

The 12th International Workshop of Advanced Plasma Processing and Diagnostics

Date: January 4 - 6, 2011

Venue: Centennial Hall Kyushu University School of Medicine, Japan

Registration Fee: 25,000yen (Regular) / 10,000yen (Student) -Dinners are not included.

Organized by

- Program for enhancing systematic education in graduate schools
"Bringing up a doctor student with five skills for synthetic ability"
- Plasma-Nano Technology Center (PLANT), Nagoya University, Japan
- Center of Plasma Nano-interface Engineering (CPNE), Kyushu University, Japan
- Center for Advanced Plasma Surface Technology (CAPST), SKKU, Korea
- Plasma Bioscience Research Center (PBRC), Kwangwoon University, Korea
- Brain Korea 21 Human Resource Center for Next Generation
IT materials and Components, SKKU, Korea
- The Japan Society of Applied Physics, Kyushu Chapter, Japan
- Aichi Science and Technology Foundation
(Tokai Region Knowledge Cluster Headquarters), Japan
- Grant-in-Aid for Scientific Research on Innovative Areas
"Frontier science of interactions between plasmas and nano-interfaces", Japan
- Systematic graduate school education reform promotion program
Nurturing doctoral candidates by creating a synthesis of five comprehensive abilities

Organizing Chairperson:

- M. Hori (Nagoya University, Japan)
- M. Shiratani (Kyushu University, Japan)
- J G. Han (SKKU, Korea)
- E. H. Choi (Kwangwoon University, Korea)

Executive Chairperson:

- M. Shiratani (Kyushu University, Japan)

Scope: Green Plasma Technology for Flexible Electronics and Renewable Energy

Jan. 4

19:00 Welcome dinner

Jan. 5

9:30-9:55 Opening address

Eun Ha Choi, Kwangwoon University, Korea

Masaharu Shiratani, Kyushu University, Japan

Invited Talks (5) (15min +15min Q&A)

09:55 Tetsuji Shimizu, Max-Planck, Germany

“Atmospheric Plasma in Medicine: Chronic Wound Disinfection”

10:25 HongYoung Chang, KAIST, Korea

“Wave cutoff method and its applications”

10:55 Kenji Ishikawa, Nagoya University, Japan

“Real-time Electron-Spin-Resonance Study of Plasma-Surface interaction”

11:25 SukJae Yoo, National Fusion Research Institute, Korea

“Plasma Energy Technologies at National Fusion Research Institute (NFRI)”

11:55-13:00 Lunch

Invited Talks (11) (15min +15min Q&A)

13:00 Hirotaka Toyoda, Nagoya University, Japan

“Time and Space Resolved Measurement of Microwave Electric Field in Atmospheric”

13:30 HanSup Uhm, Kwangwoon University, Korea

“Steam-Torch Reforming of Coal and its Application to Plasma Power-Plant”

14:00 Hiroki Kondo, Nagoya University, Japan

“Synthesis and control of carbon nano walls for their applications to future functional devices”

14:30 EunHa Choi, Kwangwoon University, Korea

“Plasma Bioscience Research Activities in Plasma Bioscience Research Center (PBRC)”

15:00 Yuichi Setsuhara, Osaka University, Japan

“Combinatorial Analyses of Plasma Materials Processing”

15:30-15:45 Break Time

15:45 SangYul Lee, Korea Aerospace University, Korea

“CrZr-based nitride coating to replace DLC coating for GDI engines for automotive applications”

16:15 Kentaro Tomita, Kyushu University, Japan

“Studies of Pulsed Filament Discharges Produced in Near-Atmospheric Pressure using Laser Thomson Scattering”

16:45 HaeJune Lee, Pusan National University, Korea

“Simulation of Atmospheric Pressure Dielectric Barrier Discharges for the Investigation of Plasma Kinetics and Chemistry”

17:15 Kazunori Koga, Kyushu University, Japan

“Radical flux evaluation of high pressure silane plasma CVD using multi-hollow discharges”

17:45 JinHyo Boo, Sungkyunkwan University, Korea

“Metal Nano Particle Modified N-doped DLC Films for Glucose Sensor Application”

18:30 Dinner (Banquet)

Jan. 6

Public symposium of Scientific Research on Innovative Areas

“Frontier science of interactions between plasmas and nano-interfaces”

& Kickoff symposium of Center of Plasma Nano-interface Engineering (CPNE), Kyushu University

9:30 Congratulatory Addresses 5min. each (Chair: Kazunori Koga, Kyushu University, Japan)

1. Yukio Fujiki, Executive Vice President of Kyushu University, Japan
2. Kiyoshi Toko, Dean of Graduate School and Faculty of Information Science and Electrical Engineering, Kyushu University, Japan
3. Eun Ha Choi, Kwangwoon University, Korea

9:45-10:05 Concept and strategy of Center of Plasma Nano-interface Engineering 20min.

Masaharu Shiratani, Director of Center of Plasma Nano-interface Engineering,
Kyushu University, Japan

“An Introduction to center of plasma nano-interface engineering (CPNE)”

10:20-10:30 Break

Keynote Talks (3) 30min.

