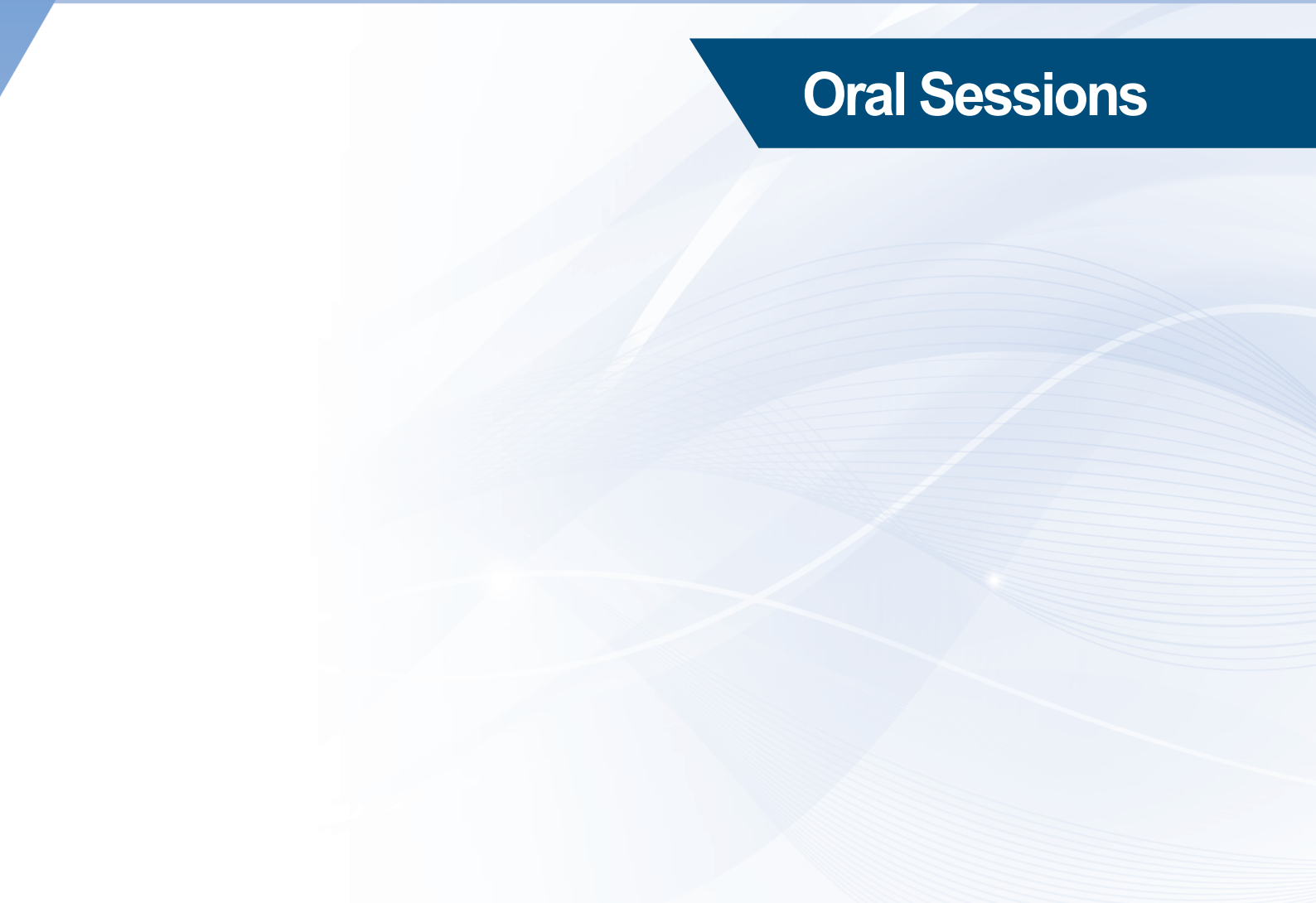




Oral Sessions



[TuA1] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions**Date / Time** August 3 (Tue.), 2021 / 14:40-16:00**Channel** Channel A**Session Chair** Prof. Nagendra Kumar Kaushik (Kwangwoon Univ., Korea)**TuA1-1****14:40-15:05****[Invited]****Bone Regeneration Using Plasma Processes and Nanoparticles**

Jean-Sébastien Thomann¹, Mohammed Cherif Nassim Chekireb¹, Sylvie Changotade², Géraldine Rohman², Maité Audemar³, Sophie Hermans³, Cristina Canal⁴, Agata Przekora-Kuśmierz⁵, Anna Belcarz⁵, Joanna Pawlat⁶, Grażyna Ginalska⁵, and David Duda¹

¹MRT/Luxembourg Inst. of Science and Tech. (LIST), Luxembourg, ²Université Paris 13, France, ³Université Catholique de Louvain, Belgium, ⁴Universitat Politècnica De Catalunya (UPC), Spain, ⁵Medical Univ. of Lublin, Poland, ⁶Lublin Univ. of Tech., Poland

TuA1-2**15:05-15:30****[Invited]****3D Engineered Models in Plasma Oncology: Investigating the Efficiency of Plasma-Activated Ringer's Saline in Osteosarcoma**

Juan Tornin¹, Miguel Mateu¹, Aranzazu Villasante², Xavi Sole¹, Maria-Pau Ginebra^{1,2}, and Cristina Canal¹

¹Universitat Politècnica de Catalunya (UPC), Spain, ²Barcelona Inst. of Science and Tech., Spain

TuA1-3**15:30-15:45****Bacterial Stress Response Proteins Protect Highly Vulnerable Iron-sulfur Clusters from Disruption by Plasma Treatment**

Marco Krewing, Kim Weisgerber, Tim Dirks, and Julia E. Bandow
Ruhr Univ. Bochum, Germany

TuA1-4**15:45-16:00****Cellular Effects Upon Treatment with Plasma-activated Solutions**

Charlotte op't Hoog¹, Joseph H.F.F. Lorent¹, Paul J. van Diest², and Andreas F.-P. Sonnen^{1,2}

¹Utrecht Univ., The Netherlands, ²Univ. Medical Center Utrecht, The Netherlands

[TuB1] Plasma-surface Interactions/Modifications for Biomedical Applications

Date / Time August 3 (Tue.), 2021 / 14:40-16:00**Channel** Channel B**Session Chair** Prof. Jae-Sung Kwon (Yonsei Univ., Korea)**TuB1-1****14:40-15:05****[Invited]****Plasma Synthesis of Metal Nanoparticle-Loaded Polymer Films with Controlled Ion Release for Antibacterial Applications**Andrei Choukourov, Daniil Nikitin, Pavel Pleskunov, Jiří Kratochvíl, Jan Hanuš, Ondřej Kylián, and Hynek Biederman
*Charles Univ., Czech Republic***TuB1-2****15:05-15:30****[Invited]****Atmospheric Pressure Plasma Processing of Biomaterials**V. Colombo, M. Gherardi, A. Liguori, M. L. Focarete, T. Galligani, F. Barletta, R. Laurita, F. Capelli, A. Bisag, and G. Laghi
*Alma Mater Studiorum-Università di Bologna, Italy***TuB1-3****15:30-15:45****Cell Behavior on Plasma-chemically Prepared "Amine-glue" Surfaces**Martina Buchtelová¹, Lucie Blahová¹, Jiřina Medalová², Petra Černochová², David Nečas¹, and Lenka Zajíčková^{1,2}
*¹CEITEC - Central European Inst. of Tech., Czech Republic, ²Masaryk Univ., Czech Republic***TuB1-4****15:45-16:00****Atmospheric Pressure PECVD Fluorinated Silane Coatings for Antimicrobial Applications**Giulia Laghi¹, Sabrina Conoci², Francesco Traina², Vittorio Colombo^{1,3}, and Matteo Gherardi^{1,3}
¹Alma Mater Studiorum-Univ. of Bologna, Italy, ²IBMTech s.r.l., Italy, ³AlmaPlasma s.r.l., Italy

