

Kun Wang[1], Xupeng Song[2], Jingbo Zhang[2], Gensheng Lu[2], Kefu Liu[1]

[1]Fudan University, Institute of Electric Light Sources, Shanghai, China, [2]China Electronic Technology Group Corporation , No.23 Research Institute, Shanghai, China

3P9 FDTD ANALYSIS OF LIGHTNING TRANSIENT ELECTROMAGNETIC FIELD ON THE TRANSMISSION LINE

Hao Wu, Chen-guo Yao, Qian-bo Xiao, Yan Mi, Chen-xiang Li, Jian Li

State Key Laboratory of Power Transmission Equipment & System Security and New technology, College of Electric Engineering Chongqing University, Chongqing, China

3P10 NUMERICAL MODELING OF UHV LABORATORY TO EVALUATE THE RATING OF HV EQUIPMENT

Adusumilli Pradeep[1], Shreeharsh Mallick[2], H S Jain[1]

[1]Bharat Heavy Electricals Limited, High Voltage Engineering, Hyderabad, India, [2]University of Florida, Lightning Research Group, Gainesvile, FL, USA

3P11 STUDY OF LIGHTNING INDUCED OUTAGE IMPROVEMENT FOR A 220KV TRANSMISSION LINE.

Goru Radhika[1], Mungala Suryakalavathi[2]

[1]VNR VJIET, EEE, Hyderabad, India, [2]JNTU, EEE, Hyderabad, India

3P12 ELECTRIC FIELD STRESS ANALYSIS ON THE SURFACE OF A COMPOSITE CONE TYPE SPACER IN GAS INSULATED SUBSTATION FOR A FIXED SPHERICAL AND A WIRE LIKE PARTICLE

Duvvada Deepak Chowdary[1], Jinka Amarnath[2]
[1]Dr.L.B.College of Engineering For Women, Electrical & Electronics Engineering, Visakhapatnam, India, [2]Jawaharlal Nehru Technological University, Electrical & Electronics Engineering, Hyderabad, India

3P13 ANALYSIS TO CORE SNUBBER BASED ON DELTAMAX

Fei Xie[12], Hongwen Yuan[1], Ge Li[1], Desheng Cheng[1], Jinling Chen[1], Qiangjian Chen[1]
[1]Chinese Academy of Sciences, Institute of Plasma Physics, Anhui, China, [2]Shunde Polytechnic, Department of Electronic and Information Engineering, Shunde, China

3P14 MHz-LEVEL REPETITIVE MODULATORS FOR ACCELERATOR APPLICATIONS

Weihua Jiang, Akira Tokuchi
Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, Japan

3P15 DEVELOPMENT OF HIGH PERFORMANCE ELECTRON BEAM SWITCHING SYSTEM FOR SWISS FREE ELECTRON LASER AT PAUL SCHERRER INSTITUTE

Martin Paraliev, Christopher Gough
Paul Scherrer Institute, Large research facilities , Villigen PSI, Switzerland

3P16 A STABILITY OF LCLS LINAC MODULATORS

Anatoly Krasnykh, Franz-Josef Decker, Ben Morris, Minh Nguyen
SLAC National Accelerator Lab Menlo Park, CA, USA

3P17 SNS LEBT CHOPPER PULSE WIDTH LIMITATION

Vladimir Peplov, Robert Saethre
ORNL Oak Ridge, TN, USA

3P18 KLYSTRON MODULATOR DESIGN FOR THE LOS ALAMOS NEUTRON SCIENCE CENTER ACCELERATOR

William Reass, David Baca, Daniel Rees, Edward Partridge
Los Alamos National Laboratory, AOT-RFE, Los Alamos, NM, USA

3P19 INJECTOR SYSTEM FOR THE POLISH SYNCHROTRON RADIATION FACILITY 'SOLARIS'
Piotr Tracz[1], C.J. Bocchetta[1], P. Goryl[1], L. Walczak[1], A. Wawrzyniak[1], M. Eriksson[2], D. Kumbaro[2], L. Malmgren[2], J. Mooder[2], S. Thorin[2]
[1]The Jagiellonian University, SOLARIS, Krakow, Poland,
[2]The Lund University, MAX-lab, Lund, Sweden

3P20 A HIGH-REPETITION RATE PULSED ELECTRON ACCELERATOR
Gennady Remnev, Ivan Egorov, Marat Kaikanov, Evgeny Lukonin, Victor Esipov, Artem Poloskov
Tomsk Polytechnic University, High Technology Physics Institute, Tomsk, Russia

