Thursday, March 13, 2008

Opening Remarks (10:00-10:20)　Y. Suzuoki (Nagoya University)

I-01　Plenary Talk (10:20-11:00)

Laser Thomson scattering diagnostics of low-temperature plasmas

A. Kono

Department of Electrical Engineering and Computer Science, Nagoya University

I-02　Invited Talk (11:00-11:40)

On surface modification of nano-particles and kinetics in molecular plasmas

V. Brüser, J. Röpcke

Leibniz-Institute for Plasma Science and Technology

I-03　Invited Talk (11:40-12:20)

Growth of carbon nanotubes by grid-inserted plasma-enhanced CVD

T. Mizutani[1] and S. Kishimoto[1, 2]

[1] Department of Quantum Engineering, Nagoya University

[2] Venture Business Laboratory, Nagoya University

Lunch (12:20-13:40)

I-04　Invited Talk (13:40-14:20)

Low Loss Long Range Surface Plasmon Polariton Waveguides and Their Applications

Y. Huang, F. Liu, Y. Rao, R. Wan, D. Qu, W. Zhang, and J. Peng

State Key Lab. of Integrated Optoelectronics, Department of Electronic Engineering, Tsinghua University

I-05　Invited Talk (14:20-15:00)

A new trend for fabrication of nanomaterials by laser irradiation in liquid

N. Koshizaki

Nanoarchitectonics Research Center (NARC),

National Institute of Advanced Industrial Science and Technology (AIST)

I-06　Invited Talk (15:00-15:40)

Gate Stack Patterning: challenges of the future

O. Joubert[1], E. Pargon[1], G. Cunge[1], T.Chevolleau[1], B. Pelissier[1], L. Vallier[1], F. Sidor[1], J. Thiault[1],

R. Ramos[1], O.Luere[1], E. Sungauer[1], M. Martin[1], X. Melaoui[1], S. Barnola[2], J. Foucher[2], T. Morel[2], T. Lill[3]

[1] CNRS/LTM, (CEA/LETI-Minatec), [2] CEA/LETI-Minatec, [3] Applied Materials Inc.

Coffee Break (15:40-16:00)

I-07 Invited Talk (16:00-16:40)

Nanodevice for Single Biomolecular and Single Cellular Research

Y. Baba[1-5]

[1] Department of Applied Chemistry

[2] MEXT Innovative Research Center for Preventive Medical Engineering

[3] Plasma Nanotechnology Research Center, Nagoya University

[4] National Institute of Advanced Industrial Science and Technology (AIST)

[5] Institute for Molecular Science, National Institute for Natural Sciences

Special Session (16:40-18:00)

FLUCTUATION' The last issue in Nanotechnology; Emerging mechanism and Solutions

I-08 Invited Talk (16:40-17:00)

Nano-scale Deviation of Gate CD after Etching

M. Izawa[1], M. Kurihara[1], J. Tanaka[1], K. Kawai[2], R. Yoshifuku[2], T. Maruyama[2], and N. Fujiwara[2]

[1] Central Research Laboratory, Hitachi Ltd.

[2] Process Technology Development Division, Renesas Technology Corporation

I-09 Invited Talk (17:00-17:20)

Challenges for minimizing plasma induced "FLUCTUATION" of device properties

T. Tatsumi

Sony Corporation

I-10 Invited Talk (17:20-17:40)

New Materials Exploration and Interface Control in Nanotechnology; compatibility with plasma processing

T. Chikyow[1], K. Ohmori[2], T.Nagata[2], N.Umezawa[1], M.Haemori[1], M.Yoshitake[1], H.Koinuma[1,3,4] and K. Yamada[2]

[1] National Institute for Materials Science

[2] Nanotechnology Research Center, Waseda University

[3] JST-CRSD

[4] University of Tokyo, Graduate school of Frontier Science

Discussion (17:40-18:00)

Banquet (18:30-20:00) (Restaurant "Hananoki" in Nagoya Univ.)

