

# A-4 Plasma Applications

## **Representative Organizer**

Kenji ISHIKAWA (Nagoya University)

## **Co-organizers**

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Kenji MAEDA (Hitachi,Ltd.)

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Taisei MOTOMURA (National Institute of Advanced Industrial Science and Technology)

## Oral Session 1                      March 27 (Fri.)                      Room 1

Chair : Kenji Ishikawa (Nagoya University)

- 15:30 A4-I-01    **Electron Energy Distribution Control in Plasma Etchers: Breaking from the Conventional Flux Ratio Scaling Rules in Etch for Precise Passivation Control** [Invited Lecture]  
*<sup>1</sup>Alok Ranjan, <sup>1</sup>Mingmei Wang, <sup>2</sup>Peter Ventzek*  
*1 TEL TECHNOLOGY CENTER, AMERICA, LLC*  
*2 TOKYO ELECTRON AMERICA, INC.*
- 16:00 A4-O-01    **Challenges of Contact Etching for 14 nm FDSOI Technology**  
*<sup>1</sup>Mokrane Mebarki, <sup>2</sup>Maxime Darnon, <sup>1</sup>Cécile Jenny, <sup>1</sup>Delia Ristoiu, <sup>3</sup>Nicolas Posseme, <sup>2</sup>Oliver Joubert*  
*1 STMICROELECTRONICS*  
*2 LTM-CNRS*  
*3 CEA-LETI*
- 16:15 A4-O-02    **Tight-Binding Quantum Chemical Molecular Dynamics Simulation for the Elucidation of SiC Etching Mechanism**  
*Hiroshi Ito, Takuya Kuwahara, Yuji Higuchi, Nobuki Ozawa, Momoji Kubo*  
*GRADUATE SCHOOL OF ENGINEERING, TOHOKU UNIVERSITY*
- 16:30 A4-O-03    **Effect of Microwave Plasma Treatment of Semiconductor Emitter Surface on Photon Enhanced Thermionic Emission**  
*<sup>1</sup>Akihisa Ogino, <sup>1</sup>Kengo Inoue, <sup>1</sup>Kazuhiro Shirakura, <sup>1</sup>Atsushi Hada, <sup>2</sup>Kenjiro Murata, <sup>2</sup>Takatoshi Watanabe*  
*1 GRADUATE SCHOOL OF ENGINEERING, SHIZUOKA UNIVERSITY*  
*2 FACULTY OF ENGINEERING, SHIZUOKA UNIVERSITY*

## Oral Session 2                      March 28 (Sat.)                      Room 1

Chair : Akihisa Ogino (Shizuoka University)

- 13:30 A4-I-02    **Advanced Plasma Processing for Controlled Synthesis of Atomically-Thin Semiconductor Nanomaterials** [Invited Lecture]  
*Toshiaki Kato, Toshiro Kaneko*  
*DEPARTMENT OF ELECTRONIC ENGINEERING, TOHOKU UNIVERSITY*
- 14:00 A4-O-04    **Investigation of Annealing-Induced Recovery Behavior of Graphenes Doped by Ammonia Plasma**  
*Byeong-Joo Lee, Goo-Hwan Jeong*  
*DEPARTMENT OF NANO APPLIED ENGINEERING, KANGWON NATIONAL UNIVERSITY*
- 14:15 A4-O-05    **Influence of Applied Voltage Waveforms in Surface Dielectric Barrier Discharge on the Decomposition of Naphthalene**  
*<sup>1</sup>Ayman Abdelfadeel Abdelaziz, <sup>2</sup>Takafumi Seto, <sup>1</sup>Tatsuo Ishijima, <sup>2</sup>Yoshio Otani*  
*1 RESEARCH CENTER FOR SUSTAINABLE ENERGY AND TECHNOLOGY, KANAZAWA UNIVERSITY*  
*2 SCHOOL OF NATURAL SCIENCE, KANAZAWA UNIVERSITY*