[TuA2] Fundamentals of Atmospheric Plasmas/Plasma Sources for Biomedical Applications**Date / Time** August 3 (Tue.), 2021 / 16:20-17:45**Channel** Channel A**Session Chair** Dr. Barbora Tarabová (Czech Academy of Sciences, Czech Republic)**TuA2-1****16:20-16:45****[Invited]****Average Power Feedback Control Carried Out by a Sinusoidal High Voltage Power Supply Feeding a Dielectric Barrier Discharge Reactor**

Gabriele Neretti, Anna Chiara Ricchiuto, Andrea Cristofolini, and Carlo Angelo Borghi

*Univ. of Bologna, Italy***TuA2-2****16:45-17:00****Electric Field in Plasma Medicine: an Approach to Measurement and Effects in Wound Treatment**Laura Vilardell Scholten^{1,2,3}, Veronika Hahn¹, Klaus-Dieter Weltmann¹, and Torsten Gerling^{1,2,3}¹INP Greifswald, Germany, ²Centre for Innovation Competency ZIK Plasmatis, Germany, ³Competency Centre for Diabetes KDK Karlsburg, Germany**TuA2-3****17:00-17:15****Improving the Antimicrobial Sensitivity of Enterobacter Cloacae by Sub-Lethal Pre-Exposure to Cold Plasma**

Jordanne-Amee Maybin, Fiona M. Kearney, Padrig B. Flynn, and Brendan F. Gilmore

*Queen's Univ. Belfast, Ireland***TuA2-4****17:15-17:30****Interaction of Plasma Generated Carbon Monoxide (CO) with Mouse Blood Hemoglobin**Claire Douat¹, Pablo Escot Bocanegra¹, Sébastien Dozias¹, Eric Robert¹, and Roberto Motterlini²¹Université d'Orléans, France, ²Inserm U955-Univ. Paris Est, France**TuA2-5****17:30-17:45****A Novel Plasma Source for Treating Biofilm on Narrow Endoscope Channel Lumens**

Minkwan Kim, Rodolphe Hervé, Henrike Jakob, and Charles William Keevil

*Univ. of Southampton, UK***TuA2-6****17:45-18:00****Oxidative Stress Inhibits Cystine Transportation by xC⁻ Antiporter**Maryam Ghasemitarei^{1,2}, Maksudbek Yusupov², Jamoliddin Razzokov², Babak Shokri¹, and Annemie Bogaerts²¹Shahid Beheshti Univ., Iran, ²Univ. of Antwerp, Belgium

[TuB2] Plasma Liquid Interactions, Plasma Activated Liquids

Date / Time August 3 (Tue.), 2021 / 16:20-17:45**Channel** Channel B**Session Chair** Prof. Zdenko Machala (Comenius Univ. In Bratislava, Slovakia)

TuB2-1**16:20-16:45****[Invited]****The Use of Plasma Activated Water in a Mouse Model of Colitis**

Roman Gardlik, Maria Suchonova, Lubomira Tothova, Barbora Konecna, Michal Pastorek, Barbora Gromova, Slavomir Pasztor, Jaroslav Budis, Jan Radvanszky, and Zdenko Machala
Comenius Univ., Slovakia

TuB2-2**16:45-17:00****Plasma Directly Generated in Liquids as an Innovative Method to Treat Cancer**

Parisa Shali, Rouba Ghobeira, Olivier De Wever, Rino Morent, and Nathalie De Geyter
Ghent Univ., Belgium

TuB2-4**17:00-17:15****Oxychlorine Chemistry in Plasma Treated Saline Solutions**

Petr Lukes and Vit Jirasek
Czech Academy of Sciences, Czech Republic

TuB2-5**17:15-17:30****Reactions of Plasma-Generated Atomic Oxygen with Phenol Solutions**

Kerstin Sgonina¹, Giuliana Bruno², Stefan Wyprich¹, Kristian Wende², and Jan Benedikt¹
¹Kiel Univ., Germany, ²Leibniz Inst. for Plasma Science and Tech., Germany

TuB2-3**17:30-17:45****Cell Electroporation Enhancement by Non-Thermal-Plasma-Treated PBS**

Thai-Hoa Chung¹, Augusto Stancampiano², Kyriakos Sklias¹, Kristaq Gazeli¹, Franck M. André¹, Sébastien Dozias², Claire Douat², Jean-Michel Pouvesle², João Santos Sousa¹, Éric Robert², and Lluís M. Mir¹
¹Université Paris-Saclay, France, ²CNRS/Université d'Orléans

[WeA1] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions**Date / Time** August 4 (Wed.), 2021 / 09:00-10:25**Channel** Channel A**Session Chair** Prof. Michael Keidar (The George Washington Univ., USA)**WeA1-1****09:00-09:25****[Invited]****Contactless Plasma Jet Treatment of a Cancer Tumour**Endre Szili¹, Jun-Seok Oh², Keiji Inoue³, Rob Short⁴, and Hideo Fukuhara³¹Univ. of South Australia, Australia, ²Osaka City Univ., Japan, ³Kochi Medical School, Japan, ⁵The Univ. of Lancaster, UK**WeA1-2****09:25-09:40****Physically-based Cold Plasma Treatment of Cancer Cells**

Dayun Yan, Xiaoliang Yao, Qihui Wang, Alisa Malyavko, Manish Adhikari, Jonathan H.Sherman, and Michael Keidar

*The George Washington Univ., USA***WeA1-3****09:40-09:55****Biofilm Inactivation by Remote Plasma Treatment**Gaurav Nayak¹, Reed Jacobson¹, Sahil Mahajan¹, Sanjana Kerketta², Fujun Wang¹, Samyak Jain¹, Michael McAlpine¹, Mark J. Kushner², Ryan Hunter¹, Mikael Elias¹, and Peter J. Bruggeman¹¹Univ. of Minnesota, USA, ²Univ. of Michigan, USA**WeA1-5****09:55-10:10****Dielectric Barrier Discharge Plasma Reduces the Infectivity of HSV-1 Suspended in Cell Culture Medium**Julia Sutter¹, Rita Esposito¹, Gaurav Nayak², Brian Wigdahl¹, Peter Bruggeman², Fred C. Krebs¹, and Vandana Miller¹¹Drexel Univ. College of Medicine, USA, ²Univ. of Minnesota, USA**WeA1-6****10:10-10:25****Potential of Atmospheric Cold Plasma for Mycotoxin Degradation**