3P21 30 KV COAXIAL PULSED PLASMA ACCELERATOR FOR DIAGNOSTICS AND APPLICATIONS OF MATERIAL PROCESSING
Anuar Zhukeshov, Assem Amrenova, Asylgul Gabdullina
Kazakh National University, Physics Faculty, Almaty, Kazakhstan

3P22 SNS LEBT CHOPPER FAILURE MODES AND IMPROVEMENTS
Robert Saethre, Vladimir Peplov
Oak Ridge National Laboratory, Research Accelerators Division, Oak Ridge, TN, USA

3P23 EMI NOISE REDUCTION IN INTEGRATED 6 KHZ SOLID STATE PULSED POWER SYSTEM
Hao Chen, Byron Yakimow, Paul Melcher
Cymer Inc San Diego, CA, USA

3P24 METHOD OF CURRENT TRANSFORMER METROLOGICAL PROPERTIES ESTIMATION FOR TRANSFORMATION OF DISTORTED SIGNALS
Michal Kaczmarek
Technical Univeristy of Lodz, Instytute of Electrical Power Engineering, Lodz, Poland

3P25 ANALYSIS OF THE INFLUENCE OF THE LEVEL OF SIGNAL DISTORTION ON CURRENT ERROR AND PHASE DISPLACEMENT OF INDUCTIVE CURRENT TRANSFORMERS
Kaczmarek Michal
Technical Univeristy of Lodz, Instytute of Electrical Power Engineering, Lodz, Poland

3P26 AN EMPIRICAL STUDY ON EVALUATION METHOD FOR AGING MEDIUM LARGE POWER TRANSFORMER

Chang Jeong-Ho[1], Lee Sung-Hun[1], Oh Seung-Chan[2], Lee Hyo-Sung[3], Lee Heung-Ho[3]
[1]Korea Water Resources Corporation, Daejeon, Korea, [2]Corporation Korea Atomic Energy Research Institute, , Daejeon, Korea, [3]Chungnam National University Daejeon, Korea

3P27 INVESTIGATIONS INTO NON-DESTRUCTIVE MODIFICATION OF CAPACITOR BANK OUTPUT INDUCTANCE AT THE NRL MATERIALS TESTING FACILITY

Brett Huhman[1], Richard Cairns[2], Scott Douglass[2], Jess Neri[1]
[1]US Naval Research Laboratory, Plasma Physics Division, Washington, DC, USA, [2]Soterra Defense, Inc, Crofton, MD, USA

3P28 SHOCK COMPRESSION OF GAS-IMPREGNATED SOLIDS

David Rice, Scott Kovaleski, John Gahl
University of Missouri, Electrical Engineering, Columbia, MO, USA

3P29 EXPERIMENTAL RESULTS OF EXTREMELY COMPACT FERROELECTRIC GENERATOR BASED PULSED SYSTEMS

Allen Stults[1], Sergey Shkuratov[2], Jason Baird[2]
[1]US Army, AMRDEC, Redstone Arsenal, AL, USA, [2]Loki Rolla, MO, USA

3P30 ANALYSIS TO THE EAST NBI TRANSMISSION LINES

Cheng Desheng, Li Ge, Cao Lei, Xie Fei
[1]Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, China

3P31 AN ACTIVE JITTER DAMPER OF SWITCHES OF LTD BASED ON TRANSFORMER COUPLING EFFECT

Yue Zhao, Liangji Zhou, Lin Chen, Meng Wang
China Academy of Engineering Physics, Institute of Fluid Physics, Mianyang, China

3P32 COMPACT ELECTRIC POWER SYSTEM FOR TOKAMAK

Ge Li
Institute of Plasma physics, Chinese Academy of Sciences Hefei, China

3P33 SOME PROBLEMS OF SLIDING CONTACT IN RAILGUN ("VELOCITY SKIN-EFFECT" AND HALL-EFFECT IN MICRO-PLASMA)

Volodymyr Chemerys
National Aviation University of Ukraine, Theoretical Physics, Kyiv, Ukrenia

3P34 THE PRINCIPLE OF MAGNETIC FLUX COMPRESSION IN THE PULSED ELECTROMECHANICAL GENERATORS AND ITS IMPLEMENTATION IN DESIGN

