

Plenary Lecture

Monday Sep. 23, 09:00 - 10:00

Location: Effectenbeurszaal

Session chair: Prof. Xinjie Yu

Dr. Markus Schneider

Railgun technology at ISL: state of the art and evolutionary moments

Oral Session 1 - EAPPC: Solid-state pulse generators

Monday Sep. 23, 10:30 - 12:30

Location: Effectenbeurszaal

Session chair: Prof. Hong-Je Ryoo

10:30 - 11:00 (O1-1): INVITED - A 100 kV All-Solid-State Nanosecond Pulse Generator Based on a Semiconductor Opening Switch

Anton I. Gusev, Ejlal Shahriari, Simon Bland, Suzan Parker, Antoine Silvestre de Ferron, Laurent Pecastaing

11:00 - 11:15 (O1-3): Solid-state Marx generator with individual stage self-diagnostics for industrial applications

Mykhaylo Zahyka, Luis Redondo, Aleh Kandratsyau

11:15 - 11:30 (O1-4): Scaling Laws for Solid-State Opening Switch Generators

Jane Lehr, David Oh Smith

11:30 - 11:45 (O1-5): Circuit Methods for Solid-State Pulsed Power Generators

Weihua Jiang, Taichi Sugai, Akira Tokuchi, Kazuki Nagao, Xiaojing Ren, Junxiang Yang, Yuheng Li, Wenqian Li, Xijie Wang

11:45 - 12:00 (O1-6): Ultrashort Rise Time Pulses for Air Purification using a Solid-state Impedance-matched Marx Generator with Planar Waveguides

B. van Kuik, J. J. van Oorschot, L. Spooren, E. Lemmen, T. Huiskamp

12:00 - 12:15 (O1-7): Compact solid state switched spiral generators as triggers and sources of industrial plasmas

Simon Bland, Susan Parker, Simon Bott-Suzuki, Anton Gusev

12:15 - 12:30 (O1-8): Solid-state pulsed power modulator design for corona discharge reactor

Jae-Beom Ahn, Seung-Jae Jeong, Yun-Soo Gang, Seok-Jin Hong, Hong-Je Ryoo

Oral Session 2 - EAPPC: Gas breakdown and Z-pinches

Monday Sep. 23, 10:30 - 12:30

Location: Veilingzaal

Session chair: Dr. Kyle Peterson

10:30 - 10:45 (O2-1): Energy Characteristics of Transient Spark Discharges in Air

Robbie Alexander, Igor Timoshkin, Mark Wilson, Graeme Burt

10:45 - 11:00 (O2-2): Vacuum Surface Flashover under Multi-Pulse at MHz Repetition Rate

Xu Deng, Ziping Huang, Feng Li, Yuan Li, Jianjun Deng

11:00 - 11:15 (O2-3): The LIF-Dip probe as alternative to the Langmuir probe for plasma diagnostic

Luis Orellana, Wladimir An, Alfons Weisenburger, Georg Müller

11:15 - 11:30 (O2-4): Generation of Run-Away Electrons during Nanosecond Pulsed Gas Breakdown and Formation of Diffuse Discharge

Bangdou Huang, Chenhua Ren, Cheng Zhang, Tao Shao

11:30 - 11:45 (O2-5): Two-dimensional continuous spatio-temporal diagnosis of Z-pinch X-rays based on compressed ultrafast photography

Haoyu Zhou, Yinong Liu, Yue Wu, Jian Wu, Chao Ji, Jinshou Tian

11:45 - 12:00 (O2-6): Modeling of the electrothermal instability in electrode surface plasmas

A. R. Vazsonyi, S. B. Swanekamp

12:00 - 12:15 (O2-7): A preliminary design of distributed control system for 50MA super-high-power pulsed facility for Z-pinch

Qing Tian, Lin Chen, Mingjun Ding, Bing Wei, Wanchang Li, Yi Liu, Wei Chen, Xianbin Huang, Jie Wang

12:15 - 12:30 (O2-8): Design of Physics Experiment Station for Super - large Pulsed Power Facility

Zhang Zhaohui, Huang Xianbin, Chen Lin, Ren Xiaodong, Zhang Siqun, Zhou Shaotong, Xu Qiang, Li Jing, Jia Yuesong, Deng Kai

Oral Session 3 - EML: Railgun Launchers 1

Monday Sep. 23, 10:30 - 12:30

Location: Administratiezaal

Session chair: Dr. Joel Mejeur

10:30 - 11:00 (O3-1): INVITED - Design Considerations for an Electromagnetic Railgun Firing Optimized Intelligent Bursts to be Used Against One or Multiple Anti-Ship Missiles
Tom Vancaeyzeele, Johan Gallant, Ben Lauwens, Bernhard Reck, Markus Schneider

11:00 - 11:15 (O3-3): Analysis of the Railguns Contact Resistance Considering Arc Ignition in Contact Surface
Xiangyu DU, Shaowei LIU

11:15 - 11:30 (O3-4): Endurance trials using RAFIRA launcher
Philippe Delmote, François Bieth

11:30 - 11:45 (O3-5): Research on Key Scientific Issue and Technological System Framework of EM Railgun Interior Ballistics
LI Jun, LI Ran, JIN Longwen, LIU Peizhu, YU Xinjie, LIU Zhizhen

11:45 - 12:00 (O3-6): Launch package efficiency considerations for a medium caliber railgun
Bernhard Reck, Farid Alouahabi, Quentin Hassler, David Bluntzer

12:00 - 12:15 (O3-7): A New Type of Double Degree of Freedom Rotary Linear Switched Reluctance Motor
Hao Chen, Cheng Liu, Jinfu Liu, Xing Wang, Antonino Musolino, Ryszard Palka

12:15 - 12:30 (O3-8): Mechanical Aging Effect on mechanical properties of FR4 glass fiber epoxy resin composites
Yadong Zhang, huilong wan

Poster Session 1

Monday Sep. 23, 13:30 - 15:00

Location: Graanbeurszaal

EAPPC: Pulsed power components

P1-1: Experimental and numerical investigation on the dynamic impedance of a multi-gap spark-gap switch

YeongHwan Choi, Jonghyeon Ryu, Kyoung-Jae Chung

P1-2: Impedance of Plasma Erosion Opening Switch in Particle-In-Cell Simulaiton

Shen Shou Max Chung, Shih-Chung Tuan

P1-3: Optimising a compact HVPS for electron beam applications

Ludwig Lorenz, Rainer Labitzke, Gösta Mattausch, Severin Dominok, Björn Meyer

P1-4: Study on self breakdown voltage characteristics of gap switches

Kyosuke Nakata, Akira Tokuchi

P1-5: Comparative Study of Two Types of Spark Gap Switches for Parallel Triggering

Yoan BACQUEYRISSES, Baptiste GUEGAN, Frederic BAYOL, David ARNAL

P1-6: Development of High-Efficiency and High-Voltage Capacitor Charger using Phase Shift Control for Kicker Modulator

Chang-Hyun Kwon, Seong-Ho Son, Yun-Sang Yu, Sung-Roc Jang, Chan-Hun Yu, Hyoung-Suk Kim

EAPPC: Pulsed power generators

P1-7: Development of a prototype Marx generator module for a klystron power supply in J-PARC linear accelerator

Yasuhiro Fuwa, Moe Sugita, Ayato Ono, Tomohiro Takayanagi, Shinichi Shinozaki, Koki Horino, Tomoaki Ueno, Akira Tokuchi

P1-8: Evaluation of a MARX-type Klystron Modulator using Semiconductors for Practical Application

KYOSUKE NAKAYAMA, Hiroaki Kamezaki, Akira Tokuchi

P1-9: Development and Optimization of Pulsed Power Generator Using GaN Power FETs

Ryo Fujita, Momo Fujimi, Kazuki Nagao, Taichi Sugai, Akira Tokuchi, Weihua Jiang

P1-10: Development of Inductive Energy Storage, Current Superposition Pulsed Power Generator Using GaN FETs

Ryuya Matsuzaki, Yuki Oneda, Kazuki Nagao, Taichi Sugai, Akira Tokuchi, Weihua Jiang

P1-11: 60kV High Voltage Capacitor Charger using 24V Battery for UWB Pulse Generation

Woo-Cheol Jeong, Yoon-Seok Lee, Jang-Hun Park, Hong-Je Ryoo

P1-12: Study of Solid-State Modulator Topology for Magnetrons

Naoya Ikoma, Akira Tokuchi

EAPPC: Pulsed power physics, methods and enabling technologies

P1-13: Computational Modeling of Pulsed Power Experiments

Christopher L. Rousculp

P1-14: The Role of Grains and Grain Boundaries in Hydrogen Diffusion through Austenitic Stainless Steel

Tyler J. Mason, Rick B. Spielman, Randy D. Curry, Alex Sarracino, Shane L. McPherson, Michael J. Abere

P1-15: Preliminary Study On the Effect of y-ray Radiation on the Surface Flashover of Alumina Ceramic

