

Monday, January 21, 2008

Monday, January 21 10:00-11:30 (Hankyu-Sanwa Conference Hall)

Plenary Lectures

Opening Remarks 10:00-10:10

K. Taniguchi (Organizing Chair)

Plenary Lectures (part 1)

Chair: Kenji Taniguchi, Osaka University

I-1 10:10-10:50

Theory and Simulation of Electronic Transport in Unconventional MOSFETs at the 20 nm Length Scale

M. Fischetti (University of Massachusetts)

I-2 10:50-11:30

Power Semiconductor Devices: Enabling Technology for Sustainable Prosperity

I.Omura (Toshiba Semiconductor Company)

Lunch Time 11:30-13:00

Monday, January 21 13:00-15:10 (Hankyu-Sanwa Conference Hall)

Welcome Address 13:00-13:10

M. Toyoda (Dean, Graduate School of Engineering, Osaka University)

Plenary Lectures (part 2)

Chair: Ryosuke Kodama, Osaka University

I-3 13:10-13:50

(Tentative) "Advances in Magnetic Sensitive Force Microscopy"

A.Schwarz (Hamburg University)

I-4 13:50-14:30

High Energy Plasma Photonic Devices with High Power Lasers

J. Fuchs (Ecole Polytechnique)

I-5 14:30-15:10

Organic Memory Devices: New Direction in Organic Electronics

Y. Yang (UCLA)

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Monday, January 21 15:30-16:55 (Hankyu-Sanwa Conference Hall)

Plenary Lectures (part 3)

Chair: Makoto Osanai, Osaka University

I-6 15:30-16:10

The Utah Integrated Neural Interface: Wireless Gateway to the Brain

R. Harrison (University of Utah)

I-7 16:10-16:50

Optical Recording of Brain and Heart Activity; Science and Technology

L. Cohen (Yale University)

Welcome Address 16:50-16:55

Z. Kawasaki (Head of Division of Electrical, Electronic and Information Engineering)

Short Performance of Noh - Japanese Traditional Art - 17:15-17:30
(Hankyu-Sanwa Conference Hall)

Reception 17:30- (Large Conference Room)

Tuesday, January 22, 2008

Tuesday, January 22 10:00-12:00 (Large Conference Room)

Oral Presentations

Co-Chairs: Toshimasa Matsuoka, Osaka University
Shin-ichi Honda, Osaka University

O-1 10:00-10:15

The Effect of Body Bias for the MOSFET of the Resistive Network in a CMOS Vision Chip

J.-S. Kong, D.-K. Sung, H.-Y. Hyun, and J.-K. Shin
Department of Electronics, Kyungpook National University, South Korea

O-2 10:15-10:30

A Transformer Noise-Canceling UWB CMOS LNA

T. Kihara, T. Matsuoka, and K. Taniguchi
Graduate School of Engineering, Osaka University, Japan

O-3 10:30-10:45

Communicating Maps of Model Neurons in the HKUST MultiMap System

Y. Meng and B. E. Shi
Department of Electronic and Computer Engineering, Hong Kong
University of Science and Technology, Hong Kong

O-4 10:45-11:00

Timing stabilization of optical pulse using double balanced mixer And optical delay line for all-optical A/D conversion

Y. Miyoshi
Osaka University, Japan

O-5 11:00-11:15

Crucial role of heterointerface on MgO/titanate core-shell nanowires

K. Nagashima, T. Yanagida, K. Oka, H. Tanaka, S. Seki, A. Saeki, S. Tagawa, and
T. Kawai
Institute of Scientific and Industrial Research, Osaka University, Japan

O-6 11:15-11:30

Dynamic screening of Longitudinal-Optical phonons

T. P. O'Regan, M. V. Fischetti, and S. Jin
University of Massachusetts Amherst, USA

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O-7 11:30-11:45

Real-time visual collision detection system using a bio-inspired algorithm

H.Okuno and T. Yagi

Division of Electrical, Electronic and Information Engineering, Osaka
University, Japan

O-8 11:45-12:00

Non-contact detection of explosive chemicals by nuclear quadrupole resonance

G. Ota and H. Itozaki

Graduate School of Engineering Science, Osaka University, Japan

Lunch Time 12 : 00-13 : 30

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Tuesday, January 22 13:30-15:00 (Large Conference Room)

