

**Wednesday, 5 September 2012  
(KKR Hotel)**

<b>Wednesday, September 5<sup>th</sup> 18:00</b>	
<b>Registration Opens</b>	KKR Hotel (Lobby)

<b>Wednesday, September 5<sup>th</sup> 19:00-21:00</b>	
<b>Welcome Reception</b>	KKR Hotel (Ariake-Shiranui Hall)

**Thursday, 6 September 2012  
(KKR Hotel)**

<b>Thursday, September 6<sup>th</sup> 8:50-9:00</b>	
<b>Opening Ceremony</b> Prof. H. Akiyama, Chairman of Bioelectrics 2012	KKR Hotel (Gohou-Jyousai Hall)

<b>Thursday, September 6<sup>th</sup> 9:00-9:45</b>	
<b>Keynote Lecture 1</b> Prof. R. Heller (Old Dominion University, USA)	Chair: H. Akiyama (Kumamoto University, Japan)
9:00-9:45 Paper No. K-1	<u>R. Heller</u> , R. Strange, Jr, L. Murray, C. Lundberg, B. Hargrave (USA) Delivery of Plasmids Encoding Vascular Endothelial Growth Factor Directly to a Beating Heart Using Gene Electrotransfer.

**Thursday, September 6<sup>th</sup> 9:45-10:45****Oral Session 1 (Bioelectrics Consortium)****Chair: K. Schoenbach**  
**(Old Dominion University, USA)**

9:45-10:05 Paper No. O-1	<b>W. Frey</b> , A. Silve (Germany)
	Behaviour of Voltage Sensitive Hemicyanine Dyes on the Nanosecond Time Scale: An Explanatory Approach for ANNINE-6
10:05-10:25 Paper No. O-2	N. Islam, J. Gahl, J. Baker, O. Ibrahim, C. Schuster, J. Moskowitz, J. Thweat, A. Tungesvik, D. Wilson, D. Miller, <b>P. Pevsner</b> (USA)
	In-Vivo Pathobiology of Electromagnetic (EM) Radiation on Mice
10:25-10:45 Paper No. O-3	J. Zhuang, A.C. Sabuncu, A. Steuer, A. Beskok, R.P. Joshi, <b>J.F. Kolb</b> (Germany)
	Pulsed Electric Field Induced Dielectric Changes and Their Correlation with Biological Responses

10:45-11:00

**Coffee / Tea****Thursday, September 6<sup>th</sup> 11:00-12:00****Oral Session 2 (Bioelectrics Consortium)****Chair: W. Frey**  
**(Karlsruhe Inst. Tech., Germany)**

11:00-11:20 Paper No. O-4	J.M. Escoffre, C. Mauroy, E. Bellard, J. Orio, S. Chabot, M.P. Rols, M. Golzio, <b>J. Teissié</b> (France)
	Fast Kinetic Events during « Classical » Electroporation: An Imaging Approach
11:20-11:40 Paper No. O-5	A.J. Llewellyn, <b>R. Gilbert</b> (USA)
	Interpreting the Impact of an Electroporation Protocol by Monitoring the Current/Voltage Relationship in a Post Electroporation Voltage Pulse Probe
11:40-12:00 Paper No. O-6	<b>P. Lukes</b> , E. Spetlikova, M. Clupek, S. Ondrckova, I. Sisrova, V. Janda (Czech Republic)
	Aqueous-Phase Chemistry and Related Bactericidal Effects of ROS and RNS Produced by Gas Phased Pulse Discharge Plasma in Contact with Water

12:00-13:00

**Lunch**

<b>Thursday, September 6<sup>th</sup> 13:00-14:30</b>	
<b>Poster Session 1</b>	Chairs: <b>K. Takaki</b> (Iwate University, Japan) <b>D. Wang</b> (Kumamoto University, Japan)
<b>Group 1A 13:00-13:45</b> <b>Group 1B 13:45-14:30</b>	KKR Hotel (Gohou-Jyousai Hall)

<b>Thursday, September 6<sup>th</sup> 14:30-15:15</b>	
<b>Keynote Lecture 2</b> <b>Prof. K. Takayama</b> (Tohoku University, Japan)	Chair: <b>H. Hosseini</b> (Kumamoto University, Japan)
14:30-15:15 Paper No. K-2	<u>K. Takayama</u> (Japan) Applications of Underwater Shock Wave Research to Medicine: From Basic Physics to Therapeutic Device Development

<b>Thursday, September 6<sup>th</sup> 15:15-15:55</b>	
<b>Oral Session 3 (Bioelectrics Consortium)</b>	Chair: <b>J. Teissie</b> (Université de Toulouse, France)
15:15-15:35 Paper No. O-7	<u>G.P. Gallerano</u> , A. Doria, E. Giovenale, G. Messina, I. Spassovsky, A. Ramundo-Orlando, K. Cosentino, F. Mattia, S. Romeo, M.R. Scarfi, O. Zeni (Italy) Ultrashort Electric vs. Radiation Pulses: Search for a Unifying View
15:35-15:55 Paper No. O-8	<u>E.H. Choi</u> , Y.H. Kim, J.H. Park, B. Min, H.J. Oh, G. Cho (Korea) Nonthermal Bioplasma Characteristics in Biological Fluids and Its Fundamental Interaction with Biological Cells Immersed in Culture Media