Ehsan Feizollahi, Basheer Iqdiem, and Roopesh Syamaladevi

Univ. of Alberta, Canada

[WeB1] Plasma Agricultural Applications

Date / Time August 4 (Wed.), 2021 / 09:00-09:55**Channel** Channel B**Session Chair** Prof. Alexander Fridman (Drexel Univ., USA)

WeB1-1**09:00-09:25****[Invited]****Plasma Mediated Activation of Microbial Cell Differentiation**

Mayura Veerana, Nan-Nan Yu, Wirinthip Ketya, Sarmistha Mitra, Eun Ha Choi, and Gyungsoon Park
Kwangwoon Univ., Korea

WeB1-3**09:25-09:40****Dynamical Changes in Free-radical Signals of Seeds during Water Imbibition and Seed Germination: Analysis of Plasma-Irradiation Effects Using an Electron Spin Resonance (ESR) Technique**

Kenji Ishikawa¹, Ryo Arita¹, Takamasa Okumura¹, Pankaj Attri¹, Kazunori Koga^{1,3}, Ryoya Sato¹, Hayate Tanaka¹, Masaya Hiromatsu¹, Kayo Matsuo¹, Daisuke Yamashita¹, Kunihiro Kamataki¹, Naho Itagaki¹, Masaru Hori², and Masaharu Shiratani¹
¹Kyushu Univ., Japan, ²Nagoya Univ., Japan, ³Nat'l Inst. of Natural Sciences, Japan

WeB1-5**09:40-09:55****Efficacy for Rice Plant Growth with Plasma Irradiation to Seeds**

Hiroshi Hashizume¹, Hidemi Kitano¹, Hiroko Mizuno³, Akiko Abe¹, Genki Yuasa⁴, Satoe Tohno⁴, Hiromasa Tanaka², Kenji Ishikawa, Shogo Matsumoto¹, Hitoshi Sakakibara¹, Susumu Nikawa¹, Masayoshi Maeshima¹, Masaaki Mizuno¹, and Masaru Hori¹
¹Nagoya Univ., Japan, ²Fujitsu Client Computing Co. Ltd., Japan

[WeA2] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions

Date / Time August 4 (Wed.), 2021 / 10:50-12:10**Channel** Channel A**Session Chair** Prof. Jun-Seok Oh (Osaka City Univ., Japan)

WeA2-1**10:50-11:15****[Invited]****Cold Atmospheric Plasma Stimulated Monocyte Derived Macrophages and Induced Molecular Pattern for Cancer Treatment**Nagendra K. Kaushik¹, Neha Kaushik², Pradeep Bhartiya¹, Nguyen Nhat Linh¹, and Eun Ha Choi¹¹Kwangwoon Univ., Korea, ²Suwon Univ., Korea**WeA2-2****11:15-11:40****[Invited]****Spontaneous and Genome-Integration Free External Molecular/Gene Introduction to Cells Triggered by Complex Stimulus Generated by Plasma**Masafumi Jinno¹, Yoshihisa Ikeda¹, Hideki Motomura¹, Yugo Kido^{1,2}, and Susumu Satoh^{1,3}¹Ehime Univ., Japan, ²Pearl Kogyo Co. Ltd., Japan, ³Y's Corp., Japan**WeA2-3****11:40-11:55****TRP Channel as a Sensor for Reactive Species Generated by Atmospheric Pressure Plasma**

T. Kaneko, S. Sasaki, and M. Kanzaki

*Tohoku Univ., Japan***WeA2-4****11:55-12:10****Investigation of Chemical and Electrical Factors Induced by Double Plasmas on Cancer Cells**Chia-Hsing Chang¹, Honoka Taguchi¹, Ken-ichi Yano², and Takehiko Sato¹¹Tohoku Univ., Japan, ²Kumamoto Univ., Japan

[WeB2] Plasma-surface Interactions/Modifications for Biomedical Applications

Date / Time August 4 (Wed.), 2021 / 10:50-11:40**Channel** Channel B**Session Chair** Prof. Pankaj Attri (Kyushu Univ., Japan)

WeB2-1**10:50-11:15****[Invited]****Non-Thermal Atmospheric Pressure Plasma Jet in Dentistry – from Killing to Saving**

Jae-Sung Kwon

*Yonsei Univ. College of Dentistry, Korea***WeB2-2****11:15-11:40****[Invited]****Amine Formation on the Surface of Porous Calcium-phosphate Artificial Bone by Low-pressure Pulsed Plasma Polymer Deposition**Anjar Anggraini Harumningtyas^{1,2}, Tomoko Ito¹, Miroslav Michlichek³, Satoshi Sugimoto¹, Lenka Zajickova³, Joe Kodama⁴, Takashi Kaito⁴, and Satoshi Hamaguchi¹¹Osaka Univ., Japan, ²Nat'l Nuclear Energy Agency of Indonesia (BATAN), Indonesia, ³Central European Inst. of Tech., Czech Republic, ⁴Osaka Univ. Graduate School of Medicine, Japan

[WeA3] Plasma Medical Applications – Clinical and Animal Studies**Date / Time** August 4 (Wed.), 2021 / 14:05-15:25**Channel** Channel A**Session Chair** Prof. Sun Jung Kim (Dongguk Univ., Korea)**WeA3-1****14:05-14:30****[Invited]****Cold Plasma for Accelerated Healing of Chronic Wounds in Diabetic Patients**Kai Masur^{1,3}, Bernd Stratmann², Wolfgang Kerner³, Debarati Shome¹, Diethelm Tschoepe², Wolfgang Motz³, Klaus-Dieter Weltmann¹, and Thomas von Woedtke¹¹INP Greifswald, Germany, ²Ruhr Universität Bochum, Germany, ³Klinikum Karlsburg, Germany**WeA3-2****14:30-14:55****[Invited]****In Search for the Most Effective Therapeutic Schemes in Clinical Plasma Medicine**Hans-Robert Metelmann^{1,3}, Christian Seebauer^{1,3}, and Philine Doberschuetz^{2,3}¹Univ. Medicine Greifswald, Germany, ²Nat'l Center for Plasma Medicine, Germany**WeA3-3****14:55-15:10****The Use of Plasma Activated Water in Urinary Tract Infection**Slavomir Pasztor, Maria Suchonova, Barbora Konecna, Lubomira Tothova, and Zdenko Machala
*Comenius Univ., Slovakia***WeA3-4****15:10-15:25****Medical Gas Plasma Technology Promotes Platelet Activation via Hemolysis**Sander Bekeschus¹, Broder Poschkamp^{1,2}, and Julia van der Linde^{1,2}¹INP Greifswald, Germany, ²Greifswald Univ. Medical Center, Germany