Mingzhu Gao, Xudong Qiu, Wei Shang, Jiancang Su, Rui Li, Jie Cheng, Haoran Zhang, Binxiang Yu, Shuai Shaō, Liang Zhao

P1-16: Comparison of Cell Constant of Positive and Negative Pulse Streamer Discharges in Water with Different Conductivities

Ryo Sasamoto, Douyan Wang, Taketoshi Koita, Chiharu Tokoro, Takao Namihira

P1-17: Printing High Voltage insulators using FDM additive manufacturing

Simon Bland, Jergus Strucka, Kassim Mughal, Yifan Yao

P1-18: Study for Separation of Positive Electrode Active Materials from Aluminum Foils by Electrical Pulse Treatment and Elucidation of Its Mechanisms

Ryosuke Honda, Minoru Asao, Yusei Onitsuka, Daisuke Yamashita, Douyan Wang, Soowon Lim, Shinichi Higuch, Taketoshi Koita, Chiharu Tokoro, Takao Namihira

EAPPC: Pulsed power applications

P1-19: Short Pulsed Magnetic Field Measurement System for Analysis of Magnetic Field Dynamics During Magnetic Pulse Welding and Forming

Pavel Piatrou, Vilius Vertelis, Voitech Stankevič, Skirmantas Keršulis, Juštas Dilys, Vakarīs Rudokas, Vytautas Bleizgys, Valentina Plaušnaitienė, Mindaugas Viliūnas, Nerija Žurauskienė

P1-20: Investigations of nanosecond pulsed electric field (ns-PEF) treatment induced changes in *Chlorella vulgaris* photosynthetic system

Kamilė Jonynaitė, Dominykas Daunys, Marius Franckevičius, Vilius Vertelis, Skirmantas Keršulis, Arūnas Stirkė, Nerija Žurauskienė

P1-21: Meeting Flash Neutron Radiography Requirements with the MJOLNIR Dense Plasma Focus (DPF)

Andrea Schmidt, Steve Chapman, Chris Cooper, Owen Drury, Luis Frausto, Clement Goyon, Anthony Link, Sophia Rocco, J. Kurt Walters, Amanda Youmans

P1-22: An Electromagnetic Accelerator for Industrial Applications

Bucur M Novac, Marcos Pereira, Peter Senior, Luis Redondo

P1-23: Pseudo In-situ characterization of PAW with FTIR/ATR spectroscopy in liquid phase

Prashant prashant, W.F.L.M. Hoeben, Tom Huiskamp, A.J.M. Pemen

P1-24: A Co-Axial Dielectric Barrier Discharge based VUV Excilamp for Surface Treatment

Ram Prakash Lamba, Navin Kumar Sharma, Akhilesh Mishra, Priti Pal, Mahendra Singh, M. Jeganathan, Brijendra Kumar Verma, Subhash Kumar Ram, Ranjan Kumar Maurya, Udit Narayan Pal

P1-25: Development and Characterization of 222 nm Far UV-C Excimer Radiation Sources for Inactivation of Pathogens

Navin Kumar Sharma, Priti Pal, Akhilesh Mishra, Mahendra Singh, Alok Mishra, M. Jeganathan, Subhash Kumar Ram, Brijendra Kumar Verma, Ram Prakash Lamba, Udit Narayan Pal

P1-26: Design of 10 L/h PEF treatment chamber for milk pasteurization

Bingyu Yan, Nakamura Tomohiro, Sunao Katsuki, Naoya Masuda, Yoshiharu Shimizu

P1-27: Pulsed Power Drilling for Deep Secure Storage

E.J.M. van Heesch, R. Plat, G-J. Heerens, T. Willenbroek, M. Azimi, T. Huiskamp, A.J.M. Pemen

EML: Railgun Launchers

P1-28: Flux Characteristics Analysis of Novel Tubular Permanent Magnet Linear Launcher

Hao Chen, Wenju Yan, Xing Wang, Antonino Musolino, Mohamed Orabi, Mahmoud Abdelwahab Gaafar

P1-29: A Novel 3-Phase Tubular Permanent Magnet free-piston Stirling Engine for Linear Launcher

Xing Wang, Hao Chen, Hossein Torkaman, Xiaodong Li, Ryszard Palka, Jason Gu

P1-30: Novel Cylindrical Double Stator Switched Reluctance Linear Motor for Linear Launcher

Hao Chen, Xing Wang, Jinfu Liu, Murat Shamiev, Yokub Tairov, Antonino Musolino, Hossein Torkaman, Xiaodong Li, Ryszard Palka, Jason Gu

P1-31: An Improved Adaptive Weight MOEA for Many-objective Optimization of Electromagnetic Rail Launcher

Jie Bai, Tao Chao, Ping Ma, Ming Yang

P1-32: Effect of arc armature geometrical parameters on current distribution at the armature/rail interface

Lixue Chen, Bingxuan Zhao, Penghao You, Xuan Xu, Shengqin Xu, Wenhao Zhang, Tingyun Xiao

P1-33: Study on the Dynamic Response of Electromagnetic Launcher Under Different Current Peaks

Zhizeng Wang, Weiqun Yuan, Weidong Xu, Yunlong Che, Wenping Cheng, Ping Yan

P1-34: Research on Methods of Decoupling Current and Friction in Electromagnetic Launching

Weidong Xu, Jiong Wang, Wenyi Ye, Rong Xu, Yiting Cao, Ping Yan

P1-35: Analysis of Electromagnetic Force of the Jumper Conductors in Augmented Special Motor

Wenping Cheng, Weidong Xu Corresponding author , Zhizeng Wang, Rong Xu, Jiong Wang, Ping Yan

P1-36: Analysis of Rail Structure of Augmented High Pulse Current Linear Drive

Rong Xu, Zunjing Fu, WenYi Ye, Jiong Wang, Wenping Cheng, Weidong Xu, Ping Yan

P1-37: Research on inductance gradient of electromagnetic railgun based on eddy current field analysis

Shengqin Xu, Lixue Chen, Xinyu Lan, Xuan Xu, Wenhao Zhang, Bingxuan Zhao

P1-38: Optimization Design of Coated Armature in Electromagnetic Railgun Based on Multi-objective Genetic Algorithm

Xuan Xu, Lixue Chen, Shengqin Xu, Wenhao Zhang, Bingxuan Zhao, Tingyun Xiao

P1-39: A Numerical Model of Magneto-Electro-Thermo-Mechanical Characteristics at the Armature-Rail Contact Interface

Xuan Xu, Lixue Chen, Shengqin Xu, Wenhao Zhang, Bingxuan Zhao, Tingyun Xiao

P1-40: Constant Magnetic Field Effects on EMRGs: Mechanisms and Analysis

Yuhang Wu, Hao Geng, Pengfei Li, Xueke Gou

P1-41: Study on Arcing Dynamics and Arc Igniter Design for Railguns Considering the Impact of Muzzle Flow Field

Qunxian Qiu, Gang Gu, Bo Gao, Haitong Song, Zhipeng Niu, Zhanhong Xie, Yingjie Zhao

P1-42: Weight and Optimization Study of the Effect of Launch Parameters on Launcher Efficiency

Nan Xiao, Jun Li, Ping Yan

P1-43: Research on the surface morphology change rule of repeatedly launched insulation components

Yafeng Gao, Ying Zhao, Wen Tian, Bo Liu, Weiqun Yuan, Ping Yan

P1-44: Research on Electromagnetic Launcher Gouging under Non-Ideal Conditions

Bo Liu, Yunlong Che, Weiqun Yuan, Yafeng Gao, Ping Yan

P1-45: Research on Different Structures of Revolving Armature in Electromagnetic Launch

Zheng Ren, Zengji Wang, Zhizeng Wang, Wenping Cheng, Rong Xu, Ping Yan, Weidong Xu

P1-46: Study on Influence Characteristics of Sliding Contact of Armature inside the Space Curved rails in Electromagnetic Launch

Yunlong Che, Weiqun Yuan, Zhizeng Wang, Rongyao Fu, Weidong Xu, Ping Yan

P1-47: Research on recoil test method of electromagnetic orbital launcher

WANG Dongdong

P1-48: Research on Velocity Measurement of Electromagnetic Railgun Based on Magnetic Probe

Ran An, Shiyu Hao, Hao Shi, Weihao Li, Chengcheng Li, Li Chen, Huantong Shi, Xingwen Li

P1-49: Optimization Analysis of the Bore Cross-Section in Launchers Based on Shooting Accuracy

Qingxia Zhang, Hui Li, Jun Li, Kun Liu, Longwen Jin, Weidong Xu

P1-50: The study of dynamic inductance gradient in EM railgun launchers

Longwen JIN, Jun LI, Peizhu LIU, Ran LI, Xutong GAO, Qingxia ZHANG, Weidong XU

P1-51: Analysis of Contact Pressure Between Armature and Rails of Electromagnetic Railgun

