



Poster Session



A. Fundamentals of Atmospheric Plasmas

PA-001**Fabrication of Excellent and Durable Superhydrophobic Surfaces by Cold Plasma Treatment**

Udip Adhikari, Rajesh Guragain, and Deepak Prasad Subedi

*Kathmandu Univ., Nepal***PA-002****Study on Relationship between the Distribution of RONS and Gas Flow in Non-thermal Atmospheric Pressure Plasma**

Rae Han Kim, Jinsung Choi, Jun Sup Lim, Se Hoon Ki, and Eun Ha Choi

*Kwangwoon Univ., Korea***PA-003****Accurate Measurement of Plasma Parameters in RF Atmospheric Pressure Plasma Jet Using Electrical Diagnostics**

Mahreen, G. Veda Prakash, Satyananda Kar, Ashish Ganguli, Debaprasad Sahu, and Ramesh Narayanan

*Indian Inst. of Tech. Delhi, India***PA-004****Collisional-radiative Model for Helium Atmospheric Pressure Plasma Jet**

Tuyen Ngoc Tran, Bumsoo Kim, Wonwook Lee, and Cha-Hwan Oh

*Hanyang Univ., Korea***PA-005****Influence of an Additional Metal Electrode on Hydroxyl Radical Intensity in a kHz AC Bias Applied Atmospheric Pressure Plasma Jet**

Tuyen Ngoc Tran, Bumsoo Kim, Wonwook Lee, and Cha-Hwan Oh

*Hanyang Univ., Korea***PA-006****A Research Data Management Infrastructure for Plasma Medicine and Beyond**Laura Vilardell Scholten¹, Markus M. Becker¹, Steffen Franke¹, Fabian Hoppe^{2,3}, Detlef Loffhagen¹, Harald Sack^{2,3}, Volker Skwarek⁴, Tabea Tietz^{2,3}, and Simon Tschirner⁴¹INP Greifswald, Germany, ²FIZ Karlsruhe –Leibniz-Institut für Informationsinfrastruktur GmbH, Germany,³Karlsruhe Inst. of Tech., Germany, ⁴FTZ Digitale Wirtschaftsprozesse, Germany

B. Plasma Sources for Biomedical Applications

PB-001**Electrical Property of Flexible Microplasma Discharge Devices on Plasma Medicine**Jongbong Choi¹, Yeongtak Song¹, Tae Ho Lim¹, and Junghyun Kim²¹Hanyng Univ., Korea, ²CODE STERI, Korea**PB-002****Comparison of Two Electrode Configurations to Produce Non-thermal Plasma Jet in Biomedical Applications**

Tran Trung Nguyen, Oanthavinsak Bounyang, and Hiroto Matsuura

Osaka Prefecture Univ., Japan

PB-003**Comparison of Reactive Species to the Atmospheric Pressure Plasma Jet with and without Injecting Natural Air**

Bishwa Chandra Adhikari, Pradeep Lamichhane, Mahmuda Akter, Ramhari Paneru, Jun Sup Lim, and Eun Ha Choi

Kwangwoon Univ., Korea

PB-004**Effect of Treatment Angle on the Distribution of Plasma Cocktail Components**T. Gerling^{*}, D. Grollmisch¹, V. Hahn¹, T. von Woedtke^{1,4}, and K.-D. Weltmann¹¹INP Greifswald, Germany, ²Centre for Innovation Competency ZIK Plasmatis, Germany,³Competency Centre for Diabetes KDK Karlsburg, Germany, ⁴Greifswald Univ. Medicine, Germany**PB-005****Distribution of Excited Species in Helium Plasma Jet in Interaction with Various Surfaces**

Julien Cosimi, Frédéric Marchal, Nofel Merbahi, and Mohamed Yousfi

Université de Toulouse, France

PB-006**Protective Effect of Non-thermal Plasma on MDPC 23 Cells by TEGDMA Injury**Byul Bo Ra Choi¹, Se Eun Yoon², Hae-June Lee², Jin-Woo Hong², Sang Rye Park³, and Gyoo Cheon Kim²¹Feagle Co., Ltd., Korea, ²Pusan Nat'l Univ., Korea, ³Kyungnam College of Information & Tech., Korea

PB-010

Development of Plasma Devices by 3D Printer for Medical ApplicationTakamatsu Toshihiro^{1,2}, Yuma Suenaga³, Shohei Moriya³, Shosaku Ota⁴, Hiroaki Ikematsu², and Akitoshi Okino³¹Tokyo Univ. of Science, Japan, ²Natl Cancer Center, Japan, ³Tokyo Inst. of Tech., Japan, ⁴Kobe Design Univ., Japan

PB-011

Study on the Diffusion of Plasma Generated Reactive Species through Skin Models Using UV-VIS Spectroscopic Method

Se Hoon Ki, Ku Youn Baik, and Eun Ha Choi

Kwangwoon Univ., Korea

PB-012

Plasma Bullet Propagation with Rotational Temperature Distribution

Jun Sup Lim, Young June Hong, Abdul Munna Shaik, and Eun Ha Choi

Kwangwoon Univ., Korea

PB-013

Improvement of Paclitaxel Efficacy on Breast Cancer Cells by Association with Cold Atmospheric PlasmaC.T. Mihai^{1,2}, G. Vochita², D. Gherghel², I. Mihaila³, and I. Topala³¹Univ. of Medicine and Pharmacy "Grigore T. Popa", Romania, ²NIRDBS - Inst. of Biological Research, Romania,³Alexandru Ioan Cuza Univ., Romania