Volodymyr Chemerys
National Aviation University of Ukraine, Theoretical Physics, Kyiv, Ukrenia

3P35 EFFECTS OF ELECTROMAGNETIC PULSES ON A SYSTEM WITH MULTIPLE LAYERS OF DIFFERENT MATERIALS

Antonio Upia[1], Daniel Muffoletto[1], Mark Muffoletto[1], Brett Bowman[1], Kevin Burke[1], Jennifer Zirnheld[1], Harry Moore[2], Hardev Singh[2], Thomas DeAngelis[3]
[1]The University at Buffalo, Energy Systems Institute, Buffalo, NY, USA, [2]US Army Military, ARDEC, Picatinny Arsenal, NJ, USA, [3]SciTech Services, Inc. Havre de Grace, MD, USA

3P36 FREQUENCY AGILITY OF A FERRITE-LOADED, NONLINEAR TRANSMISSION LINE

Christopher Simmons, James-William Bragg, James Dickens
Texas Tech University, Department of Electrical And Computer Engineering, Lubbock, TX, USA

3P37 PROSPECTS OF BUILDING CAPACITIVE NONLINEAR LINES USING CERAMIC PZT FOR HIGH-FREQUENCY OPERATION

Jose Osvaldo Rossi[1], Fernanda Sayuri Yamasaki[1], Lauro Paulo da Silva Neto[1], Edl Schamiloglu[2]
[1]INPE, Associated Plasma Laboratory, Sao Jose dos Campos, Brazil, [2]UNM, ECE Dept, Albuquerque, NM, USA

3P38 X-BAND RELATIVISTIC BACKWARD WAVE OSCILLATOR WITH TWO-SPIRAL CORRUGATED BRAGG REFLECTOR

A. Elfrgani, M. Fuks, S. Prasad, E. Schamiloglu
University of New Mexico, Electrical and Computer Engineering, Albuquerque, NM, USA

3P39 ELECTRIC CIRCUIT MODELING METHODS OF ELECTROMAGNETIC SHOCK WAVE IN AIR FOR HIGH POWER MICROWAVE PROPAGATION

Kun-A Lee, Jong-Yoon Park, Kwang-Cheol Ko
Hanyang University, Dept. of Electrical Engineering, Seoul, South Korea

3P40 OPEN TRANSVERSE ELECTROMAGNETIC (TEM) CELL AS APPLICATOR OF HIGH-INTENSITY NS PEFs AND ELECTRO-OPTIC MEASUREMENTS

Sophie Kohler[1], Thao Vu[1], Thomas Vernier[2], Delia Arnaud-Cormos[1], Philippe Leveque[1]
[1]University of Limoges, XLIM UMR 6172 CNRS, Limoges, France, [2]Information Sciences Institute, MOSIS, California, CA, USA

3P41 A PIEZOELECTRICALLY DRIVEN ION DIODE NEUTRON SOURCE FOR ACTIVE INTERROGATION

Peter Norgard, Scott Kovaleski, James VanGordon, Emily Baxter, Brady Gall, Jae Kwon, Baek Kim
University of Missouri, Electrical and Computer Engineering, Columbia, MO, USA

3P42 CARRIER DYNAMICS AND ELECTRON ENERGY DISTRIBUTION FUNCTION OF A TRANSBERSE VIRCATOR

Shen Shou Max Chung[1], Yien Chieh Huang[2], Ci Ling Pan[1]
[1]National Tsing Hua University, Department of Physics, Hsinchu, Taiwan, [2]National Tsing Hua University, Institue of Photonics Technologies, Hsinchu, Taiwan

3P43 SHAPES OF GRATINGS AND BEAM ENERGY RELATIONSHIP IN A 100 MEV SMITH-PURCELL DEVICE

Shen Shou Max Chung[1], Yien Chieh Huang[2], Ci Ling Pan[1]
[1]National Tsing Hua University, Department of Physics, Hsinchu, Taiwan, [2]National Tsing Hua University, Institue of Photonics Technologies, Hsinchu, Taiwan

3P44 INNOVATIVE SOLUTIONS TO HPM TESTING

Russell Blundell
White Sands Missile Range, Survivability Vulnerability & Assessment Directorate, White Sands, NM, USA

3P45 INVESTIGATIONS INTO THE POTENTIAL FOR SURFACE FLASHOVER ON METAMATERIAL STRUCTURES IN AN HPM ENVIRONMENT

Patrick Kelly, John Mankowski, Stephen Bayne
Center for Pulsed Power and Power Electronics, Electrical and Computer Engineering, Lubbock, TX, USA

