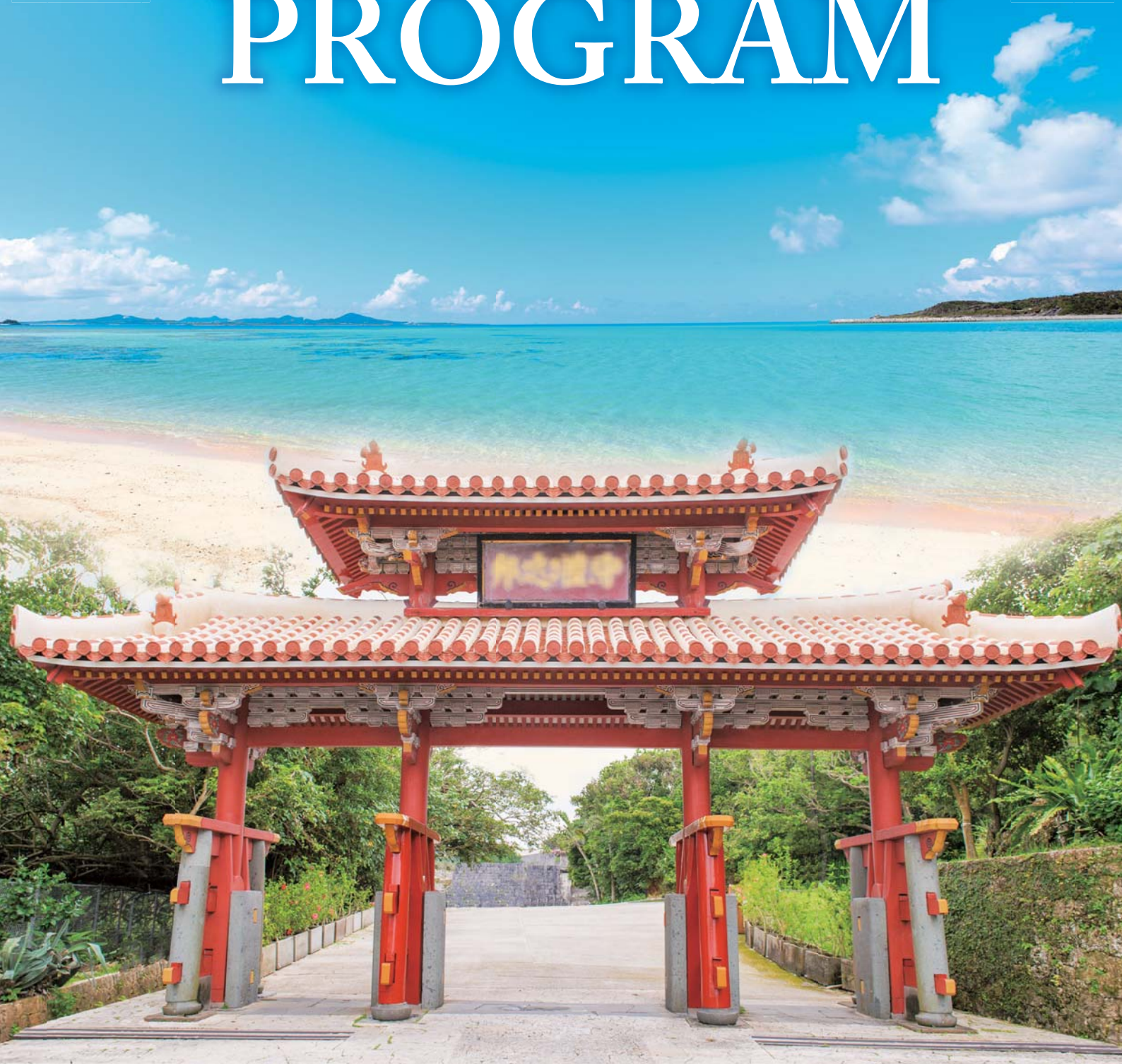


The 10th EU-Japan Joint Symposium on Plasma Processing

JSPP2017

The 82nd IUVSTA Workshop on Plasma-based Atomic Layer Processes

PROGRAM



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Foreword

On behalf of the organizing committees of both 10th EU-Japan Joint Symposium on Plasma Processing (JSPP) and 82nd IUVSTA Workshop on Plasma-based Atomic Layer Processes, I would like to welcome all participants of both meetings at Bankoku Shinryokan Conference Hall at Okinawa, Japan. The EU-Japan JSPP is an international symposium that covers a broad range of science and technologies related to plasmas processing. This time, in addition to the areas traditionally covered by this Symposium such as basic plasma physics and chemistry, atomic and molecular processes, and plasma-surface interaction, we have organized the Special Sessions on “Plasma-Liquid Interactions” and “Plasma Application to Agriculture.” These two sessions focus on rapidly growing subfields associated with plasma applications in medicine and biology. On the other hand, the 82nd IUVSTA Workshop on Plasma-based Atomic Layer Processes is a focused workshop sponsored by International Union for Vacuum Science, Technique and Applications (IUVSTA) and covers science and technologies of plasma-based atomic layer processes (ALPs), i.e., atomic layer etching (ALE), atomic layer deposition (ALD), and other surface processes with atomic-scale size control. Unlike conventional etching and deposition processes, ALD and ALE characterize themselves as having self-limiting reactions, which allow the processes to proceed (nearly) layer by layer. Plasma-based ALPs have attracted much attention in the semiconductor industry for their great potential in nano-scale device manufacturing.

The organizers believe that having these two rather distinctively different meetings simultaneously and allowing the participants of each meeting to attend sessions of the other freely will benefit all participants in gaining a broader perspective of the technical fields they work on. I hope all participants will enjoy the academic contents of the meetings as well as inspiring discussions with their colleagues in a relaxing atmosphere at Okinawa.

Satoshi Hamaguchi

Chair

10th EU-Japan Joint Symposium on Plasma Processing

82nd IUVSTA Workshop on Plasma-based Atomic Layer Processes

The 10th EU-Japan Joint Symposium on Plasma Processing

Organizing Committee

Satoshi Hamaguchi	(Chair), Osaka University, Japan
Nigel Mason	(Co-Chair), Open University, UK
Zoran Petrovic	(Co-Chair), Institute of Physics, Serbia
Fumiyoshi Tochikubo	(Co-Chair), Tokyo Metropolitan University, Japan
Katsuhisa Kitano	(Secretary), Osaka University, Japan