PB-015

Improvement of Skin Tissue by Atmospheric Pressure Plasma IrradiationKira Jinno¹, Akio Nishijima¹, Takahiro Fujimoto^{1,2}, and Takamichi Hirata¹¹Tokyo City Univ., Japan, ²Clinic F, Japan

PB-016

Study on Induction of Apoptosis by Plasma Irradiation

Shuma Motoi, Kira Jinno, and Takamichi Hirata

Tokyo City Univ., Japan

PB-019

A Comparative Study of SDBD Plasma Efficiency under Sinusoidal and Pulse Power SupplyThusitha Randima Wellawatta^{1,2}, Shin Kim¹, and Jun Choi¹¹KITECH, Korea, ²Univ. of Ulsan, Korea

PB-020

RF Plasma for the Facile Synthesis of Bio-Functional Polymeric Nanoparticles

Laura Libnan Haidar, Mark Baldry, Stuart Fraser, Badwi Bob Boumelhem, Aaron D Gilmour, Zongwen Liud, Zhong Zheng, Marcela Bilek, and Behnam Akhavan
Univ. of Sydney, Australia

PB-021

A Plasma Igniting Device for Treating Cancer Cells

Fang Wang^{1,2}, Hui Deng¹, and Ho Cheung Shum²
¹*Southern Univ. of Science and Tech., China*, ²*The Univ. of Hong Kong, China*

PB-022

Does the Association of Cold Atmospheric Pressure Plasma and Conventional Antifungals Increase the Antibiofilm Effect on *Candida Albicans*?

Cristiane Y. Koga-Ito¹, Lady D. P. Leite¹, Maria A.C. Oliveira¹, Thalita M.C. Nishime², and Konstantin G. Kostov¹
¹*São Paulo State Univ. – UNESP, Brazil*, ²*Leibniz Inst. for Plasma Science and Tech., Germany*

PB-023

A Study on Plasma Source with Special Structure in Aqueous Solution

Ju Sung Kim and Eun Ha Choi
Kwangwoon Univ., Korea

C. Plasma Liquid Interactions, Plasma Activated Liquids

PC-003**Visualization of Chemical Probes with PVA-KI Solution in the Room and Cool Temperature by Atmospheric Plasma Jet**

Hiroto Matsuura¹, Ouanthavinsak Bounyang¹, Tran Trung Nguyen¹, Jin Sakamoto¹, Yuichiro Takemura², Ryoko Asada¹, and Masakazu Furuta¹

¹Osaka Prefecture Univ., Japan, ²Kindai Univ., Japan

PC-004**Oxidative PTMs in Peptides and Proteins – Understanding the Physiological Consequences of Physical Plasma**

Sebastian Wenske¹, Jan-Wilm Lackmann¹, Sander Bekeschus¹, Thomas von Woedtke², Klaus-Dieter Weltmann², and Kristian Wende¹

INP Greifswald, Germany

PC-005**Pulsed Electric Field as a Key Element to Overcome Plasma-activated Liquids Limited Cytotoxicity in 3D**

Elena Grisetti^{1,2}, Jelena Kolosnjaj-Tabi Elena Grisetti^{1,2}, Jelena Kolosnjaj-Tabi¹, Laure Gibot¹, Mohammed Yousfi², Marie-Pierre Rols¹, Nofel Merbahi², and Muriel Golzio¹, Laure Gibot¹, Mohammed Yousfi², Marie-Pierre Rols¹, Nofel Merbahi², and Muriel Golzio¹

¹Inst. of Pharmacology and Structural Biology (IPBS), France,

²Laboratoire des Plasmas et de Conversion d'Énergie (LAPLACE), France

PC-006**Plasma-activated Saline Solutions for Cancer Cells Treatment and the Implication of Long-lived Reactive Oxygen and Nitrogen Species**

Elena Grisetti^{1,2}, Muriel Golzio¹, and Nofel Merbahi²

¹Inst. of Pharmacology and Structural Biology (IPBS), France,

²Laboratoire des Plasmas et de Conversion d'Énergie (LAPLACE), France

PC-007**Evaluation of the Amount of Nitrate and Nitrite Reactive Species in Plasma Activated Water**

Lucas F. Nunes¹, Felipe S. Almeida¹, João V. Faria¹, Marco A.R. Ramos¹, Rodrigo S. Pessoa², Mônica D.V.D.C.T. Barbosa¹, and Anelise C.O.C. Doria¹

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PC-008

Production of Peroxynitric Acid (HOONO₂) on the Surface Layer of Plasma-treated Water for Effective DisinfectionK. Kitano¹, S. Ikawa², Y. Nakashima², T. Yokoyama¹, and A. Tani³¹Osaka Univ., Japan, ²Osaka Research Inst. of Industrial Science and Tech., Japan, ³Kobe Univ., Japan

PC-011

Evaluation of the Antimicrobial Action of Different Waters Activated by Atmospheric Plasma on Escherichia ColiFelipe S. Almeida¹, Lucas F. Nunes¹, João V. Faria¹, Rodrigo S. Pessoa², Marco A.R. Ramos¹, Sonia Khouri¹, and Anelise C.O.C. Doria¹¹Universidade do Vale do Paraíba, Brazil, ²Instituto Tecnológico de Aeronáutica (ITA-DCTA), Brazil

