

Schedule at a Glance

13th International Symposium on Bioelectrics

Sunday, September 11, 2016 – Thursday, September 15, 2016

Sunday – September 11, 2016	
3:30 pm – 6:00 pm	Registration and Check-In, Penta Hotel
7:00 pm – 9:00 pm	Welcome Reception, Penta Hotel

Monday – September 12, 2016	
8:00 - 08:30	Welcome and Introduction
08:30 – 09:30	Plenary Session I Session Chair: Richard Heller <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA</i>
8:30 - 09:30	Plenary I - Gregor Sersa: Current Developments in Clinical Application of Electrochemotherapy and Future Directions Gregor Sersa <i>Department of Experimental Oncology, Institute of Oncology Ljubljana, Zaloska 2, SI-1000 Ljubljana, Slovenia</i>
9:30 - 09:45	Coffeebreak
09:45 – 11:45	Oral Session I: Medical/Clinical Applications Session Chair: Lluís Mir <i>Vectology and Anticancer Therapies, UMR8203, CNRS, Univ. Paris-Sud, Gustave Roussy, Université Paris-Saclay, Villejuif, France</i>
09:45 - 10:15	O1-1-1.2 - Invited - Connolly, Richard: Adaptive Electroporation Technology for Intratumoral Immunotherapy D.W. Brown, A.J. Bahrami, D.A. Canton, J.S. Campbell, R.H. Pierce, R.J. Connolly <i>Oncosec Medical Inc., 5820 Nancy Ridge Drive, San Diego, CA 92121, USA</i>
10:15 - 10:45	O1-1-3.4 - Invited - Nuccitelli, Richard: Optimizing Nano-Pulse Electro-Signalling (NPES) Parameters for Activating Immunogenic Apoptosis and Inhibiting Metastasis R. Nuccitelli, Z. Mallon, A. McDaniel, S. Anand, J. Cha, M. Kreis, B. Athos, D. Danitz, D. Uecker, P. Nuccitelli <i>Pulse Biosciences, Inc., 849 Mitten Rd., Ste 104, Burlingame, CA 94010, USA</i>
10:45 - 11:15	O1-1-5.6 - Invited - Robert, Eric: Non Thermal Plasma Jets and Plasma Jet Electric Fields for Biomedical and Agricultural Applications E. Robert ¹ , S. Iseni ¹ , C. Douat ¹ , V. Vijayarangan ² , A. Delalande ² , C. Pichon ² , J.M. Pouvesle ¹ <i>¹GREMI CNRS/Université d'Orléans, 45067 Orléans, France; ²CBM, UPR 4301 CNRS Orléans, France</i>
11:15 - 11:30	O1-1-7 - Ran, Sun: Preclinical Study of Irreversible Electroporation Ablation in Lung and Kidney in Pigs R. Sun ¹ , T. Zhu ² , Z. Ren ^{1,2} , D. Guo ² , X. Zhang ² , Z. Peng ² , Z. Yu ¹ , J. Sun ² , S. Zheng ² , Q. Kan ¹ , X. Chen ² <i>¹Department of Infectious disease, the First Affiliated Hospital of Zhengzhou University, 450001, China; ²Key Laboratory of Combined Multi-organ Transplantation, Ministry of Public Health; Department of Hepatobiliary and Pancreatic Surgery, The First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310003, China</i>