[WeB3] Plasma for Pharmaceutical Applications, Biochemical and Biomolecular Engineering**Date / Time** August 4 (Wed.), 2021 / 14:05-15:25**Channel** Channel B**Session Chair** Prof. Hiromasa Tanaka (Nagoya Univ., Japan)**WeB3-1****14:05-14:30****[Invited]****Exploration of Plasma-driven Biocatalysis**Julia E. Bandow¹, Abdulkadir Yayci¹, Tim Dirks¹, Marco Krewing¹, Frank Hollmann², and Miguel Alcalde³¹Ruhr Univ. Bochum, Germany, ²Delft Univ. of Tech., The Netherlands. ³Inst. of Catalysis and Petrochemistry (CSIC), Campus Cantoblanco, Spain**WeB3-2****14:30-14:55****[Invited]****Report on the 1st International Meeting on Plasma Cosmetic Science (IMPCS1)**Jean-Michel Pouvesle¹, Vittorio Colombo², David Graves³, Catherine Grillon⁴, Ihn Han⁵, Jun-Seok Oh⁶, Endre Szili⁷, Thomas von Woedtke⁸, and Eric Robert¹¹CNRS/Université d'Orléans, France, ²Università di Bologna, Italy, ³UC Berkeley, USA, ⁴CNRS, France, ⁵Kwangwoon Univ., Korea, ⁶Osaka City Univ., Japan, ⁷Univ. of South Australia, Australia, ⁸INP Greifswald, Germany**WeB3-3****14:55-15:10****Detection of Volatile Compounds of Biological Interest as Cancer Biomarkers in Saliva Using Controlled-Atmosphere Flexible Micro Tube Plasma Ionization (CA-FuTP) and Mass Spectrometry**Pascal Vogel¹, Constantinos Lazarou², Odhisea Gazeli², Sebastian Brandt¹, Joachim Franzke¹, and David Moreno- González^{1,3}¹Leibniz-Inst. Für Analytische Wissenschaften, Germany, ²Univ. of Cyprus, Greece, ³Univ. of Jaén, Spain**WeB3-4****15:10-15:25****Influence of Cold Atmospheric Plasma on NADPH Oxidase 1 (NOX1) Enzyme and Membrane Protein Structures: A Combined Experimental and Computational Study**P. Attri¹, K. Koga¹, A. Bogaerts², W. Lee³, and M. Shiratani¹¹Kyushu Univ., Japan, ²Univ. of Antwerp, Belgium, ³Yonsei Univ., Korea

[WeA4] Plasma Sources for Biomedical Applications**Date / Time** August 4 (Wed.), 2021 / 15:40-17:20**Channel** Channel A**Session Chair** Dr. Matteo Gherardi (Alma Mater Studiorum - Università Di Bologna, Italy)**WeA4-1****15:40-16:05****[Invited]****Corona Plasma Pen Using Streamer Discharge in Air Induces Disinfection and Selective Anticancer Effects Both Directly and by Plasma Activated Medium**Z. Machala¹, V. Martišovits¹, D. Sersenová¹, H. Gbelcová¹, V. Repiská¹, M. Suchoňová¹, B. Konečná¹, L. Tóthová¹, A.C. Ricchiuto², G. Neretti², D.B. Graves³, and G. Bauer⁴¹Comenius Univ. in Bratislava, Slovakia, ²Univ. of Bologna, Italy, ³Univ. of California Berkeley, USA, ⁴Univ. of Freiburg, Germany**WeA4-2****16:05-16:20****Citizen Scientist in Plasma Medicine. See the in-humans Results Since 1967**Deborah Black¹, Mark Edwards¹, Yubin Xian², Kostya (Ken) Ostrikov³, and Erik (Rik) Thompson⁴¹Bionic Products Pty Ltd., Australia, ²Huazhong Univ. of Science and Tech., China, ³Queensland Univ. & Tech., Australia, ⁴Inst. of Health and Biomedical Innovation, Australia**WeA4-3****16:20-16:35****Impact of Helium Plasma Jet on Tilted Dielectric Targets: Target Conductivity vs Dielectric Constant**Natalia Babaeva¹, George Naidis¹, Dmitry Tereshonok¹, Vladislav Panov¹, Cheng Zhang², Bangdou Huang², Tao Shao²¹Russian Academy of Sciences, Russia, ²Chinese Academy of Sciences, China**WeA4-4****16:35-16:50****Combination Treatment of Biocompatible Cold Plasma and Chemotherapeutic Agent to Sensitize Human Glioblastoma**

Manish Adhikari, Vikas Soni, Hayk Simonyan, Colin Young, Jonathan Sherman, and Michael Keidar

*The George Washington Univ., USA***WeA4-5****16:50-17:05****Optimization of Cold Plasma Jet for Enhancing Hydrogen Peroxide Production and its Application to Wound Healing**Bhagirath Ghimire¹, Endre Szili², Bethany L. Patenall³, Alexander Robson¹, Naing T. Thet³, Andrew Toby A. Jenkins³, and Robert D. Short¹¹Lancaster Univ., UK, ²Univ. of South Australia, Australia, ³Univ. of Bath, UK**WeA4-6****17:05-17:20****Beam-Plasma Systems for Medical and Agricultural Applications**

Tatiana Vasilieva, Michael Vasiliev, and Htet Ko Ko Zaw

Moscow Inst. of Physics and Tech., Russia

[WeB4] Plasma Liquid Interactions, Plasma Activated Liquids**Date / Time** August 4 (Wed.), 2021 / 15:40-17:05**Channel** Channel B**Session Chair** Prof. Jean-Michel Pouvesle (GREMI, Orleans, France)**WeB4-1****15:40-16:05****[Invited]****Selectivity of Detection Methods for Reactive Oxygen and Nitrogen Species in Plasma Treated Aqueous Solutions**Barbora Tarabová¹, Malte U. Hammer², Helena Jablonowski², Thomas von Woedtke², Stephan Reuter³, Mário Janda⁴, Karol Hensel⁴, Zdenko Machala⁴, and Petr Lukeš¹¹*Inst. of Plasma Physics of the CAS, Czech Republic*, ²*INP Greifswald, Germany*, ³*École Polytechnique de Montréal, Canada*,⁴*Comenius Univ., Slovakia***WeB4-3****16:05-16:20****Development of an Electrochemical Sensor for In-Situ Monitoring of Reactive Species Produced by Cold Physical Plasma**Zahra Nasri¹, Seyedali Memari¹, Sander Bekeschus¹, Klaus-Dieter Weltmann¹, Thomas von Woedtke^{1,2}, and Kristian Wende¹¹*Leibniz Inst. for Plasma Science and Tech., Germany*, ²*Univ. Medicine Greifswald, Germany***WeB4-4****16:20-16:35****On the Chemical Stability of Plasma-treated Liquids**K. Sklias¹, K. Gazeli¹, T.-H. Chung¹, A. Stancampiano², S. Dozias², C. Douat², J.-M. Pouvesle², E. Robert², L.M. Mir¹, and J. Santos Sousa¹¹*Université Paris-Saclay, France*, ²*Université d'Orléans, France***WeB4-5****16:35-16:50****Hydrogel-forming Biopolymer Solutions: An Opportunity for the Design of RONS Carriers**

Cédric Labay, Marcel Roldán, Inès Hamouda, Maria-Pau Ginebra, and Cristina Canal

*Universitat Politècnica de Catalunya (UPC), Spain***WeB4-2****16:50-17:05****Plasma-driven Biomolecule Modification – a Lever System Sparking Non-linear Cellular Response?**Kristian Wende¹, Sebastian Wenske¹, Zahra Nasri¹, Mehdi Ravandeh^{1,2}, Giuliana Bruno¹, Klaus-Dieter Weltmann³, Sander Bekeschus¹, and Thomas von Woedtke^{2,3}¹*ZIK Plasmatis/Leibniz Inst. for Plasma Science and Tech., Germany*, ²*Univ. of Greifswald, Germany*, ³*Leibniz Inst. for Plasma Science and Tech., Germany*