Short Oral Presentations

Chair: Yoshinari Kamakura, Osaka University

P-1

A 0.5V Ultra-Low Power Op-Amp Using Floating Voltage Sources

J. Wang, T.-Y. Lee, D.-G. Kim, T. Matsuoka, and K. Taniguchi
Osaka University, Japan

P-2

Efficient state-space construction with improved Fuzzy ART for real time learning

N. Kotani and K. Taniguchi
Graduate School of Engineering, Osaka University, Japan

P-3

Defects of YBCO grain-boundaries grown on bicrystal

Y. Nakatani¹⁾, T. Maki¹⁾, X. Kong¹⁾, A. Yutani¹⁾, H. Itozaki¹⁾, M. Abe²⁾, and
T. Matsuoka²⁾
¹⁾Graduate School of Engineering Science, Osaka University, Japan
²⁾Graduate School of Engineering, Osaka University, Japan

P-4

Direct Optical Switching-CDMA by Broadband Photonic Device and Its Applications

T. Higashino, Y. Morioka, and K. Tsukamoto
Graduate School of Engineering, Osaka University, Japan

P-5

Research of the Mechanism of Femtosecond Laser-induced Nucleation

R. Murai^{1,2)}, H. Y. Yoshikawa^{1,2)}, S. Maki^{1,2)}, S. Sugiyama^{1,2)}, T. Kitatani^{1,2)}, H.
Adachi^{1,2,3)}, K. Takano^{2,3,4)}, H. Matsumura^{2,3,5)}, S. Murakami^{2,3,6)}, T. Inoue^{2,3,5)},
T. Sasaki^{1,2,3)}, and Y. Mori^{1,2,3)}
¹⁾Department of Electrical, Electronic and Information Engineering,
Osaka University, Japan, ²⁾CREST, JST, Japan, ³⁾SOSHO Inc.,
Japan, ⁴⁾Department of Material and Life Science, Osaka University,
Japan, ⁵⁾Department of Materials Chemistry, Osaka University, Japan,
⁶⁾Institute of Scientific and Industrial Research, Osaka University, Japan

P-6

Growth of DAST-Derivative Crystals for Terahertz-Wave Generation

T. Matsukawa¹⁾, Y. Takahashi¹⁾, R. Miyabara²⁾, H. Umezawa²⁾, S. Okada³⁾, H.
Koga⁴⁾, I. Kawayama⁴⁾, M. Tonouchi⁴⁾, M. Yoshimura¹⁾, Y. Kitaoka¹⁾, Y. Mori¹⁾,
and T. Sasaki¹⁾
¹⁾Division of Electrical, Electronic and Information Engineering, Osaka
University, Japan, ²⁾Department of Chemistry and Biochemistry,
Fukushima National College of Technology, Japan, ³⁾Department of
Polymer Science and Engineering, Yamagata University, Japan,
⁴⁾Institute of Laser Engineering, Osaka University, Japan

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Measurement of Hot Electron Spatial Distribution in Different Plasma Density Profiles

T. Tanimoto^{1,2)}, A. L. Lei³⁾, T. Yabuuchi⁴⁾, H. Habara^{1,2)}, K. Kondo^{1,2)}, R. Kodama^{1,2)}, K. Mima²⁾, and K. A. Tanaka^{1,2)}

¹⁾Graduate School of Engineering, Osaka University, Japan, ²⁾Institute of Laser Engineering, Osaka University, Japan, ³⁾Shanghai Institute of Optics and Fine Mechanics, China, ⁴⁾University of California San Diego, USA

P-8

The study of electron acceleration with PW laser system

N. Nakanii^{1,2)}, K. Kiminori^{1,2)}, K. Tsuji^{1,2)}, K. Kimura^{1,2)}, S. Fukumochi^{1,2)}, M. Kashihara^{1,2)}, T. Tanimoto^{1,2)}, H. Nakamura^{1,2)}, T. Ishikura^{1,2)}, R. Kodama^{1,2)}, K. Mima^{1,2)}, K. A. Tanaka^{1,2)}, Y. Mori³⁾, Y. Kitagawa³⁾, E. Miura⁴⁾, K. Takeda²⁾, and M. Tampo²⁾

¹⁾Graduate School of Engineering, Osaka University, Japan, ²⁾Institute of Laser Engineering, Osaka University, Japan, ³⁾Graduate School for The Creation of New Photonics Industries, Japan, ⁴⁾Advanced Industrial Science and Technology, Japan