Bo Gao, Pengfei Li, Yingjie Zhao, Zhipeng Niu, Xiang Li, Guohua Pang, Qunxian Qiu

Oral Session 4 - EAPPC: High-power microwaves and RF sources 1

Monday Sep. 23, 15:30 - 17:30

Location: Effectenbeurszaal

Session chair: Prof. Yakov Krasik

15:30 - 16:00 (O4-1): INVITED - Experimental and Numerical Studies on High-Power Microwave Generation by Virtual Cathode Oscillator

Weihua Jiang, Taichi Sugai, Akira Tokuchi, Kazuki Nagao, Shion Okubo, Ryusei Takahashi, Pham Huu Thanh

16:00 - 16:15 (O4-3): Preliminary study of V band transit time oscillator with TM03 mode

Fanbo Zeng, Jiande Zhang, Juntao He, Junpu Ling

16:15 - 16:30 (O4-4): Frequency Structure and Compression of Superradiance Pulses Generated by an Oversized Coaxial Cherenkov Generator with Profiled Slow Wave Structure

Renzhen Xiao, Renjie Cheng, Kun Chen, Yanchao Shi

16:30 - 16:45 (O4-5): A Novel Tightly Coupled Array Antenna for High Power Microwaves

Hongzhou Gong, Jiande Zhang, Chengwei Yuan, Qiang Zhang, Yunfei Sun

16:45 - 17:00 (O4-6): A General Design Method for High-Performance RBWOs

Dian Zhang, Zhenxing Jin, Jun Zhang, Jiande Zhang, Kaiqi Yang, Zicheng Zhang, Huibo Zhang, Hanwu Yang

17:00 - 17:15 (O4-7): Multi-Vircators with Dielectric Reflectors, the Luce Diode and High Power Microwaves

Gennadi Liziakin, Oleg Belozorov, John G. Leopold, Yakov E. Krasik

17:15 - 17:30 (O4-8): Generation of all-solid, MW level, broadband tunable photonic-microwave using V-doped 4H-SiC semiconductor with linear modulation

Tao Xun, Lang-ning Wang, Mu-yu Yi, Jin-mei Yao, Han-wu Yang, Jin-liang Liu, Jian-de Zhang

Oral Session 5 - BEAMS: Particle beam technology

Monday Sep. 23, 15:30 - 17:30

Location: Veilingzaal

Session chair: Dr. Bruce Weber

15:30 - 16:00 (O5-1): INVITED - Exact Solution to the Boltzmann Equation for Evaluating Approximate Scattering Models
S.B. Swanekamp

16:00 - 16:15 (O5-3): Status of the EPURE Facility LIAs
Christophe VERMARE, Bruno CASSANY, Baptiste CADILHON, Claude FOURMENT, Alain GEORGES, Alexandre GOEURY, Rémi MAISONNY, Philippe SOUTENAIN

16:15 - 16:30 (O5-4): Computational models of Albers and Bragg, 2 MV, 700 kA Pulsed Power Machines Coupled with Plasma Filled Rod Pinch Diodes
Aled Jones, Anthony Meadowcroft, Matthew Childs

16:30 - 16:45 (O5-5): Studies of the interaction of the high-power sub-nanosecond microwave pulse with neutral gases
V. Maksimov, Y. Cao, A. Kostinskiy, A. Haim, J. G. Leopold, Ya. E. Krasik

16:45 - 17:00 (O5-6): Nanosecond intense relativistic electron beam propagation in gas and preformed plasma
DUDES Adrien, DORCHIES Fabien, FOURMENT Claude

17:00 - 17:15 (O5-7): Experimental observation of AK gap closure generated by a velvet cathode
Madison R. Howard, Joshua E. Coleman, Steven Lidia

Oral Session 6 - EML: EML related materials, computational techniques, modeling and applications 1

Monday Sep. 23, 15:30 - 17:30

Location: Administratiezaal

Session chair: Prof. Antonino Musolino and Dr. Claudia Simonelli

15:30 - 16:00 (O6-1): INVITED - Full 3D calculation of moving railgun armatures

M. Hagel, H. Scharf, M. Stiemer, M. Schneider

16:00 - 16:15 (O6-3): Study on the Relationship between Microstructure Evolution and Mechanical Property Degradation of Electromagnetic Rail Launch Material

Chengcheng Li, Weihao Li, Shiyu Hao, Jiajing Zhou, Huantong Shi, Li Chen, Xingwen Li

16:15 - 16:30 (O6-4): Research on modeling and simulation of electric arc at the mouth of electromagnetic rail gun

Yulu Yang, Xiaolong Huang, Huikai Xu, Wenjun Ning, Lihua Zhao, Shenli Jia

16:30 - 16:45 (O6-5): Research on Armature Melting and Ejection at the Armature-Rail Interface in Railgun

Gongwei Wang, Wen Tian, Weiqun Yuan, Ping Yan

16:45 - 17:00 (O6-6): A combined discrete-continuous model for railgun simulation

Irene Ndindabahizi, Tom Vancayzeele, Ben Lauwens, Markus Schneider, Johan Gallant

17:00 - 17:15 (O6-7): An analytical model of internal ballistic air resistance of electromagnetic launch based on computational fluid dynamics

Sun HW, Yan P

17:15 - 17:30 (O6-8): Numerical Study of Current Distribution on Armature and Rail Interface with Dynamic Contact

Jinghan Xu, Shengguo Xia, Lixue Chen

Plenary Lecture

Tuesday Sep. 24, 09:00 - 10:00

Location: Effectenbeurszaal

Session chair: Prof. Tom Huiskamp

Prof. Laurent Pecastaing
Recent pulsed power-based systems developed at the University of Pau

Oral Session 7 - EAPPC: Pulsed power generators 1

Tuesday Sep. 24, 10:30 - 12:30

Location: Effectenbeurszaal

Session chair: Prof. Luis Redondo

10:30 - 11:00 (O7-1): INVITED - Proof of Concept for a MV Class Marx Generator Limiting its Environmental Impact

L. Sousbielle, B. Lassalle, B. Lassalle, T. Chanconie, M. Rivaletto, L. Pecastaing

11:00 - 11:15 (O7-3): Preliminary Study on Giga-Watt Level Impedance-Matched Marx Generator

Huibo Zhang, Zicheng Zhang, Hanwu Yang

11:15 - 11:30 (O7-4): FP-1/2: the intense pulsed power facilities for metal liner implosion

Qizhi Sun

11:30 - 11:45 (O7-5): Development and Testing of a 300-kV Low Impedance PFN-Marx Generator

Umar Hashmi, Aaisha Alali, Gideon Nemo Appiah, Hamad Deiban, Fernando Albarracin, Felix Vega, Chaouki Kasmi

11:45 - 12:00 (O7-6): Compact Repetitive 5 GW Long-life PFN-Marx Generator-Type Pulse Driving Source Based on Mica Capacitor

Zicheng Zhang, Huibo Zhang, Shifei Liu, Haoran Zhang, Hanwu Yang, Taizhuang Hu, Jiande Zhang

12:00 - 12:15 (O7-7): Output impedance modulation method of pulse generator based on pulse forming line

Lvheng Ren, Liang Yu, Jiuxin Ma, Shoulong Dong, Chenguo Yao

12:15 - 12:30 (O7-8): A circuitry solution for fast transformer-coupled LC inversion generators

Rainer Bischoff

Oral Session 8 - EAPPC: Pulsed power generators and components

Tuesday Sep. 24, 10:30 - 12:30

Location: Veilingzaal

Session chair: Dr. Randy Curry

10:30 - 11:00 (O8-1): INVITED - Compact Gigawatt-Level Pulsed Power Generator Using Folded PFL
Taichi Sugai, Naoki Terajima, Akira Tokuchi, Weihua Jiang

11:00 - 11:15 (O8-3): Optimizing Control Strategies for High Power Capacitor Chargers with a SiC-based LC-resonant Topology
Felix Haag, Volker Brommer, Maxime Berard, Oliver Liebfried, Klaus F. Hoffmann

11:15 - 11:30 (O8-4): Lifetime Performance of Pulsed Capacitors under the Combined Effect of Gamma Irradiation and High Electric Field
Su Xiaohui, Li Hua, Wang Yvcheng, Zhang Qin, Lin Fuchang, Ding Chenghan

11:30 - 11:45 (O8-5): Development of a Fast-Rising Short-Pulse High-Voltage Power Supply using SiC-MOSFETs for the J-PARC Kicker System
Tomohiro Takayanagi, Ayato Ono, Koki Horino, Tomoaki Ueno, Moe Sugita, Yasuhiro Fuwa, Shinichi Shinozaki, Akira Tokuchi, Naoya Ikoma, Hiroaki Kamezaki

11:45 - 12:00 (O8-6): Improved transfer function for predicting the output voltage of vector inversion generators
Wens Thor, Laurent Philippe, Fagnard Jean-François, Greffe Christophe, Vanderbemden Philippe