15:55-16:10	<b>Coffee / Tea</b>
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<b>Thursday, September 6<sup>th</sup> 16:10-16:55</b>	
<b>Oral Session 4 (Bio-Mechanisms 1)</b>	<b>Chair: A. Pakhomov</b> (Old Dominion University, USA)
16:10-16:25 Paper No. O-9	W. Ren, N.M. Sain, <b>S.J. Beebe</b> (USA) Nanosecond Pulsed Electric Fields (nsPEFs) Activate Mitochondria-Mediated Intrinsic Caspase-Dependent and -Independent Cell Death in Jurkat Cells
16:25-16:40 Paper No. O-10	<b>Ken-ichi Yano</b> , Keiko Morotomi-Yano (Japan) Nanosecond Pulsed Electric Fields Act as a Novel Form of Cellular Stress on Human Cells
16:40-16:55 Paper No. O-11	<b>O. Pakhomova</b> , B. Gregory, A. Pakhomov (USA) Two Mechanisms of Cell Death Caused by Exposure to Nanosecond Electric Pulses

16:55-17:10	<b>Coffee / Tea</b>
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<b>Thursday, September 6<sup>th</sup> 17:10-17:55</b>	
<b>Oral Session 5 (Biophysics)</b>	<b>Chair: M.P. Rols</b> (Université de Toulouse, France)
17:10-17:25 Paper No. O-12	<b>S. Moosavi-Nejad</b> , K. Tachibana, H. Akiyama, S.H.R. Hosseini (Japan) Direct Evidence of Cell Sonoporation under Low Intensity Ultrasound
17:25-17:40 Paper No. O-13	<b>G.L. Thompson</b> , C. Roth, G. Tolstykh, M. Kuipers, B. Ibey (USA) Elastic Moduli of Cells Correlates to Effects of Nanosecond Pulsed Electric Fields
17:40-17:55 Paper No. O-14	<b>F. Reidy</b> (USA) Special Lecture

<b>Thursday, September 6<sup>th</sup> 19:00-21:00</b>	
<b>Banquet (Award Ceremony)</b>	KKR Hotel (Gohou-Jyousai Hall)

**Friday, 7 September 2012  
(KKR Hotel)**

<b>Friday, September 7th 9:00-9:45</b>	
<b>Keynote Lecture 3</b> <b>Prof. L. Mir (Université Paris-Sud, France)</b>	<b>Chair: P. Pevsner</b> <b>(University of Missouri-Columbia, USA)</b>
9:00-9:45 Paper No. K-3	A. Silve, M. Breton, I. Leray, <u>L.M. Mir</u> (France) Electroporation and Electroporomeabilization, a Unifying Mechanism

<b>Friday, September 7th 9:45-10:45</b>	
<b>Oral Session 6 (Bio-Mechanisms 2)</b>	<b>Chair: S.J. Beebe</b> <b>(Old Dominion University, USA)</b>
9:45-10:00 Paper No. O-15	<u>H.T. Beier</u> , C.C. Roth, G.P. Tolstykh, B.L. Ibey (USA) Resolving the Spatial Kinetics of Electric Pulse-induced Ion Release
10:00-10:15 Paper No. O-16	<u>H. Kurita</u> , T. Nakajima, H. Yasuda, K. Takashima, A. Mizuno (Japan) Evaluation of DNA Damage Induced by Atmospheric Non-thermal Plasma
10:15-10:30 Paper No. O-17	<u>A. Silve</u> , I. Leray, M. Leguèbe, C. Pognard, L.M. Mir (France-Germany) Extracellular Conductivity : A Powerful Tool to Investigate the Mechanism of Electroporomeabilisation
10:30-10:45 Paper No. O-18	J.W.M. Bree, J. Geysen, E.J.M. Heesch, <u>A.J.M. Pemen</u> (Netherlands) Induction of Cell Proliferation Using a Novel Instrument for Non-contact Treatment of Cell Culture Vials with Nanosecond Pulsed Electric Fields

10:45-11:00	<b>Coffee / Tea</b>
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<b>Friday, September 7<sup>th</sup> 11:00-12:00</b>	
<b>Oral Session 7 (Cell &amp; Tumor Effects 1)</b>	<b>Chair: K. Yano</b> (Kumamoto University, Japan)
11:00-11:15 Paper No. O-19	L. Gibot, L. Wasungu, L. Chopinet, E. Bellard, J. Teissié, <b>M.P. Rols</b> (France) Multicellular Spheroids as a Relevant Model to Address the Mechanisms of <i>In-vivo</i> Molecules Transfer by Pulsed Electric Field
11:15-11:30 Paper No. O-20	<b>L.C. Heller</b> , C.M. Edelblute, O. Pakhamova, R. Heller, B. Hargrave (USA) Inactivation of Opportunistic Bacteria by Antimicrobial Peptides Produced by Nanosecond Pulse Activated Platelets
11:30-11:45 Paper No. O-21	<b>A. Pakhomov</b> , S. Xiao, O. Pakhomova (USA) Diverse Modes of Phosphatidylserine Externalization Triggered by Nanosecond Electric Pulses
11:45-12:00 Paper No. O-22	<b>R. Nuccitelli</b> , M. Kreis, B. Athos, R. Wood, K. Lui, J. Huynh, P. Nuccitelli (USA) Nanoelectroablation for Human Carcinoma Therapy