[ThA1] Fundamentals of Atmospheric Plasmas/Plasma Modeling and Numerical Simulation

Date / Time August 5 (Thu.), 2021 / 09:00-10:20**Channel** Channel A**Session Chair** Prof. Vandana Miller (Drexel Univ., USA)

ThA1-1**09:00-09:25****[Invited]****Towards an Understanding of Plasma-bio Interactions: Tracking Reactive Species from the Plasma Source to the Biological Target**Peter J. Bruggeman
*Univ. of Minnesota, USA***ThA1-2****09:25-09:50****[Invited]****Atmospheric Pressure Plasma Interactions with Complex Biomedical Surfaces**Kseniia Konina¹, Mackenzie Meyer¹, Juliusz Kruszelnicki¹, Jordyn Polito¹, Theresa Freeman², and Mark J. Kushner¹
¹*Univ. of Michigan, USA*, ²*Thomas Jefferson Univ., USA***ThA1-3****09:50-10:05****Towards Single Shot Plasma Diagnostics**Stephan Reuter^{1,2}, Benjamin M. Goldberg^{3,2}, Luka Hansen^{4,2}, Arthur Dogariu², and Richard B. Miles^{2,5}
¹*Polytechnique Montréal, Canada*, ²*Princeton Univ., USA*, ³*Sandia Nat'l Lab., USA*, ⁴*Christian-Albrechts-Univ. Kiel, Germany*,
⁵*Texas A&M Univ., USA***ThA1-4****10:05-10:20****Changes on Discharge Parameters and Production of Reactive Species in Argon and Helium Plasma Jets with Oxygen Addition**Fellype do Nascimento, Kleber Petroski, Ananias Barbosa, Ana Almeida, and Konstantin Kostov
São Paulo State Univ. – UNESP, Brazil

[ThB1] Plasma Sources for Biomedical Applications

Date / Time August 5 (Thu.), 2021 / 09:00-10:20**Channel** Channel B**Session Chair** Prof. Jinsung Choi (Kwangwoon Univ., Korea)

ThB1-1**09:00-09:25****[Invited]****Biomedical Applications of Gliding Arc Plasma: From Produce Washing to Stimulation of Plant Growth**Alexander Fridman
*Drexel Univ., USA***ThB1-2****09:25-09:50****[Invited]****Adaptive Plasmas for Plasma Medicine**Michael Keidar
*The George Washington Univ., USA***ThB1-3****09:50-10:05****Development of Cold Atmospheric Pressure Plasma Jets for Biomedical and Dental Applications**Konstantin G. Kostov¹, Fellype Nascimento¹, Thalita M. C. Nishime^{1,2}, Gabriela M.G. Lima¹, Marcia H Tanaka¹, and Cristiane Y. Koga-Ito¹¹São Paulo State Univ. – UNESP, Brazil, ²INP-Greifswald, Germany**ThB1-4****10:05-10:20****Multielectrode Plasma Torch Characterization for Rapid Wound Healing and Sterilization**Bhavya Bellannagari¹, Syed Hassan A. Kazmi², and Sohail H. Zaidi³¹IntelliScience Research Labs, USA, ²Salem Hospital, USA, ³San Jose State Univ., USA

[ThA2] Plasma-based Decontamination and Sterilization

Date / Time August 5 (Thu.), 2021 / 10:40-12:00**Channel** Channel A**Session Chair** Prof. Ihn Han (Kwangwoon Univ., Korea)

ThA2-1**10:40-11:05****[Invited]****Plasma Applications for the Filtration and Sterilization of Bioaerosols**Seunghun Lee¹, Joo-Young Park¹, Sang-Jin Kim¹, Ki-Ho Baek¹, Do-Geun Kim¹, Sungweon Ryoo², and Sanggu Lee³¹Korea Inst. of Materials Science, Korea, ²Masan Nat'l Tuberculosis Hospital, Korea, ³Korea Conformity Laboratories, Korea**ThA2-2****11:05-11:30****[Invited]****Compact Atmospheric Plasma Sterilization Device for Contact Lenses**Takehiko Sato¹, Kazuki Okazaki¹, Hideto Kamiyama¹, Koki Oikawa¹, Kairi Muramatsu¹, Tomoki Nakajima¹, Shigeru Fujimura², Toshikatsu Nagasawa³, and Tatsuyuki Nakatani⁴¹Tohoku Univ., Japan, ²Tohoku Medical and Pharmaceutical Univ., Japan, ³Hirayama Manufacturing Corp., Japan, ⁴Okayama Univ. of Science, Japan**ThA2-3****11:30-11:45****UV-photolysis and Numerical Simulation for O₃ Gas Emitted from Non-thermal Atmospheric Pressure Biocompatible Plasma Sterilizer**Jang Sick Park, Se Hoon Ki, Do Young Kim, Young Oh Shin, and Eun Ha Choi
Kwangwoon Univ., Korea**ThA2-4****11:45-12:00****The Mechanism of MRSA Inactivation by Surface Air Discharge**Dingxin Liu¹, Li Guo¹, Weitao Wang¹, Zifeng Wang¹, and Michael G Kong^{1,2}¹Xi'an Jiaotong Univ., China, ²Old Dominion Univ., USA



August 3~6, 2021
Online Conference

8th International Conference on Plasma Medicine

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ISPB 10 10th International Symposium on Plasma Bioscience

Associated with 3rd Summer School on Plasma Medicine on August 2~3, 2021

[ThB2] Plasma Medical Applications – Clinical and Animal Studies

Date / Time August 5 (Thu.), 2021 / 10:40-11:05

Channel Channel B

Session Chair Prof. Dongping Liu (Dalian Univ. of Tech., China)

ThB2-2

10:40-11:05

[Invited]

Plasma-surface Modifications for Biomedical Applications: Process Design Strategies for Complex Porous Materials and 3D Biofabrication

MMM Bilek¹, B Akhavan¹, M Santos^{1,2}, CT Tran¹, G Yeo¹, P Thorn¹, A Waterhouse^{1,2}, SG Wise^{1,2}, and DR McKenzie¹

¹Univ. of Sydney, Australia, ²Heart Research Inst., Australia

[ThA3] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions

Date / Time August 5 (Thu.), 2021 / 13:00-13:55**Channel** Channel A**Session Chair** Prof. Masafumi Jinno (Ehime Univ., Japan)

ThA3-2**13:00-13:15****Application of Cold Atmospheric Plasma for the Treatment and Prevention of Drug-Resistant Breast Cancer Cells**Hyeon Woo Kim¹, Heejoo Kim¹, Hwee Won Ji¹, Sung Hwan Yun¹, Jae Eun Park¹, Eun Ha Choi², and Sun Jung Kim¹¹Dongguk Univ., Korea, ²Kwangwoon Univ., Korea**ThA3-3****13:15-13:30****Fundamentals of Atmospheric Plasmas-tissue Interactions**XinPei Lu¹, M. Keidar², M. Laroussi³, E. Choi⁴, E. Szili⁵, and K. Ostrikov⁶¹HuaZhong Univ. of Science and Tech., China, ²George Washington Univ., USA, ³Old Dominion Univ., USA, ⁴Kwangwoon Univ., Korea, ⁵Univ. of South Australia, Australia, ⁶Queensland Univ. of Tech., Australia**ThA3-4****13:30-13:55****[Invited]****Elucidating Non-Thermal Plasma Effects on the Tumor and Tumor Microenvironment for Strategic Combination Therapies**