Oral Session I – continued	
11:30 - 11:45	<p>O1-1-8 - Ren, Zhigang: Local Liver Ablation with Pulsed Electric Field Stimulate Systemic Immune Reaction against Hepatocellular Carcinoma with Time-Dependent Cytokine Profile</p> <p>Z. Ren^{1,2}, S. Yin², T. Zhu², D. Guo², X. Zhang², Z. Peng², Z. Yu¹, J. Sun², S. Zheng², Q. Kan¹, X. Chen²</p> <p>¹Department of Infectious disease, the First Affiliated Hospital of Zhengzhou University, 450001, China; ²Key Laboratory of Combined Multi-organ Transplantation, Ministry of Public Health; Department of Hepatobiliary and Pancreatic Surgery, The First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310003, China</p>
11:45 - 01:00	Lunchbreak
01:00 – 02:45	<p>Oral Session II: Devices and Methods & Environmental Applications, Biomass Treatment, Food Treatment</p> <p>Session Chair: Hamid Hosseini</p> <p><i>Bioelectronics Department, Institute of Pulsed Power Science, Kumamoto University, Kumamoto, Japan</i></p>
01:00 - 01:30	<p>O1-2-1.2 - Invited - Vernier, Thomas: Beyond the "Standard Model" of Electroporation - Physical and Physiological Components of the Electroporomeome</p> <p>P.Th. Vernier¹, E.B. Sözer¹, Z.A. Levine²</p> <p>¹Frank Reidy Research Center for Bioelectronics, Old Dominion University, 4211 Monarch Way, Norfolk, VA 23508, USA; ²Department of Physics and Department of Chemistry and Biochemistry, University of California Santa Barbara, Santa Barbara, CA 93106, USA</p>
01:30 - 02:00	<p>O1-2-3.4 - Invited - Kempkes, Mike: PEF Industrialization Status</p> <p>A.M. Kempkes</p> <p><i>Diversified Technologies, Inc., Bedford, MA, USA</i></p>
02:00 - 02:15	<p>O1-2-5 - Pemen, Guus: The Pulsed Electric Field of a Plasma for Biomedical Applications</p> <p>A.J.M. Pemen¹, P. Smits², A. Sobota², B. Zeper³</p> <p>¹Eindhoven University of Technology, Electrical Engineering, Eindhoven, The Netherlands; ²Eindhoven University of Technology, Applied Physics, Eindhoven, The Netherlands; ³PlasmaCure, Eindhoven, The Netherlands</p>
02:15 - 02:30	<p>O1-2-6 - Teissié, Justin: Direct Observations of Electrostretching Associated to Pulsed Electric Field Delivered on Vesicles and Cells</p> <p>C. Mauroy, M. Coustets, E. Bellard, M.-P. Rols, M. Golzio, J. Teissié</p> <p><i>Institut de Pharmacologie et de Biologie Structurale, Université de Toulouse, CNRS, UPS, France</i></p>
02:30 - 02:45	<p>O1-2-7 - Pillet, Flavien: Pulsed Electric Fields Induce Cell-Envelope Damages on Bacterial Spores</p> <p>F. Pillet^{1,2}, J. Teissié^{1,2}, E. Dague^{1,3}, M.-P. Rols^{1,2}</p> <p>¹CNRS, IPBS (Institut de Pharmacologie et de Biologie Structurale); 205 Route de Narbonne BP64182, F-31077 Toulouse, France; ²Université de Toulouse, UPS, IPBS, F-31077 Toulouse, France; ³LAAS, 7 avenue du Colonel Roche, F-31400 Toulouse, France</p>
02:45 - 03:00	Coffeebreak

03:00 – 04:45	Oral Session III: Basic Research & Methods: DNA Delivery, Selectivity, Ablation Session Chair: Gregor Sersa <i>Department of Experimental Oncology, Institute of Oncology Ljubljana, Zaloska 2, SI-1000 Ljubljana, Slovenia</i>
03:00 - 03:30	O1-3-1.2 - Invited - Heller, Richard: Gene Electrotransfer an Effective Approach for Delivering Plasmid DNA to the Skin R. Heller, A. Donate, C. Edelblute, S. Guo, M. Malik, J. Hornef, C. Jiang, A. Bulysheva <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA 23508, USA</i>
03:30 - 03:45	O1-3-3 - Gianulis, Elena: Selective Killing by nsPEF Across Multiple Types of Cancer and Non-Cancer Cells E.C. Gianulis ¹ , C. Labib ¹ , G. Saulis ² , V. Novickij ³ , O.N. Pakhomova ¹ , A.G. Pakhomov ¹ ¹ <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA;</i> ² <i>Department of Biology, Faculty of Natural Sciences, Vytautas Magnus University, Kaunas, Lithuania;</i> ³ <i>Magnetic Field Institute, Vilnius Gediminas Technical University, Vilnius, Lithuania</i>
03:45 - 04:00	O1-3-4 - Guo, Siqu: Nanosecond Electric Pulses as Ablation-Immunotherapy for Advanced Breast Cancer S. Guo, Y. Jing, N.I. Burcus, R. Heller, S.J. Beebe <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, 4211 Monarch Way, Norfolk, VA 23508, USA</i>
04:00 - 04:15	O1-3-5 - Gomonov, Sergey: Tumor Treating Fields can Disrupt Cancer Cell Proliferation by Means of Inwardly Rectifying K⁺ Channels S.V. Gomonov <i>FID GmbH, Werksstrasse 25, 57299, Burbach, Germany</i>
04:15 - 04:30	O1-3-6 - Poignard, Clair: Dynamical Numerical Model for Clinical IRE Ablation of Liver Tumors O. Gallinato ^{1,2} , F. Cornelis ³ , O. Séror ⁴ , C. Poignard ^{1,2} ¹ <i>Université de Bordeaux, France;</i> ² <i>INRIA Bordeaux Sud-Ouest, France;</i> ³ <i>Hôpital Pellegrin, CHU de Bordeaux, France;</i> ⁴ <i>Hôpital Jean Verdier, Bondy, France</i>
04:30 - 04:45	O1-3-7 - Mir, Lluís: Non-Invasive and Label-Free Optical Spectroscopy Techniques to Investigate the Interaction between Intense Pulsed Electric Fields and Biological Samples A. Azan ¹ , M. Scherman ² , A. Silve ³ , V. Untereiner ^{4,5} , C. Merla ¹ , N. Dorval ² , B. Attal-Trétout ² , O. Piot ⁴ , L.M. Mir ¹ ¹ <i>Vectology and Anticancer Therapies, UMR8203, CNRS, Univ. Paris-Sud, Gustave Roussy, Université Paris-Saclay, Villejuif, France;</i> ² <i>ONERA – Département de Mesures PHysiques, Palaiseau, France;</i> ³ <i>KIT – IHM, Karlsruhe, Germany;</i> ⁴ <i>MEDyC, UMR7639, CNRS, Faculté of Pharmacy, Université de Reims Champagne-Ardennes, Reims, France;</i> ⁵ <i>Platerforme d'imagerie cellulaire et tissulaire, Faculty of Pharmacy, Université Reims Champagne-Ardennes, Reims, France</i>
07:00 - 08:00	Consortium Meeting
08:00 -09:00	Consortium Dinner