12:00-13:00	<b>Lunch</b>
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<b>Friday, September 7<sup>th</sup> 13:00-14:30</b>	
<b>Poster Session 2</b>	<b>Chairs: L. Heller (Old Dominion University, USA)</b> <b>B.L. Ibey (Air Force Research Laboratory, USA)</b>
<b>Group 2A 13:00-13:45</b> <b>Group 2B 13:45-14:30</b>	KKR Hotel (Gohou-Jyousai Hall)

<b>Friday, September 7<sup>th</sup> 14:30-15:15</b>	
<b>Keynote Lecture 4</b> <b>Prof. S. Katsuki (Kumamoto University, Japan)</b>	<b>Chair: G.H. Rim (Korea Electrotechnology Research Institute, Korea)</b>
14:30-15:15 Paper No. K-4	S. Katsuki, M. Yano, N. Tanaka, K. Mitsutake, M. Morodomi, K. Abe, T. Sakugawa, H. Akiyama (Japan) Primary and Secondary Effects of Non-thermal and Thermal Electrical Pulses

**Friday, September 7<sup>th</sup> 15:15-16:15**

**Oral Session 8 (Plasma/Inactivation)**

**Chair: P. Lukes (Institute Plasma Physics, Czech Republic)**

15:15-15:30 Paper No. O-23	<b>T. Sato</b> , M. Yokoyama, K. Johkura (Japan) Gene Expression Analysis Using a Microarray for Hela Cells Exposed to a Plasma Flow
15:30-15:45 Paper No. O-24	<b>S. Tatematsu</b> , M. Blajan, K. Shimizu (Japan) Study on Remote Sterilization of Bacteria by Using Atmospheric Microplasma
15:45-16:00 Paper No. O-25	<b>T. Ohta</b> , H. Hashizume, M. Ito, K. Takeda, K. Ishikawa, M. Hori (Japan) Oxidative Inactivation of Fungal Spores by Atmospheric Pressure Oxygen Radical Source
16:00-16:15 Paper No. O-26	<b>A.B. Gojani</b> , S. Obayashi (Japan) Plasma Diagnostics Using Imaging and Laser-Induced Breakdown Spectroscopy

16:15-16:30

**Coffee / Tea**

**Friday, September 7<sup>th</sup> 16:30-18:00**

**Oral Session 9 (Simulation/Devices/Processing)**

**Chair: J. Kolb (Leibniz-Institute for Plasma Science & Tech., Germany)**

16:30-16:45 Paper No. O-27	O. Kavian, M. Leguèbe, L.M. Mir, <b>C. Poignard</b> , A. Silve, L. Weynans (France) Numerical Study of the Influence of the Medium Conductivity Through a New Dynamic Model of Cell Electroporation.
16:45-17:00 Paper No. O-28	<b>Y. Minamitani</b> , Y. Kuramochi, T. Toyooka, K. Shinagawa, K. Mitsutake, M. Yano, M. Morotomi, S. Katsuki, H. Akiyama (Japan) The Dependence of Protein Expression Level in Hela Cells on the Frequency of High Frequency Burst Pulse High Electric Field
17:00-17:15 Paper No. O-29	<b>W. Jiang</b> , T. Sugai, N. Aoyagi, A. Tokuchi (Japan) Development of Repetitive Pulsed High-Voltage Generator for Industrial Applications
17:15-17:30 Paper No. O-30	<b>M. Shiratani</b> , S. Kitazaki, T. Sarinont, K. Koga, G. Uchida, N. Itagaki, H. Seo, K. Kamataki, N. Hayashi (Japan) Growth Enhancement of Plants by Combinatorial Plasma Irradiation
17:30-17:45 Paper No. O-31	<b>C. Gusbeth</b> , C. Eing, R. Sträßner, M. Göttel, W. Frey (Germany) Stimulation of Microalgal Growth by Means of Nanoseconds Pulsed Electric Field Treatment (nsPEF)
17:45-18:00 Paper No. O-32	<b>S. Ihara</b> , Y Kaneko, K. Sumiyoshi, R. Sakamoto, K. Ohe, H. Terato (Japan) Changes of Germination Ratio and Glucose Concentration in <i>Gladiolus</i> Bulb on Pulsed Power Application

**Friday, September 8<sup>th</sup> 18:30-22:00**

**International Bioelectrics Consortium Meeting  
(Advisory Committee members)**

KKR Hotel (Hana-Tsuki Room)



**Saturday, 8 September 2012**  
**(100<sup>th</sup> Anniversary Memorial Hall, Kumamoto University)**

\*Buses will leave at 8:20 AM from KKR Hotel

<b>Saturday, September 8<sup>th</sup> 9:00-9:45</b>	
<b>Oral Session 10 (Cell &amp; Tumor Effects 2)</b>	
<b>Chair: G. Mueller</b> (Karlsruhe Inst. Tech., Germany)	
9:00-9:15 Paper No. O-33	J.T. Camp, S. Xiao, <b><u>K.H. Schoenbach</u></b> (USA) Correlation Between Temperature and Cell Death on Cells Exposed to Subnanosecond Pulsed Electric Fields
9:15-9:30 Paper No. O-34	<b><u>K. Kurata</u></b> , M. Matsushita, T. Yoshii, H. Hirahara, T. Fukunaga, H. Takamatsu (Japan) Irreversible Electroporation for a Three-dimensional Cell Culture Model
9:30-9:45 Paper No. O-35	M.A. Kuipers, C.C. Roth, D.R. Dalzell, <b><u>B.L. Ibey</u></b> (USA) Changes in Nuclear Morphology and Permeabilization Following Multiple nsPEF Exposures