12:00 - 12:15 (O8-7): Numerical Simulation of Semiconductor Closing and Opening Switches
Ejlal Shahriari, Anton Gusev, Thomas Mayssonave, Antoine Silvestre De Ferron, Laurent Pecastaing

12:15 - 12:30 (O8-8): Gyrator-Capacitor Circuit Modeling of Tesla Transformer with Partial Magnetic Cores
Hanwu Yang, Zicheng Zhang, Jingming Gao, Tao Xun, Jiande Zhang

Oral Session 9 - EML: Coilguns and other types of EML - EML: Integrated launch systems and control and diagnostic systems for EML

Tuesday Sep. 24, 10:30 - 12:30

Location: Administratiezaal

Session chair: Dr. Li Hua

10:30 - 11:00 (O9-1): INVITED - Development of a Hypersonic Ground Test Capability Through Electromagnetic Launch

Joel Mejeur, Daniel Wise, Christopher Croft, Michael Libeau, Alex Dworzanczyk, Nick J. Parziale

11:00 - 11:15 (O9-3): Revolutionizing Space Launch: The Economic and Operational Benefits of the Variable-Pitch Screw Architecture

Philip Swan, Alastair Swan, Vikash Kodati, Dillon Gray

11:30 - 11:45 (O9-5): Optimization Design of Trigger Timing for Multi-Stage Coil Launcher

Yadong Zhang, Jianping Cao, Ao Zhou, Xiong Lin, Youhong Dong, Zhiqiang Sun

11:45 - 12:00 (O9-6): Design and Experiment of a Three-stage Coil Gun

Guo Yizhong, He Yong, Long Quanhong

12:00 - 12:15 (O9-7): Trigger Position Optimization and Robustness Analysis of Induction Coilgun

Chenghan Ding, Fuchang Lin, Xiang Su, Xiaohui Su

Poster Session 2

Tuesday Sep. 24, 13:30 - 15:00

Location: Graanbeurszaal

EAPPC: Pulsed power components

P2-1: Impedance adjustments on a fast 20kV solid state switch
Michael Osemann

P2-2: Research on the damage of IGBT under high voltage pulse with hundred-nanosecond duration
Yang Zenghui, Zhang Huibo, Zhang Zicheng, Li Diangeng, Hu Taizhuang, Zhang Shuaitao

P2-3: Development of 720kW/7kV High Power Density Charging Power Supply
Cao Xu, Gao Yinghui, Liu Kun, Zhou Jingfeng, Sun Chao

P2-4: Research on Electromagnetic Analysis and Detection Methods for Busbar Faults in Pulse Magnet Power Supply of Fusion Devices
Hong Lei, Ya Huang, Li Jiang, Ge Gao

P2-5: Research on the thermal failure mechanism of an opposed-contact silicon carbide photoconductive semiconductor switch
Qian Sun, Zhong Zheng, Yutian Wang, Yuming Zhang, Hui Guo

P2-6: A repetitive corona-stabled trigger switch under DC charging
Haoran Zhang, Xudong Qiu, Motao Zhang, Shuai Shao, Yu Zhang, Rui Li, Jiancang Su

P2-7: Solid-State Opening Switch for Current Commutation in Hybrid DC Circuit Breakers
Chan-Hun Yu, Chang-Hyun Kwon, Sung-Roc Jang, Hyoung-Suk Kim, Seong-Ho Son, Yun-Sang Yu

P2-8: Evaluation of Folded Pulse Forming Line Characteristics
Hiroaki Kamezaki, Akira Tokuchi, Hiroaki Kawakami, Yukiko Hirose, Weihua Jiang, Taichi Sugai

P2-9: Innovative switches without corona for pulsed power radiography facilities 1MV Linear Transformer Driver (LTD)
Arnaud LOYEN, Francis LASSALLE, Stephane LACOSTE, Gabriel DUCROCQ, Laurent ARIZTIA

P2-10: Experimental characterization of breakdown delay of self-fired and pulsed charged gas switches
Benjamin Lassalle, Sylvain Delmas, Arnaud Loyen

P2-11: Active EMI Compensation for High Power Pulsed Kicker Systems in Particle Accelerators
Tobias Stadlbauer, Fritz Caspers

EAPPC: Pulsed power generators

P2-12: Simulations of an Impedance Matched Marx Generator Considering Non-Ideal Load and Stage Configurations
Johannes Alt, Martin Sack, Georg Müller

P2-13: High Speed, Low Loss and Energy Recovery in Pulsed Power Circuit Using Ultra-High Voltage SiC Devices
Reo Sasaki, Yusei Yamada, Takashi Sakugawa, Kunihiro Sakamoto, Takeharu Kuroiwa

P2-14: An Improved Gate-Boosting Gate Driver for Ultrafast Switching of GaN Transistors for Nanosecond Pulse Generation
Mohsen Feizi, Tom Huiskamp, Bas Vermulst

P2-15: Transformerless Driving Circuit for Semiconductor Opening Switch Using Transient Voltage Suppressor Diodes
Mahmoud S. Hassan, Ibrahim M. Safwat, Ahmed M. E. Abounemra, Hesham N. Ahmed, T. Huiskamp

P2-16: Design of a Solid-State High-Current Pulse Generator for Inductive Load Operation

Wilfried Bohez, Stéphane Petitjean, Olivier James, Alexandre Goeury, Anton Gusev, Laurent Pecastaing

P2-17: Characteristic Improvement of a Full-Bridge Bipolar Marx Generator

Taichi Sugai, Nguyen Huu Phat, Hiromu Katayose, Shota Uei, Weihua Jiang, Akihiro Higashida, Shingo Tsuda

P2-18: On the Turn-On Speed of Semiconductor Switches in CLC Resonance Pulsed Power Generator

Kazuki Nagao, Kazuki Okubo, Kohei Sato, Masato Kasahara

P2-19: The world's first pulsed power generator

Guus Pemen, Tom Huiskamp, Wilfred Hoeben

P2-20: First test results of a 30kA pulsed current generator for a new eddy current septum in the CERN PS extraction.

Gregor Gräwer, Laurent Ducimetière, Stéphane Huon

EAPPC: Pulsed power applications

P2-21: Investigation of effective electrode structure for metal removal from composite materials using pulsed discharge

Takuto Doi, Shota Oishi, Takashi Sakugawa, Kaisei Nishimura, Shinichiro Shobako, Shinichi Shimasaki, Tomohiko Yamashita

P2-22: Generation of Active Species in Liquid by a Bipolar Nanosecond Pulsed Power

Takeshi IHARA, Satoshi TAKEICHI, Yusuke HIBINO, Takahiko SATAKE, Yoshihito YAGYU, Hiroharu KAWASAKI

P2-23: Investigations on a dynamic resistance based on a matrix of solid-state components for multi-time radiography applications.

E. BRUNE, C. Sigogne, L. Pécastaing, A. Silvestre de Ferron, B. Cadilhon, B. Cassany, A. Goeury, L. Courtois, T. Huiskamp, J.J van Oorschot

P2-24: Production of High-concentration Plasma Activated Water by Gliding Arc Plasma

YUNSIK JIN, Chuhyun-Cho, Chae Hwa Sohn, Sung-Rok Jang¹, Keekon Kang, Daejong Kim

P2-25: A study of contactless seawater electrolysis

Peter R Rushforth, Bucur M Novac, Peter Senior

P2-26: A pulsed power plasma-activated aluminium nanoparticle slurry

Peter R Rushforth, Bucur M Novac, Peter Senior

P2-27: Design and Performance Analysis of High-Voltage Pulsed Power Modulator for DBD Plasma Applications

Brijendra Kumar Verma, Subhash Kumar Ram, Akhilesh Mishra, Vivek Kumar Saini, Ram Prakash Lamba, Udit Narayan Pal

P2-28: Standard PEF Equipment for Increasing the Added Value of the Technology in Olive Oil & Wine Industries

Marcos Pereira, Mafalda Aguiar, Duarte Rego, Luis Redondo

BEAMS: Particle beam technology

P2-29: The Impact of Cathode Geometry on Electron Hot Spot Formation and Ion Beam Properties in Pinched-Beam Diodes

Jesse Foster, Steve Swanekamp, Paul Ottinger

P2-30: CHARACTERISATION OF THE CESAR ELECTRON BEAM FOR STUDIES AND SIMULATIONS OF ALUMINUM HYDRODYNAMIC RESPONSE AT HIGH FLUENCES

Nicolas Szalek, David Hébert, Gael Poette, Cécile Peiffer, Romain Riffet

P2-31: Analysis and Modelling of Vacuum Breakdown in the Output Line of the MAXI Pulsed Power Machine

Anthony Meadowcroft, Aled Jones, Mark Sinclair

P2-32: EMPIRE Validation with RKA and SPHINX Gas Cell Electron Beam Propagation Experiments

Elaine L. Rhoades, Nicolas Szalek, Théo Dhote, Israel Owens, David Hébert, Claude Fourment, Christopher H. Moore, Pierre Grua, Keith L. Cartwright, Michael G. Mazarakis