3P46 COMPARISON OF CSI COATED CARBON VELVET AND ALUMINUM CATHODES OPERATED AT CURRENT DENSITY ON THE ORDER OF 300A/CM^2

Curtis Lynn, John Walter, Andreas Neuber, James Dickens, Magne Kristiansen
Texas Tech University, Electrical Engineering, Lubbock, TX, USA

3P47 AN ARBITRARY-GEOMETRY PULSED RF SOURCE ARRAY SYSTEM BASED ON GPS TIMING
John Walter, Christopher Lutrick, Scott Clark, Shad Holt, David Reale, Patrick Kelly, James Dickens, John Mankowski
Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA

3P48 STOCHASTIC MODEL OF METAL OXIDE SURGE ARRESTERS BASED ON SYSTEM IDENTIFICATION
Pablo Bezerra Vilar, George Rossany Soares Lira, Tarso Vilela Ferreira, Edson Guedes da Costa
Federal University of Campina Grande, Department of Electric Engineering , Campina Grande, Brazil

3P49 PSPICE MODELING OF SILICON CARBIDE MOSFETS AND DEVICE PARAMETER EXTRACTION
Argenis Bilbao, Stephen Bayne
Texas Tech University, Electrical and Computer Engineering, Lubbock, TX, USA

3P50 PULSED POWER SWITCH MODELING FOR BROAD OPERATION
Steven Glover[1], Peter Foster[2], Dillon McDaniel[1], Forest White[3], Gary Pena[1], Larry Schneider[1]
[1]Sandia National Laboratories Albuquerque, NM, USA, [2]Defense Nuclear Facilities Safety Board Washington, DC, USA, [3]SAIC Albuquerque, NM, USA

3P51 ANALYTIC SOURCES USING POLYNOMIAL SHAPED PARTICLES IN THE LTP METHOD
Robert Jackson[1], John Verboncoeur[2]
[1]Calabazas Creek Research, Inc. San Mateo, CA, USA, [2]Michigan State University, Electrical and Computer Engineering, East Lansing, MI, USA

3P52 ANALYSIS OF CURRENT-DIVIDING POST-HOLE CONVOLUTES FOR SIX LINES DRIVING THREE TRIODES ON SATURN
E. A. Madrid[1], D. V. Rose[1], C. L. Miller[1], V. Harper-Slaboszewicz[2]
[1]Voss Scientific Albuquerque, NM, USA, [2]Sandia National Laboratories, Albuquerque, NM, USA

3P53 REPETITIVE PULSE TESTING AND MODELING OF A HIGH POWER CERAMIC RESISTOR
Daniel Muffoletto, Kevin Burke, Jennifer Zirnheld
University at Buffalo, Energy Systems Institute, Buffalo, NY, USA

3P54 DYNAMIC BIFURCATION ANALYSIS OF ADVANCED AIRCRAFT ELECTRIC POWER SYSTEM (AAEPS) WITH NONLINEAR LOADING

Hadi Ebrahimi, Hassan El-Kishky
The University of Texas at Tyler, Electrical Engineering, Tyler, TX, USA

3P55 A NOVEL GENERALIZED AVERAGING TECHNIQUE FOR THE MODELING OF CONTROLLERS IN AN AAEPS MULTI-CONVERTER SYSTEM

Hadi Ebrahimi, Hassan El-Kishky
The University of Texas at Tyler, Electrical Engineering, Tyler, TX, USA

3P56 AN EMI MODEL OF HIGH FREQUENCY AND HIGH VOLTAGE CAPACITOR CHARGING POWER SUPPLY CONSIDERING TRANSIENT SWITCHING INTERFERENCE BASED ON SABER

Xiao Han[3], Yinghui Gao[1], Dongdong Zhang[2], Yaohong Sun[1], Ping Yan[2]
[1]Chinese Academy of Sciences, Institute of Electrical Engineering, Beijing, China, [2]Chinese Academy of Sciences, Key Laboratory of Power Electronics and Electric Drive, Beijing, China, [3]Chinese Academy of Sciences, Graduate School, Beijing, China