Monday, September 12, 2016

Tuesday – September 13, 2016	
08:15 - 08:30	Introduction and Announcements
08:30 – 09:30	Plenary Session II Session Chair: Andrei Pakhomov <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA</i>
08:30 - 09:30	Plenary II - Bennett Ibey: Understanding the Biophysical and Biochemical Response of Mammalian Cells to Nanosecond Pulsed Electric Fields Bennett L. Ibey, Hope T. Beier <i>Bioeffects Division, Air Force Research Laboratory, Ft. Sam Houston, TX, USA</i>
09:30 - 09:45	Coffeebreak
09:45 – 11:45	Oral Session IV: Plasmas, Shock Waves, Cell Deformation, Electroporation Session Chair: Eric Robert <i>GREMI CNRS/Université d'Orléans, 45067 Orléans, France</i>
09:45 - 10:15	O2-1-1.2 - Invited - Lukes, Petr: Effects of Atmospheric Plasma Jet on Bacterial Cell Membrane Integrity P. Lukes ¹ , M. Breton ² , J. Niedoba ¹ , V. Fantova ¹ , L.M. Mir ² <i>¹Institute of Plasma Physics of the Czech Academy of Sciences, v.v.i., Za Slovankou 1782/3, Prague, Czech Republic; ²Laboratory of Vectorology and Anticancer Therapies, CNRS UMR8203 Univ. Paris-Sud, Gustave Roussy, 114 rue Edouard Vaillant, 94805 Villejuif, France</i>
10:15 - 10:30	O2-1-3 - Wende, Kristian: Atmospheric Pressure Plasma in Biotechnology K. Wende ¹ , F. Näser ² , C. Bäcker ² , K.-D. Weltmann ¹ , U. Lindequist ² , Th. von Woedtke ¹ , B. Haertel ² <i>¹Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, D-17489 Greifswald, Germany; ²University of Greifswald, Institute for Pharmacy, Friedrich-Ludwig-Jahn-Str. 17, D-17489 Greifswald, Germany</i>
10:30 - 10:45	O2-1-4 - Hosseini, Hamid: Impulsive Shock Acceleration of Free-Surface for Novel Drug/Vaccine Delivery H. Hosseini ¹ , V. Menezes ² , H. Akiyama ¹ , S. Moosavi-Nejad ³ <i>¹Bioelectrics Department, Institute of Pulsed Power Science, Kumamoto University, 2-39-1 Kurokami, Kumamoto 860-8555, Japan; ²Department of Aerospace Engineering, Indian Institute of Technology Bombay, Powai, Mumbai - 400-076, India; ³Department of Anatomy, School of Medicine, Fukuoka University, Fukuoka 814-0180, Japan</i>
10:45 - 11:00	O2-1-5 - Semenov, Iurii: Plasma Membrane Permeabilization by Temporally Separated 300 ns Pulses M. Casciola ¹ , A.G. Pakhomov ¹ , S. Xiao ^{1,2} , B.L. Ibey ³ , I. Semenov ¹ <i>¹Frank Reidy Research Center for Bioelectrics, Old Dominion University, 4211 Monarch Way, Suite 300, Norfolk, VA, USA; ²Dept. of Electrical and Computer Engineering, Old Dominion University, Norfolk, VA, USA; ³711th Human Performance Wing, Radio Frequency Radiation Branch, Air Force Research Laboratory, Brooks City-Base, San Antonio, Texas, USA</i>

