

# A-4 Plasma Applications

## **Representative Organizer**

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

Poster Session                      March 28 (Sat.)                      16:45 ~ 18:00

- 16:45 A4-P-01    **Effect of Inorganic Ions on the Colloidal Stability of Magnetic Spinel Ferrite Nanoparticles Synthesized by Gas Phase Condensation Method**  
<sup>1,2</sup>Shivaji Vitthal Bhosale, Sudha Vasant Boraskar, <sup>2</sup>Vikas Laxman Mathe  
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*2 DEPARTMENT OF PHYSICS, SAVITRIBAI PHULE PUNE UNIVERSITY*
- 16:45 A4-P-02    **Removal Degree of Metallic Impurities from Ti Alloy Scraps Using Hydrogen Plasma Arc Melting**  
<sup>1</sup>Jae-Won Lim, <sup>2</sup>Jung-Min Oh, <sup>2</sup>Back-Kyu Lee, <sup>2</sup>Chang-Youl Suh  
*1 DIVISION OF ADVANCED MATERIALS ENGINEERING AND RESEARCH CENTER FOR ADVANCED MATERIALS DEVELOPMENT, CHONBUK NATIONAL UNIVERSITY*  
*2 MINERAL RESEARCH DIVISION, KOREA INSTITUTE OF GEOSCIENCE AND MINERAL RESOURCES*
- 16:45 A4-P-03    **Effect of Plasma Treatment Conditions on the Sterilization of Fuzarium**  
<sup>1</sup>Satoshi Seki, <sup>1</sup>Ryohei Yoshida, <sup>1</sup>Shinji Yasui, <sup>2</sup>Hitoshi Terazoe, <sup>2</sup>Kazuhiro Shoji  
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*2 CENTRAL RESEARCH INSTITUTE OF ELECTRIC POWER INDUSTRY*
- 16:45 A4-P-04    **Development of Atmospheric Pressure Plasma Jet for Silicon Etching**  
Chun Huang, Wei-Ting Liu, You-Chia Liu, Yi-Jan Chang, Chun Li, Li-Yu Wu, Tzu-Tung Chang  
*DEPARTMENT OF CHEMICAL ENGINEERING & MATERIALS SCIENCE, YUAN ZE UNIVERSITY*
- 16:45 A4-P-05    **Effect of Fluorocarbon Discharge Gas on the Angular Dependence of SiO<sub>2</sub> Etch Rates**  
Jeong-Geun Park, Seung-Su Ok, Jun-Hyun Kim, Sung-Woon Cho, Chang-Koo Kim  
*DEPARTMENT OF CHEMICAL ENGINEERING AND DEPARTMENT OF ENERGY SYSTEMS RESEARCH, AJOU UNIVERSITY*
- 16:45 A4-P-06    **Removal of Corrosion Layers Using the Reducing Effect of Low-Temperature Low-Pressure H<sub>2</sub>-Ar Plasma**  
<sup>1</sup>Petra Fojtková, <sup>1</sup>Lucie Řádková, <sup>2,1</sup>Drahomíra Janová, <sup>1</sup>František Krčma  
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*2 FACULTY OF MECHANICAL ENGINEERING, BRNO UNIVERSITY OF TECHNOLOGY*
- 16:45 A4-P-07    **Performance Improvement of LTPS-TFTs with Various Plasma Surface Treatment**  
William Cheng-Yu Ma, Chi-Yuan Huang  
*DEPARTMENT OF ELECTRICAL ENGINEERING, NATIONAL SUN YAT-SEN UNIVERSITY*
- 16:45 A4-P-08    **Power Dependence in Microwave Sheath-Voltage Combination Plasma**  
Satyananda Kar, Lukas Alberts, Hiroyuki Kousaka  
