




ICOPS 2012

39th IEEE International Conference on Plasma Physics 8-12 July 2012

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Conference Venue

ICOPS 2012 will be held at the Edinburgh International Conference Centre (EICC). 

Situated at the heart of Scotland's elegant and historic capital city, the EICC is one of the world's outstanding venues for conferences, conventions and exhibitions.

The EICC is readily accessible from all major hotels and is only five minutes from Edinburgh's famous Princes Street – a wonderful shopping location overlooked by the world famous Castle.

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The main conference sessions will take place in the Pentland Auditorium – a state of the art facility with comfortable raked seating, its own stage, lighting, sound, projection and full soundproofing.

For more information about the EICC, visit <http://www.eicc.co.uk/>

Address:
150 Morrison Street



2P Plasma Medicine (poster 1)

Tuesday, July 10 14:00-15:15 Cromdale Hall

Session Chair: Mounir Laroussi

2P-131 Effect of Non-Thermal Plasma Exposure on Regrowth Potential of Foodborne and Nosocomial Pathogens

M. Thiyagarajan, G. Vidal, H. Pham, J. Ausland

Texas A&M University - Corpus Christi, Corpus Christi, TX, United States

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2P-132 Non-Thermal Plasma Induction of Pre-Programmed Cell Death in Monocytic Leukemia Cells

M. Thiyagarajan, X. Gonzales, H. Anderson, M. Norfolk

Texas A&M University - Corpus Christi, Corpus Christi, United States

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2P-133 Preliminary Studies on Biocidal Activities of UV-C Emitting Phosphors under Plasma Excitations.

B. Caillier¹, J. Demoucron¹, P. Guillot¹, J. Dexpert-ghys², R. Mauricot², M. Caiut³

¹*CUFR JFC, Albi, France*

²*CEMES, Toulouse, France*

³*Department of Chemistry, University of São Paulo, Ribeirão, Brazil*

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2P-134 Inactivation Pathways of Reactive Species Generated by Low Temperature Atmospheric Pressure Plasma

N. Barekzi, M. A. Akman, M. Laroussi

Old Dominion University, Norfolk, United States

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2P-135 Low Temperature Atmospheric Pressure Plasma Kills Leukemia Cells

N. Barekzi, M. Laroussi

Old Dominion University, Norfolk, United States

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2P-136 Effects of Control Parametrs on Apoptosis in Atmospheric Pressure Pulsed Helium Plasma Jet

T. H. Chung, H. M. Joh, S. H. Leem

Physics, Dong-A University, Busan, South Korea

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2P-137 Temperature Controllable Cold Plasma Source for Medical Application

T. Oshita¹, T. Takamatsu¹, N. Nakashima², H. Miyahara¹, Y. Matsumoto¹, A. Okino¹

¹*Energy Sciences, Tokyo Institute of Technology, Kanagawa, Japan*

²*Plasma Factory, Co. Ltd., Kanagawa, Japan*

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2P-138 Cell Apoptosis Induced by Atmospheric Pressure Plasma

Y. Yang¹, Z. Xiong¹, F. Zou¹, X. Lu¹, X. Yan², S. Zhao², G. Yang², G. He²

¹College of Electrical and Electronics Engineering, Huazhong University of Science and Technology, Wuhan, Hubei, China

²College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China

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2P-139 Effect of Non-Thermal Plasma on Cells in Presence of Ionic Liquids

Y. Han¹, N. K. Kaushik¹, E. H. Choi¹, P. Attri²

¹Plasma Bioscience Research Center, Kwangwoon University, Seoul, South Korea

²Department of Chemistry, University of Delhi, Delhi, India

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2P-140 EFFECT OF NON-THERMAL PLASMA ON LOADING OF TETRACYCLINE COMBINED WITH PLGA INTO TITANIA NANOTUBE