Abraham Lin

Universiteit Antwerpen, Belgium

[ThB3] Fundamentals of Atmospheric Plasmas

Date / Time August 5 (Thu.), 2021 / 13:00-14:20**Channel** Channel B**Session Chair** Dr. Hajime Sakakita (AIST, Japan)

ThB3-1**13:00-13:25****[Invited]****Plasma-water Interactions, and High-efficiency and Large-volume Generation of Plasma-activated Water**Dongping Liu, Zhihua Qi, Yao Zhao, and Zhiguo Zhao
*Dalian Univ. of Tech., China***ThB3-2****13:25-13:50****[Invited]****Introduction to Particular Standards of Plasma Medical Equipment for Wound Healing**Jinsung Choi, Junsup Lim, Sehun Ki, Young June Hong, and Eun Ha Choi
*Kwangwoon Univ., Korea***ThB3-3****13:50-14:05****Burn Wound Healing and Disinfection with Cold-atmospheric Plasmas through ROS Mediated Mechanisms**Constance Duchesne^{1,2}, Nadira Frescaline^{1,2}, Jean-Jacques Lataillade², Sébastien Banzet², Olivier Dussurget³, and Antoine Rousseau¹¹*Sorbonne Université, France*, ²*Inst. de Recherche Biomédicale des Armées, France*, ³*Université Paris Diderot, France***ThB3-4****14:05-14:20****Effect of Cold Atmospheric Plasma Jet on Oxidative Stress**Alireza Rezaeinezhad¹, Marjan Mahdavi-Gharavi¹, Hossien Mirmiranpour², and Hamid Ghomi¹¹*Shahid Beheshti Univ., Iran*, ²*Tehran Univ. of Medical Sciences, Iran*

[ThA4] Plasma Liquid Interactions, Plasma Activated Liquids

Date / Time August 5 (Thu.), 2021 / 14:35-15:45**Channel** Channel A**Session Chair** Dr. Kai Masur (INP, Germany)

ThA4-1**14:35-15:00****[Invited]****Initiation of Plasma Discharges in Saline Solutions**Thomas A. Field¹, Fayza Hassan¹, Leonidas Asimakoulas¹, Mohammad Karim¹, Adam Murphy¹, František Krčma², Lukáš Dostál², Kenneth R Stalder¹, and William G Graham¹¹Queens Univ. Belfast, UK, ²Brno Univ. of Tech., Czechia**ThA4-2****15:00-15:15****Reactive Species Generation Using Plasma Gun above or Inside Liquid Solutions**E. Robert¹, A. Hamon¹, S. Dozias¹, C. Douat¹, A.R. Bisag², R. Laurita², M. Gherardi², V. Colombo², and J.M. Pouvesle¹¹CNRS-Université d'Orléans, France, ²Alma Mater Studiorum-Università di Bologna, Italy**ThA4-3****15:15-15:30****On the Use of Plasma Activated Liquids for the Treatment of Cancer Cells**

Alina Bisag, Cristiana Bucci, Sara Coluccelli, Giulia Girolimetti, Romolo Laurita, Pierandrea De Iaco, Anna Myriam Perrone, Matteo Gherardi, Lorena Marchio, Anna Maria Porcelli, Vittorio Colombo, and Giuseppe Gasparre

*Alma Mater Studiorum-Univ. of Bologna, Italy***ThA4-4****15:30-15:45****Resection Polymeric Dentures Modified in Low-Temperature Plasma for Orthopedic Rehabilitation of Cancer Patients**Tatiana Vasilieva¹, Michael Vasiliev¹, Htet Ko Ko Zaw¹, Ekaterina Kudasova², and Ekaterina Kochurova²¹Moscow Inst. of Physics and Tech., Russia, ²The First Sechenov Moscow State Medical Univ. under Ministry of Health of the Russian Federation, Russia

[ThB4] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions**Date / Time** August 5 (Thu.), 2021 / 14:35-16:15**Channel** Channel B**Session Chair** Prof. Hans-Robert Metelmann (Greifswald Univ. Medicine, Germany)**ThB4-1****14:35-15:00****[Invited]****The Surface Marker and Gene Expression Signature Linked to Plasma-induced Toxicity in Cancer Cells – a Comprehensive Screening**Sander Bekeschus¹, Jonas Menz^{1,2}, Eric Freund^{1,2}, Kristian Wende¹, Thomas von Woedtke¹, and Anke Schmidt¹¹INP Greifswald, Germany, ²Greifswald Univ., Germany**ThB4-2****15:00-15:15****Enhancement of Impact of Atmospheric Plasma Jet on Cancer Cells with External Electrode**Irina Schweigert^{1,2}, Dmitry Zakrevsky^{3,4}, Pavel Gugin³, Elena Milakhina⁴, Ekaterina Golubitskaya⁵, Olga Troitskaya⁵, and Olga Koval^{5,6}¹Khristianovich Inst. of Theoretical and Applied Mechanics, Russia, ²George Washington Univ., USA, ³A.V. Rzhanov Inst. of Semiconductor Physics, Russia, ⁴Novosibirsk State Technical Univ., Russia, ⁵Inst. of Chemical Biology and Fundamental Medicine, Russia, ⁶Novosibirsk State Univ., Russia**ThB4-3****15:15-15:30****Investigating the Interactions of Plasma with DNA: Towards Safer Plasma Jet Treatments**Nishtha Gaur^{1,3}, Endre Szili^{2,3}, Hirofumi Kurita⁴, Saki Miyachika⁴, Jun-Seok Oh⁵, Masafumi Ito⁶, Akira Mizuno⁴, Bhagirath Ghimire¹, Sarah Allinson¹, Allison Cowin^{2,3}, and Robert Short¹¹Lancaster Univ., UK, ²Univ. of South Australia, Australia, ³Wound Management Innovation Cooperative Research Centre, Australia, ⁴Toyohashi Univ. of Tech., Japan, ⁵Osaka City Univ., Japan, ⁶Meijo Univ., Japan**ThB4-4****15:30-15:45****Gas Plasma-conditioned Liquids: Tumor-toxicity and Immunogenicity from *in vitro* to *in vivo* Studies**Eric Freund^{1,2}, Lea Miebach^{1,2}, Ramona Clemen¹, Eun Ha Choi³, Klaus-Dieter Weltmann¹, Claus Dieter Heidecke², and Sander Bekeschus¹¹Leibniz Inst. for Plasma Science and Tech. (INP), Germany, ²Greifswald Univ. Medical Center, Germany, ³Kwangwoon Univ., Korea**ThB4-5****15:45-16:00****Targeting Platelet Lipids with Physical Plasma – Is There a Link to Blood Coagulation?**

