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The Conference Theme

Electron Devices and Intellectualization of Everything

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Tutorials (in Japanese)

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Koji Hosokawa
(IBM Japan)

Short Break (10:30-10:40)

10:40-11:40 Development of Spintronics and Device Application

Yasuo Ando
(Tohoku University)

Opening

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

Keynote Speeches

Chair: Mutsumi Kimura

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K-1 (p.18) Silicon Neuronal Networks

- another approach to intelligent systems -
Takashi Kohno
(University of Tokyo)

Short Break (13:50-14:00)

Session A (Silicon Devices)

Chairs: Naoto Matsuo / Yukiharu Uraoka

14:00-14:40 - Invited -

A-1 (p.22) Silicon-based Micro Thermoelectric Generator Fabricated by CMOS Compatible Process

Takanobu Watanabe
(Waseda University)

14:40-15:00

A-2 (p.24) An 800-MHz 8-bit High Speed SAR ADC in 16nm FinFET Process

Keisuke Okuno, Koji Obata, Takumi Kato and Koji Sushihara
(Panasonic Corporation)

Short Break (15:00-15:10)

15:10-15:30

A-3 (p.26) Image Sensor with New Trench-gated Phototransistor

Katsuyuki Sakurano, Takaaki Negoro, Kazuhiro Yoneda, Yasukazu Nakatani, Katsuhiko Aisu, Yoshinori Ueda and Hirobumi Watanabe
(Ricoh)

15:30-15:50

A-4 (p.28) Low-Power CMOS LNA for 900-MHz LoRa Application Through Parallel-RC Feedback

Cheng-Shian Shiau and Jeng-Rern Yang
(Yuan Ze University, Taiwan)

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Poster Session

Short Presentation – 2min. each (6/29, 16:00-17:40)

Chairs: A: Akira Hiroki, B: Takatoshi Kato, C: Yuichi Ando

PA-01 (p.32) Study of the inverter circuit with DNA/Si-MOSFET

Hibiki Nakano¹, Naoto Matsuo¹, Tadao Takada¹, Kazushige Yamana¹, Akira Heya¹, Tadashi Sato² and Shin Yokoyama²
(¹University of Hyogo, ²Hiroshima University)

PA-02 (p.34) Physical Mechanisms of Short-Channel Effects of Lateral Double-Gate Tunnel FET

Yoshiaki Mori¹, Shingo Sato¹, Yasuhisa Omura¹ and Abhijit Mallik²
(¹Kansai University, ²University of Calcutta)

PA-03 (p.36) Study on Underwater Wireless Power Transfer via Electric Coupling with a submerged electrode

Mitsuhiro Urano, Kazuki Ata and Akira Takahashi
(National Institute of Technology, Nara College)

PA-04 (p.38) Wireless Power Transmission to Thin-Film Devices

Keigo Misawa, Yuki Yamamoto and Mutsumi Kimura
(Ryukoku University)

PA-05 (p.40) Evaluation of Thin-Film Biostimulating Device using Thin-Film Transistors

Kohei Miyake, Keisuke Tomioka, and Mutsumi Kimura
(Ryukoku University)

PA-06 (p.42) Angular dependence of nonparabolicity factor of silicon band structure

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

PA-07 (p.44) Evaluation platform for the security of in-vehicle systems

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

PA-08 (p.46) Evaluation of PLFSR PUF with Several Implementation Methods for FPGA

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

PB-01 (p.48) Heteroepitaxial growth of ϵ -Ga₂O₃ thin films on cubic (111) GGG substrates by mist chemical vapor deposition

Daisuke Tahara, Hiroyuki Nishinaka, Shota Morimoto and Masahiro Yoshimoto
(Kyoto Institute of Technology)

PB-02 (p.50) Junction-Barrier Schottky Diodes Fabricated with Very Thin Highly Mg-Doped p+-GaN(20nm)/n-GaN Layers Grown on GaN Substrates

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PB-03 (p.52) Optical absorption properties of Ni_{1-x}Mg_xO thin films

Kazutoshi Kinoshita, Tomohiko Nishida, Shoso Shingubara, Mitsuru Inada and Tadashi Saitoh (Kansai University)

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Hiroshi Ohta, Kentaro Hayashi, Tohru Nakamura and Tomoyoshi Mishima
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PB-05 (p.56) Thermal Analysis of Pulsed LED Lighting in Plant Factory

Kazuki Ata, Mitsuhiro Urano and Akira Takahashi
(National Institute of Technology, Nara College)

PB-06 (p.58) Protonation-Induced Change on Optical, Electrical, and Structural Properties of Epitaxial WO₃ Films

