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PLENARY SESSION 9:00 – 16:40

Reception Hall, Faculty Club

9:00 **Welcome Remarks**

9:10 **Opening Address**

Taizo Muta, President, Hiroshima University

9:30 **Recent Progress of the COE**

Atsushi Iwata, COE Leader, Graduate School of Advanced Sciences of Matter, Hiroshima University

9:50 **[Invited] System LSI: Challenges and Opportunities**

Tadahiro Kuroda, Keio University

10:30 **[Invited] High-k Gate Dielectrics for Future CMOS Technology**

T. P. Ma, Yale University

11:10 **[Invited] Sub-20 nm Novel Silicon-Based Transistors**

J. C. S. Woo, UCLA

11:50 – 13:10 Lunch Break

13:10 **[Invited] Perspective on Emerging Devices and their Impact on Scaling Technologies**

S. Biesemans, IMEC

13:50 **[Invited] Device Simulation for Nano MOSFET and Scaling Issues**

Y. J. Park, Seoul National University

14:30 **[Invited] Conventional Bulk and Bulk+ Architectures for 45 nm Node**

F. Boeuf, ST Microelectronics

15:10 – 15:20 Break

15:20 **[Invited] Current Status of PVD Hf-Based High-k Gate Stack-Process Improvement on Drive Current**

Masaaki Niwa, Matsushita Electric

16:00 **Current Activities in Device and Process R & D of the COE**

H. Sunami, S. Miyazaki, K. Shibahara, A. Nakajima, S. Yokoyama, and T. Kikkawa, Hiroshima University

POSTER SESSION 16:40 –18:00

Lounge, Faculty Club

- P-01 A 3D Integration Architecture utilizing Wireless Interconnections for Implementing Hyper Brains**
Atsushi Iwata, Mamoru Sasaki, Takeshi Yoshida, Seiji Kameda, Hiroshi Ando, Masahiro Ono, Kan'ya Sasaki, Daisuke Arizono, and Takamaro Kikkawa
- P-02 A 0.95mW/1.0Gbps Spiral-Inductor Based Wireless Chip-Interconnect with Asynchronous Communication Scheme**
Mamoru Sasaki and Atsushi Iwata
- P-03 A brain-type vision system using a 3-dimensional integration with local and global wireless interconnections**
Seiji Kameda, Nobuo Sasaki, Daisuke Arizono, Masaki Odahara, Mamoru Sasaki, Takamaro Kikkawa, and Atsushi Iwata
- P-04 Robust Face Recognition Methods under Illumination Variations toward Hardware Implementation on 3DCSS**
H. Ando, N. Fuchigami, M. Sasaki, and A. Iwata
- P-05 A Layout Method of 20GHz Global Clock Distribution**
Mitsuru Shiozaki, Atsushi Mori, Atsushi Iwata, and Mamoru Sasaki
- P-06 A Robust Modular Learning Model with Addition and Integration of Modules**
Masahiro Ono, Mamoru Sasaki, and Atsushi Iwata
- P-07 A window-based stereoscopic system using a weighted average of costs aggregated with window size reduction**
Kan'ya Sasaki, Seiji Kameda, and Atsushi Iwata
- P-08 A CMOS RF Front-End using Radiation Oscillator for Short-Range Wireless Communication**
Toru Mukai, Atsushi Iwata, and Mamoru Sasaki
- P-09 A 1V Supply Low noise CMOS Amplifier Using Noise Reduction Technique of Autozeroing and Chopper Stabilization**
Yoshihiro Masui, Takeshi Yoshida, Takayuki Mashimo, Mamoru Sasaki, and Atsushi Iwata
- P-10 Systems with Recognition and Learning Capability Based on Associative Memory**
Hans Juergen Mattausch and Tetsushi Koide
- P-11 Real-Time Multi-Object Tracking Based on Highly Parallel Image Segmentation and Pattern Matching**
Tetsushi Koide, Hans Juergen Mattausch, Takashi Morimoto, Hidekazu Adachi, and Kosuke Yamaoka
- P-12 Associative Memory Based Hardware Design for an OCR System and Prototyping with FPGA**
Ali Ahmadi, Md. Anwarul Abedin, Kazuhiro Kamimura, Yoshinori Shirakawa, Kazuhiro Takemura, Hans Juergen Mattausch, and Tetsushi Koide

- P-13 Fully-Parallel Associative Memory Architecture Realizing Minimum Euclidean Distance Search**
Md. Anwarul Abedin, Kazuhiro Kamimura, Ali Ahmadi, Hans Juergen Mattausch, and Tetsushi Koide
- P-14 Image-Scan Video Segmentation Architecture Based on Embedded Memory Technology**
Takashi Morimoto, Hidekazu Adachi, Kosuke Yamaoka, Tetsushi Koide, and Hans Juergen Mattausch
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Takeshi Kumaki, Yasuto Kuroda, Tetsushi Koide, Hans Juergen Mattausch, Hideyuki Noda, Katsumi Dosaka, Kazutami Arimoto, and Kazunori Saito
- P-16 Unified Data/Instruction Cache with Distributed Crossbar, Hidden Precharge Pipeline and Dynamic CMOS Logic**
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Yoshioki Isobe, Dondee Navarro, Youichi Takeda, Kiyohito Hara, Tatsuya Ezaki, and Mitiko Miura-Mattausch
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T. Kikkawa, N. Sasaki, P. K. Saha, K. Kimoto, and M. Nitta
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Masayuki Kitaura, Yoshio Mizukane, Shin Yokoyama, and Mitiko Miura-Mattausch
- P-47 Development of Photodetectors using Si Quantum Dots**
Mitsuhisa Ikeda, Masayuki Kitaura, Seiichi Miyazaki, and Shin Yokoyama
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Tetsuo Tabei, Kazuhiko Maeda, Shin Yokoyama, and Hideo Sunami
- P-49 Smooth Cu Thin Film Fabricated by H_2 Addition Sputtering**
Masahiro Ooka and Shin Yokoyama
- P-50 Characterization and application of SiON gate dielectrics**
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Shiyang Zhu, Anri Nakajima, Takuo Ohashi, and Hideharu Miyake
- P-52 [Invited] Dynamic Behavior of Human Eye**
Roland Kempf, Yuichi Kurita, Yoshichika Iida, Makoto Kaneko, Hiromu Mishima, Hidetoshi Tsukamoto, and Eiichiro Sugimoto