P-9

Study of novel plasma devices generated by high power lasers coupled with a micro-pulse power technology

A. Nishida¹⁾, H. Yoneda^{2,3)}, N. Yugami^{3,4)}, K. Kondo^{1,3,5)}, Z. L. Chen^{1,3)}, Z. Jin^{1,3)}, H. Arima²⁾, and R. Kodama^{1,3,5)}

¹⁾Graduate School of Engineering, Osaka University, Japan, ²⁾Institute for Laser Science, University of Electro-communications, Japan, ³⁾Japan Science and Technology CREST, Japan, ⁴⁾Graduate School of Engineering, Utsunomiya University, Japan, ⁵⁾Institute of Laser Engineering, Osaka University, Japan

P-10

Characterization of AlSiO Film for Wide Bandgap Semiconductors

N. Komatsu and C. Kimura

Department of Electrical, Electronic and Information Engineering, Osaka University, Japan

P-11

Significant changes in the internuclear potential of solid metallic hydrogen by being a superconductive state

K. Shibata and R. Kodama

Graduate School of Engineering, Osaka University, Japan

P-12

Significance of 3D Epitaxy on Heterostructured Oxide Nanowires

K. Oka, T. Yanagida, K. Nagashima, H. Tanaka, and T. Kawai

Institute of Scientific and Industrial Research, Osaka University, Japan

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Crystalline Quality Improvements of the Homoepitaxial CVD Diamond Films on the Vicinal Substrates

O. Maida and T. Ito

Graduate School of Engineering, Osaka University, Japan

P-14

Ambipolar organic field effect transistors using poly(cyano-ethylacrylate) as gate dielectric and hydroxyl effect on ambipolar field effect transistor

H. Kawaguchi, M. Taniguchi and T. Kawai

The Institute of Scientific Industrial Research, Osaka University, Japan

P-15

CAICISS Study of GaN(0001) surface grown by liquid phase epitaxy

H. Suto¹, S. Fujii¹, F. Kawamura¹, Y. Mori¹, S. Honda¹, M. Katayama¹, and Y. Kitaoka²

¹Division of Electrical, Electronic and Information Engineering, Osaka University, Japan, ²Frontier Research Center, Osaka University, Japan

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High spatial resolution imaging on Si(001)-(2×1) and P/Si(001)-(2×1) surfaces using atomic force microscopy

D. Sawada¹, T. Namikawa¹, M. Hiragaki¹, Y. Sugimoto¹, M. Abe^{1,2}, and S. Morita¹

¹Graduate school of Engineering, Osaka University, Japan, ²PRESTO-JST, Japan

P17

Active diagnosis on dynamic compression by laser-induced shock waves with laser-produced pulsed MeV proton beams

H. Nakamura¹, R. Kodama¹, T. Michibata¹, N. Ozaki¹, M. Tampo², M. Borghesi³, Julian Fuchs⁴

¹Graduate School of Engineering, Osaka University, Japan, ²Institute of Laser Engineering, Osaka University, Japan, ³School of Mathematics and Physics, The Queen's University of Belfast, United Kingdom, ⁴Laboratoire pour l'Utilisation des Lasers Intenses, UMR 7605 CNRS-CEA-Ecole Polytechnique-Univ. Paris VI, France

P-18

Atomistic Modeling of Hole Transport in DG MOSFETs

H. Minari and N. Mori

Department of Electronic Engineering, Osaka University, Japan

P-19

Monochromatic x-ray sampling camera for high-density plasma diagnostics

M. Tanabe, T. Fujiwara, S. Fujioka, and H. Nishimura

Institution of Laser Engineering, Osaka University, Japan

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P-20

A Fully Digital RC Time Constant Auto-tuning Technique for Continuous-Time $\Delta\Sigma$ Modulators

D. Kanemoto, T. Ido, and K. Taniguchi

Graduate School of Engineering, Osaka University, Japan

P21

Fabrication of Silicon Micro Filter using MEMS Technology

J.-H. Jeong¹⁾, H. Aoki¹⁾, C. Kimura¹⁾, T. Sugino¹⁾, and J.-H. Lee²⁾

¹⁾Department of Electrical Engineering, Osaka University, Japan,

²⁾Department of Electrical, Electronic Engineering and Computer Science, Kyungpook National University, Korea