*DEPARTMENT OF MECHANICAL SCIENCE & ENGINEERING, NAGOYA UNIVERSITY*
- 16:45 A4-P-09    **Cyclonic Atmospheric Plasma Deposition of Carbon-Free Silicon Dioxide Thin Films**  
Li-Yu Wu, Chun Huang  
*DEPARTMENT OF CHEMICAL ENGINEERING & MATERIALS SCIENCE, YUAN ZE UNIVERSITY*

- 16:45 A4-P-10 **Degradation of Amoxicillin in Water Treated with DBD Plasma**  
<sup>1</sup>Tomasz Izdebski, <sup>2</sup>Elisa Ceriani, <sup>2</sup>Ester Marotta, <sup>2</sup>Cristina Paradisi, <sup>1</sup>Mirosław Dors, <sup>1</sup>Marek Kocik  
*1 CENTER FOR PLASMA AND LASER ENGINEERING, THE SZEWALSKI INSTITUTE OF FLUID-FLOW MACHINERY POLISH ACADEMY OF SCIENCES*  
*2 DIPARTIMENTO DI SCIENZE CHIMICHE, UNIVERSIT' A DEGLI STUDI DI PADOVA*
- 16:45 A4-P-11 **Application of Underwater Discharge: Reduction of the Corrosion Layers on Glass Archaeological Artifacts**  
<sup>1</sup>Lenka Hlochova, <sup>2</sup>Bill Graham, <sup>3</sup>Drahomira Janova, <sup>1</sup>Frantisek Krema  
*1 BRNO UNIVERSITY OF TECHNOLOGY, FACULTY OF CHEMISTRY*  
*2 QUEEN'S UNIVERSITY BELFAST, SCHOOL OF MATHEMATICS AND PHYSICS*  
*3 BRNO UNIVERSITY OF TECHNOLOGY, FACULTY OF MECHANICAL ENGINEERING*
- 16:45 A4-P-12 **Flue Gas Denitrification by •OH Radicals Produced from O<sub>2</sub><sup>+</sup> and Water Vapor in a Duct**  
<sup>1</sup>Mindi Bai, <sup>2</sup>Baiyu Leng, <sup>2</sup>Xiyao Bai, <sup>1</sup>Jiangang Zhou, <sup>1</sup>Shoulei Mao, <sup>1</sup>Chaoqun Li  
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*2 SCHOOL OF LIGHT INDUSTRY AND CHEMICAL ENGINEERING, DALIAN POLYTECHNIC UNIVERSITY*
- 16:45 A4-P-13 **Reactive Species Generated in Liquids Treated with Neutral Oxygen Radicals**  
<sup>1</sup>Takuya Tawatari, <sup>2</sup>Hiroshi Hashizume, <sup>1</sup>Takayuki Ohta, <sup>2</sup>Kenji Ishikawa, <sup>2</sup>Masaru Hori, <sup>1</sup>Masafumi Ito  
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*2 DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, NAGOYA UNIVERSITY*
- 16:45 A4-P-15 **Photo-Induced Hydrophilicity in Titanium Dioxide Thin Films Fabricated via Compact Planar Magnetron Sputtering**  
Donna April Parado Teodoro, Michelle Marie Sendaydiego Villamayor, Henry Jacala Ramos  
*PLASMA PHYSICS LABORATORY, NATIONAL INSTITUTE OF PHYSICS, UNIVERSITY OF THE PHILIPPINES*
- 16:45 A4-P-16 **Growth Promotion of *Saccharomyces Cerevisiae* Using Periodic Oxygen-Radical Treatments**  
<sup>1</sup>Jun Kobayashi, <sup>2</sup>Hiroshi Hashizume, <sup>1</sup>Takayuki Ohta, <sup>2</sup>Masaru Hori, <sup>1</sup>Masafumi Ito  
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*2 GRADUATE SCHOOL OF ENGINEERING, NAGOYA UNIVERSITY*