Uroš Cvelbar	Jožef Stefan Institute., Slovenia
Uwe Czarnetzki	Ruhr University Bochum, Germany
William G. (Bill) Graham	Queen's University Belfast, UK
Seiji Samukawa	Tohoku University, Japan
Masaharu Shiratani	Kyushu University, Japan
Peter L. G. Ventzek	Tokyo Electron America, USA

The 82nd IUVSTA Workshop on Plasma-based Atomic Layer Processes

Organizing Committee

Satoshi Hamaguchi (Chair), Osaka University, Japan

Timo Gans (Co-Chair), University of York, JK

Keizo Kinoshita (Co-Chair), Petra, Japan

Tetsuya Tatsumi (Co-Chair), Sony Semiconductor Solutions, Japan

Sumit Agarwal, Colorado School of Mines, USA

Masanobu Honda, Tokyo Electron, Japan

Eric Joseph, IBM, USA

Kazuhiro Karahashi, Osaka University, Japan

Erwin Kessels, Eindhoven University of Technology, Netherlands

Shahid Rauf, Applied Materials, USA

Guen Young Yeom, Sungkyunkwan University, Korea

Timetable

Mon (December 4)		Tue (December 5)		Wed (December 6)		Thu (December 7)	
Room A		Room B		Room C		Room C	
8:45-9:00	Opening & Introduction (Hamaguchi & Mason)	Eun Ha Choi	Guen Young Yeom	Jean-Michel Pouvesle	David Smith	Room B	Room C
9:00-9:35	Toshiaki Makabe	Alexander Fridman	Yukihiro Shimogaki	Douyan Wang	Peter L. G. Ventzek	David Graves	Seiji Samukawa
9:35-10:10	Zoran Lj. Petrović	Uroš Cvelbar	Erwin Kessels	Yuki Yanagawa Kinga Kutas	Ying Zhang	Koichi Takaki	Hiroyuki Fukumizu
10:10-10:45	Mark Kushner	Masaharu Shiratani	Sumit Agarwal	Kiwon Song	Eric A. Joseph	Takayuki Ohta	Shota Nunomura
10:45-11:00	15 min break	15 min break	15 min break	15 min break	15 min break	Deborah O'Connell	Jozef Brcka Gwenaël Fubiani
11:00-11:35	Jane P. Chang	William Graham	Hae June Lee	Lenka Zajíčková	David N. Ruzic	15 min break	Yoshihide Kihara
11:35-12:10	Steven M. George	Katsuhisa Kitano	Jan van Dijk	Miran Mozetič	Masaru Hori	Peter Bruggeman	Masaru Izawa
12:30-14:30	Welcome Lunch (buffet)	Nishtha Gaur Tomoyuki Murakami	Emilie Desplau-Pujo	Andrei Choukurov Glenn Lalag	Gilles Cunge	Ryo Ono	Masanaga Fukasawa
14:30-16:00	Poster Session	Excursion 13:00 - ...		Lunch (with lunch boxes)		Kenji Miyamoto	Closing (Hamaguchi)
16:00-16:30	Room B	Room C	Room D	Kristian Wende	Emil Pinck	(white boxes; talks in EU-Japan JSPP)	
16:30-17:00	Shunjiro Shinohara	Nigel Mason	Panel Discussion on "ALP in future industries"	Fumiyoshi Tochikubo	Bert Ellingboe		
17:00-17:30	Jean-Pierre Boeuf	Thomas Field		Jun-Seok Oh	Zoltan Donko		
17:30-18:00	Dajji Kato	Jean-Paul Booth		Endre Szili	Hehyun Song Zoran Petrovic		
17:30-18:00	David Zarzoso	Peter Papp Juraj Fesfor		30 min break			
18:00-18:30	Sadrudin Benkadda	Holger Kersten		Ron White	Uwe Czarnetzki		
18:30-20:30	Reception			Yong Zhang	Timo Gans		
				Toshiro Kaneko	Jaeho Kim Magdalena Jr. Vasquez Halime Sakakita		
				Ladislav Moravsky			
				Banquet 19:00 - ...			