Johanna Striesow, Thomas von Woedtke, and Kristian Wende

INP Greifswald, Germany

ThB4-6**16:00-16:15****The Influence of the Chemistry of Plasma-treated Solutions on Its Selective Anti-cancer Nature**K. Sklias¹, P.M. Girard^{1,2}, and J. Santos Sousa¹¹Université Paris-Saclay, France, ²PSL Research Univ., France



August 3~6, 2021
Online Conference

8th International Conference on Plasma Medicine

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[FrA1] Plasma Sources for Biomedical Applications

Date / Time August 6 (Fri.), 2021 / 09:00-10:05

Channel Channel A

Session Chair Prof. Dehui Xu (Xi'an Jiaotong Univ., China)

FrA1-1

09:00-09:25

[Invited]

Design of In-liquid Plasma Generation Systems for Cardiovascular Plasma Medicine

Sean D. Knecht, McKayla Nicol, Ali Kazemi, Philip Snyder, Anoop Soodini, Daniel Holcomb, Christopher A. Siedlecki, Lichong Xu, Sven Bilén, and Girish Kirimanjeswara

Penn State Univ., USA

FrA1-2

09:25-09:50

[Invited]

Bioscience Application for Non-thermal Atmospheric Pressure Biocompatible Plasma (NBP)

Ihn Han, Mahmuda Akter, and Eun Ha Choi

Kwangwoon Univ., Korea

FrA1-4

09:50-10:05

Visualization of Plasma Treatment on 3D Printed Bone Defect Model

Kodai Aoki, Shunya Hashimoto, Akiyoshi Shimatani, Hiromitsu Toyoda, Hiroaki Nakamura, Tatsuru Shirafuji, and Jun-Seok Oh

Osaka City Univ., Japan

[FrB1] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions

Date / Time August 6 (Fri.), 2021 / 09:00-10:20**Channel** Channel B**Session Chair** Prof. Endre Szili (Univ. of South Australia, Australia)**FrB1-1****09:00-09:25****[Invited]****Cell Death Mechanisms by Plasma Activated Medium and Plasma Activated Ringer's Lactate Solution**M. Hori, H. Tanaka, M. Mizuno, K. Ishikawa, K. Nakamura, H. Kajiyama, Y. Okazaki, S. Toyokuni, and F. Kikkawa
*Nagoya Univ., Japan***FrB1-2****09:25-09:50****[Invited]****Non-thermal Atmospheric Pressure Plasma as an Efficient Tool to Activate the Proliferation of Human Mesoderm-derived Stem Cells through Epigenetic Modifications**Jeongyeon Park¹, Tianyu Tang², Hae June Lee², and Kiwon Song¹
¹*Yonsei Univ., Korea*, ²*Pusan Nat'l Univ., Korea***FrB1-3****09:50-10:05****Dual Microwave-excited Atmospheric-pressure Plasma Jets for Extending Treatment Areas**Daecheon Lim and Jun Choi
*KITECH, Korea***FrB1-4****10:05-10:20****Analysis of Cellular Respiration in Plasma-activated Solutions-treated Cancer Cells**H. Tanaka, S. Maeda, M. Mizuno, K. Ishikawa, K. Nakamura, H. Kajiyama, Y. Okazaki, S. Toyokuni, M. Ito, K. Ohno, F. Kikkawa, and M. Hori
Nagoya Univ., Japan

[FrA2] Plasma Medical Applications – Clinical and Animal Studies

Date / Time August 6 (Fri.), 2021 / 10:35-11:35**Channel** Channel A**Session Chair** Prof. Toshiro Kaneko (Tohoku Univ., Japan)

FrA2-1**10:35-10:50****Spatiotemporal Behavior of Surface Temperature on the Mouse Skin During Plasma Irradiation**Shunya Hashimoto¹, Kodai Aoki¹, Tatsuru Shirafuji¹, Hideo Fukuhara², Chiaki Kawada², Keiji Inoue², Masayuki Tsuda², Endre J. Szili³, and Jun-Seok Oh¹¹Osaka City Univ., Japan, ²Kochi Medical School, Japan, ³Univ. of South Australia, Australia**FrA2-3****10:50-11:05****Activation of Ion Channel and Uptake of Extracellular Dye Induced by In-liquid Plasma Treatment**Ryosuke Honda, Shota Sasaki, Keisuke Takashima, Makoto Kanzaki, Takehiko Sato, and Toshiro Kaneko
Tohoku Univ., Japan**FrA2-4****11:05-11:20****Treatment of Non-small Cell Lung Cancer: Plasma-activated Liquid as a Recent Advances and New Perspectives**Dehui Xu¹, Miao Qi¹, Shuai Wang¹, Bing Li¹, Hao Zhang¹, and Michael G Kong^{1,2}¹Xi'an Jiaotong Univ., China, ²Old Dominion Univ., USA**FrA2-5****11:20-11:35****Plasma-activated Saline Immersion as a Potential Bladder Cancer Treatment Approach**Hao Zhang¹, Jishen Zhang¹, Dehui Xu¹, and Michael G Kong^{1,2}¹Xi'an Jiaotong Univ., China, ²Old Dominion Univ., USA

[FrB2] Plasma Modeling and Numerical Simulation / Plasma Liquid Interactions, Plasma Activated Liquids

Date / Time August 6 (Fri.), 2021 / 10:35-11:05**Channel** Channel B**Session Chair** Prof. Takehiko Sato (Tohoku Univ., Japan)

FrB2-1**10:35-10:50****Water Activation by a Helium Plasma Jet with Additive Air Gases**Han Xu¹, Dingxin Liu¹, Li Guo¹, and Michael G Kong^{1,2}¹*Xi'an Jiaotong Univ., China*, ²*Old Dominion Univ., USA***FrB2-2****10:50-11:05****Zinc Based Nanomaterials Preparation Using Soft Jet Plasma and Antibacterial Application of the Materials**Antony Ananth¹, Ihn Han², Subramanian Dharaneedharan³, Jin-Hyo Boo¹, and Eun Ha Choi²¹*Sungkyunkwan Univ., Korea*, ²*Kwangwoon Univ., Korea*, ³*Madurai Kamaraj Univ., India*

[FrA3] Fundamentals of Atmospheric Plasmas

Date / Time August 6 (Fri.), 2021 / 12:50-13:55**Channel** Channel A**Session Chair** Prof. Dongping Liu (Dalian Univ. of Tech., China)

FrA3-1**12:50-13:15****[Invited]****Standardization of a Low Energy Ionized Gas Haemostasis Equipment in International Electrotechnical Commission**Hajime Sakakita^{1,2,3}¹Nat'l Inst. of Advanced Industrial Science and Tech. (AIST), Japan, ²Chiba Univ., Japan, ³Int'l Electrotechnical Commission (IEC)**FrA3-2****13:15-13:40****[Invited]****Plasma Diagnostics Using Collisional Radiative Model in Atmospheric Pressure Air DBD (Dielectric Barrier Discharge) Plasma**