PC-013

Computational Modelling of Initiation of Breakdown in Bubbles Immersed in Conductive and Dielectric Waters Using Plasma GunKamal Hajisharifi^{1,2}, Audoin Hamon², Claire Douat², Jean-Michel Pouvesle², and Eric Robert²¹Kharazmi Univ., Iran, ²CNRS Université d'Orléans, France

PC-014

Atmospheric Pressure Argon Plasma Jet Interaction with Ionic Liquids

G. Veda Prakash, Kamalakanta Behera, Mahreen, Deepchandra Joshi, and Satyananda Kar

Indian Inst. of Tech. Delhi, India

PC-015

The Effect of Plasma Activated Media and PBS on Human Cancer and Non-cancer Skin Cells

Dominika Sersenová, Helena Gbelcová, Vanda Repiská, and Zdenko Machala

Comenius Univ., Slovakia

PC-016

Effects of Cold Plasma Generated by Transient Spark Discharge on Water Solutions of Proteins and Amino Acids

Karol Hensel, Daniel Jakubčín, and Katarína Kučerová

Comenius Univ., Slovakia

PC-018

Anti-cancer Effects of Plasma Conditioned Liquids Require Reactive Nitrogen SpeciesValeria Veronico¹, Roberto Gristina², Emiliano Altamura¹, Pietro Favia^{2,3}, Vandana Miller⁴, Francesco Fracassi^{1,2}, Paola Albanese¹, Savino Cosmai², Danilo Benedetti¹, and Eloisa Sardella²¹Univ. of Bari Aldo Moro, Italy, ²Nat'l Research Council of Italy (CNR-NANOTEC), Italy, ³Univ. of Bari Aldo Moro via Orabona ⁴, Italy, ⁴Drexel Univ., USA

PC-020

Selective Inhibition of Adhesion of Dermal Tumor Cells by Plasma-activated Medium

Anna-C. Waldner, Claudia Bergemann, Henrike Rebl, Lars Boeckmann, Steffen Emmert, and J. Barbara Nebe
Rostock Univ. Medical Center, Germany

PC-021

Critical Aspects in Generation, Analysis and in Vitro Testing of Plasma Treated Water Solutions for Cancer Treatment

Valeria Veronico, Roberto Gristina, Pietro Favia, and Eloisa Sardella
Univ. of Bari Aldo Moro, Italy

PC-023

Influence of Different Tube Lengths on Antimicrobial Effect of Nebulized Plasma-activated Tap Water on Opportunistic Microbial Species

Aline Sampaio¹, William Chiappim², Paulo Cardoso³, Konstantin Kostov¹, Rodrigo Pessoa², and Cristiane Koga-Ito¹
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PC-024

Comparison of H₂O₂ and NO₃ - Concentration in Plasma-activated Liquids Prepared by Various Atmospheric Pressure Plasma Jets

Jin Hee Bae, Hea Min Joh, and Tae Hun Chung
Dong-A Univ., Korea

PC-025

Cylinder DBD Non-thermal Biocompatible Plasma (NBP) Treated Liquid Inhibits Ovarian Cancer Cells

Mahmuda Akter, Se Hoon Ki, Eun Ha Choi, and Ihn Han
Kwangwoon Univ., Korea

PC-026

Effects of Nonthermal Biocompatible Plasma Treated Liquid on Cancer Cells

Ihn Han, Mahmuda Akter, and Eun Ha Choi
Kwangwoon Univ., Korea

D. Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions**PD-001****The Role of Bacterial Enzymes in Mitigating Cold Atmospheric Plasma Induced Death within a Biofilm**Bethany Patenall¹, Hollie Hathaway², Naing The¹, Robert Short², and Toby Jenkins¹¹Univ. of Bath, UK, ²Univ. of Lancaster, UK**PD-003****Investigation of the Plasma-induced Activation of Escherichia Coli Hsp33**

Tim Dirks, Marco Krewing, and Julia E. Bandow

Ruhr Univ. Bochum, Germany

PD-005**Oxidative Damage to Hyaluronan–Cd44 Interactions as an Underlying Mechanism of Action of Oxidative Stress-Inducing Cancer Therapy**Angela Privat-Maldonado¹, Maksudbek Yusupov¹, Rodrigo Cordeiro², Hanne Verswyvel¹, Priyanka Shaw¹, Jamoliddin Razzokov^{1,3,4}, Evelien Smits¹, and Annemie Bogaerts¹¹Univ. of Antwerp, Belgium, ²Universidade Federal do ABC, Brazil,³Tashkent Inst. of Irrigation and Agricultural Mechanization Engineers, Uzbekistan, ⁴Uzbek Academy of Sciences, Uzbekistan**PD-006****Cold Atmospheric Plasma is Associated with Reduced Intramacrophagic Survival of Staphylococcus Aureus and Enhanced Phagolysosomal Maturation**Constance Duchesne^{1,2}, Nadira Frescaline^{1,2}, Océane Blaise^{1,2}, Sébastien Banzet², Olivier Dussurget³, and Antoine Rousseau¹¹École Polytechnique, France, ²Institut de Recherche Biomédicale des Armées, France, ³Institut Pasteur, France**PD-007****Argon Plasma Treatment Stimulates Proliferation of Bone Marrow Multipotent Stromal Cells**Sysolyatina Elena¹, Chailakhyan Ruben¹, Grosheva Alla¹, Gerasimov Yuri¹, Akishev Yuri², Petryakov Alexandr², and Ermolaeva Svetlana¹¹Gamaleya Nat'l Research Centre, Russia, ²Troitsk Inst. for Innovation and Fusion Research, Russia**PD-008****Oxidative Damage in Genomic DNA Induced by Cold Atmospheric Pressure Plasma Irradiation**

