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Address:
150 Morrison Street

1P Environmental and Industrial applications (poster)

Monday, July 9 14:00-16:15 Cromdale Hall

Session Chair: Ahmed Khacef

1P-140 The Synthesis of Magnetic Nanoparticles by Laser Ablation in Different Solvents

H. R. Yousefi[1], B. S. Kariman[1], M. F. Aghamir[2]

[1]*Plasma Physics Research Center, Science and Research Branch, Islamic Azad University, Tehran, Iran, Tehran, Iran*
[2]*Department of Physics University of Tehran, Tehran, Iran*

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1P-141 Crystalizing Metallic Compound Film by Ion Irradiation in Plasma

N. Sakudo, N. Ikenaga, Y. Kishi, Z. Yajima

Kanazawa Institute of Technology, 3-1 Yatsukaho,Hakusan, Ishikawa, Japan

View Abstract

1P-142 The Effect of Heat Treatment on Osteogenic Property of Sputtered Antibacterial Silver-Titanium Oxide Nanocomposite Films

D. -H. Song[1], S. -H. Uhm[1], S. -E. Kim[1], J. -S. Kwon[1], J. -G. Han[2], K. -N. Kim[1]

[1]*College of Dentistry, Yonsei University, Research Center for Orofacial Hard Tissue Regeneration, Seoul, South Korea*
[2]*Sungkyunkwan University, Center for Advanced Plasma Surface Technology, Suwon, South Korea*

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1P-143 Time-Dependent Growth of Titania Nanotubes from Sputtered Titanium Thin Films for Bio-Application

S. -H. Uhm[1], D. -H. Song[1], J. -S. Kwon[1], S. -B. Lee[1], J. -G. Han[2], K. -M. Kim[1], K. -N. Kim[1]

[1]*College of Dentistry, Yonsei University, Research Center for Orofacial Hard Tissue Regeneration, Seoul, South Korea*
[2]*Sungkyunkwan University, Center for Advanced Plasma Surface Technology, Suwon, South Korea*

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1P-144 Characteristics of Operating Mode in a Rotating Arc and Optimization of Chemical Process by Control of the Mode

K. -T. Kim, D. H. Lee, H. S. Kang, I. M. Kim

Plasma Engineering, Korea Institite of Machinery and Materials, Daejeon, South Korea

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1P-145 Physiochemical Parameters of Treated Wastewater by KrCl Excilamp

B. Rahmani[1], N. Benhamouche[2], M. Talhi[2], E. R. Rahmani[3], S. Avtaeva[4], G. Zissis[5,6]

[1]*Electronics Department, Faculty of Electrical Engineering,university of science and technology (USTO-MB), Oran, Algeria*
[2]*Applied Molecular Genetics Department, Faculty of Science, University of Science and Technology (USTO-MB), Oran, Algeria*
[3]*Saliege- 3 rue Bernanos., Balma-Cedex ,Toulouse, France*
[4]*-Kyrgyz-Russian Slavic University,, Bishkek, Kyrgyz Republic*
[5]*UPS, INPT; LAPLACE, Université de Toulouse 3;, Toulouse cedex 9, France*
[6]*LAPLACE, CNRS LAPLACE, Toulouse cedex9, France*

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1P-146 Atmospheric-Pressure Cold Plasma for One-Step Deposition of TiO2 Photocatalytic Films

X. -S. Li, D. -L. Chang, L. -B. Di, A. -M. Zhu

Lab of Plasma Physical Chemistry, Dalian University of Technology, Dalian, China

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1P-147 Improving the Corrosion Resistance of Biodegradable Magnesium Alloy by Plasma Dual Ion Implantation

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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1P-148 Using the Diffuse Coplanar Surface Barrier Discharge for Improvement of Felting Properties of Animal Fibres

J. Vorac, V. Stepanova, P. Slavicek, P. Stahel, M. Cernak

Department of Physical Electronics, Faculty of Science, Masaryk University, Brno, Czech Republic