BEAMS: High-energy density physics and technology

P2-33: Data driven approach for high-power laser ablation phenomena

Toru Sasaki, Momoka Iwasa, Innu Wang, Takatoshi Harada, Tsuneo Suzuki, Kazumasa Takahashi, Takashi Kikuchi

P2-34: Experimental and Simulation Investigations of Pseudospark Discharge based Short Pulsed Electron Beam for Surface Modification

Akhilesh Mishra, Ram Prakash Lamba, Sachin Shishodia, Raghav Sharma, Bharat Lal Meena, Varun, Radha Raman Mishra, Udit Narayan Pal

EML: Power electronics, switching techniques and pulsed power supplies for EML

P2-35: Research on Output Voltage Maintenance Control Strategy for Battery Cascade Charging Power Supply

Kun Liu, Wanyu Liu, Yinghui Gao, Rongyao Fu, Hongyan Sun, Yaohong Sun, Ping Yan

P2-36: Research on A Novel High-Voltage Power Supply Topology and Control Strategy

Jinpu Cai, Yinghui Gao, Yaohong Sun, Kun Liu, Ping Yan

P2-37: Research on pulsed power supply sequence solution strategy based on charge equivalent

Wanyu Liu, Kun Liu, Rongyao Fu, Weiwei Pan, Yaohong Sun, Ping Yan

P2-38: Design of Multi-channel Pulse Signal Generator with Adjustable Time Sequence

Weiwei Pan, Hengyu Lv, Kun Liu, Rongyao Fu, Wanyu Liu, Yuxiang Huo, Yaohong Sun

P2-39: Research on Control Strategy of Cascaded Constant Current Charging Power Supply

Yuxiang Huo, Yinghui Gao, Kun Liu, Hengyu Lv, Chuanren Chen, Weiwei Pan, Yaohong Sun

P2-40: Analysis and Suppression Method of Current Fluctuations in Series Segmented Powered Linear Synchronous Motors

Zhihua Zhang, Kexin Liu, Mindong Lyu, Guang Yang, Yanqing Zhang, Ping Li

P2-41: Semi-analytical calculation method for eddy current and electromagnetic force in inductors of PPS system

Liu Zhizhen, Yu Xinjie, Li Zhen, Li Bei

P2-42: Electromagnetic Analysis of Axial Flux Air-Core Compulsators

Claudia Simonelli, Nicolò Gori, Giovanni Landi, Antonino Musolino, Luca Sani, Rocco Rizzo

P2-43: Research on the Temperature Rise and Cooling Methods of Inductor in Inductive Pulsed Power Supply

Bei Li, Xinjie Yu, Zhizhen Liu, Zhen Li

P2-44: Development of Battery Cascade High Power Charging Supply Based on Time Sequence Encoding

Jing Han, Yinghui Gao, Kun Liu, Ping Yan

P2-45: UPGRADE BENDING MAGNET POWER CONVERTER OF TRANSFER LINE IN TAIWAN LIGHT SOURCE

Yong-seng Wong, Kuo-Bin Liu, Chen-Yao Liu, B-Sheng Wang, Jhao-Cyuan Huang

EML: EML related materials, computational techniques, modeling and applications

P2-46: Temperature Characteristics of the Electromagnetic Driving Device

Rongge Yan, Haokai Zhao, Wenye Zhao

P2-47: A Modified Johnson-Cook Model for Dynamic Tensile Behaviors of Cu-Cr-Zr alloy at Current and High Strain Rate

Weihaoli, Hao Shi, Chengcheng Li, Shiyu Hao, Li Chen, Huantong Shi, Xingwen Li

P2-48: Effect of Armature Mass on the Efficiency of High Current Linear Drive System

CAO Yiting, XU Weidong, WANG Meng, Cheng Wenping, XU Xuzhe, YAN Ping

P2-49: Study on the Testing Methods for Discharge Efficiency of PVDF-based Film Capacitors

Hao Geng, Xueke Gou, Yong Zhang, Lizhou Wu

P2-50: The design of liquid metal loop current connectors in EML

Zhen Li, Xinjie Yu, Bei Li, Zhizhen Liu

P2-51: Simulation on Impact Damage of Rail-Armature Liquefied Film Based on the Arbitrary Lagrangian-Eulerian Method

Dongdong Zhang, Kejiang Zhou, Ruijie Wang, Youjun Kong

P2-52: Simulation on the Development of the Liquefied Film at Rail-Armature Interface During High-Speed Sliding Electrical Contact

Yuan Zhou, Kejiang Zhou, Dongdong Zhang, Yiming Wang, Youjun Kong

Oral Session 10 - EAPPC: Pulsed power applications 1

Tuesday Sep. 24, 15:30 - 17:30

Location: Effectenbeurszaal

Session chair: Prof. Georg Mueller

15:30 - 15:45 (O10-1): Relationship between Discharge Gap and Shock Wave Pressure Induced by Pulsed Discharge in Electro-Hydraulic Disintegration

Taketoshi Koita, Ryo Sasamoto, Shingo Terakado, Shigeo Ohori, Yasumoto Date, Katsuya Nishidate, Takuji Yoshida, Tomohiro Moriyama, Ryoichi Ozaki, Takao Namihira

15:45 - 16:00 (O10-2): Pulse Generator for Impact Ionization Triggering in Thyristors

Viliam Senaj, Alicia Ana del Barrio Montañés, Thomas Kramer, Martin Sack

16:00 - 16:15 (O10-3): Electrical properties of different materials studied by sub-microsecond underwater electrical explosions of single wires

Ron Grikshtas, Nikita Asmedianov, Sergey Efimov, Yakov E. Krasik

16:15 - 16:30 (O10-4): Specific current action integral of different materials studied by underwater electrical explosions of foils

Nikita Asmedianov, Ron Grikshtas, Gennadi Liziakin, Sergey Efimov, Yakov E. Krasik

16:30 - 16:45 (O10-5): Measurement of Magnetic Field Distribution Using a Matrix of CMR-B-Scalar Sensors

Nerija Zurauskiene, Voitech Stankevic, Vilius Vertelis, Martynas Sapurov, Justas Dilys, Skirmantas Kersulis, Darius Antonovic, Milita Vagner, Valentina Plausinaitiene

16:45 - 17:00 (O10-6): 2D Particle-In-Cell Simulations of Two Cylindrical Reflex Triodes in Parallel

Ian M. Rittersdorf, Bruce V. Weber, Stephen B. Swanekamp, David D. Hinshelwood

17:00 - 17:15 (O10-7): Mapping non-linear pulsed electrolysis for industrial hydrogen production

Peter R Rushforth, Bucur M Novac, Peter Senior

17:15 - 17:30 (O10-8): Low Voltage High Current Circuit Breaker

Michael Kempkes, Robert Phillips, Dr. Marcel P.J. Gaudreau, Dr. Susie Eustis, Shannon Hunter, Dr. David Cope, Rebecca Simpson

Oral Session 11 - EAPPC: (Spark gap) switching

Tuesday Sep. 24, 15:30 - 17:30

Location: Veilingzaal

Session chair: Prof. Laurent Pecastaing

15:30 - 15:45 (O11-1): Research progress on the characteristics of repetition-rate spark gap switch
Falun Song, Fei Li, Beizhen Zhang, Chunxia Li, Ganping Wang, Yanqing Gan, Xiao Jin

15:45 - 16:00 (O11-2): Scaling and Operation of Uniform Field, High Pressure Spark gaps in Ultra Zero Air
Randy Curry, Seth Miller, Owen John

16:00 - 16:15 (O11-3): Study for the impact of cathode field emission electrons on the self-breakdown jitter of gas switches
Wei Shang

16:15 - 16:30 (O11-4): Characterization of the Triggering Voltage of the Cold-Cathode Thyatron for Parallel Switching Applications
Aaisha Alali, Gideon Nimo Appiah, Fernando Albarracin, Felix Vega, Chaouki Kasmi

16:30 - 16:45 (O11-5): Design and implementation of a 100 kA peak solid state pulse switch for a high energy neutron source
J. T. Bonnema, T. Huiskamp, R. J. E. Jaspers, S. Lisgo

16:45 - 17:00 (O11-6): Modeling of High Pressure Breakdown in Ultra-Zero Air
Seth Miller, Randy D. Curry, Owen Johns, Edl Schamiloglu

17:00 - 17:15 (O11-7): Pulse Breakdown of Overvolted Gaps Filled with CO₂
Igor Timoshkin, Mark P. Wilson, Martin J. Given, Scott J. MacGregor, Nelly Bonifaci, Rachelle Hanna

17:15 - 17:30 (O11-8): Study on breakdown voltage and damage mechanism of an extrinsic V-doped 4H-SiC lateral photoconductive device with shielding conductor
Liu Fuyin, Shen Tianjiao, Yang Li'ao, Zeng Linglong, He Ting, Wang Langning, Xun Tao

