Conference Venue

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

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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.

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Address:
150 Morrison Street

1E Environmental and Industrial Applications I (oral)

Monday, July 9 10:00-12:00 Pentland Auditorium

Session Chair: Ahmed Khacef

10:00 1E-1 (invited) Plasms Surface Treatment of Biomaterials

P. K. Chu

Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong, China

View Abstract

10:30 1E-2 Solar Driven Discharge Plasma for Nox Treatment in a Diesel Automobile: a Practical Demonstration

S. B. Maragani, S. Mohapatro, B. S. Rajanikanth

Electrical Engineering, Indian Institute of Science, Bangalore, Karnataka, India

View Abstract

10:45 1E-3 Plasma-Assisted Diesel Oxidation Catalyst: Laboratory and Bench Scale Investigations for CO and HC Light-Off Temperature and NOx Remediation

A. Leray[1,2], A. Guy[3], M. Makarov[2], K. Lombaert[4], J. M. Cormier[1], A. Khacef[1]

[1]*GREMI Laboratory, CNRS-Univ. d'Orleans, Orleans, France*
[2]*FR TCR, RENAULT, Guyancourt, France*
[3]*Engineering, SAFRAN, Montigny-le-Bretonneux, France*
[4]*CTL, RENAULT, Lardy, France*

View Abstract

11:00 1E-4 Low Temperature Plasma-Driven Catalysis of Nano-Titanium Dioxide for Vehicle Exhaust Clearance

S. Yu[1], Y. Liang[1], S. Sun[1], K. Zhang[1], J. Zhang[1], J. Fang[1], W. Zhu[2]

[1]*Academy for Advanced Interdisciplinary Studies,Peking University, Beijing, China*
[2]*Saint Peter's College, Jersey City, New Jersey, USA*

View Abstract

11:15 1E-5 The Effect of Balance Gas Mixture on the Destruction of Naphthalene by Surface Dielectric Barrier Discharge

A. A. Abdelaziz, T. Seto, Y. Otani

Department of Chemical and Material Engineering, Kanazawa University, Kanazawa, Japan

View Abstract

11:30 1E-6 DUAL SIDED Al/Al2O3 MICROCHANNEL PLASMA OZONE REACTOR

M. H. Kim, J. H. Cho, S. B. Ban, J. K. Bae, S. -J. Park, J. G. Eden

Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States

View Abstract

11:45 1E-7 Dissociation and Conversion of Carbon Dioxide in Arrays of Atmospheric Pressure Microplasma Devices

T. Oh, S. -J. Park, J. G. Eden

Department of Electrical and Computer Engineering, University of Illinois, Urbana, IL, United States

View Abstract

PLASMS SURFACE TREATMENT OF BIOMATERIALS

Paul K Chu
Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China

Development of new biomaterials takes a very time before of long certification processes and government approval. Therefore, it is normally more efficient to use existing biomaterials and then selectively enhance the pertinent properties to expedite the acceptance of biomaterials and biomedical implants. This is because the surface of biomaterials plays the major role in determining the effects and interfacing with biological tissues *in vivo*. Plasma surface modification is very useful and applicable in these cases because selected biomedical and related surface properties such as hydrophilicity and cyto-compatibility can be enhanced while the favorable properties of the bulk materials such as strength and inertness can usually be preserved. In particular, plasma immersion ion implantation and deposition (PIII&D) which combines energetic ion implantation and low-energy plasma deposition is very useful. In this invited talk, recent research activities pertaining to plasma surface modification and engineering of biomaterials performed in the Plasma Laboratory of City University of Hong Kong are presented and discussed. Examples include bone fixation devices, hip joints, automatic scoliosis correction devices, biodegradable metallic and polymeric materials, antimicrobial materials, as well as other biomedical applications.

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