Wataru Kuwagata¹, Hiroki Mito¹, Satoshi Murakami¹, Kazuto Koike¹, Yoshiyuki Harada¹, Shigehiko Sasa¹, Mitsuaki Yano¹, Shintaro Kobayashi² and Katsuhiko Inaba²
(¹Osaka Institute of Technology, ²Rigaku Corporation)

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Takahiro Fukumoto, Yasuo Kimura, Masataka Moriya, Yoshinao Mizugaki, Toshiro Ogino, Daisuke Tadaki, Ma Teng, Ayumi Hirano-Iwata and Michio Niwano
(CREST)

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Ryo Tanaka, Yuki Koga, Keisuke Ikushima, Kenta Umeda, Toshimasa Hori, Tomoharu Yokoyama, Koki Watada, Daiki Yamakawa, Mutsumi Kimura and Tokiyoshi Matsuda
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(Kansai University)

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Daiki Yamakawa, Yuki Koga, Keisuke Ikushima, Kenta Umeda, Toshimasa Hori, Tomoharu Yokoyama, Koki Watada, Ryo Tanaka, Mutsumi Kimura and Tokiyoshi Matsuda
(Ryukoku University)

PC-08 (p.74) Characteristic Evaluation of Ga-Sn-O Films deposited using Mist Chemical Vapor Deposition

Ryugo Okamoto, Hiroki Fukushima, Mutsumi Kimura and Tokiyoshi Matsuda
(Ryukoku University)

PC-09 (p.76) Magnetoresistance Effect of Ga-Sn-O Film deposited using Mist Chemical Vapor Deposition

Ryuki Nomura, Asuka Fukawa, Kota Imanishi, Hiroki Fukushima, Ryugo Okamoto, Mutsumi Kimura and Tokiyoshi Matsuda
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Yuanyue Guo, Jie Deng and Dongjin Wang
(USTC, China)

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Session B (Compound Devices)

Chairs: Masaaki Kuzuhara / Hiroyuki Sakai

9:30-10:10 – Invited –

C-1 (p.82) MEMS Mirrors for automotive applications

Toshiyuki Tsuchiya
(Kyoto University)

Short Break (10:10-10:20)

10:20-11:00 – Invited –

B-1 (p.84) Recent Topics of Vertical GaN Power Devices

Tohru Oka
(TOYODA GOSEI)

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B-2 (p.86) Characterization of lightly-doped n- and p-type homoepitaxial GaN on free-standing substrates

Masahiro Horita¹ and Jun Suda²
(¹Kyoto University, ²Nagoya University)

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B-3 (p.88) Effect of Reverse Bias Annealing on the Properties of AlGaIn/GaN MIS-HEMTs with Recessed-gate Structure

Wataru Gamachi, Koutarou Ishii, Joel Asubar, Hirokuni Tokuda and
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Minoru Nakagawa, Seigo Mori, Yuichiro Nanen, Masatoshi Aketa,
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(ROHM)

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Ryota Yamaguchi, Yudai Suzuki, Joel Asubar, Hirokuni Tokuda and
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Keito Kanatani, Satoshi Yoshida, Akio Yamamoto and Masaaki
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Masataka Sasada, Aki Sasakura, Norifumi Takashima, Hirokuni
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Session C (Emerging Devices)

Chairs: Minoru Noda / Mutsumi Kimura

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Kuniharu Takei
(Osaka Prefecture University)

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C-3 (p.102) A Novel SAW Resonator with Incredible High-Performances

Hideki Iwamoto, Tsutomu Takai, Yuichi Takamine, Masahiro Hiramoto and Masayoshi Koshino
(Murata)

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15:40-16:00

C-4 (p.104) Hall Effect in Thin-Film Transistor - Sensitivity Dependence on Applied Voltage -

Takaaki Matsumoto¹, Akito Yoshikawa¹, Tokiyoshi Matsuda¹, Mutsumi Kimura¹, Tokuro Ozawa², Koji Aoki² and Chih-Che Kuo²
(¹Ryukoku University, ²AU Optronics Corporation)

16:00-16:20

C-5 (p.106) MEMS based fabrication of conformal electrode pairs for thermotunneling cooling

Amit Banerjee, Yoshikazu Hirai, Toshiyuki Tsuchiya and Osamu Tabata
(Kyoto University)

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C-6 (p.108) Sensitivity of piezoelectric MEMS ultrasonic sensors using sol-gel PZT films prepared through various pyrolysis temperatures

Shota Nakajima, Jo Shiomi, Kaoru Yamashita and Minoru Noda
(Kyoto Institute of Technology)

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Poster Viewing Session

16:50-18:00 at Poster Room

Closing

18:00-18:20 Award and Closing: Mutsumi Kimura (Ryukoku University)