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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. Yousefi¹, B. S. Kariman¹, M. F. Aghamir²
¹Plasma Physics Research Center, Science and Research Branch, Islamic Azad University, Tehran, Iran
²Department of Physics University of Tehran, Tehran, Iran

View Abstract

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. Song¹, S. -H. Uhm¹, S. -E. Kim¹, J. -S. Kwon¹, J. -G. Han², K. -N. Kim¹
¹College of Dentistry, Yonsei University, Research Center for Orofacial Hard Tissue Regeneration, Seoul, South Korea
²Sungkyunkwan University, Center for Advanced Plasma Surface Technology, Suwon, South Korea

View Abstract

1P-143 Time-Dependent Growth of Titania Nanotubes from Sputtered Titanium Thin Films for Bio-Application
S. -H. Uhm¹, D. -H. Song¹, J. -S. Kwon¹, S. -B. Lee¹, J. -G. Han², K. -M. Kim¹, K. -N. Kim¹
¹College of Dentistry, Yonsei University, Research Center for Orofacial Hard Tissue Regeneration, Seoul, South Korea
²Sungkyunkwan University, Center for Advanced Plasma Surface Technology, Suwon, South Korea

View Abstract

1P-144 Characteristics of Operating Mode in a Rotating Arc and Optimization of Chemical Process by Control of the Mode
Plasma Engineering, Korea Institute of Machinery and Materials, Daejeon, South Korea

View Abstract

1P-145 Physiochemical Parameters of Treated Wastewater by KrCl Excilamp
B. Rahmani¹, N. Benhamouche², M. Talhi², E. R. Rahmani³, S. Avtaya², G. Zissis²,³
¹Electronics Department, Faculty of Electrical Engineering, University of Science and Technology (USTO-MB), Oran, Algeria
²Applied Molecular Genetics Department, Faculty of Science, University of Science and Technology (USTO-MB), Oran, Algeria
³Salleige- 3 rue Bernanos, Balma-Cedex, Toulouse, France

View Abstract

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
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

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

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

1P-150 PLASMA MADE ANTIREFLECTIVE GaAs NANOGRASS
S. Ravipati¹, F. H. Ko¹, J. Shieh², C. C. Yu³, H. L. Chen³, S. H. Chen⁴
¹Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan
²Department of Materials Science and Engineering, National United University, Miaoli, Taiwan
³Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan
⁴Nano CMOS Device Technology, National Nano Device Laboratories, Hsinchu, Taiwan

1P-151 A Method for Generating Plasma Activated Water and Its Biological Assessments
S. R. Yoo¹, J. S. Park¹, S. M. Ryu¹, E. J. Hong¹, T. Lho¹, S. O. Jang¹, G. H. Song², S. I. A.³
¹National Fusion Research Institute, Daejeon, South Korea
²TEKorea, Suwon, South Korea
³JSC Technoxtem-ECO, Moscow, Russia

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

1P-153 Atmospheric Plasma Jet Array for Large Scale Surface Treatment
M. Ghasemi¹, J. W. Bradley¹, J. L. Walsh¹
¹Department of Electrical Engineering & Electronics, University of Liverpool, Liverpool, United Kingdom
²Department of Atomic & Molecular Physics, Faculty of Science, University of Mazandaran, Babolsar, Iran
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 oxidation, 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).