Oral Session IV – continued	
11:00 - 11:15	<p>O2-1-6 – Masur, Kai: Plasma Medicine: From Bench to Bedside K. Masur¹, S. Hasse¹, K. Wende¹, Th. von Woedtke¹, H.-R. Metelmann², K.-D. Weltmann¹ ¹Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany; ²Department of Oral and Maxillofacial Surgery, Plastic Surgery, Greifswald University, 17489 Greifswald, Germany</p>
11:15 - 11:30	<p>O2-1-7 - Heller, Loree: Gene Electrotransfer Affects Expression of Cytosolic DNA Sensors in Tumor Cells <i>in vitro</i> K. Znidar¹, M. Bosnjak², M. Cemazar^{1,2}, L. Heller³ ¹University of Primorska. Faculty of health science, Polje 42, 6310 Izola, Slovenia; ²Institute of Oncology Ljubljana, Zaloška 2, 1000 Ljubljana, Slovenia; ³Frank Reidy Research Center for Bioelectrics, Old Dominion University, 4211 Monarch Way, Norfolk, VA 23508, USA, School of Medical Diagnostic and Translational Sciences, Old Dominion University, Norfolk, VA, USA</p>
11:30 - 11:45	<p>O2-1-8 - Damas, Maria: The Electroporation of Guard Cells Improves the Quality of Dried Genovese Basil (<i>Ocimum Basilicum L.</i>) Leaves S. Kwao¹, S. Al-Hamimi², M.E.V. Damas^{1,4}, A.G. Rasmusson³, F.G. Galindo¹ ¹Food Technology, Engineering and Nutrition, Lund University, PO Box 124, SE-221 00 Lund, Sweden; ²Center for Analysis and Synthesis, Lund University, PO Box 124, SE-221 00 Lund, Sweden; ³Department of Biology, Lund University, Sölvegatan 35B, SE-223 62 Lund, Sweden; ⁴Optifreeze AB, Skiffervägen 12, SE-22478 Lund, Sweden</p>
11:45 - 01:00	Lunchbreak
01:00 – 02:45	<p>Oral Session V: Basic Research: Tumor Treatments, Calcium Electroporation, Sensitization Session Chair: Justin Teissié <i>Institut de Pharmacologie et de Biologie Structurale, Université de Toulouse, CNRS, UPS, France</i></p>
01:00 - 01:30	<p>O2-2-1.2 - Invited - Krog Frandsen, Stine: Calcium Electroporation Induces Tumor Necrosis Whilst Sparing Surrounding Normal Tissue S.K. Frandsen^{1,3}, M.B. Krüger¹, T. Tramm², I. Novak³, J. Gehl¹ ¹Center for Experimental Drug and Gene Electrotransfer, Department of Oncology, Copenhagen University Hospital Herlev, Denmark; ²Department of Experimental Clinical Oncology, Aarhus University Hospital, Denmark; ³Department of Biology, Section for Cell Biology and Physiology, University of Copenhagen, Denmark</p>
01:30 - 01:45	<p>O2-2-3 - Cenazar, Maja: Effect of Calcium Electroporation on Different Types of Cells T. Dolinsek¹, B. Staresinic¹, M. Cemazar^{1,2} ¹Institute of Oncology Ljubljana, Zaloška cesta 2, 1000 Ljubljana, Slovenia; ²Faculty of Health Sciences, University of Primorska, Polje 40, 6310 Izola, Slovenia</p>
01:45 - 02:00	<p>O2-2-4 - Muratori, Claudia: Lowering Temperature after Nanoelectroporation Assists Cell Ablation C. Muratori, A. G. Pakhomov, and O. N. Pakhomova <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA</i></p>

Oral Session V – continued	
02:00 - 02:15	<p>O2-2-5 - Zhuang, Jie: Dielectric Investigation of Normal and Malignant Cells Exposed to Nanosecond Pulsed Electric Field J. Zhuang, A. Steuer, J.F. Kolb <i>Leibniz Institute for Plasma Science and Technology (INP Greifswald), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany</i></p>
02:15 - 02:30	<p>O2-2-6 - Kranjc, Simona: Radiosensitization of Tumors by Combined Modality Approach of Gene Electrotransfer of Plasmid Encoding shRNA for Silencing Endoglin and Tumor Irradiation - A Proof Of Concept S. Kranjc¹, M. Stimac¹, U. Kamensek¹, A. Coer², M. Cemazar^{1,2}, G. Sersa¹ <i>¹Department of Experimental Oncology, Institute of Oncology Ljubljana, Zaloska 2, SI-1000 Ljubljana, Slovenia; ²Faculty of Health Sciences, University of Primorska, Polje 42, SI-6310 Izola, Slovenia</i></p>
02:30 - 02:45	<p>O2-2-7 - Pakhomova, Olga: Enhancement of nsPEF Ablation in 3D Cell Cultures and <i>in vivo</i> by Electrosensitization C. Muratori, A., S. Xiao, L. Heller, O. Pakhomova <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA</i></p>
02:45 - 03:00	Coffee Break
03:00 – 04:45	<p>Poster Session Session Chair: Stine Krog Frandsen <i>Center for Experimental Drug and Gene Electrotransfer, Department of Oncology, Copenhagen University Hospital Herlev, Denmark</i></p>
03:00 - 04:45	<p>P-01 - Sersa, Gregor: Bleomycin Pharmacokinetic in Head and Neck Cancer Patients Treated with Electrochemotherapy; Implications for the Lowering of the Dose A. Groselj¹, T. Kosjek², M. Krzan³, M. Cemazar^{4,5}, M. Bosnjak⁴, S. Kranjc⁴, G. Sersa⁴ <i>¹Department of Otorhinolaryngology and Cervicofacial Surgery, University Medical Centre Ljubljana, Zaloska 2, Ljubljana SI-1000, Slovenia; ²Department of Environmental Sciences, Jozef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia; ³Department of Pharmacology and Experimental Toxicology, Faculty of Medicine, University of Ljubljana, Korytkova 2, Ljubljana, Slovenia; ⁴Department of Experimental Oncology, Institute of Oncology Ljubljana, Zaloska 2, SI-1000 Ljubljana, Slovenia; ⁵Faculty of Health Sciences, University of Primorska, Polje 42, SI-6310 Izola, Slovenia</i></p> <p>P-02 - Dempster, A. Thomas: Pulsed Electric Fields for Algal Extraction and Predator Control A.Th. Dempster¹, B.M. Kempkes², C.I. Roth² <i>¹AzCATI, Arizona State University Tempe, AZ, USA; ²Diversified Technologies, Inc., Bedford, MA, USA</i></p>