Hirofumi Kurita, Natsuki Haruta, Yoshito Uchihashi, Takahito Seto, and Kazunori Takashima

Toyohashi Univ. of Tech., Japan

PD-009

Effects of Cold Atmospheric Plasma on Eukaryotic and Bacterial Membranes

Mick van der Weijde, Andreas Sonnen, Eefjan Breukink, Antoinette Killian, and Joseph H. Lorent
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PD-010

An Oxidative Lipid Signature Responsible for Permeabilization by Cold Atmospheric Plasma

Min Xie, Andreas Sonnen, Joseph H. Lorent, and Antoinette Killian
Utrecht Univ., The Netherlands

PD-011

Investigation into the Metastatic Capacity of Head and Neck Squamous Cell Carcinoma Following Non-thermal Plasma Treatment in 3D Tumour Models

Hanne Verswyvel, Angela Privat-Malonado, Annemie Bogaerts, Evelien Smits, and Abraham Lin
Univ. of Antwerp, Belgium

PD-012

Antibacterial Effects of Low-temperature Plasma are Mediated by Reactive Oxygen Species

McKayla J. Nicol¹, Timothy R. Brubaker¹, Christopher A. Siedlecki², Sven G. Bilén¹, Sean D. Knecht¹, and Girish S. Kirimanjeswara¹
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PD-013

Genome-wide Comparison of Target Genes between Cold Atmospheric Plasma and Reactive Oxygen Species in Cancer Cells

Hwee Won Ji¹, Heejoo Kim¹, Hyeon Woo Kim¹, Sung Hwan Yun¹, Jae Eun Park¹, Eun Ha Choi², and Sun Jung Kim¹
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PD-014

Evaluation of the Effect of Non-thermal Plasma on the Adaptation of *Candida Albicans* to Oxidative Stress

Myoung Won Chae¹, Ku Youn Baik¹, Masur Kai², and Eun Ha Choi¹
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PD-016

Cold Atmospheric Plasma Induces Melanoma Inhibition and Mediates Cellular Crosstalk between Skin Cells

Pradeep Bhartiya¹, Neha Kaushik², Nhat Nguyen Linh¹, Nagendra Kumar Kaushik¹, and Eun Ha Choi¹
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PD-019

Quantification of Plasma Treatment on Biotargets via ROS MeasurementWanook Ji and Eun-Hee Kim²¹KAERI, Korea, ²Seoul Nat'l Univ., Korea

PD-020

Cold Atmospheric Pressure Plasma in Contrast to Paclitaxel Which Has a Negative Selective Effect, Induces a Strong Selectivity on Normal and Cancer Ovarian Cells

Milad Rasouli and Mahmood Ghoranneviss

Tehran Univ. of Medical Sciences, Iran

PD-021

Concomitant Modality of Gas Plasma and Chemotherapy Drug Leading to Apoptosis in Breast Cancer Cells

Milad Rasouli and Mahmood Ghoranneviss

Tehran Univ. of Medical Sciences, Iran

PD-022

Cellular Effects upon Treatment with Plasma-activated SolutionsCharlotte op't Hoog¹, Joseph H.F.F. Lorent¹, and Andreas F.-P. Sonnen^{1,2}¹Utrecht Univ., The Netherlands, ²Univ. Medical Center Utrecht, The Netherlands

PD-024

Investigation of the Mechanisms Leading to Cancer Cells Death during Direct and Indirect Plasma TreatmentsK. Sklias¹, K. Gazeli¹, L. Invernizzi¹, G. Bauville¹, M. Fleury¹, P.M. Girard^{1,2}, and J. Santos Sousa¹¹Université Paris-Saclay, France, ²PSL Research Univ., France

PD-025

Selective Anti-cancer Effect of Plasma-activated Medium and its Mechanism in Hepatocellular Carcinoma Cells with Cancer Stem Cell FeaturesYan Li¹, Tianyu Tang², Hae June Lee², and Kiwon Song¹¹Yonsei Univ., Korea, ²Pusan Nat'l Univ., Korea

PD-026

The Regulation of Ferroptosis by Non-thermal Plasma in Human Lung Cancer Cells

Ara Jo, Jin Hee Bae, Tae Hun Chung, Jin Woong Chung, and Hea Min Joh

Dong-A Univ., Korea

PD-027

Using a Model of Latent HIV-1 Infection to Demonstrate Modulation of Immune Cell Function in Response to Non-thermal Plasma

Hager Mohamed¹, Adam Snook², Brian Wigdahl¹, Vandana Miller¹, and Fred C. Krebs¹

¹Drexel Univ. College of Medicine, USA, ²Thomas Jefferson Univ., USA

PD-028

Evaluation of the Indirect Effect of Helium Plasma on Apoptosis of Cells U87MG by MTT and Flow Cytometry Methods

