The Conference Theme

"What's the 2nd Mainstream of Device Technology?"
- For Successive Evolution of Electron Devices-

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Break (16:40-17:00)

Technical Session - EDS (A) (Emerging Devices)

17:00-17:20

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Toan Thanh Dao[1,2], Thu Viet Tran[1], Koichi Higashimine[1], Hiromasa Okada[3], Derrick Mott[1], Shinya Maenosono[1] and Hideyuki Murata[1] ([1]JAIST, [2]University of Transport and Communications, [3]International Test & Engineering Services Co., Ltd.)

17:20-17:40

A-2 **(p.40)** Luminescence Properties of Ge-Implanted SiO2 Layer on Si Substrate for Blue-UV Light Source with Low-Voltage Drive
Nobutoshi Arai[1], Go Miyagawa[2], Shohei Kinoshita[2], Masatomi Harada[1], Hiroshi Tsuji[2], Hiroshi Kotaki[1], Akira Takahashi[1] and Yasuhito Gotoh[2] ([1]SHARP CORPORATION, [2]Kyoto University)

17:40-18:00

A-3 **(p.42)** Frequency mixing with a tetrode vacuum transistor
Yoshiki Yasutomo, Yasuhito Gotoh, Wataru Ohue and Hiroshi Tsuji (Kyoto University)

18:00-18:20

A-4 **(p.44)** Graphene-based electro-optical modulator: concept and analysis
Victor Ryzhii[1], Akira Satou[1], Taiichi Otsuji[1], Maxim Ryzhii[2], Nadezhda Ryabova[2], Stanislav O. Yurchenko[3] and Michael S. Shur[4] ([1]Tohoku University, [2]University of Aizu, [3]Bauman Moscow State Technical University, [4]Rensselaer Polytechnic Institute)

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Special Invited Session - SSCS

9:30-10:20

I-1 **(p.30)** Essence and Technology Direction of ADC Design
Akira Matsuzawa (Tokyo Institute of Technology)

10:20-11:10

I-2 **(p.32)** Implantable CMOS Biomedical Devices
Jun Ohta (Nara Institute of Science and Technology)

Lunch (11:10-13:00)

Technical Session - SSCS

13:00-13:20

S-1 **(p.70)** Co-evaluation of Power Supply Noise of CMOS Microprocessor using On-Board Magnetic Probing and On-Chip Waveform Capturing Techniques
Yuta Sasaki[1], Kumpei Yoshikawa[1], Kouji Ichikawa[2] and Makoto Nagata[1] ([1]Kobe University, [2]DENSO CORPORATION)

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S-2 **(p.72)** Circuit Characteristic Analysis Considering NBTI and PBTI-Induced Delay Degradation
Michitarou Yabuuchi[1] and Kazutoshi Kobayashi[1,2]
([1]Kyoto Institute of Technology, [2]CREST)

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S-3 **(p.74)** Low Power and More Accurate Temperature Sensor with an Integrated Dual Slope AD Converter
Takeshi Nagahisa, Shinichi Kubota and Hirobumi Watanabe
(Ricoh Company, Ltd.)

Break (14:00-14:20)

Poster Session
Short Presentation – 2min. each (5/10, 14:20-16:20)

PA-01 **(p.78)** Transport Properties of Post-Stressed sol-gel-Based TiO2 Films
Yusuke Kondo, Susumu Tamura and Yasuhisa Omura
(Kansai University)

PA-02 **(p.80)** TEM observation of directly bonded interface between Si and SiC
Takamasa Kurumi, Ryosuke Araki, Hiroyuki Kinoshita and Masahiro Yoshimoto (Kyoto Institude of Technology)

PA-03 **(p.82)** Photoluminescence study on recrystallization of ultra-shallow junction towards in-line measurements
Gota Murai[1], Masashi Okutani[1], Hiroki Saikusa[1], Masahiro Yoshimoto[1] and Woo Sik Yoo[2]
([1]Kyoto Institute of Technology, [2]WaferMasters, Inc)

PA-04 **(p.84)** Evaluation of morphology and crystal structure of Si nanowires prepared by single-step metal assisted etching
Takuya Yamaguchi, Tomohiro Shimizu, Fumihiro Inoue, Chounge Wang, Mitsuru Inada, Tadashi Saitoh and Shoso Shingubara (Kansai University)

PA-05 **(p.86)** Electroless Deposition of Barrier and Seed Layers for Via Last Cu-TSV Metalization
Fumihiro Inoue, Tomohiro Shimizu, Ryohei Arima, Hiroshi Miyake and Shoso Shingubara (Kansai University)