03:00 - 04:45

P-03 - Guionet, Alexis: Lipids Extraction from *Botryococcus braunii* Algae Using Pulsed Electric Field

A. Guionet¹, B. Hosseini¹, J. Teissie², H. Hosseini¹, H. Akiyama¹
¹IPPS, Institute of Pulsed Power Science, Kumamoto University, 2-39-1 Kurokami Chuo-ku Kumamoto, Japan; ²UMR-5089 (IPBS), CNRS and Paul Sabatier University, 205 route de Narbonne, F-31077 Toulouse Cedex

P-04 - Banaschik, Robert: Pulsed Corona Plasma and Pulsed Electric Fields for the Decontamination of Water Containing *Legionella pneumophila*

R. Banaschik¹, G. Burchhardt², K. Zoher¹, S. Hammerschmidt², J.F. Kolb¹, K.-D. Weltmann¹
¹Leibniz Institute for Plasma Science and Technology (INP Greifswald e.V.), Felix-Hausdorff-Straße 2, 17489 Greifswald, Germany; ²Department Genetics of Microorganisms, Interfaculty Institute for Genetics and Functional Genomics, Ernst Moritz Arndt University of Greifswald, Friedrich-Ludwig-Jahn-Straße 15a, 17489 Greifswald, Germany

P-05 - Sözer, Esin B.: Molecular Transport in the Electroporome - Measurements and Models

E.B. Sözer¹, C.F. Pocetti², P.Th. Vernier¹
¹Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA 23508, USA; ²Department of Bioengineering, Instituto Tecnológico de Buenos Aires, Buenos Aires, Argentina

P-06 - Merla, Caterina: A Coplanar Waveguide System for Cells EM Exposure and Real Time Coherent Anti-Stokes Raman (CARS) Imaging

C. Merla¹, M. Liberti², A. Azan¹, P. Marracino², F. Apollonio², L.M. Mir¹
¹CNRS UMR 8203 Laboratory of Vectorology and Anticancer Therapy, Gustave Roussy, Univ.-Paris Sud, Université Paris Saclay, 114 rue E. Vaillant, 94805 Villejuif, France; ²Department of Information Engineering Electronic and Telecommunication, "Sapienza" University of Rome, via Eudossiana 18, 00184 Rome, Italy

P-07 - Xiao, Shu: Collapse of Microbubbles

S. Xiao¹, E. Yang¹, C. Zhou¹, M. Cho²
¹Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA; Department of Electrical and Computer Engineering, Old Dominion University, Norfolk, VA, USA; ²Bioengineering Department, University of Texas, Arlington, TX, USA

P-08 - Xiao, Shu: A New Pulse Delivery Utilizing the Cancellation Effect by Biphasic Nanosecond Pulses

E. Yang, C. Zhou, A. Pakhomov, S. Xiao
Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA; Department of Electrical and Computer Engineering, Old Dominion University, Norfolk, VA, USA

P-09 - Shi, Fukun: Impedance Measurement of Epithelial Cells after Exposure to Nanosecond Pulsed Electric Fields

F. Shi, J. Zhuang, A. Steuer, J.F. Kolb
Leibniz Institute for Plasma Science and Technology (INP Greifswald), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany

P-10 - Gusbeth, Christian: Microalgae Respond to an Abiotic Stress Induced by Nanosecond Pulsed Electric Fields

C. Gusbeth¹, F. Bai¹, P. Nick², W. Frey¹
¹Karlsruhe Institute of Technology (KIT), Institute for Pulsed Power and Microwave Technology (IHM), 76344 Eggenstein-Leopoldshafen, Germany; ²Karlsruhe Institute of Technology (KIT), Molecular Cell Biology, 76131 Karlsruhe, Germany

Poster Session – continued

03:00 - 04:45	<p>P-11 - Steuer, Anna: Nanosecond Pulsed Electric Fields Decrease the Elasticity of WB F344 Cells Exposed in Monolayers A. Steuer¹, K. Wende¹, P. Babica², J.F. Kolb¹ <i>¹Leibniz Institute for Plasma Science and Technology, Greifswald, Germany; ²Research Centre for Toxic Compounds in the Environment (RECETOX), Faculty of Science, Masaryk University, Brno, Czech Republic</i></p> <p>P-12 - Miron, Camelia: Effect of Pulsed Electric Fields on Myocardial Tissue C. Miron¹, D. Vasincu², I. Topala³, V. Pohoata³, I. Mihaila³, W. Bild², J.F. Kolb¹ <i>¹Leibniz Institute for Plasma Science and Technology e.V. (INP Greifswald), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany; ²University of Medicine and Pharmacy “Gr. T. Popa”, Faculty of Medicine, Str.Universitatii 16, 700115 Iasi, Romania; ³“Al. I. Cuza” University of Iasi, Faculty of Physics, Blvd. Carol I 11, 700506, Iasi, Romania</i></p>
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06:00 - 7:00	Conference Banquet Reception, Penta Hotel
7:00 – 10:00	Conference Banquet, Penta Hotel