Friday, March 14, 2008

I-21 Invited Talk (9:00-9:40)

Stochastic Heating in Capacitive Discharges and the PSR Effect

J. Schulze[1], B.G. Heil[1], D. Luggenhölscher[1], T. Mussenbrock[2], R. P. Brinkmann[2], U. Czarnetzki[1]

[1] Institute for Plasma and Atomic Physics, Ruhr-University Bochum

[2] Institute for Theoretical Electrical Engineering, Ruhr-University Bochum

I-22 Invited Talk (9:40-10:20)

Unraveling the importance of surface association to the formation of molecules in a recombining N_2/O_2 plasma

R. Zijlmans[1], S. Welzel[2], O. Gabriel[1], J.H. van Helden[1], J. Röpcke[2], D.C. Schram[1] and R. Engeln[1]

[1] Departement of Applied Physics, Eindhoven University of Technology

[2] INP-Greifswald

Coffee break (10:20-10:40)

I-23 Invited Talk (10:40-11:20)

Plasma-Surface Interactions for Advanced Gate Etch Process

K. Ono

Department of Aeronautics and Astronautics, Kyoto University

I-24 Invited Talk (11:20-12:00)

TCO film deposition on polymer by magnetron sputtering at low temperature

J. G. Han

Center for Advanced Plasma Surface Technology, Sungkyunkwan University

Lunch (12:00-13:00)

Poster session (13:00-14:30)

I-25 Invited Talk (14:30-15:10)

Exotic Plasmas for Nano Technology & Science - Cryo Plasma & Supercritical Fluid Plasma

K. Terashima, T. Tomai, Y. Noma and .J.H. Choi

Department of Advanced Materials Science, Graduate School of Frontier Science, The University of Tokyo

I-26 Invited Talk (15:10-15:50)

Low Temperature Material Processing Using Microwave Plasma Technology

M. Nagatsu, K. Martin, M. K. Singh, D. Lu, E. Anzawa, A. Ogino

Graduate School of Science and Technology, Shizuoka University

I-27 Invited Talk (15:50-16:30)

Plasma Engineering for Third Generation Nanotechnology

M. Shiratani and K. Koga

Department of Electronics, Kyushu University

Closing (16:30-16:40) M. Hori (Nagoya University)

Poster session program

13:00-14:30, Friday, March 14, 2008

P-01 **Wet Chemical Etching Processes of SiC and ZnO Thin Films**

S.-H. Nam, J.-S. Hyun, M. H. Kim, D. G. Yoo, S. H. Jeong, B.Y. Hong, Y. J. Kim, and J.-H. Boo
Center for Advanced Plasma Surface Technology, Sungkyunkwan University

P-02 **Effects of PVP and KCl concentration on the synthesis of gold nanoparticles using a solution plasma processing**

S.-M. Kim[1], J.-U. Lee[2], S.-Y. Lee[1]
[1] Department of Material Engineering, Korea Aerospace University
[2] Department of Materials Science and Engineering, KAIST

P-03 **Parallel- and latticed-nanostructures fabricated by surface-patterning technique for nano-electronic device**

H. J. Kim[1] and B. Hong[1,2]
[1] School of Information and Communication Engineering, Sungkyunkwan University
[2] Center for Advanced Plasma Surface Technology, Sungkyunkwan University

P-04 **High Rate Growth of Highly Crystallized Ge:H Thin Films from VHF Inductively-Coupled Plasma of GeH_4**

Y. Ono, H. Kaku, K. Makihara, S. Higashi and S. Miyazaki
Graduate School of Advanced Sciences of Matter, Hiroshima University

P-05 **Impact of Annealing condition on the Efficiency of Dopant Activation Induced by Thermal Plasma Jet Crystallization of Heavily-Phosphorus-Doped Amorphous Si films**

H. Kaku, S. Higashi, H. Furukawa, T. Okada, T. Yorimoto, H. Murakami and S. Miyazaki
Graduate School of Advanced Sciences of Matter, Hiroshima University

P-06 **Control of Plasma Non-uniformity in Large Area / Very High Frequency Capacitive Discharges**

S. K. Ahn, B. K. Na, and H. Y. Chang
Low-Temperature Plasma Lab., Department of Physics,
Korea Advanced Institute of Science and Technology

P-07 **Enhancement of crystal growth in Si thin film deposition by H radical-assisted magnetron sputtering**

K. Fukaya[1], A. Tabata[1], K. Sasaki[2]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University

P-08 **One-Meter-Square Surface Wave Plasma for Si Film Deposition**

Y. Takanishi[1], H. Endo[1], T. Ishijima[2], H. Toyoda[1] and H. Sugai[3]
[1] Dep. of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University
[3] Dep. of Electronics Engineering and Information Technology, Chubu University