Y. J. Hong, B. C. Kim, J. S. Lim, J. S. Choi, and E. H. Choi

*Kwangwoon Univ., Korea***FrA3-4****13:40-13:55****The Effect of Atmospheric Pressure Plasma Jet on Surface Micromorphology of Hard Dental Tissue**Mahmood Ghoranneviss¹, Shahram Solaymani^{1,2}, Negin Beryani Nezafat^{1,2}, and Azizollah Shafiekhani²¹Tehran Univ. of Medical Sciences, Iran, ²Inst. for Research in Fundamental Sciences, Iran

[FrB3] Plasma-cell and Plasma-tissue Interactions – Biological and Biochemical Reactions**Date / Time** August 6 (Fri.), 2021 / 12:50-13:45**Channel** Channel B**Session Chair** Prof. Kiwon Song (Yonsei Univ., Korea)**FrB3-1****12:50-13:15****[Invited]****Effect of Non-thermal Plasma Irradiation on the Biological Targets; Model Tissue, Culture Dermis, and Live Mouse**Jun-Seok Oh¹, Endre Szili², Hideo Fukuhara³, Rob Short⁴, Akimitsu Hatta⁵, Masafumi Ito⁶, and Keiji Inoue³¹Osaka City Univ., Japan, ²Univ. of South Australia, Australia, ³Kochi Medical School, Japan, ⁴Univ. of Lancaster, UK, ⁵Meijo Univ., Japan, ⁶Kochi Univ., Japan**FrB3-3****13:15-13:30****Characterization of Cold Atmospheric Pressure Plasma Jet and It's Application in Biomedicine**H. B. Baniya^{1,2}, R. P. Guragain¹, G. Qin³, and D. P. Subedi¹¹Kathmandu Univ., Nepal, ²Tribhuvan Univ., Nepal, ³Herbin Inst. of Science and Tech., China**FrB3-5****13:30-13:45****Comparison of Transdermal Permeability of Adenosine by Iontophoresis and Plasma Treatment**Jaroslav Kristof, Fariha Mustafa, Ahmad Guji Yahaya, Tomomichi Aoshima, Marius Blajan, and Kazuo Shimizu
Shizuoka Univ., Japan

[FrA4] Plasma-based Decontamination and Sterilization**Date / Time** August 6 (Fri.), 2021 / 14:35-16:00**Channel** Channel A**Session Chair** Dr. Eric Robert (Gremi CNRS Universite d`Orrleans, France)**FrA4-1****14:35-15:00****[Invited]****Plasma Systems and Processes for the Containment of SARS-CoV-2 Diffusion through Bioaerosol and Fomite Routes**

Romolo Laurita, Alina Bisag, Pasquale Isabelli, Cristiana Bucci, Filippo Capelli, Giorgio Dirani, Matteo Gherardi, Giulia Laghi, Alessandro Paglianti, Vittorio Sambri, Silvia Tappi, Pietro Rocculi, Elisabetta Suffredini, and Vittorio Colombo
Alma Mater Studiorum-Università di Bologna, Italy

FrA4-3**15:00-15:15****Non-equilibrium Atmospheric Pressure Plasma Assisted Inactivation of Bioaerosols**

Pasquale Isabelli^{1,3}, Alina Bisag¹, Cristiana Bucci¹, Filippo Capelli^{1,2}, Giulia Laghi¹, Vittorio Colombo^{1,2,3,4}, Matteo Gherardi^{1,2,3}, and Romolo Laurita^{1,2,3}

¹*Univ. of Bologna, Italy*, ²*AlmaPlasma s.r.l., Italy*, ³*Industrial Research Centre for Advanced Mechanics and Materials (CIRI-MAM), Italy*, ⁴*Interdepartmental Centre for Agri-food Industrial Research (CIRI-AGRO), Italy*

FrA4-4**15:15-15:30****Combined Modeling Approach to Study the Interaction of a Cold Plasma Jet with Solid Tumors**

Kristaq Gazeli¹, Constantinos Lazarou¹, Odhisea Gazeli¹, Myrianthi Hadjicharalambous¹, Charalambos Anastassiou¹, Vasileios Vavourakis^{1,2}, Panagiotis Svarnas³, George E. Georghiou¹

¹*Univ. of Cyprus, Cyprus*, ²*Univ. College London, UK*, ³*Univ. of Patras, Greece*

FrA4-5**15:30-15:45****Direct Plasma Deposition of Collagen for Cell Culture**

Denis O Sullivan^{1,2}, Liam O'Neill¹, and Paula Bourke²

¹*Ballingarrane Science and Tech. Park Clonmel, Ireland*, ²*Univ. College Dublin, Ireland*

FrA4-2**15:45-16:00****Evaluation of the Mutagenic Effects of Cold Atmospheric Plasma Jet Treatment on *Escherichia Coli* Relative to Other Known Mutagens**

Bethany Patenall¹, Hollie Hathaway², Naing Thet¹, Amber Young³, Sarah Allinson², Robert Short², and Toby Jenkins¹

¹*Univ. of Bath, UK*, ²*Univ. of Lancaster, UK*, ³*Bristol Royal Infirmary*

[FrB4] Plasma Agricultural Applications**Date / Time** August 6 (Fri.), 2021 / 14:35-16:00**Channel** Channel B**Session Chair** Prof. Gyungsoon Park (Kwangwoon Univ., Korea)**FrB4-1****14:35-15:00****[Invited]****Selected Applications of Low Temperature Atmospheric Pressure Plasmas for Agriculture, Food Technology and Medicine**Joanna Pawlat¹, Piotr Terebun¹, Michał Kwiatkowski¹, Barbara Chudzik³, Marek Kopacki², Agata Przekora⁴, Grażyna Ginalska⁴, Agnieszka Starek², Zdenko Machala⁵, and Karol Hense⁵¹Lublin Univ. of Tech., Poland, ²Univ. of Life Sciences in Lublin, Poland, ³Maria Curie– Skłodowska Univ., Poland, ⁴Medical Univ. of Lublin, Poland, ⁵Comenius Univ., Slovakia**FrB4-2****15:00-15:15****Effects of Plasma Treated Air and Plasma Treated Water on Plant Seed Germination and Inactivation Potential of Bacterial Cells and Spores**

Henrike Brust, Nicola Wannicke, Jasmin Werner, Sabine Bousselmi, Robert Wagner, Jörg Stachowiak, Jörg Ehlbeck, and Klaus-Dieter Weltmann

*INP Greifswald, Germany***FrB4-3****15:15-15:30****Effect of Atmospheric Cold Plasma Treatment on Cereal Food Allergens**Sing Wei Ng¹, Peng Lu¹, Daniela Boehm², and Paula Bourke^{1,2}¹Univ. College Dublin, Ireland, ²Technological Univ. Dublin, Ireland**FrB4-4****15:30-15:45****Plasma Activated Water as Novel Resistance Inducer for Plants in Greenhouse and Open Field**

Alina Bisag, Enrico Biondi, Alessandro Canel, Vittorio Colombo, Nicoletta Contaldo, Matteo Gherardi, Romolo Laurita, Set Perez, Yuri Zambon, and Assunta Bertaccini

*Alma Mater Studiorum-Univ. of Bologna, Italy***FrB4-5****15:45-16:00****Effect of Atmospheric Pressure DBD on Physio-chemical and Microbial Parameters of Groundwater and its Use in Agriculture**

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

Kathmandu Univ., Nepal