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1P-149 NITRIDATION of STEEL 460LI-21Cr by PLASMA IMMERSION ION IMPLANTATION in CAPACITIVELY COUPLE RADIO FREQUENCY PLASMA

H. Bhuyan, B. Bora, M. Favre, E. S. Wyndham, H. Chuaqui

Physics, Pontificia Universidad Católica de Chile, Santiago, Chile

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1P-150 PLASMA MADE ANTIREFLECTIVE GaAs NANOGRASS

S. Ravipati[1], F. H. Ko[1], J. Shieh[2], C. C. Yu[3], H. L. Chen[3], S. H. Chen[4]

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[3]*Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*
[4]*Nano CMOS Device Technology, National Nano Device Laboratories, Hsinchu, Taiwan*

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1P-151 A Method for Generating Plasma Activated Water and Its Biological Assessments

S. R. Yoo[1], J. S. Park[1], S. M. Ryu[1], E. J. Hong[1], T. Lho[1], S. O. Jang[1], G. H. Song[2], S. I. A.[3]

[1]*National Fusion Research Institute, Daejeon, South Korea*
[2]*TEKorea, Suwon, South Korea*
[3]*JSC Technosytem-ECO, Moscow, Russia*

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1P-152 PLASMA-CATALYST INTERACTION FOR REMOVAL OF METHANE AND PROPENE IN AIR AT ATMOSPHERIC PRESSURE

T. Pham Huu, J. M. Cormier, A. Khacef

GREMI, Polytech'Orleans, Orleans, France

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1P-153 Atmospheric Plasma Jet Array for Large Scale Surface Treatment

M. Ghasemi[1,2], J. W. Bradley[1], J. L. Walsh[1]

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[2]*Department of Atomic & Molecular Physics, Faculty of Science, University of Mazandaran, Babolsar, Iran*

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IMPROVING THE CORROSION RESISTANCE OF BIODEGRADABLE MAGNESIUM ALLOY BY PLASMA DUAL ION IMPLANTATION*

Jamesh M, Guosong Wu, Ying Zhao and Paul K. Chu
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Tat Chee Avenue, Kowloon, Hong Kong

Magnesium and its alloys are most attracted materials because of its potential application in biodegradable hard-tissue implants. In vivo and in vitro studies show that it has good biocompatibility. It has been reported that the dissolved magnesium ions may promote bone cell attachment and tissue growth on the implants. The specific density and Young's modulus of Mg are closer to bone than the commonly used metallic implant materials, which enables a decrease in stress at the bone/implant interface, stimulate bone growth and increase the implant stability. Mg possesses greater fracture toughness over ceramic biomaterials, higher strength than biodegradable plastics, and favorable elastic modulus than commonly used metallic implant materials. In spite of the numerous advantages, the use of Mg as a biodegradable implant has been restricted because of some major limitations. Mg usually corrodes rapidly in body fluid, which leads to the generation of a large volume of hydrogen gas and a remarkable increase in local pH value of body fluid. Various methods have been developed to improve the corrosion resistance of Mg alloys such as alkali-heat treatment, plasma immersion ion implantation, microarc oxidization, and so on. Silicon carbide (SiC) was chosen as the coating material because of its biocompatibility, bioinert to biological tissues and aggressive environment. Stuart et al. implanted SiC-coated quartz discs into the subcutaneous space of the New Zealand White rabbit and no chronic inflammatory response was obtained from histological diagnosis. Besides, the amorphous SiC films have fairly well anti-thrombogenic properties due to their semiconducting properties, and as such it is also a promising coating material for coronary stents. Bickel et al. examined the in vitro thrombogenicity of different coatings used for coronary stents and found that the silicon carbide coated coronary stent led to an improved hemocompatibility compared with the uncoated one. So the present paper aims to address the role of silicon carbide prepared by plasma surface modification technique on the corrosion resistance of magnesium alloy in simulated body fluid (SBF).

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