S. -Y. Im¹, S. -K. Moon¹, J. -S. Kwon¹, Y. H. Kim², K. -M. Kim¹, E. H. Choi², K. -N. Kim¹

¹Department and Research Institute of Dental Biomaterials and Bioengineering, Yonsei University College of Dentistry, Seoul, Republic of Korea

²Plasma Bioscience Research Center, Kwangwoon University, Seoul, Republic of Korea

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2P-141 Decontamination of Microorganisms by Low-Temperature Atmospheric Pressure Microplasma

D. Czyłkowski¹, B. Hrycak¹, M. Jasiński¹, M. Dors¹, J. Mizeraczyk^{1,2}

¹Centre for Plasma and Laser Engineering, The Szevalski Institute of Fluid-Flow Machinery, Polish Academy of Sciences, Gdańsk, Poland

²Department of Marine Electronics, Gdynia Maritime University, Gdynia, Poland

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2P-142 Sterilization of Bacillus Subtilis Spores by Atmospheric Pressure Plasma Jet with Ar and Ar/h2o Mixtures

C. Cheng, J. Shen, S. Fang, Y. Meng, X. Wang, J. Li

Institute of Plasma Physics, Chinese Academy of Sciences, Shushahu Road No. 350, Hefei, China, Hefei, Anhui, China

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2P-143 Sterilization of Bacillus Subtilis Spores Using an Atmospheric Plasma Jet

J. Shen¹, J. Li¹, J. Luo²

¹Institute of Plasma Physics, Chinese Academy of Sciences, Shushahu Road No. 350, Hefei, China, Hefei, Anhui, China

²College of Science, Donghua University, Songjiang District People North Road 2999., Shanghai, China

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2P-144 Risk Assessment of a Plasma Device for Therapeutic Use in Dermatology

S. Baldus¹, N. Bibinov¹, C. Suschek², P. Awakowicz¹

¹Institute for Electrical Engineering and Plasma Technology (AEPT), Ruhr-University Bochum, Bochum, Germany

²Department of Trauma and Hand Surgery, Dusseldorf University Hospital, Dusseldorf, Germany

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2P-145 The Effects of Rat C6 Glioma Cells and in Vivo Tumor by Atmospheric Pressure Cold Plasma Jet

Y. Wang¹, C. Cheng², J. Shen², J. Li²

¹The first Affiliated Hospital of Anhui Medical University, Jixi Road No.210,Hefei 230032, P.R. China, Hefei, Anhui, China

²Institute of Plasma Physics, Chinese Academy of Sciences, Shushahu Road No. 350, Hefei, China, Hefei, Anhui, China

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2P-146 Improving the Degradation Behavior of Magnesium Alloy by Plasma Surface Modification for Biomedical Application

[M. I. Jamesh, G. Wu, Y. Zhao, P. K. Chu](#)

Department of Physics and Materials Science, City university of Hong Kong, Hong Kong, China

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2P-147 Characterization of an Offt-Based Biosensor Using a Tips-Pen Composite with Atmospheric Plasma-Treatment

[H. G. Jeon, C. Y. Cho, Y. C. Kim, J. S. Choi, Y. K. Kim, E. H. Choi, B. Park](#)

Electrophysics, Kwangwoon University, soul, South Korea

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2P-148 Optical Detection in Plasma-Treated Phospholipid Layers by Surface Plasmon Resonance Investigation

[C. Y. Cho, H. G. Jeon, Y. C. Kim, J. C. Shin, B. Park](#)

Department of Electrophysics, Kwangwoon University, Seoul, South Korea

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2P-149 Measurement of Bimolecular Valence Band Energy Structure of Erythrocyte after Bio-Plasma Treatment.