- 16:45 A4-P-17 **Flue Gas Desulfurization by Dielectric Barrier Discharge**  
<sup>1</sup>Bai-Yu Leng, <sup>2</sup>Min-Di Bai, <sup>3</sup>Jian-Gang Zhou, <sup>2</sup>Shou-Lei Mao, <sup>1</sup>Si-Xue Ma, <sup>1</sup>Yu Wang, <sup>1</sup>Xiu Han  
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*2 DEPARTMENT OF PHYSICS, DALIAN MARITIME UNIVERSITY*  
*3 SCHOOL OF PHYSICAL SCIENCE AND TECHNOLOGY, DALIAN UNIVERSITY*
- 16:45 A4-P-18 **Ammonia Production Using Packed Bed Electric Discharge and Catalyst**  
Tomohiro Shimoda, Takuma Nakamura, Ryo Yoshida, Hirofumi Kurita, Kazunori Takashima, Akira Mizuno  
*DEPARTMENT OF ENVIRONMENTAL AND LIFE SCIENCES, TOYOHASHI UNIVERSITY OF TECHNOLOGY*
- 16:45 A4-P-19 **A Vibrational Infrared Thermal Detector Released by Plasmaless Si Etching Process**  
<sup>1</sup>Jonghyeon Jeong, <sup>1</sup>Shinya Kumagai, <sup>2</sup>Satomi Tajima, <sup>2</sup>Toshio Hayashi, <sup>3</sup>Kouji Yamakawa, <sup>1</sup>Minoru Sasaki  
*1 TOYOTA TECHNOLOGICAL INSTITUTE*  
*2 PLASMA NANOTECHNOLOGY RESEARCH CENTER, NAGOYA UNIVERSITY*  
*3 KATAGIRI ENGINEERING CO., LTD.*
- 16:45 A4-P-20 **A Comparison Study on 0D and 3D Simulation of CF<sub>4</sub>/O<sub>2</sub> Gas Plasma in Inductively Coupled Plasma Systems**  
<sup>1</sup>Young Jun Lee, <sup>1</sup>Seon-Geun Oh, <sup>2</sup>Deuk Chul Kwon, <sup>1</sup>Hee Hwan Choe  
*1 DEPARTMENT OF ELECTRONICS ENGINEERING, KOREA AEROSPACE UNIVERSITY*  
*2 NATIONAL FUSION RESEARCH INSTITUTE (NFR)*
- 16:45 A4-P-21 **Inactivation of Algae in Ballast Water by Gas-Liquid Two Phases Pulsed Discharge with Nozzle-Cylinder Electrode**  
Ming Sun, Xiatong Hao, Xiaohui Lu, Yanyan Yang, Hongli Jin, Cunfeng Dai  
*INSTITUTE OF THE ELECTROSTATICS, SHANGHAI MARITIME UNIVERSITY*

- 16:45 A4-P-22 **Underwater Capillary Discharge with Air and Oxygen Addition**  
Muhammad Waqar Ahmed, Suresh Rai, Young Sun Mok, Heon Ju Lee  
 DEPARTMENT OF NUCLEAR ENERGY AND CHEMICAL ENGINEERING, JEJU NATIONAL UNIVERSITY
- 16:45 A4-P-23 **Diagnostics of High Frequency Underwater Capillary Discharge**  
Muhammad Waqar Ahmed, Min Gyu Oh, Seong Heon Kim, Young Sun Mok, Heon Ju Lee  
 DEPARTMENT OF NUCLEAR, ENERGY AND CHEMICAL ENGINEERING, JEJU NATIONAL UNIVERSITY
- 16:45 A4-P-24 **Glow Characterization of Radio-Frequency Capacitively Coupled Plasma Polymerization of Hydrocarbon Monomers**  
<sup>1</sup>Yin-Che Huang, <sup>2</sup>Qingsong Yu, <sup>1</sup>Chun Huang  
 1 DEPARTMENT OF CHEMICAL ENGINEERING & MATERIALS SCIENCE, YUAN ZE UNIVERSITY  
 2 CENTER FOR SURFACE SCIENCE AND PLASMA TECHNOLOGY, DEPARTMENT OF MECHANICAL ENGINEERING, UNIVERSITY OF MISSOURI-COLUMBIA