PA-06 **(p.88)** Ellipsoidal Band Structure Effects on Current-Voltage Characteristics in Silicon Nanowire Transistors
Yi Yan and Nobuya Mori (Osaka University)

PA-07 **(p.90)** An Estimation of the Inversion Charge Influenced by Quantum Effect for Sub-20nm MOSFETs
Masahiro Yamamoto, Akira Hiroki and Jong Chul Yoon
(Kyoto Institute of Technology)

PA-08 **(p.92)** Structure Dependence of Reduced Saturation Current Influenced by Source and Drain Resistances for 17 nm MOSFETs
Jong Chul Yoon, Akira Hiroki and Kazutoshi Kobayashi
(Kyoto Institute of Technology)

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Byoung-seon Choi, Hyunae Park, Dongsoo Kim and Byoung-deog Choi (Sungkyunkwan University)

PA-10 **(p.96)** Observation of Direct Tunneling Conduction for TDTFTin High Temperatures
Takahiro Kobayashi[1], Naoto Matsuo[1], Akira Heya[1], Yasuhisa Omura[2] and Shin Yokoyama[3]
([1]University of Hyogo, [2]Kansai University, [3]Hiroshima University)

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Shota Kino[1], Yuki Nonomura[1], Akira Heya[1], Naoto Matsuo[1], Kazuhiro Kanda[1], Shuji Miyamoto[1], Sho Amano[1], Takayasu Mochizuki[1], Kaoru Toko[2], Taizoh Sadoh[2] and Masanobu Miyao[2]
([1]University of Hyogo, [2]Kyusyu University)

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Zi-Hao Wang[1], Ping-Chuan Chang[1], Kai-Hsuan Lee[2] and Shoou-Jinn Chang[2]

([1]Kun Shan University, [2]National Cheng Kung University)

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Yasuaki Miyoshi[1], Matsuto Ogawa[1], Satofumi Souma[1] and Hajime Nakamura[2] ([1]Kobe University, [2]IBM Japan)

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Kenji Nakamura and Nobuya Mori (Osaka University)

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Hiroki Takahashi[1], Hideki Minari[1,2] and Nobuya Mori[1,2]

([1]Osaka University, [2]REST)

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(Osaka Institute of Technology)

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Kazuichi Nishisaka[1], Kazuhisa Takayama[2], Toshihiko Maemoto[1], Shigehiko Sasa[1] and Masayoshi Tonouchi[2]

([1]Osaka Institute of Technology, [2]Osaka University)

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Ryuji Morita, Toshihiko Maemoto and Shigehiko Sasa

(Osaka Institute of Technology)

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([1]Kansai University, [2]NICT)

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([1]National Chiao-Tung University, [2]Chung Hua University, [3]I-Shou University and [4]Tse-An Clinic)

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([1]Nara Institute of Science and Technology, [2]CREST)

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Yuri Ohara[1], Prinya Lorchirachoonkul[1], Alberto Ortiz Artero[2], Toshinori Shimanouchi[3], Kaoru Yamashita[1] and Minoru Noda[1]

([1]Kyoto Institute of Technology, [2]Universitat Politècnica de Catalunya, [3]Osaka University)

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Takeshi Ohmi and Yoshinari Kamakura (Osaka University)

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Kazuma Kojima, Susumu Tamura and Yasuhisa Omura

(Kansai University)

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Hiroyuki Nakashima, Mitsuru Inada and Tadashi Saitoh

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Shintaro Otsuka[1], Tomohiro Shimizu[2], Shoso Shingubara[2], Satoshi Kurumi[1], Kaoru Suzuki[1], Nobuyuki Iwata[1], Tadataka Watanabe[1], Yoshiki Takano[1] and Kouichi Takase[1]

([1]Nihon University, [2]Kansai University)

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Shunsuke Tanimori, Mizuki Motoyoshi, Kosuke Katayama, Kyoya Takano and Minoru Fujishima (Hiroshima University)

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Masafumi Suizu, Kosuke Katayama, Mizuki Motoyoshi, Kyoya Takano and Minoru Fujishima
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([1]National Chiao-Tung University, [2]Chung Hua University, [3]I-Shou University and [4]Tse-An Clinic)

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Junki Mizuno[1], Tsutomu Yoshimura[1], Syuhei Iwade[1], Hiroshi Makino[1] and Yoshio Matsuda[2]
([1]Osaka Institute of Technology, [2]Kanazawa University)