3P57 MODELING AND SIMULATION OF MULTIPACTOR DISCHARGE ON DIELECTRIC WINDOW UNDER HPM IN VACUUM

Guan-Jun Zhang, Bai-Peng Song, Xi-Wei Hao
Xi'an Jiaotong University, School of Electrical Engineering, Xi'ab, China

3P58 SIMULATION OF PULSED ELECTROMAGNETIC PROCESSES IN MULTI-LAYER PACKAGE OF INDUCTOR CORE OF INDUCTION ACCELERATORS OF ELECTRONS

Volodymyr Chemerys, Iren Borodiy
National Aviation University of Ukraine, Theoretical Physics, Kyiv, Ukrenia

3P59 HIGH VOLTAGE DIRECT CURRENT TRANSMISSION – A REVIEW, PART I

Mohamed Saied
Abu Qir Fertilizers & Chemical Industries Company (AFC) Alexandria, Egypt

3P60 HIGH VOLTAGE DIRECT CURRENT TRANSMISSION – A REVIEW, PART II – CONVERTER TECHNOLOGIES

Mohamed Saied
Abu Qir Fertilizers & Chemical Industries Company (AFC) Alexandria, Egypt

3P61 CPF, TDS BASED VOLTAGE STABILITY ANALYSIS USING SERIES, SHUNT AND SERIES–SHUNT FACTS CONTROLLERS FOR GENERATOR OUTAGE CONTINGENCY

Surya Kalavathi[1], Naveen Kumar[2]
[1]JNTUH, EEE, Hyderabad, India, [2]VNRVJIET, EEE, Hyderabad, India

3P62 OPTIMAL LOCATION AND PARAMETER SETTING OF UPFC FOR POWER SYSTEM VOLTAGE STABILITY ENHANCEMENT USING DIFFERENTIAL EVOLUTION(DE) ALGORITHM

Suryakalavathi Munagala[1], Balachennaiah Pagidi[2]
[1]JNTUH, EEE Department, Hyderabad, India, [2]A.I.T.S, EEE Department, Rajampet, India

3P63 OPTIMAL POWER FLOW ANALYSIS OF ANDHRA PRADESH STATE GRID IN DEREGULATED ENVIRONMENT

Sunilkumar Chava[1], Amarnath Jinka[2], Subramanyamps[3]
[1]CVR COLLEGE OF ENGINEERING, EEE, HYDERABAD, India, [2]JNTUH, EEE, HYDERABAD, India, [3]VBIT, EEE, HYDERABAD, India

3P64 ROLE OF FACTS DEVICES ON ZONAL CONGESTION MANAGEMENT ENSURING VOLTAGE STABILITY UNDER CONTINGENCY

Jami Sridevi[1], Jinka Amarnath[2], Gade Govinda Rao[3]
[1]Gokaraju Rangaraju Institute of Engineering And Technology, Electrical and Electronics Engineering, Hyderabad, India, [2]Jawaharlal Nehru Technological University, Electrical and Electronics Engineering, Hyderabad, India, [3]Gayatri Vidya Parishad College of Engineering, Electrical and Electronics Engineering, Hyderabad, India

3P65 INFLUENCE OF HEAT TREATMENT ON PROPERTIES OF HIGH-CURRENT METALLIZED FILM CAPACITORS

Kong Zhonghua, Xu Bei, Tong Chunya, Lou Zaifei
School of Electronic and Information Engineering, Ningbo University of Technology, Ningbo, China

3P66 DEVELOPMENT AND PERFORMANCE OF HIGH TEMPERATURE POWER CONVERSION CAPACITORS

J. R. MacDonald, J. B. Ennis, M. A. Schneider
General Atomics Electronic Systems, Inc., Capacitor Research and Development, San Diego, CA, USA

3P67 DROOP RELATED LIFETIME REDUCTION OF POLYPROPYLENE FILM CAPACITOR IN A PULSED POWER APPLICATION
Tao Tang[1], Mark Kemp[1], Craig Burkhart[1]
[1]SLAC National Acclerator Laboratory Menlo Park, CA, USA, [2]SLAC National Acclerator Laboratory, RF Accelerator Research and Enegineering, Menlo Park, CA, USA

3P68 LIFETIME TESTING OF AIRIX ACCELERATING UNITS
Alain Georges, Hervé Dzitko, Marc Mouillet, Rémi Nicolas, Denis Reynaud
CEA, DIF, ARPAJON, France