P-09 **Multihole Micro-hollow Cathode Discharges Driven by High Alternating Voltages**

J. Watanabe, R. Kakei, A. Ogino and M. Nagatsu
Graduate School of Engineering, Shizuoka University

P-10 **Photoluminescent Properties of SiO_x Films Formed by Plasma Enhanced Chemical Vapor Deposition**

T. Okada, S. Higashi, H. Kaku, T. Yorimoto, H. Murakami and S. Miyazaki
Graduate School of Advanced Sciences of Matter, Hiroshima University

P-11 **Luminescence Property of ZnO Nanophosphors Treated by Surface-wave Plasma**

K. Shinji[1], Q. Ou[2], A. Ogino[3], and M. Nagatsu[3]
[1] Graduate School of Engineering, Shizuoka University
[2] Innovative Joint Research Center, Shizuoka University
[3] Graduate School of Science and technology, Shizuoka University

P-12 **Electrochromic properties of microvillus-structured InGaN films prepared by glancing-angle reactive evaporation**

H. Takaba[1], H. Takeuchi[1], Y. Inoue[2], and O. Takai[2]
[1]Graduate School of Engineering, Nagoya University
[2]EcoTopia Science Institute, Nagoya University

P-13 **Effect of Feed Gas Composition of Discharge Plasma on Low Temperature Sterilization Efficiency**

M. K. Singh[1], L. Xu[2], A. Ogino[1] and M. Nagatsu[1]
[1] Graduate School of Science and Technology, Shizuoka University
[2] Japan Science and Technology Agency

P-14 **Comparison of Probe Tip Materials for Application to the Atmospheric Pressure Discharge Plasma**

H. Matsuura and K. Nakano
Graduate School of Engineering, Osaka Prefecture University

P-15 **Numerical Simulation of Capacitively Coupled Plasma Considering the Radial Power Deposition Profile**

I.Sawada, K.Matsuzaki, S.Y.Kang, T.Ohshita, M.Kawakami and S.Segawa
Technology Development Center, Tokyo Electron Ltd.

P-16 **Effects of Argon-Helium mixing on plasma parameters using a CFD-ACE+**

H.-S. Jun, Y.-S. Lee, S.-H. Seo and H.-Y. Chang
Department of Physics, Korea Advanced Institute of Science and Technology

P-17 **Numerical Simulation of a DC Magnetron Sputtering with Moving Magnet Configuration in TFT-LCD Manufacturing**

D. H. Kim[1], H. Chang[1], C.-M. Ryu[1], S. H. Lee[2], G. Y. Park[2] and J. K. Lee[2]
[1] Department of Physics, Pohang University of Science and Technology
[2] Department of Electronic and Electrical Engineering, Pohang University of Science and Technology

P-18 **Observation of laser-ablation dynamics in pressurized water by shadowgraph imaging**

T. Nakano[1], N. Takada[1], W. Solimanm[1], and K. Sasaki[2]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University

P-19 **Numerical investigation of cavitation bubbles induced by laser ablation in pressurized water**

W. Soliman[1], T. Nakano[1], N. Takada[1], and K. Sasaki[2]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University

P-20 **Spatial distributions of size and density of Cu particulates in magnetron sputtering plasmas measured by two-wavelength laser light scattering technique**

N. Nafarizal[1], N. Takada[1] and K. Sasaki[2]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University

P-21 **Generation and diagnostics of atmospheric-pressure microgap plasma excited by 10-GHz microwave**

Y. Harada, M. Kobayashi, M. Aramaki and A. Kono
Department of Electrical Engineering and Computer Science, Nagoya University

P-22 **Effect of Multi-photon Ionization in the Focal Region of Nd:YAG Laser Used for Thomson scattering measurement**

K. Fukuyama, M. Aramaki and A. Kono
Department of Electrical Engineering and Computer Science, Nagoya University

P-23 **Production of 10 GHz micro ECR plasma and its diagnosis**

Y. Kawamura, T. Kuroki, M. Aramaki and A. Kono
Department of Electrical Engineering and Computer Science, Nagoya University

P-24 **Low Temperature Surface Modification of Polymers Using Acetic Acid Surface-wave Plasma**

E. Anzawa[1], M. Kral[2], A. Ogino[2] and M. Nagatsu[2]
[1] Graduate School of Engineering, Shizuoka University
[2] Grduate School of Science and Technology, Shizuoka University