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Yasushi Kishiwada, Shun Ueda, Yusuke Miyawaki and Toshimasa Matsuoka (Osaka University)

Poster Session
Cheese and Wine (5/10, 16:20-18:20)

Technical Session - EDS (B)
(Silicon Devices and Related)

10:30-10:50

B-1 **(p.48)** Effect of High-pressure Deuterium Oxide Annealing on Al2O3 Deposited by Plasma-assisted Atomic Layer Deposition at Low Temperature
Koji Yoshitsugu[1], Kosuke Ohara[1], Nozomu Hattori[3], Masahiro Horita[1,2], Yasuaki Ishikawa[1,2] and Yukiharu Uraoka[1,2]
([1]Nara Institute of Science and Technology, [2]CREST and [3]Mitsui Engineering & Shipbuilding Co.,Ltd)

10:50-11:10

B-2 **(p.50)** Nanodot-type Floating Gate Memory with High-density Nanodot Array Formed Utilizing Listeria Ferritin
Hiroki Kamitake[1,2], Kosuke Ohara[1], Mutsunori Uenuma[1,2], Bin Zheng[1,2], Yasuaki Ishikawa[1,2], Ichiro Yamashita[1,2,3] and Yukiharu Uraoka[1,2] ([1]Nara Institute of Science and Technology, [2]CREST and [3]Panasonic Corp.)

11:10-11:30

B-3 **(p.52)** Mechanical strain altered gate and substrate currents in n and p-channel MOSFETs
Wangran Wu, Jiabao Sun and Yi Zhao (Nanjing University)

Lunch (11:30-13:30)

Technical Session - EDS (C)
(Compound Semiconductor Device)

13:30-13:50

C-1 **(p.56)** Fundamental Study on Junction Termination Structures for Ultrahigh-Voltage SiC PiN Diodes
Hiroki Niwa, Jun Suda and Tsunenobu Kimoto (Kyoto University)

13:50-14:10

C-2 **(p.58)** Analysis of Electron Traps in SiO2/IGZO Interface by Cyclic Capacitance-Voltage Method

Yoshihiro Ueoka, Mami Fujii, Haruka Yamazaki, Masahiro Horita, Yasuaki Ishikawa and Yukiharu Uraoka (Nara Institute of Science and Technology)

14:10-14:30

C-3 **(p.60)** Dependence of Semiconductor Nanoparticle Size on Spray Condition in Electro-Spray Deposition Method

Takahiro Doe[1,2], Shinji Araki[1,2], Masahiro Horita[1,2], Takashi Nishida[1,2], Yasuaki Ishikawa[1,2] and Yukiharu Uraoka[1,2] ([1]Nara Institute of Science and Technology, [2]CREST)

14:30-14:50

C-4 **(p.62)** Highly reliable a-InGaZnO thin film transistors with new SiNx gate insulators

Haruka Yamazaki[1], Mami Fujii[1], Yoshihiro Ueoka[1], Yasuaki Ishikawa[1], Masaki Fujiwara[2], Eiji Takahashi[2] and Yukiharu Uraoka[1] ([1]Nara Institute of Science and Technology, [2]Nissin Electric Co., Ltd.)

14:50-15:10

C-5 **(p.64)** Fabrication of Nano-patterns Using Quick Gel-nanoimprint Process

Shinji Araki[1], Min Zhang[1], Takahiro Doe[1], Li Lu[1], Masahiro Horita[1,2], Takashi Nishida[1,2], Yasuaki Ishikawa[1,2] and Yukiharu Uraoka[1,2] ([1]Nara Institute of Science and Technology, [2]CREST)

15:10-15:30

C-6 **(p.66)** High-Resistance ZrN Thin Film Resistor For Small and Low-cost MMIC Switch

Masahiro Shibata, Hiroaki Tokuya, Satoshi Yamamoto, Tsunekazu Saimei, Takatoshi Kato and Tadao Fukura

(Murata Manufacturing Co., Ltd.)

Break (15:30-15:50)

Special Invited Session - EDS

15:50-16:40

I-3 **(p.34)** New Communication Paradigm by Compelling Wireless Technology
Yuichi Kado (Kyoto Institute of Technology)

Break (16:40-16:50)

16:50-17:10 Award Presentation: Yasuhisa Omura (Kansai University)
17:10-17:20 Closing Remark: Yasuhisa Omura (Kansai University)