[J. Y. Lee¹, K. Y. Baik², Y. H. Kim², E. H. Choi^{1,2}](#)

¹*Department of Electrophysics, Kwangwoon University, Seoul, South Korea*

²*College of Veterinary Medicine, Chonbuk National University, Chollabuk-Do, South Korea*

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2P-150 Characteristics of Atmospheric Pressure Plasma for Decontamination of Endoscopic Channels

[X. Wang¹, C. Bai¹, D. Li¹, D. Liu¹, M. Rong¹, M. Kong²](#)

¹*School of Electrical Engineering,, Xi'an Jiaotong University, Xi'an, Shaanxi, China*

²*School of Electronic, Electrical and Systems Engineering, Loughborough University, Leicester, UK*

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2P-151 Effect of Non-Thermal Atmospheric Pressure Plasma Jet on Hydrophilicity and Cellular Activity of SLA-Treated Titanium Surface

[E. -J. Lee¹, J. -S. Kwon¹, S. -H. Uhm¹, Y. H. Kim², K. -M. Kim¹, E. H. Choi², K. -N. Kim¹](#)

¹*Department and Research Institute of Dental Biomaterials and Bioengineering, Yonsei University College of Dentistry, Seoul, Republic of Korea*

²*Plasma Bioscience Research Center, Kwangwoon University, Seoul, Republic of Korea*

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2P-152 Antimicrobial Efficacy of Non-Thermal Atmospheric Pressure Plasma Jet on Oral Micro-Organisms

[E. -M. Yoo¹, S. -H. Uhm¹, J. -S. Kwon¹, H. -S. Choi¹, K. -M. Kim¹, E. H. Choi², K. -N. Kim¹](#)

¹*Department and Research Institute of Dental Biomaterials and Bioengineering, Yonsei University College of Dentistry, Seoul, Republic of Korea*

²*Plasma Bioscience Research Center, Kwangwoon University, Seoul, Republic of Korea*

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2P-153 Synergistic Actions of Bacillus Subtilis Devitalization by Atmosphere Plasma Jet

[Y. Meng](#)

11st Division, Institute of Plasma Physics, Chinese Academy of Sciences, hefei, Anhui, China

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IMPROVING THE DEGRADATION BEHAVIOR OF MAGNESIUM ALLOY BY PLASMA SURFACE MODIFICATION FOR BIOMEDICAL APPLICATION*

James M, Guosong Wu, Ying Zhao and Paul K. Chu
*Department of Physics and Materials Science, City
University of Hong Kong,
Tat Chee Avenue, Kowloon, Hong Kong*

The materials such as 316L stainless steel, pure titanium and its alloys, and cobalt–chromium-based alloys are commonly used in the bone fracture fixation and which are non-biodegradable. Nevertheless, one desirable characteristic of an implant is its ability to be degraded after the bone has healed as problems may arise if the implants are not degradable. Long-term adverse effects or even an increased risk of local inflammation may occur after long-term implantation since the metallic implant is a foreign body to human tissues. If this is the case, second surgery is subsequently conducted for implant removal. However, repeated surgery not only increases the morbidity rate of the patients, but also results in an increase of health care costs and longer hospitalization. To reduce such complications, the use of biodegradable metallic implants has been investigated. Magnesium and its alloys are the most commonly used metal amongst all the degradable metallic materials. The interfacial situations of the magnesium alloy implants and the biological environments have drawn more and more attentions recently. Magnesium is a very important element in human body, related to modulate transport functions and receptors, signal transduction, enzyme activity, energy metabolism, nucleic acid and protein synthesis. However, the major obstacles of the clinical use of magnesium-based materials are its rapid degradation rate and the release of hydrogen gas upon degradation. Alloying is a viable option to improve the corrosion resistance of Mg in body fluid. However, when the magnesium alloy is dissolved, the alloying elements will also be absorbed in the human body. Hence, alloying of Mg with elements such as Al, Zr, Pr, Ce, and Y is limited due to their toxicity. Surface engineering is another viable option to improve the corrosion resistance of Mg in body fluid. Silicon is one of the essential trace elements in the mammals. The presence of trace amount of silicon can enhance the bone growth and offer good bioactivity. So the present paper aims to address the role of silicon coating prepared by plasma surface modification technique on the corrosion resistance of magnesium alloy in simulated body fluid (SBF).

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