<b>Saturday, September 8<sup>th</sup> 9:45-10:30</b>	
<b>Oral Session 11 (Bio-Applications)</b>	
<b>Chair: H. Takano</b> (Kumamoto University, Japan)	
9:45-10:00 Paper No. O-36	<b><u>L.H. Wegner</u></b> , S. Schönwälder (Germany) Whole-Cell Patch Clamp Experiments in Electroporation Research: A Critical Evaluation of the Method, and an Investigation into Ion Selectivity of Membrane Pores Induced by Pulsed Electric Fields
10:00-10:15 Paper No. O-37	<b><u>N. Hayashi</u></b> , S. Kitazaki, K. Koga, M. Shiratani (Japan) Growth Enhancement and Redox Reactions of Plants Induced by Oxygen Radicals
10:15-10:30 Paper No. O-38	<b><u>C. Cho</u></b> , G.G. Choi, Y.S. Jin, G.H. Rim, H.M. Oh (Korea) PEF Applications to Microalgal Cultivation and Lipid Extraction

10:30-10:45	<b>Coffee / Tea</b>
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Saturday, September 8 <sup>th</sup> 10:45-11:45	
<b>Oral Session 12 (Bioelectric Effects)</b>	<b>Chair: R. Gilbert</b> (University of South Florida, USA)
10:45-11:00 Paper No. O-39	<b>A.T. Quitain</b> , T.H. Zohourian, M. Sasaki, M. Goto (Japan) Pulsed Microwave Dielectric Heating for Ambient and Hydrothermal Extraction of Natural Bioactive Compounds
11:00-11:15 Paper No. O-40	<b>S. Mirpour</b> , M. Nikkhah, S. Pirouzmand, H.R. Ghomi (Iran) Non-thermal Atmospheric Pressure Plasma Jet in Breast Cancer Cells: Study on the Cell Apoptosis
11:15-11:30 Paper No. O-41	<b>C. Zheng</b> , Y. Xu, Z. Liu, K. Yan (China) Continuous Water Disinfection by Pulsed Atmospheric Air Plasma
11:30-11:45 Paper No. O-42	<b>J. Li</b> , N. Sakai, M. Watanabe, E. Hotta, M. Wachi (Japan) Study on Inactivation Mechanism of an Atmospheric DC Plasma Jet Using <i>Escherichia Coli</i> Mutants

Saturday, September 8 <sup>th</sup> 11:45-11:55	
<b>Closing Ceremony &amp; Best Poster Presentations Award</b>	Kumamoto University (100 <sup>th</sup> Anniversary Memorial Hall)

Saturday, September 8 <sup>th</sup> 12:00-19:00	
<b>Excursion</b>	Aso Mountain Area
*Buses will leave at 12:10 PM from 100 <sup>th</sup> Anniversary Memorial Hall	

Thursday, September 6<sup>th</sup> 13:00-13:45

**Poster Session 1A**

Chair: K. Takaki (Iwate University, Japan)

Paper No. P-1A-1	<u>M. Talaat</u> (Egypt) Calculation of Electrically Induced Human Body Currents Subjected to High Voltage Transmission Lines
Paper No. P-1A-2	G.P. Tolstykh, C.C. Roth, J.A. Payne, M.A. Kuipers, G.L. Thompson, H.T. Beier, B.L. Ibey (USA) Activation of Intracellular Phosphoinositide Signaling after a Single Nanosecond Electric Pulse
Paper No. P-1A-3	C.C. Roth, M. Kuipers, D.R. Dalzell, B.L. Ibey (USA) Nanosecond Pulsed Electric Fields Inhibit Membrane Repair by Lysosomal Exocytosis-Induced Membrane Repair by Tubulin Depolymerization
Paper No. P-1A-4	<u>S. Maquaire</u> , S. Girard, J. Joly, A. Catrain, A. Vian, P. Bonnet (France) A Novel Biological Effect of Intense Electromagnetic Nanopulses.
Paper No. P-1A-5	<u>T. Tanino</u> , K. Sakai, T. Ohshima (Japan) Solubilization and Refolding of Inclusion Body Proteins by Pulsed Electric Field Treatment
Paper No. P-1A-6	<u>I. Yagi</u> , T. Yasuda, R. Ono, T. Oda, C. Tsutsui, T. Hirata, K. Takaki (Japan) Nano-seconds Pulsed Discharge Plasma Inducing Apoptotic Behavior in Fibroblast Cell Lines
Paper No. P-1A-7	<u>S. Sudo</u> , H. Takita, M. Akiyama, E. Shiraishi, H. Akiyama (Japan) Differentiation Control of the Fish using Multifunctional Pulsed Power Generator
Paper No. P-1A-8	<u>S. Kono</u> , A. Yamaguchi, T. Kubo, Y. Imamura, N. Tominaga (Japan) Improvement of Pulsed Power System for Incorporating Materials into Medaka ( <i>Oryzias Latipes</i> ) Eggs
Paper No. P-1A-9	<u>N. Takamura</u> , D. Wang, T. Namihira, K. Yano, H. Saitoh, H. Akiyama (Japan) Protein and Antibody Transduction into Human Cells Using Non-thermal Plasma
Paper No. P-1A-10	<u>N. Tanaka</u> , K. Sakabe, K. Abe, S. Katsuki, H. Akiyama (Japan) Gene Expression Associated with Proliferation of HeLa S3 Cells Subjected to Intense Burst Sinusoidal Electric Fields
Paper No. P-1A-11	<u>M. Yano</u> , M. Morodomi, T. Wada, K. Abe, S. Katsuki, H. Akiyama (Japan) Gene Expression Analysis of Apoptosis Pathway in HeLa S3 Cells Subjected to 5 ns and 120 ns-long Electrical Pulses
Paper No. P-1A-12	<u>S. Itami</u> , R. Sugino, K. Fukuda, M. Kobayashi, N. Morizumi, S. Morioka, S. Kamada (Japan) Influence of Light Stimulation for Attraction and Avoidance Behavior of Fish
Paper No. P-1A-13	<u>Peng LU</u> , T. Watanabe, K. Mitsutake, S. Katsuki, H. Akiyama (Japan) Investigation on Response of HeLa Cells to Intense Pulsed Ultraviolet Irradiation: Viability and Proliferation