P-22

Fabrication of Fe_{3-x}Mn_xO₄ nanostructure using Mo nanomask AFM lithography

K. Goto, H. Tanaka, and T. Kawai

The Institution of Scientific and Industrial Research, Osaka University, Japan

P-23

High throughput fabrication of the integrated Fe_{3-x}M_xO₄ (M=Mn and Zn) nano array structures in large area by Nanoimprint lithography with Mo lift-off technique and their magnetic properties

S. Yamanaka¹⁾, N. Suzuki²⁾, B. K. Lee²⁾, H. Y. Lee^{1,2)}, H. Tanaka^{1,2)}, and T. Kawai^{1,2)}

¹⁾The Institution of Science and Industrial Research, Osaka University, Japan ²⁾JST-CREST, Japan

P-24

Proposal of Sip Based AP Selection Agent System in Wireless LAN

Y. Morioka, T. Higashino, K. Tsukamoto, and S. Komaki

Osaka University, Japan

P-25

Electric Field Modulation of Magnetism in Spinel Ferrite Field Effect Transistor at Room Temperature

J. Takaobushi, H. Tanaka, and T. Kawai

ISIR-Sanken, Osaka University, Japan

P-26

Plasma optics to control a high-intensity laser pulse

M. Nakatsutsumi¹⁾, A. Kon¹⁾, Z. L.Chen¹⁾, Z.Jin¹⁾, R. Kodama¹⁾, and W. H. Bin²⁾

¹⁾Graduate School of Engineering, Osaka University, Japan, ²⁾National Key Laboratory of Laser Fusion, China

P-27

Off-Hugoniot generation of water using FDAC target and high power laser

T. Kimura¹⁾, N. Ozaki¹⁾, K. Miyanishi¹⁾, T. Endo¹⁾, T. Sano¹⁾, T.Terai¹⁾, T. Okuchi²⁾, T. Sano³⁾, K. Shimizu⁴⁾, K. Shigemori³⁾, M. Ikoma⁵⁾, and R. Kodama^{1,3)}

¹⁾Graduate School of Engineering, Osaka University, Japan, ²⁾Graduate School of Environmental Studies, Nagoya University, Japan, ³⁾Institute of Laser Engineering, Osaka University, Japan, ⁴⁾Center for Quantum

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Science and Technology under Extreme Conditions, Osaka University, Japan, ⁵⁾Graduate School of Science and Engineering, Tokyo Institute of Technology, Japan

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Integrated Electronic-Nanowell BioCHIP

H. Y. Lee, B. K. Lee and T. Kawai

Institute of Scientific and Industrial Research, Osaka University, Japan

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Facile and Rapid Direct Gold Surface Immobilization with Controlled Orientation for Carbohydrates

J. H. Seo, K. Adachi, B. K. Lee, D. G. Kang, Y. K. Kim, K. R. Kim, H. Y. Lee, T. Kawai, and H. J. Cha

¹⁾Department of Chemical Engineering, Pohang University of Science and Technology, Korea, ²⁾Institute for Scientific and Industrial Research, Osaka University, Japan, ³⁾Japan Science and Technology Agency, Japan

P-30

A High efficiency Variable Gain Amplifier circuit with controllable conductance amp

Tetsuro Okura, Toru Ido and Kenji Taniguchi

Division of Electrical, Electronic and Information Engineering, Osaka University, Japan

P-31

An Area-Efficient Reference Voltage Circuit Utilizing Switched Current Technique

Bogoda A. Indika U.K., Shunsuke Okura, Ido Toru, Kenji Taniguchi

Division of Electrical, Electronic and Information Engineering, Osaka University, Japan

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Low Power-Consumption OP-Amp Using Adaptive Biasing for Switched Capacitor Circuit

Tsukasa Ida, Tomoyuki Tanaka, Toshimasa Matsuoka and Kenji Taniguchi

Graduate School of Engineering, Osaka University, Japan

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Electrooptic Modulators with Controlled Frequency Responses by Using Non-periodic Polarization Reversal for Advanced modulation formats

Ha Viet Pham, Hiroshi Murata, and Yasuyuki Okamura

Graduate School of Engineering Science, Osaka University, Japan

Tuesday, January 22 15:15-17:00 (Conference Room B)

Poster Session

Chair: Yoshinari Kamakura, Osaka University

Conference Closing 17:10- (Large Conference Room)