14:30 A4-O-06 **Crednerite-CuMnO<sub>2</sub> Thin Films Prepared Using Atmospheric Pressure Plasma Annealing**  
Hong-Ying Chen, Yu-Chang Lin  
DEPARTMENT OF CHEMICAL AND MATERIALS ENGINEERING, NATIONAL KAOHSIUNG UNIVERSITY OF APPLIED SCIENCES

**Oral Session 3                      March 29 (Sun.)                      Room 1**

Chair : Alok Ranjan (TEL Technology Center, America, LLC)

8:50 A4-I-03 **Plasma-Assisted Polishing for Damage-Free Atomically Flat Finishing of Wide Gap Semiconductor Materials** [Invited Lecture]

K.Yamamura, H.Deng, K.Endo

RESEARCH CENTER FOR ULTRA-PRECISION SCIENCE AND TECHNOLOGY, OSAKA UNIVERSITY

9:20 A4-O-07 **Effect of SiH<sub>4</sub> Inductively Coupled Plasma Surface Treatment on Low Temperature and Low Resistance Ohmic Contact for AlGaIn/GaN-Based Power Device**

Xu Li, Konstantinos Floros, Gary Ternent, Abdullah Al-Khalidi, Edward Wasige, Iain G.Thayne

SCHOOL OF ENGINEERING, UNIVERSITY OF GLASGOW

9:35 A4-O-08 **The Effect of Ion Bombardment from BCl<sub>3</sub> Inductively Coupled Plasma on Resistivity of Ohmic Contact Formed on GaN-Based Epitaxial Structure**

<sup>1</sup>Anton Kobelev, <sup>2</sup>Nickolai Andrianov, <sup>3</sup>Yuri Barsukov, <sup>1</sup>Alexander Smirnov

<sup>1</sup> DEPARTMENT OF PLASMA PHYSICS, ST. PETERSBURG STATE POLYTECHNICAL UNIVERSITY

<sup>2</sup> SVETLANA-ROST JSC

<sup>3</sup> CODDAN TECHNOLOGIES LLC

Chair : Hajime Sakakita (AIST Tsukuba)

9:50 A4-O-09 **Inactivation of *P. digitatum* Spore on *Citrus Unshiu* by APDBD for Agricultural Applications of Plasma Technologies**

<sup>1</sup>Yoshihito Yagyu, <sup>1</sup>Naokoi Matsumoto, <sup>1</sup>Yuta Hatayama, <sup>2</sup>Nobuya Hayashi, <sup>3</sup>Tomoko Mishima,

<sup>3</sup>Terumi Nishioka, <sup>4</sup>Akikazu Sakudo, <sup>1</sup>Hiroharu Kawasaki, <sup>1</sup>Tamiko Ohshima, <sup>1</sup>Takeshi Ihara, <sup>1</sup>Yoshiaki Suda

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<sup>2</sup> FACULTY OF ENGINEERING SCIENCES, KYUSHU UNIVERSITY

<sup>3</sup> RESEARCH INSTITUTE OF ENVIRONMENT, AGRICULTURE AND FISHERIES, OSAKA PREFECTURAL GOVERNMENT

<sup>4</sup> FACULTY OF MEDICINE, UNIVERSITY OF THE RYUKYUS

10:05 A4-O-10 **Quatitative Estimation of Inactivation of Fungal Spores Using an Atmospheric-Pressure Oxygen-Radical Source**

<sup>1</sup>Hiroshi Hashizume, <sup>2</sup>Keisuke Nishida, <sup>2</sup>Takayuki Ohta, <sup>1</sup>Masaru Hori, <sup>2</sup>Masafumi Ito

<sup>1</sup> DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, NAGOYA UNIVERSITY

<sup>2</sup> FACULTY OF SCIENCE AND TECHNOLOGY, MEIJO UNIVERSITY