Thursday, September 6<sup>th</sup> 13:00-13:45

**Poster Session 1A (continued)**

Paper No. P-1A-14	<u>S. Uchida</u> , R. Kato, N. Shirai, F. Tochikubo (Japan) Metabolic Control of Microorganisms Using Pulsed Electric Field in Microgap
Paper No. P-1A-15	<u>D.K. Kang</u> , S.H.R. Hosseini, E. Shiraishi, H. Akiyama (Japan) Effects of Nanosecond Pulse Electric Field Application to Medaka Fish Embryo in Low Conductivity Mediums
Paper No. P-1A-16	<u>K. Tamura</u> , T. Toyooka, Y. Kuramochi, Y. Minamitani (Japan) Investigation of Effect into the Cell by High Frequency Component of Burst Pulse Electric Field Using a Budding Yeast for Cancer Treatment
Paper No. P-1A-17	<u>Y. Miyamoto</u> , S.H.R. Hosseini, D.K. Kang, D. Oshita, K. Mawatari, H. Akiyama (Japan) Study of Embryonic Modifications Induced by Underwater Shock Waves
Paper No. P-1A-18	<u>M. Nagahama</u> , N. Shimomura, A. Nakagawa, K. Teranishi, Y. Uto, H. Hori (Japan) In Vivo Experimental Study of Nanosecond Pulse Electric Fields Effects on a Solid Tumor
Paper No. P-1A-19	<u>Y. Chen</u> , S. Xiao, S. Ngabonziza, J. Swanson (USA) Neuromuscular Incapacitation with High Voltage Nanosecond Pulses
Paper No. P-1A-20	<u>K. Mitsutake</u> , S. Moriyama, J. Noda, Y. Kishita, T. Sakamoto, T. Shuto, H. Kai, S. Katsuki, H. Akiyama (Japan) Analysis of HSP Expression in HeLa Cells Subjected to Non-Thermal and Thermal Pulsed Electric Fields
Paper No. P-1A-21	M. Farhanginia, <u>S.Z. Moosavi-Nejad</u> , S. Moosavi (Iran) Kinetics of Reduction in Magnetic Behavior of a Magnetotactic Bacterium by Ultrasound Waves
Paper No. P-1A-22	S. Balevicius, V. Stankevicius, N. Zurauskiene, E. Shatkovskij, A. Stirke, A. Bitinaite, R. Saule, R. Maciuleviciene, <u>G. Saulis</u> (Lithuania) System for Nanoporation of Biological Cells Based on Optically Triggered High-Voltage Spark-Gap Switch
Paper No. P-1A-23	<u>R. Rodaite-Riseviciene</u> , G. Saulis (Lithuania) Quenching of the Fluorescence in Solution and Cells by the Iron Ions Released from the Stainless-Steel Anode During High-Voltage Pulse
Paper No. P-1A-24	<u>R. Rodaite-Riseviciene</u> , R. Saule, V. Snitka, G. Saulis (Lithuania) Release of Iron Ions from the Stainless-steel Anode during High-voltage Pulses and Its Consequences for Cell Electroporation Technology
Paper No. P-1A-25	<u>K. Morotomi-Yano</u> , K. Yano (Japan) Nanosecond Pulsed Electric Fields Induce a Novel Stress Response that Elicits Translational Suppression Mediated by eIF2 $\alpha$ and 4E-BP1

Thursday, September 6<sup>th</sup> 13:45-14:30

**Poster Session 1B**

Chair: D. Wang (Kumamoto University, Japan)