Wednesday – September 14, 2016	
08:15 - 08:30	Introduction and Announcements
08:30 – 09:30	Plenary Session III Session Chair: Petr Lukes <i>Institute of Plasma Physics of the Czech Academy of Sciences, v.v.i., Za Slovankou 1782/3, Prague, Czech Republic</i>
08:30 - 09:30	Plenary III - Thomas von Woedtke: Progress and Challenges in Plasma Medicine Th. von Woedtke <i>Leibniz Institute for Plasma Science and Technology e.V. (INP Greifswald), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany; Greifswald University Medicine, Greifswald, Germany</i>
09:30 - 09:45	Coffeebreak
09:45 – 11:45	Oral Session VI: Basic Research: Stimulation, Immune Response, Delivery Session Chair: Maja Cemazar <i>Institute of Oncology Ljubljana, Slovenia; Faculty of Health Sciences, University of Primorska, Izola, Slovenia</i>
09:45 - 10:15	O3-1-1.2 - Invited - Pakhomov, Andrei: Stimulation and Permeabilization of Adult Ventricular Myocytes by Nano- to Millisecond Electric Pulses A.G. Pakhomov ¹ , S. Grygoryev ¹ , S. Xiao ^{1,2} , I. Semenov ¹ <i>¹Frank Reidy Research Center for Bioelectrics, Old Dominion University, 4211 Monarch Way, Suite 300, Norfolk, VA, USA; ²Dept. of Electrical and Computer Engineering, Old Dominion University, Norfolk, VA, USA</i>
10:15 - 10:30	O3-1-3 - Steelman, Zachary A.: Cellular Response to High Pulse Repetition Rate Nanosecond Pulses Z.A. Steelman ¹ , G.P. Tolstykh ² , H.T. Beier ³ , B.L. Ibey ³ <i>¹Duke University, Department of Biomedical Engineering, 101 Science Drive, Durham, NC, USA; ²General Dynamics Information Technology, Fort Sam Houston, TX, USA; ³Bioeffects Division, Air Force Research Laboratory, Ft. Sam Houston, TX, USA</i>
10:30 - 10:45	O3-1-4 - Falk, Hanne: Immune Response Initiated by Calcium Electroporation H. Falk ¹ , P.F. Forde ² , D.M. Soden ² , J. Gehl ¹ <i>¹Center for Experimental Drug and Gene Electrotransfer (C*EDGE), Department of Oncology, Copenhagen University Hospital Herlev, Denmark; ²Cork Cancer Research Centre, Leslie C. Quick Laboratory, BioSciences Institute, University College Cork, Ireland</i>
10:45 - 11:00	O3-1-5 - Hoejholt, Karen: Time- and Temperature Dependency in Calcium Electroporation K.L. Hoejholt, S.D. Jensen, S.K. Frandsen, J. Gehl <i>Center for Experimental Drug and Gene Electrotransfer, Department of Oncology, Herlev and Gentofte Hospital, University of Copenhagen, Denmark</i>

Oral Session VI – continued	
11:00 - 11:15	<p>O3-1-6 - Onishi, Nobuaki: Intracellular Ca²⁺ Mobilization Caused by Microseconds and Nanoseconds Electrical Pulses N. Ohnishi¹, K. Honda¹, T. Nagahisa¹, Y. Li¹, D. Miyakawa¹, S. Katsuki², H. Akiyama² ¹Graduate School of Science and Technology, Kumamoto University, 2-39-1, Chuo-ku, Kumamoto 860-8555, Japan; ²Institute of Pulsed Power Science, Kumamoto University, 2-39-1, Chuo-ku, Kumamoto 860-8555, Japan</p>
11:15 - 11:30	<p>O3-1-7 - Hoff, A.: Molecular Delivery and Tissue Electrostatics A. Hoff^{1,3}, R. Atkins¹, M. Jaroszeski^{1,2}, A. Llewellyn¹, R. Gilbert^{1,2} ¹Center for Molecular Delivery, University of South Florida, Tampa, Florida 33620, USA; ²Chemical and Biomedical Engineering Department, Univ. of South Florida, Tampa, Florida, USA; ³Electrical Engineering Department, Univ. of South Florida, Tampa, Florida, USA</p>
11:30 - 11:45	<p>O3-1-8 - Steuer, Anna: Combined Treatment of Cells in Monolayers with Nanosecond Pulsed Electric Fields and Cold Atmospheric Pressure Plasma Jet A. Steuer, A. Schmidt, J.F. Kolb, Th. von Woedtke, K.-D. Weltmann Leibniz Institute for Plasma Science and Technology e.V. (INP Greifswald), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany</p>
11:45 - 01:00	Lunchbreak
01:00 – 02:45	<p>Oral Session VII: Basic Research: Nerve, Wound and Tissue Stimulation Session Chair: Richard Nuccitelli Pulse Biosciences, Inc., 849 Mitten Rd., Ste 104, Burlingame, CA, USA</p>
01:00 - 01:30	<p>O3-2-1.2 - Invited - Wilke, Robert: External Stimulation of Nerve Cells by Displacement Current Pulses E.W. Schmid¹, R. Wilke² ¹Krankenhaus Dresden-Friedrichstadt, Dresden, Germany; ²Institute of Theoretical Physics, University of Tübingen, Auf der Morgenstelle 14, 72076 Tübingen, Germany</p>
01:30 - 01:45	<p>O3-2-3 - Kowtharapu, Bahwani: Role of External Electric Field Application in Corneal Stromal Wound Healing B.S. Kowtharapu¹, A.G. Juenemann¹, J.Ziebart², A. Jonitz-Heincke², R. Bader², O. Stachs¹ ¹Ophthalmology, University of Rostock, Rostock, Germany; ²Orthopaedics, University Medicine Rostock, Rostock, Germany</p>
01:45 - 02:00	<p>O3-2-4 - Barnes, Ronald: Probe Beam Deflection Optical Imaging of Electrostrictive Pressure Fields and Thermal Excitation During Nanosecond Electric Pulse (nsEP) Exposures <i>in-vitro</i> R.A Barnes Jr¹, C.C. Roth¹, H.T. Beier², D.Ch. Valdez¹, J. Bixler², B.L. Ibey² ¹Radio Frequency Bioeffects Branch, Bioeffects Division, 711th Human Performance Wing Air Force Research Laboratory, 4141 Petroleum Road, JBSA Fort Sam Houston, TX 78234, USA; ²Optical Radiation Bioeffects Branch, Bioeffects Division, 711th Human Performance Wing Air Force Research Laboratory, 4141 Petroleum Road, JBSA Fort Sam Houston, TX 78234, USA</p>