<Room D> Sunset Lounge
- Panel Discussion : Mon (December 4)

<Room A> Summit Hall
- Opening & Introduction : Mon (December 4)
- Plenary : Mon (December 4)

Café terrace
- Welcome Lunch : Mon (December 4)

<Room B, C> Ocean Hall
- Invited
- Oral (Contributed)
- Poster Session
- Reception
- Closing
Mon (December 4) – Fri (December 7)




N. Takayama

Symposium/Workshop Venue Map

Social Events

Opening & Introduction:

Date: 8:45-9:00, Monday, December 4.

Venue: Summit Hall, Bankoku Shinryokan

Welcome Lunch (buffet):

Date: 12:30-14:30, Monday, December 4.

Venue: Cafe Terrace, Bankoku Shinryokan

Reception (drinks & snack):

Date: 18:30-20:30, Monday, December 4.

Venue: Ocean Hall, Bankoku Shinryokan

Excursion:

Date: 13:00- Tuesday December 5.

Visit to Ocean Expo Park including Okinawa Churaumi Aquarium, and Okinawa-style dinner at Nago city in the evening.

The tour will start after the morning session and return to the hotels by 9PM.

Conference Banquet:

Prior reservation is required.

Date: 19:00-21:00, Wednesday, December 6.

Venue: Function Room, The Busena Terrace

(on Level 4 of the Central Tower)

Fee: 10,000 JPY

A sit-down buffet dinner

Closing:

Date: 12:30-, Thursday, December 7.

Venue: Ocean Hall, Bankoku Shinryokan

General Information

Registration Desks:

- Pre-Registration Desk
- On-Site Registration Desk
- Cashier

Hours of Operation:

December 4	8:00 - 18:30
December 5	8:00 - 12:30
December 6	8:00 - 18:30
December 7	8:00 - 12:30

Lunch:

Welcome Lunch will served on December 4 at Café terrace.

Boxed lunch called “*Bento*” will be served on December 6 and 7 at Ocean Hall.

Wi-Fi Area:

Free Wi-Fi is available in all halls at the venue. SSID: guest

Lost and Found:

If you lose or find an item, please stop by the registration desk.

First Aid:

If you require medical assistance during the Conference, please contact the secretariat office staff immediately.

Cloak Room:

No cloakroom is available. Please note it in advance.

Taxi:

If a taxi is required, please contact the Registration Desk.

Smoking Policy:

Smoking is not permitted in any building. There are some smoking spaces outside the building.

Instructions for Presenters

Oral Presentation

- The presentation time is as follows

(including the time for you to connect your PC to the projector):

- Plenary 35 min (30 min presentation and 5 min discussion)
- Invited 30 min (25 min presentation and 5 min discussion)
- Oral (Contributed) 15 min (12 min presentation and 3 min discussion)

- Equipment

Windows laptop computer for common use will be available for your presentations in the conference room.

Please bring your presentation data saved to a USB storage device.

****Notes when using your own laptop for presentation****

Please bring all required connection cables (with a d-sub 15-pin adapter) for your laptop, and a power adapter, if necessary.

If you wish to use your own Mac computer, you will need the appropriate VGA video adapter.

Poster Presentation

- Poster session is held on Monday, 4 (13:30-14:30)
- Poster board size is 2.1m high and 1.2m wide.

Poster should not be larger than the poster board.

Drawing pins (thumbtacks) for posting will be offered by the organizer.

- Please put up your poster before your poster session starts.
- Please remove your poster by 12:00 on Thursday 7.

Posters left on the board after this time may be removed by the Conference staff.