Paper No. P-1B-1	<u>K. Abe</u> , M. Yano, M. Morodomi, S. Katsuki, H. Akiyama, S. Abe (Japan) Analysis of Ion Influx and Expression of CERAMIDE in Human Cancer Cells Subjected to Nanosecond Pulsed Electric Fields
Paper No. P-1B-2	<u>K. Yamada</u> , K. Morotomi-Yano, K. Yano, H. Saitoh (Japan) The Effect of Nanosecond Pulsed Electric Fields (nsPEFs) on SUMO/Ubiquitin Modification Pathways: Towards Unraveling Cellular Signaling Pathways Activated by nsPEFs
Paper No. P-1B-3	<u>T. Ohshima</u> , M. Yanagisawa, T. Tanino (Japan) Inactivation of Microorganism by using Submerged Style Pulse Discharge System in Bubble Water
Paper No. P-1B-4	<u>N. Takeuchi</u> , Y. Ishii, M. Ando, K. Yasuoka (Japan) Sterilization in Water Using Plasma Generated inside Oxygen Bubbles and Numerical Simulation of Chemical Reactions
Paper No. P-1B-5	<u>Y. Yagyu</u> , M. Noda, N. Hayashi, H. Kawasaki, T. Ohshima, T. Ihara, Y. Suda (Japan) Bactericidal Effect of Low Pressure Plasma on General Micro-organisms Attached on Agricultural Seeds
Paper No. P-1B-6	<u>M. Akiyama</u> , D. Azumaya, S. Sudo, T. Onodera, H. Satake, K. Yoshida (Japan) Flexible Control of Pulse Power for Applications
Paper No. P-1B-7	<u>T. Onodera</u> , D. Azumaya, Y. Kikuchi, M. Akiyama, T. Sakugawa, H. Akiyama (Japan) Fundamental Research on Electrical Discharge in Water
Paper No. P-1B-8	<u>N. Aoki</u> , K. Ishibashi, T. Sakugawa, H. Akiyama, A. Kouda, K. Suematu (Japan) Cyanobacterial Bloom Treatment by Underwater Discharge using Pulsed Power
Paper No. P-1B-9	M. Breton, L. Delemotte, A. Silve, M. Tarek, <u>L.M. Mir</u> (France) Transport of siRNA Molecules through Lipid Membranes Driven by Nanosecond Electric Pulses: an Experimental and Computational Study
Paper No. P-1B-10	M.D. Ménorval, F.M. André, A. Silve, C. Calvet, <u>L.M. Mir</u> (France) Reproduction of Spontaneous Calcium Oscillations of Human aMSCs : A New Potentiality of Pulsed Electric Fields
Paper No. P-1B-11	F.M. André, A. Liew, M.D. Ménorval, T. O'Brien, <u>L.M. Mir</u> (France) Optimal Electrogene Transfer Method for Human Mesenchymal Stem Cells
Paper No. P-1B-12	<u>Y. Higashi</u> , D. Wang, T. Yoshida, S. Takio (Japan) Transcriptional Activation of the Clp Molecular Chaperone Genes by Atmospheric-pressure He Plasma Bullets in <i>Porphyra yezoensis</i>
Paper No. P-1B-13	<u>K. Morotomi-Yano</u> , K. Yano (Japan) Activation of MAP Kinase Pathways by Nanosecond Pulsed Electric Fields

Thursday, September 6<sup>th</sup> 13:45-14:30

**Poster Session 1B (continued)**

Paper No. P-1B-14	<u>E. Shiraishi</u> , S.H.R. Hosseini, D.K. Kang, T. Kitano, H. Akiyama (Japan) Effects of Nanosecond Pulsed Power on Gene Expression in Medaka ( <i>Oryzias latipes</i> )
Paper No. P-1B-15	<u>R. Rodaitė-Riševičienė</u> , A.G. Pakhomov (Lithuania-USA) Pore Resealing in Cell Membrane after Nanosecond Electric Pulses
Paper No. P-1B-16	<u>T. Saito</u> , Y. Minamitani (Japan) Investigation of Active Species Generated by Pulsed Streamer Discharges in the Area with Droplets for Sterilization of Microorganisms in Water
Paper No. P-1B-17	<u>T. Higuchi</u> , Y. Kuramochi, T. Saito, Y. Minamitani (Japan) Investigation of Non-heating Sterilization Method of Packed Fresh Foods by Pulsed Electric Field
Paper No. P-1B-18	<u>K. Saito</u> , K. Shinagawa, T. Kijima, Y. Minamitani, Y. Komatsu (Japan) Investigation of Outflow Condition in a Food of Contents inside Bacteria by Pulsed Electric Field Sterilization
Paper No. P-1B-19	<u>T. Sakamoto</u> , H. Ishizawa, H. Akiyama, K. Ishibashi, T. Nakagawa, K. Suematsu, S. Nagai (Japan) Pulsed Power Produced Plasma Jet with Air Flow for Dental Application
Paper No. P-1B-20	<u>H.R. Yousefi</u> , S. Fathollah, S. Mirpour (Iran) The Effect of Plasma Jet Discharge Characteristics on Inactivation of Pseudomonas Colonies
Paper No. P-1B-21	<u>H. Ghomi</u> , S. Mohades, N.N. Safa, H. Dabiri (Iran) Effect of Barrier Corona Discharge Plasma on P. Aeruginosa and E. Coli Bacteria
Paper No. P-1B-22	<u>S.F. Mousavi</u> , M. Farhanginia, S.Z. Moosavi-Nejad (Iran) The Effect of Ultrasound Waves on Magnetic Behavior of a Magnetotactic Bacterium
Paper No. P-1B-23	<u>T. Takamatsu</u> , T. Oshita, A. Kawate, K. Uehara, N. Nakashima, H. Miyahara, Y. Matsumoto, A. Okino (Japan) Irradiation Effect of Temperature Controlled 20°C Multi-Gas Plasma on Bacteria and Human Cell
Paper No. P-1B-24	O.A. Ibrahim, T.A. Elwi, H. AlSaif, <u>N.E. Islam</u> (USA) Characterizing Implantable Sinusoidal Microstrip Antenna for Biomedical Applications