Oral Session 12 - EML: Railgun Launchers 2

Tuesday Sep. 24, 15:30 - 17:30

Location: Administratiezaal

15:30 - 16:00 (O12-1): INVITED - Experimental comparison between flat and convex rails for electromagnetic launchers

Vincent Andraud, Paul Gapenne, Quentin Hassler, Harald Scharf, Markus Schneider

16:00 - 16:15 (O12-3): On the Co-use of Railguns Used for Naval Artillery and Against Anti-Ship Missiles

Tom Vancaeyzeele, Johan Gallant, Ben Lauwens, Oliver Liebfried, Markus Schneider

16:15 - 16:30 (O12-4): Electromagnetic compatibility related to the integration of railgun on a warship

Philippe Delmote, François Bieth

16:30 - 16:45 (O12-5): Research on Muzzle Arc in Ultra High Speed Air Flow

Meng Wang, Qi Wang, Jue Wang, Ping Yan, Hongyan Sun

16:45 - 17:00 (O12-6): A Transverse Flux Single-Phase Tubular Switched Reluctance Linear Launcher with Two Stator Poles

Hao Chen, Xing Wang, Jinfu Liu, Murat Shamiev, Yokub Tairov, Antonino Musolino

17:00 - 17:15 (O12-7): Study on the motion characteristics of armature under different initial assembly accuracy

Shiyu Hao, Ran An, Hao Shi, Weihao Li, Chengcheng Li, Li Chen, Huantong Shi, Xingwen Li

Plenary Lecture

Wednesday Sep. 25, 09:00 - 10:00

Location: Effectenbeurszaal

Session chair: Prof. Weihua Jiang

Dr. Bryan Oliver

High Power Particle Beams for Radiation Effects Science

Oral Session 13 - EAPPC: Pulsed power applications 2

Wednesday Sep. 25, 10:30 - 12:30

Location: Effectenbeurszaal

Session chair: Prof. Taichi Sugai

10:30 - 11:00 (O13-1): INVITED - Efficient and Economical Pulse-Modulated AC Power Enabled Dielectric Barrier Discharge for CO₂ Dissociation

Yuxuan Xu, Yuan Gao, Liguang Dou, Dengke Xi, Bangdou Huang, Tao Shao

11:00 - 11:15 (O13-3): Flexible, solid-state, nanosecond pulsed power for plasma-activated water generation

J.J. van Oorschot, A.J.M. Pemen, T. Huiskamp

11:15 - 11:30 (O13-4): Removal of PFAS and pharmaceutical residues from water with a hyperbolic vortex pulsed plasma discharge

Roman Klymenko, W.F.L.M. (Wilfred) Hoeben, Elmar C. Fuchs, Jakob Woisetschläger, Luewton L.F. Agostinho

11:30 - 11:45 (O13-5): Generation of hydroxyl radicals in atmospheric air under repetitive nanosecond spark discharges

Iliane Hifi, Mark Wilson, Igor Timoshkin, Graeme Burt

11:45 - 12:00 (O13-6): Pulsed streamer discharges driven by a 500-kV, nanosecond, compact Marx generator

Chiel Ton, Tom Huiskamp

12:00 - 12:15 (O13-7): Ultra-high ozone yield generated by nanosecond pulsed power source

Siyuan Fan, Chiel Ton, Jeroen. J. van Oorschot, Tom Huiskamp

12:15 - 12:30 (O13-8): Extraction of C-phycoerythrin from *Arthrospira platensis* by exposure to pulsed electric fields

Njomza Ibrahim, Jean-Baptiste Beigbeder, Angela Sanchez-Quintero, Yves le Guer, Antoine de Ferron, Susana de Matos Fernandez, Laurent Pecastaing

Oral Session 14 - EAPPC: (Magnetically Insulated) Transmission Lines

Wednesday Sep. 25, 10:30 - 12:30

Location: Veilingzaal

Session chair: Dr. Paul Holligan

10:30 - 11:00 (O14-1): INVITED - Using Controlled Electron Losses in MITLs to Pulse Shape Load Current

R. B. Spielman, R. V. Shapovalov

11:00 - 11:15 (O14-3): Development of a Uniform Field Test Fixture for Power Flow Experiments

Tyler J. Mason, Rick B. Spielman, Randy D. Curry, Cameron Chavez, Alex Sarracino, Thomas Mundy, Eric Sander Lavine, Michael J Aberer, Derek C. Lamppa

11:15 - 11:30 (O14-4): Power flow in next-generation pulsed power: insights from the novel Hairpin campaigns at Imperial College London

Thomas Mundy, Lee Suttle, Katherine Marrow, Jergus Strucka, Stefano Merlini, Simon Bland, Sergey Lebedev

11:30 - 11:45 (O14-5): Characterization of SS304L Outgassing Characteristics and the impact on HED Applications

Michael J Aberer, Randy D Curry, Alex Sarracino, Karen Dezetter, Shane L McPherson, Tyler J Mason, Rick B Spielman

11:45 - 12:00 (O14-6): Simulations of Brillouin Flow with Abrupt Change in Gap Width

Ryan A. Revolinsky, Christopher J. Swenson, Nicholas M. Jordan, Y. Y. Lau, Ronald M. Gilgenbach

12:00 - 12:15 (O14-7): Tailored Metallic Coatings for Controlling Surface Heating Rates of Conductors

Alex Sarracino, Derek Lamppa, Tylan Watkins, Charles Rose

12:15 - 12:30 (O14-8): Monolithic Radial Transmission Line Circuit Modelling Using a 2D Mesh

ibrahim güngen, Gwilym Jones, Nicolas Niasse, Paul Holligan

Oral Session 15 - EML: EML related materials, computational techniques, modeling and applications 2

Wednesday Sep. 25, 10:30 - 12:30

Location: Administratiezaal

Session chair: Dr. Marcus Stiemer

10:30 - 11:00 (O15-1): INVITED - A Calculation method of deposition layer based on armature melting morphology

Wang Zengji, Chen Lixue, Yuan Weiqun, Xu Weidong, Yan Ping

11:00 - 11:15 (O15-3): Longitudinal Electromagnetic (EM) Force Experiment using a DC Coaxial Circuit

Neal Graneau

11:15 - 11:30 (O15-4): Experimental Demonstration of Model Based Control of a Nonlinear Aircraft Arresting System

Yacine Boudria, Raymond Sepe Jr, Steven Bastien, Musa Jouaneh

11:30 - 11:45 (O15-5): Optimization of energy storage control for shipboard integrated power system under high-energy impulse load

Yadong Zhang, Ao Zhou

11:45 - 12:00 (O15-6): Numerical analysis and experimental study of electromagnetic field under high-speed motion of electromagnetic launcher

Hao Jianyin, Zhu Lihua, Liu Ping, Tian Zihao

12:00 - 12:15 (O15-7): Analysis and Experimental Research on Contact Characteristics of Armature-Rail in Enhanced EML

Lihua Zhu, Ping Liu, Jianying Hao, Zhihao Tian

Poster Session 3

Wednesday Sep. 25, 13:30 - 15:00

Location: Graanbeurszaal

EAPPC: Pulsed power generators

P3-1: Development of a Kicker Power Supply Driving Bump Magnets for the Korea-4GSR Injection System

sang-hee Kim, chang-ki Min, woo-jun Byeon, Jae-yu Lee

P3-2: A Comparative Study of Solid-State Pulse-Power Generators for High-Voltage Nanosecond Applications

Saleh Omar Saleh Edhah, Jamal Alsawalhi, Balanthi Beig, Nouredine Harid, Ameer Ibrahim, Musaab Salih

P3-3: A Design of the Integrated MHz Induction Acceleration Cell with Bipolar High-Voltage Pulse Source

Yi Liu, Ziping Huang, Yi Shen, Huang Zhang, Xiaobing Jing, Jianjun Deng

P3-4: Pulse Generator for Impact Ionization Triggering in Thyristors

Viliam Senaj, Alicia Ana del Barrio Montañés, Thomas Kramer, Martin Sack

P3-5: Development of compact Marx generator based on gas discharge tube for pulsed power experiments

YeongHwan Choi, Hakmin Lee, Muhyeop Cha, Kyoung-Jae Chung

P3-6: Design of the ultra-high impulse voltage generator with output rated voltage peaking upto 16.8MV/2.52MJ

Yakun Liu, Zemin Duan, Xiaoliang Si, Zhenyu Wei, Zeyang Zhao, Song Zhang, Zhibao Li, Minglei Qu, Shujing Qiao

P3-7: Energy Distribution and Dissipation Characteristics on a 12-Stage Linear Transformer Driver Module

Zhenyu Wang, Jian Wu, Tianxiao Cheng, Xiaofeng Jiang, Zhiguo Wang, Fengju Sun, Hao Wei, Xingwen Li, Aici Qiu, Penghui Li

P3-8: A portable 250kA X-pinch for point source radiography, diffraction and absorption spectrometry