Plenary Session Program

===== **Monday, December 4, 2017** =====

<Room A> Summit Hall

Opening & Introduction (8:45-9:00)

Satoshi Hamaguchi (Osaka Univ., Japan) & Nigel Mason (Open Univ., UK)

Plenary Sessions (9:00-12:10)

[PL-1] (9:00-9:35) Toshiaki Makabe (Keio University, Japan)

“Development of research over these 70 years on electron velocity distribution in time-varying low-temperature plasmas”

[PL-2] (9:35-10:10) Zoran Lj. Petrović (Institute of Physics, Serbia)

“Physics of Swarms of Charged Particles, as a Foundation for Modeling Non-Equilibrium Collisional Plasmas”

[PL-3] (10:10-10:45) Mark Kushner (University of Michigan, USA)

“From the Plasma to the Surface: Connecting Plasma Kinetics to Atomic Layer Processing”

----- Break (10:45-11:00)-----

[PL-4] (11:00-11:35) Jane P. Chang (UCLA, USA)

“Plasma-Surface Interactions at the Atomic Scale”

[PL-5] (11:35-12:10) Steven M. George (University of Colorado, USA)

“Thermal Atomic Layer Etching Using Sequential, Self-Limiting Surface Reactions”

EU-Japan JSPP2017 Presentations Program

=====**Monday, December 4, 2017**=====

Poster Sessions (14:30-16:00)

Ocean Hall

*Please see page 22 for poster's presenter, title information.

Invited & Oral Sessions (16:00-18:30)

<Room B> Ocean Hall

[I-1] (16:00-16:30)

Shunjiro Shinohara (Tokyo Univ. of Agriculture and Technology, Japan)

“Various-Sized, High-Density Helicon Sources and Application to Electrodeless Plasma Propulsion”

[I-3] (16:30-17:00)

Jean-Pierre Boeuf (University of Toulouse, France)

“Collisionless resonant absorption in a surface-wave plasma”

[I-5] (17:00-17:30)

Daiji Kato (National Institute for Fusion Science, Japan)

“Modeling of emission line spectra from tungsten highly charged ions and its applications to tungsten transport studies”

[I-7] (17:30-18:00)

David Zarzoso (Aix-Marseille University, CNRS, France)

“Modelling of tokamak plasmas for the analysis of instabilities”

[I-8] (18:00-18:30)

Sadruddin Benkadda (Aix-Marseille University, CNRS, France)

“Multiscale Modelling of Self-Organization in Magnetized Plasma Turbulence”

<Room C> Ocean Hall

[I-2] (16:00-16:30)

Nigel Mason (The Open University, UK)

“Atomic and Molecular Data for Plasma Physics Challenges and Opportunities”

[I-4] (16:30-17:00)

Thomas Field (Queen's University Belfast, UK)

“Dissociative electron attachment in plasmas and modification of the driving circuit of a DC self pulsing plasma to control electron energy distribution”

[I-6] (17:00-17:30)

Jean-Paul Booth (Ecole Polytechnique, France)

“Kinetics of atoms and metastable molecules in oxygen plasmas revisited: an experimental study”

[O-1] (17:30-17:45)

Peter Papp (Comenius University, Slovakia)

“Dissociative electron attachment to c-C₄F₈ molecules and clusters”

[O-2] (17:45-18:00)

Juraj Fedor (J. Heyrovsky Inst. of Physical Chemistry CAS, Czech Rep.)

“Electron attachment properties of c-C₄F₈O and HFPO”

[I-9] (18:00-18:30)

Holger Kersten (University Kiel, IEAP, Germany)

“Non-conventional Diagnostics for Plasma Processing”

=====**Tuesday, December 5, 2017**=====

Invited & Oral Sessions (8:45-12:30)

<Room B> Ocean Hall

[I-10] (8:45-9:15)

Eun Ha Choi (Kwangwoon University, Korea)

“Nonthermal Biocompatible Plasma (NBP) Sources and their Applications to Agriculture in Plasma Bioscience Research Center (PBRC)”

[I-11] (9:15-9:45)

Alexander Fridman (Drexel University, USA)

“Plasma Agriculture: Fundamentals and Applications”

[I-12] (9:45-10:15)

Uroš Cvelbar (Jozef Stefan Institute, Slovenia)

“Agricultural Plasma Decontamination of Toxins”

[I-13] (10:15-10:45)

Masaharu Shiratani (Kyushu University, Japan)

“Impact of Plasma Processing of Agricultural Food on Taste and Food Quality”

----- Break (10:45-11:00)-----

[I-14] (11:00-11:30)

William Graham (Queen's University Belfast, UK)

“Studies of plasmas in liquids: Four states of matter in one glass.”