**Friday, September 7<sup>th</sup> 13:00-13:45**

**Poster Session 2A**

**Chair: L. Heller (Old Dominion University, USA)**

Paper No. P-2A-1	<u>S. Yonemori</u> , R. Ono, T. Oda (Japan) Distribution of OH Radicals on the Humid Surfaces
Paper No. P-2A-2	<u>H. Kawasaki</u> , T. Ohshima, K. Arafune, D. Taniyama, T. Ihara, Y. Yagyu, Y. Suda (Japan) Observation of the Plasma Plume in Pulsed Laser Deposition using a Ti Powder Target
Paper No. P-2A-3	<u>Y. Xu</u> , C. Zheng, Z. Liu, K. Yan (China) Electrostatic Precipitation of Airborne Bio-aerosol
Paper No. P-2A-4	<u>T. Watanabe</u> , T. Furusato, D. Oshita, H. Akiyama (Japan) Repression of Plant Seed Germination by Underwater Plasma Discharge
Paper No. P-2A-5	<u>S. Mirpour</u> , H.R. Yousefi, S. Fathollah (Iran) The Anti-bacterial Effects of Non-thermal Atmospheric Pressure Plasma Jet on Pseudomonas Colonies
Paper No. P-2A-6	<u>T. Oshita</u> , T. Takamatsu, K. Uehara, A. Kawate, N. Nakashima, H. Miyahara, Y. Matsumoto, A. Okino (Japan) Investigation of Sterilization Effect of Plasma Gas Temperature Using Temperature Controllable Plasma Jet
Paper No. P-2A-7	<u>H. Fukunaga</u> , M. Blajan, K. Shimizu (Japan) Surface Modification on Medical Polymer Films Using Remote Microplasma
Paper No. P-2A-8	<u>D. Oshita</u> , S.H.R. Hosseini, Y. Miyamoto, K. Mawatari, H. Akiyama (Japan) Study of Controllable Underwater Shock Waves Generation by Using Magnetic Pulsed Compression Circuit
Paper No. P-2A-9	<u>M. Blajan</u> , K. Shimizu (Japan) Characteristics of Pulse Powered Microplasma in Small Discharge Gap
Paper No. P-2A-10	<u>H. Ishizawa</u> , T. Tanabe, S. Moriyama, D. Yoshida, K. Sugimoto, S.H.R. Hosseini, S. Katsuki, H. Akiyama (Japan) Burst Electromagnetic Waves Inside a Biological Body for Medical Applications
Paper No. P-2A-11	<u>Y. Matsumoto</u> , T. Kajiwara, T. Sakugawa, H. Akiyama, A. Kouda, M. Watanabe, K. Suematu (Japan) Compact Capacitor Charger Using Resonant MOSFET Inverter for Repetitive Pulsed Power Generator for Bioelectrics
Paper No. P-2A-12	<u>Y. Murakami</u> , Y. Muramoto, N. Shimizu (Japan) Influence of Temperature on Sterilization of Liquid by High Electric Field Pulse
Paper No. P-2A-13	<u>T. Tanabe</u> , Y. Hagio, K. Ishibashi, T. Sakugawa, A. Kouda, K. Suematu, H. Akiyama (Japan) Development of a Nano-second Pulsed Electric Fields System Used for Biological Experiments

Friday, September 7<sup>th</sup> 13:00-13:45

**Poster Session 2A (continued)**

Paper No. P-2A-14	<u>K. Mawatari</u> , S.H.R. Hosseini, D. Oshita, Y. Miyamoto, H. Akiyama (Japan) Effects of Protecting Cover Layers During Medical Application of Underwater Shock Waves
Paper No. P-2A-15	<u>T. Furusato</u> , K. Takahashi, T. Ihara, T. Kiyama, S. Katsuki, M. Hara, H. Akiyama (Japan) Study on Pulsed Discharge Phenomena in Supercritical Carbon Dioxide toward applications
Paper No. P-2A-16	<u>T. Ihara</u> , H. Kawasaki, Y. Yagyu, T. Ohshima, Y. Suda, S. Katsuki, M. Hara, H. Akiyama (Japan) Nanosecond Pulsed Streamer in Highly Pressurized Carbon Dioxide including Supercritical Phase
Paper No. P-2A-17	<u>D. Wang</u> , T. Sonoda, T. Namihira, H. Takano, H. Akiyama (Japan) Growth Control of Leaf Vegetables using Pulsed Electric Field
Paper No. P-2A-18	T. Saito, T. Kusaka, <u>K. Takaki</u> , K. Takahashi, Y. Sakamoto (Japan) Development of Electrical Stimulation System for Improving Edible Mushroom Production
Paper No. P-2A-19	J. Takahata, S. Watanabe, <u>K. Takaki</u> , N. Satta, O. Yamada, T. Fujio, Y. Sasaki (Japan) Improvement of Growth Rate of Vegetables by Discharge under Water
Paper No. P-2A-20	<u>T. Okumura</u> , Y. Muramoto, N. Shimizu (Japan) Improvement of Seed Germination and Seedling Growth of <i>Arabidopsis thaliana</i> by D.C. Electric Field
Paper No. P-2A-21	P. Davari, <u>F. Zare</u> , A. Ghosh (Australia) Effects of Pulsed Power Polarity on Plasma Generation