- 16:45 A4-P-25 **Study on Ozone Treatment of Soil for Agricultural Application of Surface Dielectric Barrier Discharge**  
<sup>1</sup>Takuya Nagatomo, <sup>1</sup>Tomoya Abiru, <sup>1</sup>Takamasa Sakai, <sup>1</sup>Fumiaki Mitsugi, <sup>1</sup>Tomoaki Ikegami, <sup>2</sup>Kenji Ebihara, <sup>3</sup>Kazuhiro Nagahama  
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 2 ENVIRONMENT AND ENERGY LABORATORY  
 3 DEPARTMENT OF APPLIED MICROBIAL TECH., SOJO UNIVERSITY
- 16:45 A4-P-26 **Corrosion Resistance of Aluminum-Magnesium Double-Layers Films on Steel Sheet Prepared by PVD Method.**  
<sup>1</sup>Kyong-Min Lim, <sup>2</sup>Jae-In Jeong, <sup>1</sup>Jae-Wook Kang, <sup>1</sup>Myeong-Hoon Lee  
 1 KOREA MARITIME AND OCEAN UNIVERSITY  
 2 RESEARCH INSTITUTE OF INDUSTRIAL SCIENCE & TECHNOLOGY
- 16:45 A4-P-27 **The Strength Property of Plasma Coating Film and Effect of Plasma Coating on the Hydrogen Entry Property**  
<sup>1</sup>Kento Araki, <sup>1</sup>Hiroshi Nishiguchi, <sup>2</sup>Hiroharu Kawasaki, <sup>2</sup>Tamiko Ohshima  
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 2 DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING, SASEBO NATIONAL COLLEGE OF TECHNOLOGY
- 16:45 A4-P-28 **The Characteristics and Fabrication OTFT with Plasma-Polymer Gate Dielectric**  
<sup>1</sup>Hyeon Jin Seo, <sup>2</sup>Ki-Hwang Hwang, <sup>2</sup>Dong Woo Ju, <sup>1</sup>Jung-Hoon Yu, <sup>1</sup>Jin Soo Lee, <sup>1</sup>So-Hyoun Jeon, <sup>1</sup>Yong Min Lee, <sup>2</sup>Jee Yun Kim, <sup>2</sup>Sang Hin Nam, <sup>1</sup>Jin-Hyo Boo  
 1 DEPARTMENT OF CHEMISTRY, SUNGKYUNKWAN UNIVERSITY  
 2 INSTITUTE OF BASIC SCIENCE, SUNGKYUNKWAN UNIVERSITY
- 16:45 A4-P-30 **Effect of RF Plasma Treatment on Properties of Ru and Ru-Cr Alloy Powder**  
<sup>1,2</sup>Kyu-Bong Jang, <sup>1</sup>Sung-Chul Lim, <sup>1</sup>Jae-Gwang Lee, <sup>1</sup>Hyoun-Chun Kwon  
 1 KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY  
 2 SCHOOL OF MATERIALS SCIENCE AND ENGINEERING, INHA UNIVERSITY
- 16:45 A4-P-31 **Effect of Complex Permeability of the Ferrite Material to the Plasma Discharge in a Large Size Ferrite Inductively Coupled Plasma**  
Hyun Jun Kim, Chin-Wook Chung  
 DEPARTMENT OF ELECTRICAL ENGINEERING, HANYANG UNIVERSITY
- 16:45 A4-P-32 **Numerical Analysis of Electromagnetic Wave Propagation in Corrugated Waveguide with Dispersive Media Using Drude Model in FDTD**  
<sup>1</sup>Yoshihisa Fujita, <sup>2</sup>Soichiro Ikuno, <sup>1,3</sup>Shin Kubo, <sup>1,3</sup>Hiroaki Nakamura  
 1 DEPARTMENT OF ENERGY ENGINEERING AND SCIENCE, NAGOYA UNIVERSITY  