[I-15] (11:30-12:00)

Katsuhisa Kitano (Osaka University, Japan)

“Smart disinfection technique using peroxyntic acid (HOONO₂) in cryo-preserved plasma-treated water with the reduced-pH method”

[O-3] (12:00-12:15)

Nishtha Gaur (University of South Australia, Australia)

“Evaluation of atmospheric pressure plasma jet interactions with DNA using synthetic biological systems”

[O-4] (12:15-12:30)

Tomoyuki Murakami (Seikei University, Japan)

“Modelling of plasma in a water vapour layer”

===== **Wednesday, December 6, 2017** =====

Invited & Oral Sessions (8:45-18:15)

<Room B> Ocean Hall

[I-16] (8:45-9:15)

Jean-Michel Pouvesle (University of Orléans, France)

“Large surfaces, big volumes, big quantities: a real challenge for development of optimized atmospheric pressure plasma sources for medicine and agriculture.”

[I-17] (9:15-9:45)

Douyan Wang (Kumamoto University, Japan)

“Influence of Pulsed Electric Field to Leaf Lettuce”

[O-5] (9:45-10:00)

Yuki Yanagawa (National Agriculture and Food Research Org., Japan)

“Direct introduction of macromolecules into plant cells using a multi-gas plasma jet”

[O-6] (10:00-10:15)

Kinga Kutasi (Wigner Research Centre for Physics of HAS, Hungary)

“Effect of the afterglows of low pressure Ar/N₂-O₂ surface-wave microwave discharges on cereal crops”

[I-18] (10:15-10:45)

Kiwon Song (Yonsei University, Korea)

“Cold atmospheric pressure plasma as an adjuvant treatment after surgery for vestibular schwannoma”

----- Break (10:45-11:00) -----

[I-19] (11:00-11:30)

Lenka Zajíčková (Masaryk University, Czech Rep.)

“Unravelling Key Factors for Successful Application of Plasma Polymers in Immunosensing”

[I-20] (11:30-12:00)

Miran Mozetič (Jozef Stefan Institute, Slovenia)

“Controlling treatment parameters upon activation of polymer materials with neutral oxygen atoms”

[O-7] (12:00-12:15)

Andrei Choukourov (Charles University, Czech Rep.)

“Plasma Polymers for Nanoparticles and Nanostructures”

[O-8] (12:15-12:30)

Glenn Latag (University of the Philippines Diliman, Philippines)

“Effect of Plasma Modification on Electrospun Chitosan/Poly(vinyl alcohol) Nanofiber Mats”

----- Lunch (12:30-14:00) -----

[I-21] (14:00-14:30)

Kristian Wende (INP Greifswald, Germany)

“Chemical Fingerprinting to Design Medical Plasmas”

[I-22] (14:30-15:00)

Fumiyoshi Tochikubo (Tokyo Metropolitan University, Japan)

“Simulation of Atmospheric-Pressure DC Glow Discharge with Liquid Electrode”

[I-23] (15:00-15:30)

Jun-Seok Oh (Meijo University, Japan)

“UV Absorption Spectroscopic Analysis of Plasma Activated Water”

[I-24] (15:30-16:00)

Endre Szili (University of South Australia, Australia)

“Monitoring dynamic changes in hydrogen peroxide, nitrite, nitrate and oxygen in synthetic models of tissue fluid and tissue”

----- Break (16:00-16:30)-----

[I-25] (16:30-17:00)

Ron White (James Cook University, Australia)

“Kinetic modeling of electron and ion transport in gaseous and liquid matter”

[I-26] (17:00-17:30)

Yong Zhang (Xi'an Jiaotong University, China)

“Study on radio frequency discharge mechanism of an ionization gas sensor based on nanomaterials”

[I-27] (17:30-18:00)

Toshiro Kaneko (Tohoku University, Japan)

“Multiple Stimuli of Gas-Liquid Interfacial Plasmas Enhancing Drug Transfer into Cells”

[O-9] (18:00-18:15)

Ladislav Moravsky (Comenius University, Slovakia)

“Ion Mobility Spectrometry monitoring of phthalate degradation by atmospheric corona discharge”

<Room C> Ocean Hall

[O-10] (17:30-17:45)

Jaeho Kim (AIST, Japan)

“The growth of single crystal diamonds using a nonthermal microwave-excited plasma jet”

[O-11] (17:45-18:00)

Magdaleno Jr. Vasquez (University of the Philippines, Philippines)

“Deposition of Amorphous Carbon Films using Low-Energy Ion Beams”

[O-12] (18:00-18:15)

Hajime Sakakita (AIST, Japan)

“Monitoring of the Plasma Flare at Atmospheric Pressure”

===== **Thursday, December 7, 2017** =====

Invited & Oral Sessions (8:45-12:30)

<Room B> Ocean Hall

[I-28] (8:45-9:15)

David Graves (University of California at Berkeley, USA)

“Air Plasma to Improve Nitrogen Utilization Efficiency”

[I-29] (9:15-9:45)