Simon Bland, Jergus Strucka, Yifan Yao

P3-9: Development of Isolated Inverter with Feedback System for Solid-State Pulsed Power Generator

Arisa Ono, Koki Saito, Kazuki Nagao, Akihito Mizukoshi

P3-10: Improvement of field-circuit coupling model including the monolithic radial transmission line for future Z-pinch accelerators

QUAN ZHOU, Chakhung Yeung

P3-11: Development and initial tests of a compact high current generator for Warm Dense Matter studies

Frédéric Zucchini, Simon Soulié, Arnaud Loyen, Benjamin Jodar

EAPPC: Pulsed power physics, methods and enabling technologies

P3-12: Spectroscopic Comparison of an Intense Electron Beam Experiment Using the Rigid Beam Approximation

Nancy D. Isner, Eric R. Kaiser, Stuart L. Jackson, Ian M. Rittersdorf, Stephen B. Swanekamp

P3-13: An FPGA based System for Multipulse Accelerator (STREAMI)

Roman Leduc, Robert Ruscassié, Laurent Courtois, Baptiste Cadilhon

P3-14: Optimisation of Structural Parameters of Triggered Vacuum Switches

Matthew Woodyard, Simon Bower, Michael Payne, Richard Wallace

P3-15: The Stabilization of Plasma Channels with Currents of Hundreds kAmps by Conductive Screens

Victor Bochkov, Dmitry Bochkov

P3-16: A new and compact experimental setup based on coherent Smith-Purcell radiation to produce high-power THz radiation

Alexandre Goeury, Xavier Hebert, Olivier James, Rodolphe Marchesin, Sylvain Maine, Nicolas Sens

P3-17: Impulsive Breakdown Characteristics of Air in Non-Uniform Electric Field

Udit Pal, Akhilesh Mishra, Igor Timoshkin, Mark Wilson, Martin Given, Scott MacGregor

EAPPC: Pulsed power applications

P3-18: Specific current action integral of different materials studied by underwater electrical explosions of foils

Nikita Asmedianov, Ron Grikshtas, Gennadi Liziakin, Sergey Efimov, Yakov E. Krasik

P3-19: Application of pulsed discharge to separate CFRP layer from CFRP/Steel laminates

Keita Sato, Taketoshi Koita, Manabu Inutsuka, Ryo Ogawa, Keisuke Ota, Tomoki Honda, Takao Namihira, Ryo Sasamoto, Chiharu Tokoro

P3-20: Ten-Year Operational Statistics and Upgrade History of Modulator-Klystron System for PLS-II 3-GeV Linac

S. D. Jang, Y. K. Son, H. S. Kong, S. J. Park

P3-21: MI2, a 800keV-IVA to study dual 2.5kA electron beams emitted from velvet cold cathode

Baptiste Cadilhon, Bruno Cassany, CLaude Fourment, Olivier James, Stéphane Petitjean, Christophe Vermare

P3-22: The effect of thickness of cathode active material layer on separation of cathode materials in Lithium-ion batteries using electrical pulsed discharge

Moe Nakahara, Taketoshi Koita, Shinichi Higuchi, Asako Narita, Ryosuke Honda, Yusei Onitsuka, Takao Namihira, Chiharu Tokoro

P3-23: Analysis of High Voltage Pulse Characteristics for Electric Weed Control Application

Roman Grinberg, Tobias Kämpfer, Martin Bauer

P3-24: Study on Breakdown Characteristic of Ceramic Particle Enhanced Electrode

Zhang Motao, Zhang Haoran, Qiu Xudong, Li Rui, Su Jiancang

P3-25: Mapping non-linear pulsed electrolysis for industrial hydrogen production

Peter R Rushforth, Bucur M Novac, Peter Senior

P3-26: A Sonata for Pulsed Power and Plasma

Guus Pemen

P3-27: An antenna array for contactless PEF treatment

Guus Pemen, Jelle Geeve, Ramiro Serra, Tom Huiskamp

EAPPC: High-power microwaves and RF sources

P3-28: An X-band High Power Magnetron

Gennadi Liziakin, Oleg Belozorov, John G. Leopold, Yakov E. Krasik, Andrey D. Andreev, Edl Schamiloglu

P3-29: Suppression of asymmetric mode competition in an X-band dual-mode relativistic backward wave oscillator

Kun Chen, Renzhen Xiao

P3-30: LDMOS Based solid-state power amplifier for the heavy ion accelerator

Sangyoon Bae, Kyungtae Seol, Kitaek Son, Doyoon Lee, Hyungjin Kim

P3-31: Experimental Study on Diode Packaged with Permanent Magnet

Tian-ze Miao, Ren-zhen Xiao, Jun Cheng, Kun Chen, Hai-chuan Zhang, Ya-jiao He, Yan-chao Shi

P3-32: Influences of Explosive Field Emission Threshold to the Performance of Magnetron with Diffraction Output

Shen SHou Max Chung, Shih-Chung Tuan

P3-33: Approach Formulation for Frequency Tunability in Gyromagnetic Lines

Jose Osvaldo Rossi, Joaquim Jose Barroso, Fernanda Sayuri Yamasaki, Lauro Paulo da Silva Neto, Edl Schamiloglu

P3-34: Multi-Point Field Emission and Electromagnetic Shielding

Yue Wu, Jiaru Shi, Haoyu Zhou

EML: Railgun armatures and integrated projectiles

P3-35: Influence of armature surface morphology on erosion in the initial stage of launch

Bingxuan Zhao, Lixue Chen, Xuan Xu, Shengqin Xu, Wenhao Zhang, Tingyun Xiao

P3-36: General Description of Solid Armatures in Electromagnetic Railguns

Lixue Chen, Wenhao Zhang, Lidong Li, Shengqin Xu

P3-37: Research on the Sliding Electric Contact Theory of EM Railgun

LI Jun, JIN Longwen, LIU Peizhu, ZHANG qingxia, LI Ran, YU Xinjie, LI Bei

P3-38: Electromagnetic launch experiment and structure optimization of hypervelocity integrated projectile

Te Ma, Hongwei Song, Wu Yuan, Ping Yan

P3-39: Research on the Influence of Rail Deposition Layer on the Characteristics of Armature/Rail Interface

Li Chengxian

EML: Coilguns and other types of EML

P3-40: Modeling and Simulation Analysis of Linear Motor Finite Length Conveying Based on Irregular Armature

Pengfei Li, Bo Gao, Zhipeng Niu, Qunxian Qiu, Guohua Pang, Gang Gu, Xiang Li

P3-41: Timing Control Strategy for Reluctance Coilgun Based on Energy Recovery Circuit

Wentao Song, Xiaocun Guan, Shaohua Guan

P3-42: Parameters optimization design of high-speed reluctance coil launchers

Yadong Zhang, Ao Zhou

P3-43: Research on the Mechanism of Armature Capture Effect on Synchronous Induction

Tao Zhang

EML: Integrated launch systems and control and diagnostic systems for EML

P3-44: A compact flash X-ray radiography machine based on wire-shortened RPD and its application in electromagnetic launching diagnostics

Huantong Shi, Tongquan Wang, Ming Xu, Peizhou Zhang, Yizhu Wang, Jian Wu, Li Chen, Xingwen Li, Aici Qiu

P3-45: Study on temperature rise characteristics of Eddy current damper under continuous impact load

chao zhang, Zhipeng Niu, Gang Gu, Qunxian Qiu, Bo Gao, Xinke Ma, Liang Chen

P3-46: Design and Analysis of Anti Recoil Device for Launcher with large Recoil Mass

Xinke Ma, Gang Gu, Zhipeng Niu, Qunxian Qiu, Bo Gao, Chao Zhang

P3-47: Launch Efficiency of Capacitive Energy-Storage Electromagnetic Railgun System

Tingyun Xiao, Lixue Chen, Xuan Xu, Shengqin Xu, Wenhao Zhang, Wenhao Zhang

P3-48: Research on High-Energy and Ultra-High-Speed Electromagnetic Rail Launch Test System

Zhenchao Li, Wanyu Zhao, Dejiang Yu, Chong Chen, Yan Wang, Xiang Ji, Liping Jiang, Xiaoyan Tang, Xinjie Yu

P3-49: Analysis of Key Technologies of Commercial Space Launch System Utilizing Magnetic Levitation and Electromagnetic Propulsion

Yanqing Zhang, Mindong Lyu, Kexin Liu, Wenyong Wang, Zihua Zhang, Ping Li

P3-50: Railgun Armatures and Cost Considerations

Ian R. McNab

P3-51: Research on Muzzle Velocity Control of electromagnetic Rail Gun

Peizhu Liu, Jun Li, Longwen Jin, Xutong Gao, Yuhang Ren

Awards Lecture

Wednesday Sep. 25, 15:30 - 16:30

Location: Effectenbeurszaal

Session chair: Dr. Anton Gusev

EAPPC Distinguished Researcher Award Lecture
Dr. Martin Sack
Pulsed Power for Process Optimization - Selected Applications and Technologies