Bakhtiyari Ramezani Mahdiyeh, Nohekhan Mojtaba, and Hosseinkhani Hassan

Nuclear Science and Tech. Research Inst. (NSTRI), Iran

PD-029

Biochemical and Morphological Effects of Cold Atmospheric Plasma (CAP) on *Escherichia Coli* Cells

E. S. Kirchhof¹, A. G. Sampaio¹, S. M. Nogueira-Rovetta¹, M. A. C. Oliveira¹, B. R. C. Menezes², K. Kostov¹, and C. Y. Koga-Ito¹

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PD-030

Numerical Modelling of the Effects of Plasma on Mitochondrial Redox Homeostasis and Energy Metabolism

Tomoyuki Murakami

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E. Plasma-surface Interactions/Modifications for Biomedical Applications

PE-005

Comparison of Sinusoidal and Pulsed Cold Plasma Transported in Meters-long Tubing on Agarose Gel Models for Application in Endoscopy

M. Thulliez, O. Bastin, A. Nonclercq, A. Delchambre, and F. Reniers

Université libre de Bruxelles, Belgium

PE-006

Plasma Enhanced Opto-electronic Properties of Fluorine Doped Tin Oxide (FTO) Thin Films

Anish Raut

Kathmandu Univ., Nepal

PE-007

Modification of Hydrophilicity of Cotton Using Atmospheric Pressure Dielectric Barrier Discharge

Latakusum Pokharel

Kathmandu Univ., Nepal

PE-009

Ion Chamber: Study of Ion Chemistry and Ion-substrate Interactions

Jan Benedikt¹, Alexander Quack¹, Christian Schulze¹, Tristan Winzer¹, Kerstin Sgonina¹, Marco Krewing², and Julia Bandow²

¹Kiel Univ., Germany, ²Ruhr-Univ. Bochum, Germany

PE-010

Computation Modelling of Plasma Surface Treatment of Porous Structures for Biomedical Applications

Katazhyna Redzikultsava, Anyu Zhang, Mark Baldry, Seyedeh KH Alavi, Behnam Akhavan, and Marcela M Bilek

The Univ. of Sydney, Australia

PE-012

Atmospheric Pressure Plasma Jet Treatment for the Co-immobilization of Biomolecules and Hydrogels

Oliver Lotz, Aaron Gilmour, Behnam Akhavan, and Marcela M.M. Bilek

Univ. of Sydney, Australia

F. Plasma-based Decontamination and Sterilization

PF-001**Bactericidal Effect of Helium Plasma on *Helicobacter Pylori* in Vitro**Vasilieva Elena¹, Sysolyatina Elena¹, Zhukhovitsky Vladimir¹, Loleit Roman², Sofronov Aleksey², and Ermolaeva Svetlana¹¹*Gamaleya Nat'l Research Centre, Russia*, ²*KinetikaLab Ltd., Russia***PF-002****Indirect Treatment of *Escherichia Coli* in Aqueous Solution, Carried Out by a Plasma Synthetic Jet Actuator**

Anna Chiara Ricchiuto, Giorgia Gozzi, Beatrice Cellini, Luigi Ragni, Lucia Vannini, Carlo Angelo Borghi, Andrea Cristofolini, and Gabriele Neretti

*Univ. of Bologna, Italy***PF-003****Characterization of a Stainless Steel Target in Contact with an Atmospheric Pressure Piezoelectric Argon Plasma Jet**J. Orejas^{1,2}, C. Muja², C. Tendero², F. Pigache², and Ph. Guillot²¹*Univ. of Oviedo, Spain*, ²*Toulouse Univ., France***PF-004*****Candida Parapsilosis* Biofilm Inactivation by Argon / Air Plasma**Anelise C.O.C. Doria¹, Fernanda R. Figueira¹, Felipe S. Almeida¹, J.S.B. Lima², H.S. Maciel³, S. Khouri¹, and R.S. Pessoa³¹*Universidade do Vale do Paraíba, Brazil*, ²*Universidade de Taubaté, Brazil*, ³*Instituto Tecnológico de Aeronáutica, Brazil***PF-005****Bactericidal Effect of Oral Microorganism by Non-thermal Plasma(NTP)**Nam-Sook Park¹, Young-Min Kim¹, Jung Ji², Seoul Hee Nam³, Hae-June Lee², Jin-Woo Hong², and Gyoo-Cheon Kim^{1,2}¹*Feagle Co., Ltd., Korea*, ²*Pusan Nat'l Univ., Korea*, ³*Kangwon Nat'l Univ., Korea***PF-007****Biological Decontamination of Alfalfa Seeds for Sprouting Using an Atmospheric Plasma Source**

C.Muja, M. Soulier, Ph. Guillot, and P. Belenguer

*Université de Toulouse, France***PF-008****Evaluation of the Effect of High Frequency Plasma as a Potentiator of Antimicrobials Used in Cotton Textiles**João A. Santos¹, Jucilene A. A. Santos¹, Amanda C. R. Santos², Nathalia M. Claro², Anelise C.O.C. Doria¹, Guilherme R. Teodoro², and Sonia Khouri¹¹*Universidade do Vale do Paraíba / Instituto de Pesquisa & Desenvolvimento, Brazil*, ²*Golden Tech., Brazil*

PF-009

Antimicrobial Study of the Plasma Activated Water Using *E. Coli*

Kapudeep K, Punith N, P S Ganesh Subramanian, Manju D K, Dipshikha Chakravorty, and Lakshminarayana Rao
Indian Inst. of Science, India

