

11th

APCPST

Asia-Pacific Conference on Plasma Science and Technology

and

25th

Symposium on Plasma Science for Materials

SPSM

ABSTRACTS

~ Plasma Science and Technology towards Innovation and Business ~

October 2-5, 2012

Kyoto University ROHM Plaza, Kyoto, Japan

<http://www.apcpst2012.org/>



Organized by

The 11th Committee on Asia Pacific Conference on Plasma Science and Technology

The 153rd Committee on Plasma Materials Science, Japan Society for the Promotion of Science



Overview

Committee

Program

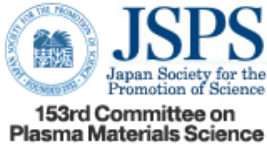
- Topics
- Time Table
- Invited Speakers
- Oral Presentation
- Poster Presentation
- Tutorial

Abstract Submission

Registration

Miscellaneous

organizer/sponsor:



Invited Speakers

Plenary

Paul K. Chu (City University of Hong Kong)

"Surface Modification of Advanced Materials by Plasma and Related Technology"

Tony Murphy (CSIRO Materials Science and Engineering, Australia)

"Solving environment problems with thermal plasma technology"

Dongchan Kim (Samsung Electronics)

"Dry Etching Challenges and Perspectives for Future Semiconductor Devices"

Susumu Noda (Kyoto University)

"Manipulation of Photons by Photonic Crystals"

Topical (Life innovation)

Ko-Shao Chen (Tatung University, Taiwan)

"Post treatments of plasma polymers for creating functional surface and their applications"

Rob Short (University of South Australia)

"Applications of Plasma Polymers in Life Science Research and Medicine"

Topical (Green innovation)

Dong-Wha Park (INHA University, Korea)

"A large-scale treatment of PFCs gases by a Thermal Plasma Scrubber"

MENG Yuedong (Chinese Academy of Sciences)

"Preparation of Direct Alcohol Fuel Cells by Plasma Technology"

Topical (Technology)

Keping Yan (Zhejiang University, China)

"High-Voltage Power Sources for Pulsed Discharge Plasmas"

Shigeru Kasai (Tokyo Electron Ltd.)

"Introduction of a New Plasma Source using Solid State AMPS for Low Electron Temperature Processes"

Tae Baek (Jesagi Hankook LTD., Korea)

"Advanced Plasma Descum Systems for PCB&Packagings of the next Generation"

General (Basic)

Keisuke Takashima (Tsinghua University, China) "Experimental Study of Fast Ionization Wave Discharge at High Pulse Repetition Rate"

Kouichi Sasaki (Hokkaido University, Japan)

"Control of combustion chemistry with the help of nonequilibrium plasmas"

He-Ji Huang (Chinese Academy of Sciences)

"Unsteady Phenomena In A Non-Transferred DC Arc Plasma Generator"

General (Material & Etch)

Geun-Young Yeom (Sungkyunkwan University, Korea)

"Atomic Layer Etching (ALET) of Semiconductor Materials"

Masatomo Sumiya (NIMS, Japan)

"Effect of hydrogen radical on decomposition of chlorosilane source gases"

General (Application)

Emilie Despiau-Pujo (Université Joseph Fourier, France)

"Molecular dynamics simulations of hydrogen plasma interaction with grapheme"

Itaru Honma (Tohoku University, Japan)

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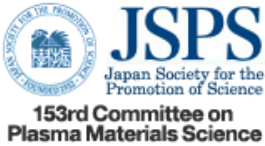
Miscellaneous

Time Table

Oct. 1 (Mon)	Oct. 2 (Tue)	Oct. 3 (Wed)	Oct. 4 (Thu)	Oct. 5 (Fri)
	09:00-10:00: Registration	09:00-10:00: Registration	09:00-10:00: Registration	09:00-10:00: Registration
	10:00-11:00: Opening	10:00-11:00: Plenary Lecture Dr. Tony Murphy	10:00-11:00: Plenary Lecture Dr. Dongchan Kim	10:00-11:00: Plenary Lecture Prof. Susumu Noda
	11:00-12:00: Plenary Lecture Prof. Paul K. Chu	11:00-12:00: Topical - <i>Green</i> Prof. Dong-Wha Park	11:00-12:00: Topical - <i>Technology</i>	11:00-12:00: General - <i>Combined</i> Prof. He-Ji Huang
	12:00-13:00: Topical - <i>Life</i> Prof. Ko-Shao Chen Prof. Rob Short 1L-003 1L-004 1L-005 1L-006	12:00-13:00: Coffee Break	12:00-13:00: Coffee Break	12:00-13:00: Coffee Break
	13:00-14:00: Lunch	13:00-14:00: Lunch	13:00-14:00: Lunch	13:00-14:00: General - <i>Combined</i> Dr. Tae Baek 4G-003 4G-004 4G-005 4G-006 4G-007
	14:00-15:00: Poster Session	14:00-15:00: Poster Session	14:00-15:00: Poster Session	14:00-15:00: Awarding Ceremony Closing
	15:00-16:00: Tutorial 1 Prof. Kouichi Ono	15:00-16:00: General - <i>Basic</i> Prof. Yi-Kang Pu Prof. Kouichi Sasaki 2B-O13 2B-O14 2B-O15 2B-O16	15:00-16:00: General - <i>Var. Appl.</i> Prof. Emilie Despiaup-Pujo Prof. Itaru Honma 3A-O13 3A-O14 3A-O15 3A-O16	15:00-16:00: Excursion
	16:00-17:00: Tutorial 2 Prof. Kunihide Tachibana	16:00-17:00: Coffee Break	16:00-17:00: Travel Time	
17:00-18:00: Registration	17:00-18:00: Tutorial 3 Dr. Liyuan Han	17:00-18:00: General - <i>Mater.&Etc.</i> Dr. Masatomo Sumiya Prof. Geun Young Yeom 2M-O23 2M-O24	17:00-18:00: Banquet	
18:00-19:00: Welcome Party				
19:00-20:00:				

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Surface Modification of Advanced Materials by Plasma and Related Technology

Paul K Chu

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

paul.chu@cityue.edu.hk

Development of new functional, especially biomaterials, is quite time consuming and demanding due to the requirements by the government, industry, and consumers. It is thus faster to improve existing materials and components to meet increasing demands. In this respect, surface modification and engineering is very useful and functional materials and industrial components with selectively enhanced surface properties can be produced while the favorable attributes of the bulk materials such as strength and inertness can be retained. 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 plenary talk, recent research activities pertaining to plasma surface modification and engineering of functional materials including optoelectronic and biomedical materials conducted in the Plasma Laboratory of City University of Hong Kong are described. Examples include nano-structured optoelectronic devices, nano-sensors, bone fixation implants, total hip replacements, automatic scoliosis correction surgical devices, biodegradable metallic and polymeric materials, as well as other materials and applications.

Key Words: plasma, materials, surface modification