Oral Session 16 - EAPPC: Pulsed power generators 2

Wednesday Sep. 25, 16:30 - 17:30

Location: Effectenbeurszaal

Session chair: Dr. Hanwu Yang

16:30 - 16:45 (O16-1): A 500 kV Nanosecond Pulse Generator Based on an Off-the-Shelf Solid-State Opening Switch

Mawuena R. Degnon, Anton I. Gusev, Antoine Silvestre de Ferron, Laurent Pecastaing, Arthur Piaser, Frédéric Bayol, Sébastien Boisne, Bucur M. Novac

16:45 - 17:00 (O16-2): Pulsed Power Fusion and Efforts to Pursue Public-Private Partnerships

Kyle Peterson, Kate Bell, Daniel Sinars

17:00 - 17:15 (O16-3): Advanced Helical Generators Performance at LLNL

J. B. Javedani, A. J. Young, G. F. Kiuttu, A. J. Johnson, A. Y. Jiao, A. D. White

17:15 - 17:30 (O16-4): Parametric Optimization and Analysis of Pulsed Power Systems

Brett M. Huhman, Christopher W. Peters

Oral Session 17 - BEAMS: High-energy density physics and technology

Wednesday Sep. 25, 16:30 - 17:30

Location: Veilingzaal

Session chair: Dr. Mark Sinclair

16:30 - 16:45 (O17-1): High Current Tokamak Protection Switch

Rebecca Simpson, Dr. David Cope, Arianna Blanchette, Dr. Marcel P.J. Gaudreau, Kathleen Quinlan, Michael Kempkes

16:45 - 17:00 (O17-2): Measurements of a Ti target impact with an intense relativistic electron beam

Sebastian Szustkowski, Michael A. Jaworski, Tyler W. Kelehan, Lee N. Merrill, David C. Moir

17:00 - 17:15 (O17-3): Study of Instabilities on Gas-on-Metal Liner Z-Pinch Implosion

Joe Chen, Landon Tafoya, Adam Bedel, George Dowhan, Brendan Sporer, Nicholas Jordan, Ryan McBride, David Yager-Elorriaga

17:15 - 17:30 (O17-4): Design and characterization of a gas-puff dense plasma focus for a negative-polarity LTD facility

Landon Tafoya, Joe Chen, Adam Bedel, Nick Jordan, Ryan McBride

Oral Session 18 - EML: Railgun armatures and integrated projectiles

Wednesday Sep. 25, 16:30 - 17:30

Location: Administratiezaal

Session chair: Dr. Frank Hegeler

16:30 - 17:00 (O18-1): INVITED - Hypervelocity integrated projectiles: design, simulation and test
Te Ma, Hongwei Song, Wu Yuan, Ping Yan

17:00 - 17:15 (O18-3): Effects of Deposition Layer on the Armature Startup in Railgun
Wen Tian, Gongwei Wang, Nan Xiao, Weiqun Yuan, Ying Zhao, Ping Yan

Plenary Lecture

Thursday Sep. 26, 09:00 - 10:00

Location: Effectenbeurszaal

Session chair: Prof. Guus Pemen

Dr. Jianjun Deng
A 50MA super-high-power pulsed facility for Z-pinch

Oral Session 19 - EAPPC: Solid-state switching

Thursday Sep. 26, 10:30 - 12:30

Location: Effectenbeurszaal

Session chair: Dr. Rainer Bischoff

10:30 - 10:45 (O19-1): Research progress of light triggered semiconductor switches and their applications
Hongtao Li

10:45 - 11:00 (O19-2): Evaluation and Optimization of Semiconductor Opening Switches
Emily Schrock, Qinhui Shao, Caitlin Chapin, James Schrock, Lars Voss

11:00 - 11:15 (O19-3): Investigation into electrically-triggered and laser-triggered thyristors for pulsed power modulators
Gideon Nimo Appiah, Aaisha Al Ali, Hamad Deiban, Fernando Albarracin, Felix Vega, Chaouki Kasmi

11:15 - 11:30 (O19-4): High-Frequency High-Voltage Solid State Switches with Integrated Driver Circuitry
John Waldron, Jim Croyle

11:30 - 11:45 (O19-5): Gate-boosted operation of a GaN-HEMT as Closing Switch
Martin Sack, Dennis Herzog, Georg Müller

11:45 - 12:00 (O19-6): Application of the Grey-Box Modelling to Simulate GaN HEMTs
Ivan Vorotiahin, Martin Hergt, Martin Sack, Marc Hiller, Georg Müller

12:00 - 12:15 (O19-7): Enhancing Drift Step Recovery Diode Performance through Graded Epitaxy: Simulation and Analysis
Alex Usenko, Jay Eifler, Anthony Caruso, Steven Bellinger

12:15 - 12:30 (O19-8): Modeling and Characterizing of Electromagnetic Coupling in 4H-SiC Photoconductive Semiconductor Switch
Zhong Zheng, Qian Sun, Yutian Wang, Hui Guo

Oral Session 20 - EAPPC: High-power microwaves and RF sources 2

Thursday Sep. 26, 10:30 - 12:30

Location: Veilingzaal

Session chair: Dr. Renzhen Xiao

10:30 - 11:00 (O20-1): INVITED - Evolution of the Relativistic Magnetron
Edi Schamiloglu

11:00 - 11:15 (O20-3): Experimental Investigation of a Relativistic Magnetron with Reducing Coaxial Section and Tilted Tuners
Yannick Delvert, Béatrice Lalle, Antoine Chauloux, Jean-Christophe Diot, Philippe Lévêque, Alexandre Catrain, Jérémy Pothée, Thibaut Delhoume, Léo Dos Santos

11:15 - 11:30 (O20-4): Design and Demonstration of an Overmoded X-band MILO
Nicholas M. Jordan, Ryan A. Revolinsky, Adam N. Brusstar, Emma N. Guerin, Christopher J. Swenson, Y.Y. Lau, Ronald M. Gilgenbach

11:30 - 11:45 (O20-5): Electron Beam Measurement and Analysis in a Virtual Cathode Oscillator
Kazuki Nagao, Ryusei Takahashi, Pham Huu Thanh, Shion Okubo, Taichi Sugai, Weihua Jiang

11:45 - 12:00 (O20-6): Design of a High Power Crossed-Field Amplifier
Christopher Swenson, Ryan Revolinsky, Emma Guerin, Ryan McBride, Yue Ying Lau, Nicholas Jordan, Ronald Gilgenbach

12:00 - 12:15 (O20-7): Design of S-band Magnetron Modulator for Anti-drone System
Joo-Young Lee, Min-Kyu Choi, Yoon-Seok Lee, Ju-Won Kim, Hong-Je Ryoo

12:15 - 12:30 (O20-8): Influence of azimuthal and axial static magnetic polarization fields on RF oscillation generation in a GNLTL.
Nicolas Charrel, Alexey Zhabin, Marc Rivaletto, Antoine Silvestre de Ferron, Veronika Gavrilenko, Laurent Pecastaing, Antoine Chauloux, Jean-Christophe Diot, Alexandre Catrain, Léo Sousbielle

Oral Session 21 - EML: Power electronics, switching techniques and pulsed power supplies for EML

Thursday Sep. 26, 10:30 - 12:30

Location: Administratiezaal

Session chair: Prof. John Mankowski

10:30 - 11:00 (O21-1): INVITED - Pulse Transformer Investigation Based on an Inductive Toroidal Coil with Coupled Coil Sections

Oliver Liebfried, Maxime Berard, Volker Brommer

11:00 - 11:15 (O21-3): Research on Rotor Strength and Critical Speed of the Air-Core Pulsed Alternator

Jijian Wan, Kexun Yu, Jiasong Wang, Xianfei Xie

11:15 - 11:30 (O21-4): Investigation of Supercapacitors as Energy Source for Compact Inductive Pulsed-Power Generators

Fabian Albrecht, Maxime Berard, Volker Brommer, Oliver Liebfried, Klaus F. Hoffmann

11:30 - 11:45 (O21-5): Implementation of Advanced Power System with Multi-Stage Inverters for Linear Induction Launchers

Serkan Dogangunes, Abdulkadir Balikci

11:45 - 12:00 (O21-6): An Optimized Topology for Air-core Pulsed Alternator Pulsed Power System

Jiasong Wang, Kexun Yu, Xianfei Xie

12:00 - 12:15 (O21-7): Research on the solution strategy of discharge sequence of pulsed power supply based on reverse fitting of mathematical model

Wanyu Liu, Hongyan Sun, Xuzhe Xu, Kun Liu, Weiwei Pan, Yaohong Sun, Ping Yan

12:15 - 12:30 (O21-8): Analysis of Self-Excitation Characteristics of an Air-Core Brushless Induction Pulsed Alternator

Chujie Dou, Shaopeng Wu, Bochao Du, Song Wang