10:30 Koichi Ono, Kyoto University, Japan

” Modeling Plasma-Surface Interactions and Profile Evolution in Nanoscale Plasma Etching Processes”

11:00 Masaru Hori, Director of Plasma Nanotechnology Research Center,
Nagoya University, Japan

“Plasma Innovation towards Next Generation Green and Life Science and Technology”

11:30 GeunYoung Yeom, Sungkyunkwan University, Korea

“Research on thin film and surface processing using modified dielectric barrier discharge system”

12:00-13:30 Lunch

Invited Talks (5) (20min +5min Q&A)

- 13:30 Masaaki Nagatsu, Shizuoka University, Japan
"Optical and Mass Spectrometric Studies on Inactivation of Spore-forming Bacteria by Low-pressure Surface-wave Excited Oxygen/Nitrogen Plasma"
- 14:00 JungHoon Joo, KunSan National University, Korea
"Numerical modeling of geometrically confined discharge: ICP and CCP"
- 14:30 Toshiro Kaneko, Tohoku University, Japan
"Manipulation of DNA Molecules into and out of Carbon Nano tubes Using Liquid Related Plasmas"
- 15:00 Poster Session
- P01 Tetsuji Shimizu, Max-Planck, Germany
"Atmospheric Plasma in Medicine: Chronic Wound Disinfection"
- P02 HongYoung Chang, KAIST, Korea
"Wave cutoff method and its applications"
- P03 Kenji Ishikawa, Nagoya University, Japan
"Real-time Electron-Spin-Resonance Study of Plasma-Surface interaction"
- P04 SukJae Yoo, National Fusion Research Institute, Korea
"Plasma Energy Technologies at National Fusion Research Institute (NFRI)"
- P05 Hirotaka Toyoda, Nagoya University, Japan
"Time and Space Resolved Measurement of Microwave Electric Field in Atmospheric"
- P06 HanSup Uhm, Kwangwoon University, Korea
"Steam-Torch Reforming of Coal and its Application to Plasma Power-Plant"
- P07 Hiroki Kondo, Nagoya University, Japan
"Synthesis and control of carbon nano walls for their applications to future functional devices"
- P08 EunHa Choi, Kwangwoon University, Korea
"Plasma Bioscience Research Activities in Plasma Bioscience Research Center (PBRC)"

- P09 Yuichi Setsuhara, Osaka University, Japan
"Combinatorial Analyses of Plasma Materials Processing"
- P10 SangYul Lee, Korea Aerospace University, Korea
"CrZr-based nitride coating to replace DLC coating for GDI engines for automotive applications"
- P11 Kentaro Tomita, Kyushu University, Japan
"Studies of Pulsed Filament Discharges Produced in Near-Atmospheric Pressure using Laser Thomson Scattering"
- P12 HaeJune Lee, Pusan National University, Korea
"Simulation of Atmospheric Pressure Dielectric Barrier Discharges for the Investigation of Plasma Kinetics and Chemistry"
- P13 Kazunori Koga, Kyushu University, Japan
"Radical flux evaluation of high pressure silane plasma CVD using multi-hollow discharges"
- P14 JinHyo Boo, Sungkyunkwan University, Korea
"Metal Nano Particle Modified N-doped DLC Films for Glucose Sensor Application"
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"Numerical modeling of geometrically confined discharge: ICP and CCP"
- P17 Toshiro Kaneko, Tohoku University, Japan
"Manipulation of DNA Molecules into and out of Carbon Nano tubes Using Liquid Related Plasmas"
- P18 Satoshi Kitazaki, Kyushu University, Japan
"Growth promotion of plants using low pressure O₂ RF discharges"

- P19 BongSoo Kwon, Sungkyunkwan University, Korea.
"The effects of gas flow rates on the etch characteristics of silicon nitride with an extreme ultra-violet resist pattern in CH₂F₂/N₂/Ar capacitively coupled plasmas"
- P20 Yeonwon Kim, Kyushu University, Japan
"Combinatorial study on deposition profiles of silicon thin films deposited using multi-hollow discharge plasma CVD"
- P21 DooHoon Song, Yonsei University, Korea
"Synthesis of Titanium Oxide Thin Films Containing Antibacterial Silver Nanoparticles by Reactive Magnetron Co-sputtering System for Application in Dental Implants"
- P22 Masahira Ikeda, Nagoya University, Japan
" Evaluation of Absolute SiH₃ Radical Density in H₂/SiH₄ Surface Wave Exited Plasma"
- P23 Young June Hong, Kwangwoon University, Korea
"Measurement of OH⁻ radicals in Plasma Jet"
- P24 Sachiko Iseki, Nagoya University, Japan
" Effect of reactive oxygen species on Penicillium digitatum inactivation"
- P25 KyongNam Kim, Sungkyunkwan University, Korea
"Nano crystalline silicon thin films fabricated using by internal ICP-CVD for solar cell processing"
- P26 Takehiro Hiraoka, Nagoya University, Japan
" Study of Terahertz Time Domain Spectroscopy for Biological Plasma Applications"
- P27 MinHwan Jeon, Sungkyunkwan University, Korea
"Etch Characteristics of SiO₂ by using Pulse-Time Modulation in the Dual- Frequency Capacitive Coupled Plasma"
- P28 Kazunari Kuwahara, Kyushu University, Japan
" Low resistivity AZO films fabricated on solid phase crystallized ZnO buffer layer: solid phase crystallization temperature dependence"
- P29 SuBong Jin, Sungkyunkwan University, Korea
"Surface energy modification of SiO_xCyHz film using PECVD by controlling the plasma processes for OMCTS (Si₄O₄C₈H₂₄) precursor"