P-25 **Hydrophilization of amorphous perfluoropolymer surface under low-pressure argon plasmas**

S. Sugimoto[1], T. Ono[2], T. Akagi[2, 3], and T. Ichiki[2, 3]
[1] Faculty of Engineering, The University of Tokyo
[2] School of Engineering, The University of Tokyo
[3] Center for NanoBio Integration, The University of Tokyo

P-26 **Effect of UV- and Ion-Irradiation Pretreatment on Amino Group Introduction on Polymer Surface Using Surface-wave Plasma**

M. Král[1], A. Ogino[2], M. Nagatsu[1,2]
[1] Graduate School of Electronic Science and Technology, Shizuoka University
[2] Graduate School of Science and Technology, Shizuoka University

P-27 **Development of new remote plasma processes for flexible device fabrication**

K. Takeda[1], S. Kono[1], K. Yamakawa[3], T. Maeda[4], M. Hori[1,2]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University
[3] Katagiri Engineering Co,. Ltd.
[4] Marubun Corporation

P-28 **Investigation of the Frequency Components in the Bulk Plasma**

T. Ito
Technology Development Center, TOKYO ELECTRON LTD.

P-29 **Influence of mixture ratio of fluorocarbon gas on stabilization of radical densities in argon-diluted C_4F_8 discharges**

K. Nakamura, F. Itazu, Y. Watarai
Department of Electrical Engineering, Chubu University

P-30 **Differences in Al_2O_3 and Y_2O_3 surfaces irradiated by high-density CF_4/O_2 and SF_6/O_2 plasmas**

K. Miwa[1], N. Takada[1] and K. Sasaki[2]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Plasma Nanotechnology Research Center, Nagoya University

P-31 **Characterization of Dual Frequency Inductively Coupled Plasma**

H.-S. Lee, S.-H. Seo and H.-Y. Chang
Department of Physics, KAIST

P-32 **Surface loss probability of nitrogen atom in process plasmas**

S. Takashima[1], K. Takeda[1], S. Kato[2], M. Hiramatsu[2] and M. Hori[1, 3, 4]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Department of Electrical and Electronics Engineering, Meijo University
[3] Plasma Nanotechnology Research Center, Nagoya University
[4] JST, CREST

P-33 **Porous Low-k Film Etching Process and its Surface Reactions Employing an Alternative Fluorocarbon Gas**

E. Shibata[1], H. Okamoto[2], M. Sekine[1], and M. Hori[1]
[1]Department of Electrical Engineering and Computer Science, Nagoya University
[2]Asahi Glass Company Limited

P-34 **Density Measurements of N Atoms and Metastable N_2 Molecules in ICP N_2 Plasmas**

Y. Horikawa[1], and K. Kurihara[2], and K. Sasaki[3]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Research & Development Center, Toshiba Corporation
[3] Plasma Nanotechnology Research Center, Nagoya University

P-35 **Development of high-density radical source for radical nitridation process in ULSI technology**

H. Kondo[1], S. Oda[1], S. Takashima[1], A. Sakai[2], M. Ogawa[3], S. Zaima[1], M. Hori[1], S. Den[4], H. Kano[5]
[1] Graduate School of Engineering, Nagoya University
[2] Graduate School of Engineering Science, Osaka University
[3] Ecotopia science institute, Nagoya University
[4] Katagiri Engineering Co., Ltd.
[5] NU-EcoEngineering Co., Ltd.

P-36 **Evaluating damage generation mechanism on porous SiOCH by H_2 plasma ashing process**

H. Yamamoto[1], K. Takeda[1], M. Sekine[1,2] and M. Hori[1,2]
[1] Nagoya University, [2] JST-CREST

P-37 **Fabrication of DLC Films on Polyurethane and Nylon Sheets for Medical Use**

R. Ohishi[1], T. Nakagawa[1], N. Ohtake[1], O. Takai[2]
[1] Department of Materials, Physics and Energy Engineering, Nagoya University
[2] EcoTopia Science Institute, Nagoya University

P-38 **Diamond deposition on stainless steel substrate without intermediate layer by combustion flame method**

K. Kobayashi, H. Suzuki, T. Mantani and Y. Ando
Department of Mechanical Engineering, Ashikaga Institute of Technology

P-39 **Fabrication of Carbon Nanostructures using Non-Equilibrium Atmospheric Pressure Plasma CVD**