 2 TOKYO UNIVERSITY OF TECHNOLOGY  
 3 NATIONAL INSTITUTE OF FUSION SCIENCE
- 16:45 A4-P-33 **Calculation of the Charge of the Metal Dust Particles in the Dust-Electron Plasma**  
 Ilnaz Fayrushin  
 DEPARTMENT OF TECHNICAL PHYSICS AND POWER ENGINEERING, KAZAN FEDERAL UNIVERSITY

- 16:45 A4-P-34 **Characteristics of Surface Discharge for the Inner Side of Narrow Polymer Tubes**  
<sup>1</sup>Y.K.Cho, <sup>2</sup>W.J.Ban, <sup>2</sup>D.G.Jung  
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- 16:45 A4-P-35 **QMS Monitoring of a Remote Plasma System for Selective Etch Back Process**  
<sup>1</sup>Donghoon Kim, <sup>1,2</sup>Junghoon Joo, <sup>1,3</sup>Seongbong Kim  
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- 16:45 A4-P-36 **Development of Air Discharge Plasma Source for Defense Applications**  
 Heesoo Jung, Samgon Ryu, Haewan Lee  
*CBR TECHNOLOGY DIRECTORATE, AGENCY FOR DEFENSE DEVELOPMENT*
- 16:45 A4-P-37L **Chemical and Physical Changes in Surface of Argon Plasma Treated Cotton**  
<sup>1,2</sup>S.Inbakumar, <sup>3</sup>P.M.Andavan  
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*3 DEPARTMENT OF PHYSICS, GOVERNMENT ARTS COLLEGE*
- 16:45 A4-P-38L **Global Model for Ar/C<sub>4</sub>F<sub>8</sub> Plasma Etching of SiO<sub>2</sub>**  
 Hao-En Lee, Ching-Yu Chen, Ta-Chin Wei  
*DEPT. OF CHEMICAL ENGINEERING, CHUNG-YUAN CHRISTIAN UNIVERSITY*
- 16:45 A4-P-39L **Analysis of Ion Source Design and Filament Materials of QMS for Plasma Process Monitoring**  
<sup>1</sup>Hyewon Mun, <sup>1</sup>Donghoon Kim, <sup>1,2</sup>Junghoon Joo, <sup>1,3</sup>Seokjae Yoo  
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- 16:45 A4-P-40L **Analysis Integrated Ozone Generator Produced by DBD Plasma**  
<sup>1</sup>M.Nur, <sup>1</sup>M.R.Wijaya, <sup>1</sup>F.Arianto, <sup>1</sup>Z.Muchlisin, <sup>1</sup>A.I.Susan, <sup>2</sup>E.Kusdiyantini, <sup>3</sup>Wuryanti, <sup>4</sup>Tri W.Agustini, <sup>5</sup>A.Susilo, <sup>6</sup>H.Muharam  
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*6 DEPARTMENT OF MANAGEMENT, FACULTY OF BUSINESS AND ECONOMICS, UNIVERSITY OF DIPONEGORO*
- 16:45 A4-P-41L **Flow Control of a Neutral Gas along with an Atmospheric Pressure Plasma Flare**  
<sup>1,2</sup>Yusuke Yamagishi, <sup>1,2</sup>Hiromasa Yamada, <sup>1,2</sup>Hajime Sakakita, <sup>1,2</sup>Syuichiro Tsunoda, <sup>3</sup>Jiro Kasahara, <sup>2</sup>Jaeho Kim, <sup>2</sup>Susumu Kato, <sup>2</sup>Hiroto Itagaki, <sup>2</sup>Satoru Kiyama, <sup>3</sup>Masanori Fujiwara, <sup>4</sup>Yuzuru Ikehara  
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