PF-010

Eradication of *Staphylococcus Aureus* and *Pseudomonas Aeruginosa* Biofilms by Means of O₃ or NO_x-enriched Atmospheres

Alina Bisag, Cristiana Bucci, Filippo Capelli, Vittorio Colombo, Matteo Gherardi, Pasquale Isabelli, Romolo Laurita, Elisa Mezzofanti, and Nikta Oveisi
Univ. of Bologna, Italy

PF-011

Sterilization Tests and OAS Analysis of an Air Surface Dielectric Barrier Discharge Operated at Atmospheric Pressure

F. Capelli, A. Bisag, G. Laghi, R. Laurita, M. Gherardi, and V. Colombo
Univ. of Bologna, Italy

PF-015

Analysis for the Effects of Non-thermal Atmospheric Pressure Plasma on Soil Microorganisms

Wirinthip Ketya, Eun-Ha Choi, and Gyungsoon Park
Kwangwoon Univ., Korea

PF-016

Virus Inactivation by Remote Plasma Treatment in a Batch Reactor

Samidha Dabhole, Ankit Moldgy, Gaurav Nayak, Hamada Aboubakr, Sagar M. Goyal, and Peter J. Bruggeman
Univ. of Minnesota, USA

PF-017

Plasma Assisted Decontamination of Food Packaging Material

Filippo Capelli, Giulia Laghi, Fortuna Ricciardiello, Cristina Bucci, Vittorio Colombo, Matteo Gherardi, Romolo Laurita, Pietro Rocculi, and Silvia Tappi
Univ. of Bologna, Italy

PF-018

The Effect of Cold Atmospheric Pressure Plasma on Survival and Cell Morphology of *Schizosaccharomyces Pombe* and *Candida Parapsilosis*

Mária Peťková¹, Seyedehnedá Siadati^{1,2}, Stanislav Kyzek¹, Ivana Ďurovcová¹, Jana Fabová¹, Terézia Zajičková¹, Anna Zahoranová¹, Eliška Gálová¹, and Andrea Ševčovičová¹

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PF-019

The Impact of Bacterial Growth Phase on Liquid Decontamination Efficiency Using Atmospheric Pressure Plasma

Ibtissam Courti, Florent Saint, Cristina Muja, and Philippe Guillot
Toulouse Univ., France

PF-020

Hydrogen Peroxide in Plasma-activated Water Coupled with Pulsed Electric Field Treatment for Bacteria Inactivation

Robin Mentheour and Zdenko Machala
Comenius Univ., Slovakia

PF-021

Low Frequency Cold Atmospheric Pressure Argon Plasma Efficacy Study on Inactivation of Assorted Multidrug Resistant Bacteria

G.Veda Prakash¹, Satyananda Kar¹, Mohapatra S², and Singh G²
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PF-022

Impact of Corona Discharge on *Serratia Marcescens* and *Pseudomonas Syringae* Inactivation

Nataliia Kot and Oleh Nedybaliuk
Taras Shevchenko Nat'l Univ. of Kyiv, Ukraine

G. Plasma for Pharmaceutical Applications, Biochemical and Biomolecular Engineering

PG-002

One-pot Synthesis of Manganese Oxide-gold Nanoparticles by Plasma Assisted Approach

Nguyen Nhat Linh, Neha Kaushik, Nagendra Kumar Kaushik, and Eun Ha Choi

Kwangwoon Univ., Korea

PG-009

Non-thermal Cellular Effect of Pulsed High-power Microwaves on Lung Cancer and Normal Cells

Juie Rana¹, Sohail Mumtaz¹, Pradeep Bhartiya¹, Neha Kaushik², Linh Nhat Nguyen¹, Nagendra Kumar Kaushik¹, and Eun Ha Choi¹

¹*Kwangwoon Univ., Korea*, ²*Univ. of Suwon, Korea*

H. Plasma Medical Applications – Clinical and Animal Studies

PH-001**Toxicity Assessment of Long-Term Exposure to Non-Thermal Plasma Activated Water in Mice**

Mihai Mareş¹, Valentin Năstasă¹, Aurelian-Sorin Paşca¹, Luminița-Iuliana Ailincăi¹, Andra-Cristina Bostănar¹, Mariana Grecu¹, Șerban Moroșan², and Eugen Hnatiuc³

¹Ion Ionescu de la Brad Univ. of Life Sciences, Romania, ²Sorbonne Univ., France, ³Gh. Asachi Technical Univ., Romania

PH-002**Surface Micromorphology and Crystalline Structures of Hard Dental Tissue Treated by Atmospheric Pressure Plasma Jet**

Mahmood Ghoranneviss¹, Negin Beryani Nezafat^{1,2}, Shahram Solaymani^{1,2}, and Azizollah Shafiekhani²

¹Tehran Univ. of Medical Sciences, Iran, ²Inst. for Research in Fundamental Sciences, Iran

PH-003**Effect of Non-Thermal Plasma on LPS-induced Periodontitis in Rat**

Jeong-Hae Choi¹, Kwang-Ha Park², Hyun-Young Lee¹, Hae-June Lee², Jin-Woo Hong², and Gyoo-Cheon Kim^{1,2}