Oral Session VII – continued	
02:00 - 02:15	<p>O3-2-5 - Zemlin, Christian: Low-energy Defibrillation with Nanosecond Electric Shocks Ch.W. Zemlin^{1,2}, F. Varghese^{1,2}, J. Neuber^{1,2}, A.G. Pakhomov¹ ¹Center for Bioelectrics, 4211 Monarch Way, Norfolk, VA 23508, USA; ²Department of Electrical and Computer Engineering, 23529 Kaufman Hall, Norfolk, VA 23529, USA</p>
02:15 - 02:30	<p>O3-2-6 - Casciola, Maura: Damage-free Nerve Stimulation by 10 Nanosecond Electric Pulses M. Casciola, S. Xiao, A.G. Pakhomov <i>Frank Reidy Research Center for Bioelectrics Old Dominion University, Norfolk, VA, USA</i></p>
02:30 - 02:45	<p>O3-2-7 - Valdez, Chris M.: The Effects of Nanosecond Electric Pulses on Skeletal Muscle C.M. Valdez^{1,2}, M.B. Jirjis², R.A. Barnes^{1,2}, C.C. Roth², B.L. Ibey² ¹National Research Council Research Associateship Program; ²Bioeffects Division, Air Force Research Laboratory, Radiofrequency Branch, JBSA Fort Sam Houston, San Antonio, TX 78234, USA</p>
02:45 - 03:00	Coffeekbreak
03:00 – 04:45	<p>Oral Session VIII: Models & Methods: Cell Membrane Oxidation, Impedance Spectroscopy, Food Treatment Session Chair: P. Thomas Vernier <i>Frank Reidy Research Center for Bioelectrics, Old Dominion University, Norfolk, VA, USA</i></p>
03:00 - 03:30	<p>O3-3-1.2 - Invited - Tarek, Mounir: High Intensity Electric Fields Enhance Cell Membranes Oxidation - A Molecular Simulations study M. Tarek, P. Campomanes <i>CNRS, Théorie-Modélisation-Simulation, Université de Lorraine Vandoeuvre-lès-Nancy, France</i></p>
03:30 - 03:45	<p>O3-3-3 - Montgomery, Noel: An Electric Conductivity Model of White Matter Based on Magnetic Resonance Imaging Data N.D. Montgomery^{1,2}, J.L. Lancaster³ ¹Air Force Research Laboratory, 711th Human Performance Wing, Airman Systems Directorate, Bioeffects Division, Radio Frequency Bioeffects Branch, JBSA Fort Sam Houston, TX 78234, USA; ²Joint Biomedical Engineering Program, University of Texas San Antonio and University of Texas Health Science Center at San Antonio, San Antonio, TX, USA; ³Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, USA</p>
03:45 - 04:00	<p>O3-3-4 - Fawcett, T.: Development of Fast Impedance Spectrometer for Integration into Electric Field Mediated Gene Delivery T. Fawcett^{1,2}, R. Atkins^{2,3}, M. Jaroszeski^{2,3}, A. Hoff^{2,4}, R. Gilbert^{2,3} ¹Information Technology, Research Computing, Univ. of South Florida, Tampa, FL 33620, USA; ²Center for Molecular Delivery, University of South Florida, Tampa, FL 33620, USA; ³Chemical and Biomedical Engineering Department, Univ. of South Florida, Tampa, FL, USA; ⁴Electrical Engineering Department, Univ. of South Florida, Tampa, FL, USA</p>