T. Masuda[1], M. Hiramatsu[1], K. Yamakawa[2], and M. Hori[3]
[1] Department of Electrical & Electronic Engineering, Meijo University
[2] Katagiri Engineering Co., Ltd.
[3] Department of Electrical Engineering and Computer Science, Nagoya University

P-40 **Effect of Post Plasma Treatments on Field Emission Properties of Carbon Nanotube Emitters**

J. Sato[1], T. Ishikawa[1], T. Matsuda[2], A. Ogino[2], and M. Nagatsu[2]
[1] Graduate School of Engineering, Shizuoka University
[2] Graduate School of Science and Technology, Shizuoka University

P-41 **Low temperature growth of carbon nano-rods with catalysts prepared by surface-wave plasma-assisted sol-gel method**

D. Lu, A. Ogino, Q. Ma and M. Nagatsu
Graduate School of Science and Technology, Shizuoka University

P-42 **Growth of single-walled carbon nanotubes using different catalysts with plasma and thermal CVD**

Z. Ghorannevis, T. Kato, T. Kaneko, and R. Hatakeyama
Department of Electronic Engineering, Tohoku University

P-43 **Growth and Performance of Vertically Aligned Carbon Nanotubes on 100 nm-Catalyst Dot Array Using Plasma CVD**

T. Matsuda[1], T. Ishikawa[2], J. Sato[2], A.Ogino[1], and M. Nagatsu[1]
[1] Graduate School of Science and Technology, Shizuoka University
[2] Graduate School of Engineering, Shizuoka University

P-44 **Investigation of early phase of carbon nanowall formation process in a newly developed three-plasma experiment**

O. Stepanović[1], S. Kondo[1], K. Yamakawa[2], S. Den[2], M. Hiramatsu[3] and M. Hori[1]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Katagiri Engineering Co., Ltd.
[3] Department of Electrical and Electronic Engineering, Meijo University

P-45 **Fabrication of carbon nanostructures using inductively coupled plasma-enhanced chemical vapor deposition**

M. Ohhira[1], T. Hishikawa[1], M. Hiramatsu[1], and M. Hori[2]
[1] Department of Electrical and Electronic Engineering, Meijo University
[2] Department of Electrical Engineering and Computer Science, Nagoya University

P-46 **Fabrication of Carbon Nanotube Film with Self-Assembled Conical Tips Using Microwave Plasma-Enhanced CVD**

H. Watanabe[1], T. Deguchi[1], M. Hiramatsu[1] and M. Hori[2]
[1] Department of Electrical & Electronic Engineering, Meijo University
[2] Department of Electrical Engineering and Computer Science, Nagoya University

P-47 **Growth of carbon nanowalls using electron beam excited plasma-enhanced CVD**

T. Mori[1], M. Hiramatsu[1], K. Yamakawa[2], K. Takeda[3], and M. Hori[3]
[1] Department of Electrical and Electronic Engineering, Meijo University
[2] Katagiri Engineering Co., Ltd.
[3] Department of Electrical Engineering and Computer Science, Nagoya University

P-48 **Radical Density Measurements in VHF C_2F_6/H_2 Plasma with Radical Injection CVD Used for CNWs Fabrication**

S. Kato[1], H. Sasaki[2], S. Takashima[2], K. Yamakawa[3], M. Hiramatsu[1], M. Hori[2]
[1] Dept. of Electrical & Electronic Engineering, Meijo University
[2] Dept. of Electrical Engineering & Computer Science, Nagoya University
[3] Katagiri Engineering Co., Ltd.

P-49 **Pattern transfer of carbon nanowall into SiO_2 film**

A. Noda[1], M. Hiramatsu[1] and M. Hori[2]
[1] Department of Electrical and Electronic Engineering, Meijo University
[2] Department of Electrical Engineering and Computer Science, Nagoya University

P-50 **Structural Control of Carbon Nanowalls Using Oxygen Gas Addition to C_2F_6/H_2 Plasma**

W. Takeuchi[1], M. Hiramatsu[2], Y. Tokuda[3], H. Kano[4] and M. Hori [1]
[1] Department of Electrical Engineering and Computer Science, Nagoya University
[2] Department of Electrical and Electronic Engineering, Meijo University
[3] Department of Electrical and Electronics Engineering, Aichi Institute of Technology
[4] NU Eco-Engineering Co.,Ltd.