Koichi Takaki (Iwate University, Japan)

“Growth promotion of Lentinula edodes mushroom by electrical stimulation and development of compact high-voltage power supply”

[I-30] (9:45-10:15)

Takayuki Ohta (Meijo University, Japan)

“Growth promotion for agriculture stimulated by atmospheric pressure plasma”

[I-31] (10:15-10:45)

Deborah O’Connell (University of York, UK)

“Mechanisms of cell death post plasma treatment in normal and malignant primary prostate cancer cells”

<Room C> Ocean Hall

[O-13] (10:15-10:30)

Jozef Brcka (Tokyo Electron America, USA)

“Transient behavior of the charged species in the geometrically restricted flow of the ammonia plasma”

[O-14] (10:30-10:45)

Gwenael Fubiani (CNRS/LAPLACE, University of Toulouse, France)

“Modelling of a Magnetized Negative Ion Source for Fusion Applications”

----- Break (10:45-11:00)-----

[I-32] (11:00-11:30)

Peter Bruggeman (University of Minnesota, USA)

“Towards an understanding of plasma-liquid interactions in plasma medicine”

[I-33] (11:30-12:00)

Ryo Ono (The University of Tokyo, Japan)

“Supply of reactive species onto liquid surface produced using vacuum ultraviolet photolysis and measurement of their effects on liquid treatment”

[I-34] (12:00-12:30)

Kenji Miyamoto (Yokohama National University, Japan)

“Mechanism of clot formation with atmospheric pressure plasma”

Closing (12:30-)

Satoshi Hamaguchi (Osaka Univ., Japan)

Poster Sessions

[P-1] Toshio Hayashi (Nagoya University, Japan)

“Electronic properties of HFC-245fa (1,1,1,3,3-pentafluoropropane) and dissociation paths obtained using computational chemistry”

[P-2] Juraj Orszagh (Comenius University Bratislava, Slovakia)

“Dissociation of Iron Pentacarbonyl into Neutral Fragments Induced by Electron Impact”

[P-3] Ippei Yamada (Doshisha University, Japan)

“Study of the Production Rate of Hydrogen Molecular Ion with the Surface of Ion Source”

[P-4] Shingo Masaki (Doshisha University, Japan)

“Comparison between Tungsten and Tantalum as Cathode Materials for Negative Hydrogen Ion Source Discharge”

[P-5] Abdulrahman H. Basher (Osaka University, Japan)

“Characteristics of Laminar and Turbulent Modes of Cold Atmospheric Pressure Plasma Jet”

[P-6] Anjar Anggraini Harumningtyas (Osaka University, Japan)

“Construction and Function Test of Rogowski Coil for Plasma Spot and Plasma Discharge Currents Measurement in Plasma Cathode Electron Source (PCES)”

[P-7] Kuan-Lin Chen (National Chiao Tung University, Taiwan)

“Effect of Reconstruction Scheme on the Plasma Fluid Modeling with Reformulated Ion Related Modeling Equations Using HLL Flux Scheme”

[P-8] Garland Nathan (James Cook University, Australia)

“Towards a continuum model of electron transport across a gas-liquid interface”

[P-9] Aubrey Faith Mella (University of the Philippines, Philippines)

“Molecular dynamics simulations of high-density polyethylene etching by argon plasma”

[P-10] Hitoshi Tamura (Hitachi High-Technologies Corporation, Japan)

“ECR plasma simulation for plasma etching reactor”

[P-11] Seiya Abe (Niigata University, Japan)

“Heat Propagation Properties on Treatment of Atmospheric-Pressure Plasma to Metal Materials”

[P-12] Bartosz Michalczyk (Comenius University, Slovakia)

“Tracking degradation of phthalate, by atmospheric pressure discharge, by Ion Mobility Spectrometry”

