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The Conference Theme

What are the next key devices for IoT era ?

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Tutorials (in Japanese) Chair: Takatoshi Kato

9:30-10:30 (N/A) The Coming SiC/GaN Age
 ~ Emerging Package and Analysis Technologies ~
 Satoshi Tanimoto (Nissan Arc)

Short Break (10:30-10:40)

10:40-11:40 (N/A) Oxide thin-film transistor technology and its application to flexible displays
 Mitsuru Nakata
 (NHK Science & Technology Research Laboratories)

Opening

13:00-13:10 Opening Remarks by Yasuhisa Omura (Kansai University)

Keynote Speeches Chair: Yukiharu Uraoka

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K-1 (p.18) Quest for Visual System of the Brain to Create Artificial Vision
 Tetsuya Yagi (Osaka University)

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Session A (Silicon Devices)

Chair: Naoto Matsuo, Yoshinari Kamakura

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Toshiaki Tsuchiya (Shimane University)

14:40-15:20 - Invited -

A-2 (p.24) Heterogeneous integration of SiGe/Ge and III-V on Si for CMOS photonics

Mitsuru Takenaka and Shinichi Takagi

(The University of Tokyo, JST-CREST)

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15:30-15:50

A-3 (p.26) High Power Efficient and Scalable Noise-Shaping SAR ADC for IoT Sensors

Yusuke Tsukamoto, Koji Obata, Kazuo Matsukawa and Koji Sushihara (Panasonic Corporation)

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A-4 (p.28) Analysis of the SOG film crack mechanism for TEOS/SOG/TEOS structure

Takuya Naoe, Takaaki Fujimoto, Masanori Miyata, Takuya Takahashi (Ricoh)

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Poster Session

Short Presentation – 2min. each (6/23, 16:20-17:40)

Chairs: A:Matsuo Ogawa, B:Takatoshi Kato, C: Hirobumi Watanabe

PA-01 (p.32) Kinetic Monte Carlo Simulation for Switching Probability of ReRAM

Masataka Shirasawa, Mlandeli Dlamini and Yoshinari Kamakura
(Osaka University)

PA-02 (p.34) Analysis of Ultra-High-Speed Image Sensor Based on Drift-Diffusion Model

Le Thi Yen¹, Natsumi Minamitani¹, Yoshinari Kamakura¹ and T. G. Etoh²

(¹Osaka University, ²Ritsumeikan University)

PA-03 (p.36) Capacitance Analysis of Pseudo-MOSFET Using Cole-Cole Plots

Isao Yarita, Shingo Sato, and Yasuhisa Omura
(Kansai University)

PA-04 (p.38) Characteristic Reliability of a Hybrid-Type Temperature Sensor using Poly-Si Thin-Film Transistors

Toshimasa Hori, Jun Taya, Hisashi Hayashi, Tokiyoshi Matsuda, and Mutsumi Kimura (Ryukoku University)

PA-05 (p.40) Effects of Ar beam irradiation on Si-Based Schottky contacts

Shohei Hisamoto, Jianbo Liang, and Naoteru Shigekawa
(Osaka City University)

PA-06 (p.42) Stimulus Performance of Poly-Si Thin-Film Transistor in in-vitro Experiment for Artificial Retinas

Keisuke Tomioka, Shota Haruki, Tokiyoshi Matsuda, and Mutsumi Kimura (Ryukoku University)

PA-07 (p.44) Gate Voltage Dependence of Channel Length Modulation for 14 nm FinFETs

Yuki Nariai and Akira Hiroki (Kyoto Institute of Technology)

PA-08 (p.46) Study on Underwater Wireless Power Transfer via Electric Coupling

Mitsuhiro Urano and Akira Takahashi
(National Institute of Technology)

PA-09 (p.48) Evaluation of Initial Electron Distributions in Ensemble Monte Carlo Simulations

Shin Hiratoko, Akira Hiroki and Nobuya Fujimoto
(Kyoto Institute of Technology)

PA-10 (p.50) Wireless Power Supply to Artificial Retina using Poly-Si Thin-Film Transistor

Yuki Yamamoto, Toshio Ishizaki, Tokiyoshi Matsuda, and Mutsumi Kimura (Ryukoku University)

PA-11 (p.52) A 0.5-3.5GHz Wideband CMOS LNA for LTE Application

Wei-Rern Liao and Jeng-Rern Yang (Yuan Ze University)

PA-12 (p.54) A 1.8/2.6 GHz CMOS High Linearity Power Amplifier For LTE Application