- P30 Nobuya Hayashi, Saga University, Japan
"Inactivation of Bacillus Spore Using Air Torch Plasma"
- P31 Seok Won Hwang, Pusan National University, Korea
"Global modeling for atmosphere pressure air discharge"
- P32 Hiroshi Miyata, Kyushu University, Japan
"Deposition of SiO_x-CH₃ nano-particles on trench substrates using pulse RF discharges"
- P33 Takuya Nomura, Kyushu University, Japan
"Emission intensity measurements of Ar+H₂+C₇H₈ plasmas using H-assisted plasma CVD"
- P34 Kenta Nakahara, Kyushu University, Japan
"Optical bandgap energy of B-doped a-Si:H films deposited by SiH₄+B₁₀H₁₄ multi-hollow discharge plasma CVD"
- P35 Daisuke Yamashita, Kyushu University, Japan
"Surface reactions of P-doped a-Si:H films deposition using SiH₄+PH₃"
- P36 Takeaki Matsunaga, Kyushu University, Japan
" Property evaluation of silicon films deposited using high gas pressure multi-hollow discharge plasma CVD"
- P37 Muneharu Sato, Kyushu University, Japan
"Photoluminescence measurement of nitridated Si particles generated by double multi-hollow discharge PECVD"
- P38 Tatsuya Urakawa, Kyushu University, Japan
"Main discharge dependence of deposition rate of plasma CVD carbon films de-positied using H-assisted plasma CVD reactor"
- P39 Katsushi Nishiyama, Kyushu University, Japan
"Flux measurements of carbon dust particles towards biased substrates in H₂ helicon discharge plasmas"
- P40 Kousuke Yamamoto, Kyushu University, Japan
" Generation of nitridated Si particle composite films by double multi-hollow plasma CVD method"

P41 Yuki Kawashima, Kyushu University, Japan
“Electrical characteristics of Si nanoparticles/ruthenium dye hybrid sensitized solar cells”

P42 Masaharu Shiratani, Director of Center of Plasma Nano-interface Engineering,
Kyushu University, Japan
“An Introduction to center of plasma nano-interface engineering (CPNE)”

Student Workshop (12) (7 min Talk +5min Q&A)

15:45 Organized and preceded by students (5 Japan + 5 Korea)

S01 Satoshi Kitazaki, Kyushu University, Japan
“Growth promotion of plants using low pressure O₂ RF discharges”

S02 BongSoo Kwon, Sungkyunkwan University, Korea.
“The effects of gas flow rates on the etch characteristics of silicon nitride with an extreme ultra-violet resist pattern in CH₂F₂/N₂/Ar capacitively coupled plasmas”

S03 Yeonwon Kim, Kyushu University, Japan
“Combinatorial study on deposition profiles of silicon thin films deposited using multi-hollow discharge plasma CVD”

S04 DooHoon Song, Yonsei University, Korea
“Synthesis of Titanium Oxide Thin Films Containing Antibacterial Silver Nanoparticles by Reactive Magnetron Co-sputtering System for Application in Dental Implants”

S05 Masahira Ikeda, Nagoya University, Japan
“ Evaluation of Absolute SiH₃ Radical Density in H₂/SiH₄ Surface Wave Exited Plasma”

S06 Young June Hong, Kwangwoon University, Korea
“Measurement of OH⁻ radicals in Plasma Jet”

S07 Sachiko Iseki, Nagoya University, Japan
“ Effect of reactive oxygen species on Penicillium digitatum inactivation”

S08 KyongNam Kim, Sungkyunkwan University, Korea
“Nano crystalline silicon thin films fabricated using by internal ICP-CVD for solar cell processing”

- S09 Takehiro Hiraoka, Nagoya University, Japan
" Study of Terahertz Time Domain Spectroscopy for Biological Plasma Applications"
- S10 MinHwan Jeon, Sungkyunkwan University, Korea
"Etch Characteristics of SiO₂ by using Pulse-Time Modulation in the Dual- Frequency capacitive Coupled Plasma"
- S11 Kazunari Kuwahara, Kyushu University, Japan
" Low resistivity AZO films fabricated on solid phase crystallized ZnO buffer layer: solid phase crystallization temperature dependence"
- S12 SuBong Jin, Sungkyunkwan University, Korea
"Surface energy modification of SiO_xCyHz film using PECVD by controlling the plasma processes for OMCTS (Si₄O₄C₈H₂₄) precursor"
- 17:45 Closing
Masaru Hori, Nagoya University, Japan
Jeon-Geon Han, Sungkyunkwan University, Korea
- 19:00 Sayonara (Farewell) Dinner