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PH-004

Withdraw

PH-005**Gas Plasma-Conditioned Ringer's Lactate Enhances the Cytotoxic Activity of Cisplatin in Pancreatic Cancer In Ovo**

Kim R. Liedtke¹, Eric Freund^{1,2}, Maraike Hermes¹, and Sander Bekeschus²

¹Greifswald Univ. Medical Center, Germany, ²INP Greifswald, Germany

PH-006**A Comparison of Two Cold Atmospheric Helium Plasma Devices which Utilise the Same Power Supply**

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PH-007**Synergistic Effect of Cold Atmospheric Plasma & TMZ in the Treatment of Cancer In-Vitro & In-Vivo**

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PH-009

Non-invasive Physical Plasma (NIPP) Treatment of Low- and High-grade Cervical Intraepithelial Neoplasia: A Non-invasive and Anesthesia-independent Treatment Procedure Evaluated in a Prospective, Monocentric Clinical Trial

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PH-010

Plasma-activated Solution Promotes Wound Healing in Diabetic Mouse via Keratinocytes Activation

Kae Nakamura¹, Masaaki Mizuno¹, Nobuhisa Yoshikawa¹, Hiromasa Tanaka¹, Katsumi Ebisawa¹, Yuzuru Kamei¹, Shinya Toyokuni¹, Akihiro Niwa², Takahiro Jindo², Masaru Hori¹, Fumitaka Kikkawa¹, and Hiroaki Kajiyama¹

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PH-012

Preclinical Evaluations of Low Energy, High Frequency Cold Atmospheric Pressure Plasma (CAP) in Deep Second Degree Thermal Burn Ulcers of Rats

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PH-013

Non-Contact and Non-Invasive Diagnosis of Atmospheric Pressure Plasma-Irradiated Wound by Biophoton

Takamichi Hirata, Genu Takahashi, and Akira Mori

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PH-014

Tooth Enamel Conditioning with Argon Cold Plasma - a Gentle Alternative to Acid Etching Techniques in Orthodontics?

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PH-015

Glycolytic Inhibitor Induces Metabolic Crisis in Solid Cancer Cells to Enhance Cold Plasma Induced Cell Death

Neha Kaushik¹, Nagendra Kumar Kaushik², and Eun Ha Choi²

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PH-016

Local Cold Plasma Treatment for Pyoderma Gangrenosum - a New Therapeutic Option?Maria-Andreea Nagy¹, Alisa Schmidt², and Anna-Maria Iancu³¹Asklepios Clinic Lich, Germany, ²Plasma Physics Department Univ. Giessen, Germany,³Human Medicine Faculty Düsseldorf Univ., Germany

PH-017

Applications of Cold Plasma in the Treatment of Periodontitis Induced by *Aggregatibacter****Actinomycetemcomitans***Geraldo M.A. de Abreu¹, Aline G. Sampaio¹, Maria A. Oliveira¹, Gabriela de M. G. Lima¹, Márcia P.A. Mayer², Sérgio L. Lopes¹,Konstantin G. Kostov¹, and Cristiane Y. Koga-Ito¹¹São Paulo State Univ. - UNESP, Brazil, ²Univ. of São Paulo, Brazil

PH-018

Determination of J-Plasma Treatment Conditions to Combat Orthopaedic InfectionLauren Israel¹, Theresa A. Freeman¹, Lilith Elmor¹, Jordan Safran¹, Rachel Grant¹, Noreen Hickok¹, Adriana Barba²,Leslie Brewer², and Thomas Schaer²¹Thomas Jefferson Univ., USA, ²Univ. of Pennsylvania, USA

PH-019

Evaluation of Novel Skin Incision Technique Using J-Plasma ScalpelLilith Elmore¹, Lauren Israel¹, Jordan Safran¹, Rachel Grant¹, Adriana Barba², Thomas Schaer², and Theresa A. Freeman¹¹Thomas Jefferson Univ., USA, ²Univ. of Pennsylvania New Bolton Center, USA

I. Plasma Agricultural Applications

PI-001

Importance of Organic Compounds on Bactericidal Activity of Radical-activated Phenylalanine Solution

Naoyuki Iwata¹, Hiroshi Hashizume², Jun-Seok Oh³, Masaru Hori², and Masafumi Ito¹

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PI-002

Withdraw

PI-003

Non-thermal Atmospheric Pressure Plasma Enganced the Alpha-amylase Secretion in *Aspergillus Oryzae*

Mayura Veerana, Sarmistha Mitra, Se Hoon Ki, Eun-Ha Choi, Take Lee, and Gyungsoon Park

Kwangwoon Univ., Korea

PI-006

Wheat Seed Treatment by Diffuse Surface Barrier Discharge at Atmospheric Pressure

Y. A. Ussenov^{1,2}, A. Akildinova^{1,2}, A.K. Bissenbaev¹, A. Kistaubaeva¹, M.T. Gabdullin¹, M.K. Dosbolayev¹, T.T. Daniyarov², and T.S. Ramazanov¹

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PI-007

Effect of Atmospheric Pressure DBD on Physio-Chemical and Microbial Parameters of Ground Water and Its Use in Agriculture

Rajesh Prakash Guragain, Bishnu Prasad Pandey, and Deepak Prasad Subedi

Kathmandu Univ., Nepal

PI-010

Analysis of Effects of Ambient Air Cold Plasmas on Germination of Different Genotypes of Arabidopsis Thaliana Under Osmotic and Saline Stresses