- [P-13] Kiyoyuki Yambe (Niigata University, Japan)**
“Spatial Distribution of Plasma Drift Velocity in Atmospheric-Pressure Plasma Jet”
- [P-14] Lenka Zajickova (Masaryk University, Czech Rep.)**
“Study of atmospheric pressure glide arc applied to the modification of polymers”
- [P-15] Elena Corella Puertas (McGill University, Canada)**
“Parametric study of methylene blue degradation using a pulsed nanosecond pin-to-liquid discharge in open air”
- [P-16] Kazumasa Ikuse (Osaka University, Japan)**
“Numerical Simulation of Plasma-induced Hypochlorous Acid Generation at the Plasma-liquid Interface”
- [P-17] Ma. Shanlene Dela Vega (University of the Philippines, Philippines)**
“Plasma Modification of Exfoliated Multi-layered Graphene”
- [P-18] Mayuko Koga (University of Hyogo, Japan)**
“Development of diamond like carbon cone for fast ignition target”
- [P-19] Kentaro Yoshioka (Doshisha University, Japan)**
“Memory Effect on Aluminum-Nitride Ion Production by a Magnetron Sputter Type RF Driven Ion Source”
- [P-20] Charisse Marie Cagomoc (Osaka University, Japan)**
“Surface Conditioning via RF Plasma Irradiation of Natural Zeolite for Chromium Adsorption”
- [P-21] Gyoo Cheon Kim (Pusan National University)**
“Effective fluoride gel application on deciduous tooth enamel by low temperature atmospheric plasma”
- [P-22] Jaroslav Kristof (Shizuoka University, Japan)**
“Microplasma-Skin Interaction in Transdermal Drug Delivery”
- [P-23] Ji Hoon Park (Kwangwoon University, Korea)**
“Water pollution remediation by non-thermal atmospheric pressure plasma”
- [P-24] Yuji Shimabukuro (Doshisha University, Japan)**
“A Compact Microwave Driven Tuner-Free Capacitively Coupled Plasma Atom/Ion Source”
- [P-25] Kiwon Song (Yonsei University, Korea)**
“Non-thermal Atmospheric Pressure Plasma Increases the Proliferation of Adipose Tissue-derived Mesenchymal Stem Cells”

[P-26] Satoshi Sugimoto (Osaka University, Japan)

“Amino Group Surface Modification of Cell Culture Polystyrene Dishes by an Inverter Plasma Process”

[P-27] Apiwat Wijaikhum (Chiang Mai University, Thailand)

“Development and characterization of compact air plasma jet against drug resistant microorganisms for wound healing”

[P-28] Takashi Yokoyama (Osaka University, Japan)

“Disinfection of the skin surface by low temperature atmospheric pressure plasma with the reduced-pH method”

[P-29] Longwei Chen (Institute of Plasma Physics, Chinese Academy of Science, China)

“Preliminary studies on electrostatic charge elimination by a compact electron cyclotron resonance (ECR) plasma with all-permanent magnet”

[P-30] Veronika Medvecká (Comenius University Bratislava, Slovakia)

“Plasma treatment of seeds by Diffuse Coplanar Surface Barrier Discharge”

[P-31] Zoran Petrovic (Institute of Physics University of Belgrade, Serbia)

“Activity of Catalase Enzyme in Paulownia Tomentosa Seeds as a Result of a Direct and Indirect Treatment by the Non-Equilibrium Plasma”

82nd IUVSTA Workshop Presentations Program

===== **Monday, December 4, 2017** =====

Poster Sessions (14:30-16:00)

Ocean Hall

*Please see page 31 for poster's presenter, title information.

Panel Discussion (16:00-17:30)

<Room D> Sunset Lounge

"Atomic Layer Processes for Future Industries"
Discussion Leaders: Sumit Agarwal and Keizo Kinoshita

===== **Tuesday, December 5, 2017** =====

Invited & Oral Sessions (8:45-12:30)

<Room C> Ocean Hall

[I-1] (8:45-9:15)

Guen Young Yeom (Sungkyunkwan University, Korea)

“Layer control of 2D-MoS₂ by atomic layer etching and its device characteristics”

[I-2] (9:15-9:45)

Yukihiro Shimogaki (The University of Tokyo, Japan)

“CVD/ALD process development for highly-reliable ULSI-Cu interconnect system”

[I-3] (9:45-10:15)

Erwin Kessels (Eindhoven University of Technology, The Netherlands)

“Recent advances in (area-selective) plasma-based atomic layer deposition”

[I-4] (10:15-10:45)

Sumit Agarwal (Colorado School of Mines, USA)

“Plasma-assisted atomic layer deposition and etching of dielectric films studied using in situ infrared spectroscopy and ellipsometry”

----- Break (10:45-11:00) -----

[I-5] (11:00-11:30)

Hae June Lee (Pusan National University, Korea)

“Two-Dimensional Simulations of a Capacitively Coupled Reactor for the Uniformity Control of SiN_xH_y films”

[I-6] (11:30-12:00)

Jan van Dijk (Eindhoven University of Technology, The Netherlands)

“On the Management of Input Data for the Modeling and Numerical Simulation of Chemically Complex Plasma Sources”

[I-7] (12:00-12:30)

Emilie Despiou-Pujo (Grenoble Alpes University (LTM), France)

“Atomic-scale simulations of low-damage plasma etching processes”

===== **Wednesday, December 6, 2017** =====

Invited & Oral Sessions (8:45-17:30)

<Room C> Ocean Hall

[I-8] (8:45-9:15)

David Smith (Lam Research Corporation, USA)

“Atomic Layer Processing of Silicon Dielectrics: Precursors, Processes and Plasmas”

[I-9] (9:15-9:45)

Peter L. G. Ventzek (Tokyo Electron America, USA)