Oral Session VIII – continued

04:00 - 04:15	<p>O3-3-5 - Pliquet, Uwe: Test of Electrode Materials for PEF-treatment U. Pliquet, D. Echemeyer <i>Institut für Bioprozess- und Analysenmesstechnik, Heilbad Heiligenstadt, Germany</i></p>
04:15 - 04:30	<p>O3-3-6 - Witt, Julian: Industrial Application of Pulsed Electric Fields (PEF) in the Food Industry J. Witt¹, C. Siemer¹, R. Ostermeier¹, I. Roeder¹, S. Toepfl² ¹<i>ELEA Vertriebs- und Vermarktungsgesellschaft mbH, Prof. von Klitzing Str. 9, 49610 Quakenbrueck, Germany;</i> ²<i>German Institute of Food Technologies (DIL e.V.), Prof. von Klitzing Str. 7, 49610 Quakenbrueck, Germany</i></p>
04:30 - 04:45	<p>O3-3-7 - Schlüter, Oliver: Cold Atmospheric Pressure Plasma Treatment of Low-moisture Foods O. Schlüter, S. Bußler, A. Fröhling, C. Hertwig, B.A. Rumpold <i>Quality and Safety of Food and Feed, Leibniz Institute for Agricultural Engineering Potsdam-Bornim (ATB), Max-Eyth-Allee 100, 14469 Potsdam, Germany</i></p>

Thursday – September 15, 2016	
08:15 - 08:30	Introduction and Announcements
08:30 – 09:30	Plenary Session IV Session Chair: Wolfgang Frey <i>Karlsruhe Institute of Technology, Institute for Pulsed Power and Microwave Technology (IHM), Karlsruhe, Germany</i>
08:30 - 09:30	Plenary IV - Peter Nick: Challenge Integrity - How nsPEFs Activate Cytoskeletal Signalling in Plant Cells Peter Nick <i>Molecular Cell Biology, Botanical Institute, Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany</i>
09:30 - 09:45	Coffeebreak
09:45 – 11:30	Oral Session IX: Basic Research & Environmental Applications: Pulse Generators, Biomass Extraction, Disinfection Session Chair: Guus Pemen <i>Eindhoven University of Technology, Electrical Engineering, Eindhoven, The Netherlands</i>
09:45 - 10:15	O4-1-1.2 - Invited - Xiao, Shu: None-invasive Delivery of Picosecond Pulses for Electrical Stimulation S. Xiao, R. Petrella, K.H. Schoenbach <i>Frank Reidy Research Center for Bioelectronics, Old Dominion University, Norfolk, VA, USA; Department of Electrical and Computer Engineering, Old Dominion University, Norfolk, VA, USA</i>
10:15 - 10:30	O4-1-3 - Pirc, Eva: Nanosecond Electroporator with Diode Opening Switch and Silicon Carbide MOSFETs E. Pirc, D. Miklavčič, M. Reberšek <i>University of Ljubljana, Faculty of Electrical Engineering, Tržaska 25, 1000 Ljubljana, Slovenia</i>
10:30 - 10:45	O4-1-4 - Kajiwara, Taiga: High Intensity Sterilization of Liquid Using Intense Pulsed Electric Fields Combined with Moderate Thermal Exposure T. Kajiwara, K. Baba, S. Hirakawa, S. Katsuki, H. Akiyama <i>Kumamoto University, 2-39-1, Kurokami, Chuo-ku, Kumamoto 850-8555, Japan</i>
10:45 - 11:00	O4-1-5 - Frey, Wolfgang: Parasitic Microalgae Precipitation in PEF Treatment Chambers R. Straessner, A. Silve, W. Frey <i>Karlsruhe Institute of Technology, Institute for Pulsed Power and Microwave Technology (IHM), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany</i>

Oral Session IX – continued

11:00 - 11:15	<p>O4-1-6 - Zocher, Katja: Enhancement Cell Wall Rupture of Microalgae by Spark Discharges K. Zocher, R. Banaschik, T. Schulz, C. Miron, J.F. Kolb <i>Leibniz Institute for Plasma Science and Technology e.V. (INP Greifswald), Greifswald, Germany</i></p>
11:15 - 11:30	<p>O4-1-7 - Zhang, Ruiqing: Dose-effect Study of Nanosecond Pulse Electric Field (nsPEF) for Ablation Treatment of Hepatic Cystic Echinococcosis R. Zhang¹, T. Aji¹, Y. Shao¹, T. Jiang¹, B. Ran¹, H. Wen¹, X. Chen² <i>¹Hepatobiliary & Hydatid Department, Digestive and Vascular Surgery Centre, First Affiliated Hospital of Xinjiang Medical University, Urumqi 830011, China; Xinjiang Key Laboratory of Echinococcosis, First Affiliated Hospital of Xinjiang Medical University, Urumqi 830011, China; ²Key Laboratory of Combined Multi-organ Transplantation, Ministry of Public Health; Department of Hepatobiliary and Pancreatic Surgery, The First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310003, China</i></p>
11:30 - 11:45	Conference Closing
11:45 - 01:00	Lunchbreak