Maxime Bafoil, Merbahi Nofel, Christophe Dunand, and Mohammed Yousfi

Univ. Paul Sabatier of Toulouse, France

PI-011

Introduction of Cas9 into Plant Cells Using Micro Plasma for Genome Editing

Yoshihisa Ikeda¹, Soichiroh Miyamoto¹, Yoshiki Ohya¹, Yugo Kido^{1,2}, Susumu Satoh¹, Hidetaka Kaya¹, and Masafumi Jinno¹

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PI-012

Influence of Plasma Micro- and Corona Discharge on the Growth of Mycelium of Higher Fungi

Yu. Veremii¹, N. Tsvyd², O. Nedybaliuk¹, O. Kolomiiets¹, M. Sukhomlyn², V. Chemyak¹, E. Martysh¹, V. Tyshchenko¹, D. Nikulin¹, B. Sokolovskyi¹, and A. Burova¹

Taras Shevchenko Nat'l Univ. of Kyiv, Ukraine

PI-013

Isolation and Characterisation of a New Soil-Bacteria Enriched by Cold Atmospheric Plasma

Jaesung Oh¹, Sung-Young Yoon¹, and Myung Kyum Kim²

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PI-014

Application of Low Temperature Plasma Technology for Improving the Quality of Black Glutinous Rice Cooking

Kamonporn Panngom, Patpen Penjamrus, Wasinee Panjan, Jirapong Sornsakdanuphab, Pradung Suanpoot, and Isara Wattananaphakasem

Maejo Univ. Phrae Campus, Thailand

PI-015

Evaluation of the Enhancement of Biodegradability of Polyethylene by Bacteria Using Plasma Pretreatment Technology

Sang Hye Ji, Seungil Park, Seungryul Yoo, and Jaesung Oh

Korea Inst. of Fusion Energy, Korea

PI-016

Effect of Plasma Treatment During the Germination on Bioactive Phytochemical of Oat Sprout

Mi Ja Lee¹, Jong-Seok Song², Hyun Young Kim, So-Yeun Woo, Seung-Yeob Song, Woo Duck Seo, Ji Yeong Yang, and JaeSung Oh²

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PI-017

Plasma-Assisted Nitrogen Fixation for Corn Plant Growth and Development

Pradeep Lamichhane, Mayura Veerana, Gyungsoon Park, and Eun Ha Choi

Kwangwoon Univ., Korea

PI-018

Analysis for the Effects of Plasma on Fungal Cellulase Production and Fruiting Body Formation

Nan-Nan Yu, Sarmistha Mitra, Eun-Ha Choi, and Gyungsoon Park

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PI-019

Magneto-Hydro-Plas-Ponics an Innovative and Effective Strategy to Have More and Healthier Agricultural Products: Lettuce

Kobra Hajizadeh^{1,2}, Reza Jamshidi¹, Mohammad-Reza Tanhayi^{2,3}, Meysam Safari⁴, and Ali Shams¹

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PI-020

Influence of Low-Temperature Plasma of DBD on Plant Seed Germination

Ivan Byshovyi, Oleh Nedybaliuk, and Dmitriy Shchur

Taras Shevchenko Nat'l Univ. of Kyiv, Ukraine

J. Plasma Modeling and Numerical Simulation

PJ-001**Effect of Plasma Oxidation on Hyaluronan Interaction with CD44: Combined Computational and Experimental Study**

Maksudbek Yusupov¹, Angela Privat-Maldonado¹, Hanne Verswyvel¹, Rodrigo Cordeiro², Jamoliddin Razzokov¹, and Annemie Bogaerts¹

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PJ-002**In Silico and In Vitro Identification of Anticancer Target of Cold Plasma**

Priyanka Shaw, Naresh Kumar, Angela Privat-Maldonado, Sylvia Dewilde, and Annemie Bogaerts

Univ. of Antwerp, Belgium

PJ-004**Numerical Investigation of Electroporation Induced by a He and He-O₂ (1000 ppm) Plasma Jets on Healthy and Cancerous Skin Tissues**

Constantinos Lazarou, Charalambos Anastassiou, and George E. Georghiou

Univ. of Cyprus, Cyprus

PJ-005**Mathematical Analysis and Numerical Simulation of Cancer Therapy Using Immunotherapy and Chemotherapy**

Rifaldy Fajar, Nana Indri Kurniastuti, and Aleya Zaha

Yogyakarta State Univ., Indonesia

PJ-006**Mathematical Modeling and Computer Simulation of Plasma Treatment Influencers on the Diffusion Coefficient of a Biofilm**

Rifaldy Fajar and Aleya Zaha

Yogyakarta State Univ., Indonesia

PJ-007**Computer Modeling for a Better Insight in the Permeability of Cell Membrane Phase-separated Domains**

Maria Cecilia Oliveira^{1,2}, Maksudbek Yusupov¹, Annemie Bogaerts¹, and Rodrigo Cordeiro²

¹Univ. of Antwerp, Belgium, ²Universidade Federal do ABC, Brazil



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PJ-008

Three-dimensional Particle-in-cell Simulation with a Floating Zone Plate in an Axial Vircator

Sohail Mumtaz and Eun Ha Choi
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PJ-009

Power-voltage Computations in the COST Reference Microplasma Jet

Sotiris Mouchtouris^{1,2} and George Kokkoris¹
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