**Friday, September 7<sup>th</sup> 13:45-14:30**

**Poster Session 2B**

**Chair: B.L. Ibey (Air Force Research Laboratory, USA)**

Paper No. P-2B-1	<u>M. Inokuchi</u> , T. Miki, T. Sakugawa, H. Akiyama (Japan) Micro Plasma Jet for Environmental Applications
Paper No. P-2B-2	<u>S. Shibuta</u> , D. Wang, T. Namihira, H. Akiyama (Japan) Gas Temperature Trend During Ozone Generation Using Nano-seconds Pulsed Discharge
Paper No. P-2B-3	<u>K. Morimoto</u> , M. Tamagawa, K. Yagyu (Japan) Development of Special Microcapsules for Drug Delivery Systems by Shock Waves and Bubbles
Paper No. P-2B-4	<u>Ruma</u> , N. Aoki, K. Yoshihara, M. Akiyama, T. Sakugawa, P. Lukeš, H. Akiyama (Japan) Effects of Gap Distance on Hydrogen Peroxide Generation by Pulsed Discharge in Bubbling Water
Paper No. P-2B-5	<u>C. Cho</u> , S.W. Lim, Y.S. Jin, G.H. Rim, G.G. Choi, H.M. Oh (Korea) Design and Test of PEF Generators for Lipid Extraction from Microalgae
Paper No. P-2B-6	<u>T. Sakamoto</u> , A. Nami, H. Akiyama (Japan) Advanced Control of Pulsed Power Parameter for Biological Application
Paper No. P-2B-7	<u>K. Nagafuchi</u> , A. Nagira, H. Akiyama, M. Sasaki, K. Kawamura (Japan) Peptide Synthesis from Amino Acid by Pulsed Discharge Plasma in Pressurized Fluids
Paper No. P-2B-8	<u>Y. Hagio</u> , T. Sakugawa, H. Akiyama (Japan) Development of a Compact Pulsed Power Generator for Bioelectrics
Paper No. P-2B-9	<u>T. Sato</u> , T. Iwaishi, H. Akiyama, T. Sakugawa (Japan) Development of High Production Compact Ozonizer Using Pulsed Streamer Discharge
Paper No. P-2B-10	<u>A.M. James</u> , V. Jose (India) A Boost Converter Based Pulsed Power Supply Topology
Paper No. P-2B-11	<u>A. Nagira</u> , <u>K. Nagafuchi</u> , M. Sasaki, K. Kawamura (Japan) Elucidation of Factors Affecting Elongation of Alanine and Alanyl Alanine in Discharged Plasma Induced Hydrothermal Treatment
Paper No. P-2B-12	<u>S. Matsumura</u> , H. Akiyama, T. Sakugawa (Japan) Development of Nano-Second Compact Pulsed Power Generator Using Diodes
Paper No. P-2B-13	<u>K. Yamawaki</u> , S. Shibuta, T. Matsumoto, D. Wang, T. Namihira, H. Akiyama (Japan) Performances of Nanoseconds Pulsed Generator

Friday, September 7<sup>th</sup> 13:45-14:30

**Poster Session 2B (continued)**

Paper No. P-2B-14	<u>T. Hirota</u> , Y. Maruta, D. Wang, T. Namihira, H. Akiyama (Japan) Effect of Rise Time of Applied Pulsed Voltage on Streamer Head Property
Paper No. P-2B-15	<u>S. Gnapowski</u> , H. Akiyama (Japan) Changing of Amber Structure by Pulsed Power Discharge
Paper No. P-2B-16	<u>D. Matsukubo</u> , T. Toyooka, Y. Minamitani (Japan) Development of a High Frequency Cluster Burst Pulse Generator Based on a SOS Diode for Cancer Treatment
Paper No. P-2B-17	<u>Y. Abe</u> , Y. Minamitani (Japan) Development of a RF Burst Pulse Generator Using a Nonlinear Transmission Line for Cancer Treatment
Paper No. P-2B-18	<u>S. Sakamoto</u> , M. Tominaga (Japan) Direct Synthesis of Metal Nanoparticles-Modified Carbon Nanotubes by Using Pulsed Power
Paper No. P-2B-19	<u>S. Shimamoto</u> , Y. Takemoto (Japan) Fundamental Study on Effects of Pulsed Electric field
Paper No. P-2B-20	<u>K. Uehara</u> , T. Oshita, T. Takamatsu, A. Kawate, N. Nakashima, H. Miyahara, A. Okino (Japan) Fundamental Properties of Multi-gas DBD Plasma Source for Medical Applications
Paper No. P-2B-21	<u>Y. Araki</u> , D. Wang, T. Namihira, H. Akiyama (Japan) Energy Transfer Efficiency on Nano-seconds Pulsed Discharge System
Paper No. P-2B-22	<u>Y. Shimasaki</u> , D. Wang, T. Namihira, H. Akiyama (Japan) Oxidation and De-oxidation Performances of Nano-seconds Pulsed Discharge
Paper No. P-2B-23	<u>R. Tsuruga</u> , S. Naka, D. Wang, T. Namihira, H. Akiyama (Japan) New Chemical Reaction Field Produced by Laser Breakdown Plasma in Solution