3P69 A MOBILE HIGH-POWER, HIGH-ENERGY PULSED-POWER SYSTEM
Bucur Novac[1], Michael Parker[1], Ivor Smith[1], Peter Senior[1], Gerasimos Louverdis[2]
[1]Loughborough University, School of Electronic, Electrical and Systems Engineering, Loughborough, United Kingdom, [2]Dstl, Security Sciences Department, Sevenoaks, United Kingdom

3P70 CAPACITOR DROOP COMPENSATION WITH SOFT SWITCHING FOR HIGH VOLTAGE CONVERTER MODULATOR
Michael Bland[1], William Reass[1], Alex Scheinker[1], Ji Chao[2], Pericle Zanchetta[2], Alan Watson[2], Jon Clare[2]
[1]Los Alamos National Laboratory, AOT-RFE, Los Alamos, NM, USA, [2]The University of Nottingham, Electrical & Electronic Engineering, Nottingham, United Kingdom

3P71 COHERENCE EFFECTS
Lutfi Oksuz, Ali Gulec, Erdogan Teke, Ferhat Bozduman Suleyman Demirel Universitesi, Fizik Bolumu, Isparta, Turkey

Oral Session 11: Analytical Methods, Modeling, and Simulations

Wednesday, June 6, 2012 3:30 – 5:30 PM (Sapphire KL)

Session Chair: Matthew Aubuchon, General Atomics

15:30 11O1,2 (Invited)
LINEAR-INDUCTION-ACCELERATOR BEAM-ENERGY-SPREAD MINIMIZATION: CELL MODELS AND TIMING OPTIMIZATION
C. R. Rose, C. Ekdahl, M. Schulze
Los Alamos National Laboratory, WX-5, Los Alamos, NM, USA

16:00 11O3
THERMAL MODELING OF HIGH TEMPERATURE POWER CONVERSION CAPACITORS
J. R. MacDonald
General Atomics Electronic Systems, Inc., Capacitor Research and Development, San Diego, CA, USA

17:00 11O4
FDTD MODELING OF FAST TRANSIENT CURRENTS IN HIGH VOLTAGE CABLES
Xiao Hu, Martin D. Judd, Wah H. Siew
University of Strathclyde, Department of Electronic and Electrical Engineering, Glasgow, United Kingdom

16:30 11O5
ELECTROMAGNETIC MODELLING OF HIGH PRESSURE SPARK GAP PEAKING SWITCH
Mrunal Parekh, Bindu Sreedevi, H.A. Mangalvedekar
VJTI, VJTI-SEIMENS HIGH VOLTAGE LAB, Mumbai, India

16:45 11O6
ESTIMATIONS OF THE ENERGY AVAILABLE TO A BREAKDOWN CHANNEL AS IT PROPAGATES THROUGH A DIELECTRIC MEDIUM
Martin J Given[1], Igor V Timoshkin[1], Yiming Gao[1], Mark P Wilson[1], Tao Wang[1], Scott J Macgregor[1], Jane M Lehr[2]
[1]University of Strathclyde, Electronic and Electrical Eng, Glasgow, United Kingdom, [2]Sandia National Laboratories Albuquerque, NM, USA

16:15 11O7
PREVENTING BREAKDOWN BY DIRECT OPTIMIZATION APPROACH
Zoran Andjelic[1], Salih Sadovic[2], Jean-Claude Mauroux[3]
[1]ABB Corporate Research Baden, Switzerland, [2]Sadovic Consulting Paris, France, [3]ABB Corporate Research Zuerich, Switzerland

17:15 11O8
A SIMULATION OF BREAKDOWN PARAMETERS OF HIGH POWER MICROWAVE INDUCED PLASMA IN ATMOSPHERIC GASES
Patrick Ford, John Krile, Hermann Krompholz, Andreas Neuber
Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock, TX, USA

Oral Session 12: Power Conditioning and Pulse Shaping, Energy Storage Devices and Components

Wednesday, June 6, 2012 3:30 – 5:30 PM (Sapphire OP)

Session Chair: Shu Xiao, Old Dominion University

15:30 12O1

HIGH TEMPERATURE CAPACITOR PERFORMANCE IN A HIGH POWER, HIGH FREQUENCY CONVERTER

Kevin Bray[1], Hiroyuki Kosai[1], Daniel Schweickart[2], Biswajit Ray[3]

[1]UES, Inc Dayton, OH, USA, [2]Air Force Research Laboratory, RZPE, Dayton, OH, USA, [3]Bloomsburg University of Pennsylvania Bloomsburg, PA, USA