“Fundamentals based studies of plasma surface interactions in plasma enhanced atomic layer etching and deposition”

[I-10] (9:45-10:15)

Ying Zhang (Applied Materials, USA)

“Atomic Layer Etch (ALE) Challenges and Opportunities”

[I-11] (10:15-10:45)

Eric A. Joseph (IBM Research, USA)

“Methods to Enable Plasma Etching with Atomic Scale Precision”

----- Break (10:45-11:00) -----

[I-12] (11:00-11:30)

David N. Ruzic (University of Illinois at Urbana-Champaign, USA)

“Dry Etching Assisted by Lasers -- a new DEAL”

[I-13] (11:30-12:00)

Masaru Hori (Nagoya University, Japan)

“An Atomic Layer Etching of SiO₂ Film Employing Fluorocarbon and O₂ Plasma Chemistry”

[I-14] (12:00-12:30)

Gilles Cunge (LTM-CNRS University of Grenoble Alpes, France)

“Towards atomic scale control of plasma processes: application to graphene”

----- Lunch (12:30-14:00) -----

[I-15] (14:00-14:30)

Emil Pincik (Institute of Physics SAS, Slovak Rep.)

“About plasma anodic oxidation of high-doped GaAs”

[I-16] (14:30-15:00)

Bert Ellingboe (Dublin City University, Ireland)

“rf-frequency effects on power coupling, plasma chemistry, and surface processes”

[I-17] (15:00-15:30)

Zoltan Donko (Wigner Research Centre for Physics, Hungary)

“Customising ion flux-energy distributions in low-pressure capacitive RF discharges”

[O-1] (15:30-15:45)

Hohyun Song (KAIST, Korea)

“Study on the gate sidewall spacer silicon-nitride ALD process at low temperature by high density multiple ICP sources.”

[O-2] (15:45-16:00)

Zoran Petrovic (Institute of Physics University of Belgrade, Serbia)

“RF Breakdown as a Swarm Experiment”

----- Break (16:00-16:30) -----

[I-18] (16:30-17:00)

Uwe Czarnetzkie (Ruhr University Bochum, Germany)

“New Developments in Diagnostics of Charged Particles”

[I-19] (17:00-17:30)

Timo Gans (University of York, UK)

“Monitoring and control of plasma based atomic layer processes”

=====**Thursday, December 7, 2017**=====

Invited & Oral Sessions (8:45-12:30)

<Room C> Ocean Hall

[I-20] (8:45-9:15)

Seiji Samukawa (Tohoku University, Japan)

“Atomic Layer Etching and Deposition Processes for Future Nano-devices”

[I-21] (9:15-9:45)

Hiroyuki Fukumizu (Toshiba Memory Corporation, Japan)

“Investigation of atomic layer etching process for AlGaIn/GaN HEMT”

[I-22] (9:45-10:15)

Shota Nunomura (AIST, Japan)

“Real-time monitoring of defects creation and annealing during plasma processing”

----- Break (10:45-11:00)-----

[I-23] (11:00-11:30)

Yoshihide Kihara (Tokyo Electron Miyagi Limited, Japan)

“New innovative etching approaches by CD controlling at atomic-level”

[I-24] (11:30-12:00)

Masaru Izawa (Hitachi High-Technologies, Japan)

“Rapid Thermal Cyclic ALE for Conformal Removal of Thin Films”

[I-25] (12:00-12:30)

Masanaga Fukasawa (Sony Semiconductor Solutions Corp., Japan)

“Damaged Layer Control for Atomic Level Processes”

Closing (12:30-)

Satoshi Hamaguchi (Osaka Univ., Japan)

Poster Sessions

[P-101] Kazuhiro Karahashi (Osaka University, Japan)

“Surface reactions of nickel by carbon monoxide cluster beams”

[P-102] Yong Sup Choi (National Fusion Research Institute, Korea)

“Polishing of SiC using Plasma Enhanced Atomic Layer Etching”

[P-103] Tomoko Ito (Osaka University, Japan)

“XPS Analysis of Adsorbed Organic Compounds on Magnetic Materials Surfaces”

[P-104] Nicolas Mauchamp (Osaka University, Japan)

“Molecular dynamics simulation of Ni self-sputtering and modeling of interatomic potential functions”

[P-105] Yuki Okada (Osaka University, Japan)

“Molecular dynamics simulations of atomic layer etching (ALE) of SiO₂”

[P-106] Jin Woo Park (Sungkyunkwan University, Korea)

“Controlled Etching of 2D Black Phosphorus”

[P-107] Dong Chan Seok (National Fusion Research Institute, Korea)

“High Precision Sintered SiC Etching with Atmospheric Pressure Plasma”

The 10th EU-Japan Joint Symposium on Plasma Processing

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