Chih-Huang Lin and Jeng-Rern Yang
(Yuan Ze University)

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Naoto Takahashi, Jiesheng Zhang, Yasuhisa Omura and Tadashi Saitoh (Kansai University)

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Kenta Umeda, Yuta Kato, Daiki Nishimoto, Tokiyoshi Matsuda, and Mutsumi Kimura (Ryukoku University)

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PB-04 (p.62) Characteristic Evaluation of Ga-Sn-O Thin Film by Hall Measurement

Kota Imanishi, Asuka Fukawa, Tokiyoshi Matsuda, and Mutsumi Kimura (Ryukoku University)

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Takayuki Murayama¹, Wataru Kuwagata¹, Kazuto Koike¹,
Yoshiyuki Harada¹, Shigehiko Sasa¹, Mitsuaki Yano¹, Shintaro
Kobayashi², Katsuhiko Inaba²
(¹Osaka Institute of Technology, ²Rigaku Corporation)

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Sho Morita, Takuya Nishimura, Jianbo Liang and Naoki Shigekawa
(Osaka City University)

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Sumio Sugisaki, Ryohei Morita, Yuki Yamaguchi, Tokiyoshi
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PC-05 (p.78) Study on Simplification of Processing Elements in Neural Networks using Circuit Simulation

Tomoharu Yokoyama, Nao Nakamura, Hiroki Nakanishi, Yuki
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(Ryukoku University)

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Koki Watada, Hiroki Nakanishi, Nao Nakamura, Tomoharu Yokoyama, Tokiyoshi Matsuda, and Mutsumi Kimura,
(Ryukoku University)

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Yusuke Nozaki, Yoshiya Ikezaki and Masaya Yoshikawa
(Meijo University)

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Yoshiya Ikezaki, Yusuke Nozaki and Masaya Yoshikawa
(Meijo University)

PC-09 (p.86) Electrical Characteristics of Al Foil/Si Junctions by Surface Activated Bonding Method
Katsuya Furuna¹, Jianbo Liang¹, Naoteru Shigekawa¹, Moeko Matsubara², Marwan Dhamrin² and Yoshitaka Nishio²
(¹Osaka City University, ²Toyo Aluminium K.K.)

Session B (Compound Devices)

Chair: Masaaki Kuzuhara, Hiroyuki Sakai

9:30-10:10 – Invited –

B-1 (p.90) High Quality Free-standing GaN Substrates and Their Application to High Breakdown Voltage GaN p-n Diodes

Hiroshi Ohta, Tohru Nakamura, and Tomoyoshi Mishima
(Hosei University)

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Josef Dobeš, František Vejražka, Jakub Popp, and Jan Míchal
(Czech Technical University in Prague)

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10:40-11:00

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11:20-11:40

B-5 (N/A) Warpage Design for Transfer-Molded Power Modules

Seita Iwahashi, Takukazu Otsuka, Masao Saito and Takashi Nakamura (ROHM)

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B-6 (p.100) Estimation of Junction Temperature at Failure of SiC DMOSFETs in UIS Test

Yuichiro Nanen, Masatoshi Aketa, Hirokazu Asahara and Takashi Nakamura (ROHM)

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Session C (Emerging Devices)

Chair: Minoru Noda, Mutsumi Kimura

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Hidekuni Takao (University of Kagawa)

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Tsutomu Kanno (Panasonic Corporation)

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14:30-14:50

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Itaru Raifuku¹, Yasuaki Ishikawa¹, Seigo Ito² and Yukiharu Uraoka¹
(¹Nara Institute of Science and Technology, ²University of Hyogo)

14:50-15:10

C-4 (p.110) Influence of top electrodes to vibration modes in impulse responses of MEMS piezoelectric diaphragms

Tomoki Nishioka, Taiki Nishiumi, Kaoru Yamashita and Minoru Noda
(Kyoto Institute of Technology)

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C-5 (p.112) Simulation and Fabrication of Test Structure for Micro-Wall Solar Cell with Electric-Field Effect

Takashi Kusakabe, Naoto Matsuo and Akira Heya
(University of Hyogo)

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C-6 (p.114) Effects of layered CdTe nano particles on Si solar cells

Tomoki Ogawa, Jianbo Liang, Shingo Imasaki, Taichi Watanabe,
Daegwi Kim and Naoteru Shigekawa (Osaka City University)

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Poster Viewing Session

16:00-17:50 at Poster Room

Short Break (17:50-18:00)

Closing

18:00-18:20 Award and Closing: Yukiharu Uraoka (NAIST)