15:45 12O2

GLASS DIELECTRICS FOR POWER CAPACITORS

Mohan Manoharan[1], Mike Lanagan[1], Douglas Kushner[2], Chen Zou[2], Shihai Zhang[2], Takashi Murata[3]

[1]The Pennsylvania State University, Materials Research Institute, University Park, PA, USA, [2]Strategic Polymer Sciences, Inc., Capacitor Division, State College, PA, USA, [3]NEG, Glass Division, Shiga, Japan

16:00 12O3

ELECTRICAL BREAKDOWN IN CAPACITOR DIELECTRIC FILMS: SCALING LAWS AND THE ROLE OF SELF-HEALING

M. A. Schneider, J. R. MacDonald, M. C. Schalnat, J. B. Ennis

General Atomics-Electronic Systems, Inc. San Diego, CA, USA

16:15 12O4

PULSED CURRENT LIMITATIONS OF HIGH POWER ELECTROCHEMICAL ENERGY STORAGE DEVICES

David Wetz, Biju Shrestha, Peter Novak

University of Texas at Arlington, Electrical Engineering Department, Arlington, TX, USA

16:30 12O5

STATUS UPDATE OF THE POWER CONDITIONING SYSTEM IN THE NATIONAL IGNITION FACILITY

Bruno Le Galloudec[1], Phil Arnold[1], Glen James[1], Dave Pendleton[1], Dave Petersen[1], Geoff Arellano-Womack[2], Javier Cano[3], Allen Harkey[2], Norris Lao[2], Manuel Magat[1], Michael McIntosh[2], Quang Ngo[2], Seth Robison[2], David Schwedler[2], Mark Lopez[2]

[1]Lawrence Livermore National Laboratory, Engineering/LSEO, Livermore, CA, USA, [2]AKIMA Infrastructure Services LLC Livermore, CA, USA, [3]NSTEC Livermore, CA, USA

16:45 12O6
DESIGN AND CONSTRUCTION OF A 250 KV, 100 HZ REPETITIVE VIRCATOR TEST STAND
Kelton Clements, Randy Curry, Robert Druce
University of Missouri, Center for Physical and Power Electronics, Columbia, MO, USA

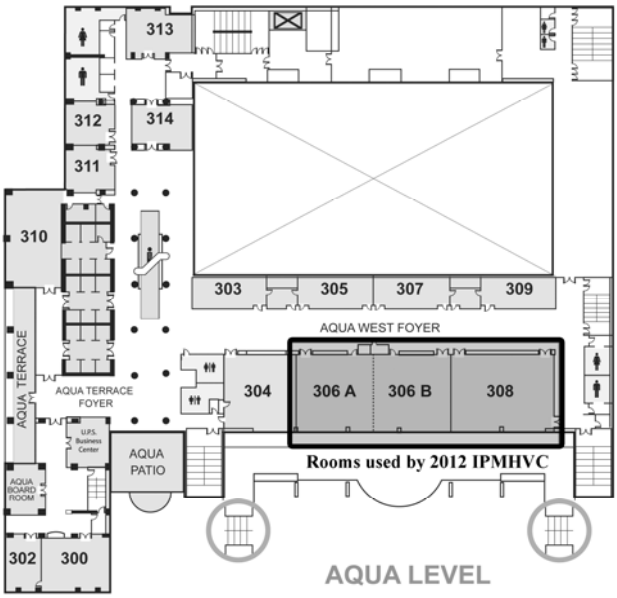
17:00 12O7
EXPERIMENTATION AND SIMULATION OF HIGH CURRENT DENSITY SURFACE COATED ELECTRO-EXPLOSIVE FUSES
Jacob Stephens, Andreas Neuber, James Dickens, Magne Kristiansen
Texas Tech University, Center for Pulsed Power and Power Electronics, Lubbock , TX, USA

17:15 12O8
ANALYSIS ON STRAY PARAMETERS IN A SOLID-STATE MARX PULSED POWER MODULATOR
Jian Qiu, Kefu Liu, Liuxia Li
Fudan University, Electric Light Sources, Shanghai, China

Notes

Locations of Conference Activities

Aqua Level - 3rd Floor, Rooms 306/308
Poster Sessions and Short Courses



Sapphire Level – 4th Floor
Plenary and Orals, Exhibits, Receptions & Banquet