

## Paper List

*January–December, 2016*

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- E2016-1(C) [Invited Paper] Wide dynamic range LOFIC CMOS image sensors: principle, achievements, and extendibility  
International Forum on Detectors for Photon Science (IFDEPS), p.9, February 2016.  
Rihito Kuroda and Shigetoshi Sugawa
- E2016-2(F) Impact on doping concentration on 1/f noise performances of accumulation-mode Si(100) n-MOSFETs  
Japanese Journal of Applied Physics, Vol.55, 04ED08, March 2016.  
Philippe Gaubert, Akinobu Teramoto, Shigetoshi Sugawa  
<https://doi.org/10.7567/JJAP.55.04ED08>
- E2016-3(F) Proposal of tunneling- and diffusion-current hybrid MOSFET: A device simulation study  
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Kiichi Furukawa, Akinobu Teramoto, Rihito Kuroda, Tomoyuki Suwa, Keiichi Hashimoto, Takashi Kojiri, and Shigetoshi Sugawa  
<https://doi.org/10.7567/JJAP.55.04ED12>
- E2016-4(F) Analysis and reduction of leakage current of 2 kV monolithic isolator with wide trench spiral isolation structure  
Japanese Journal of Applied Physics, Vol.55, No.4S, 04EF07, 2016.  
Yusuke Takeuchi, Rihito Kuroda and Shigetoshi Sugawa  
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- E2016-5(C) [Invited Paper] Random telegraph noise measurement and analysis based on arrayed test circuit toward high S/N CMOS image sensors  
2016 International Conference on Microelectronic Test Structures (ICMTS), 3-1, pp.46-51, Yokohama, March 2016.  
Rihito Kuroda, Akinobu Teramoto, and Shigetoshi Sugawa  
<https://doi.org/10.1109/ICMTS.2016.7476172>
- E2016-6(F) Low Interface Trap Density and High Breakdown Electric Field SiN Films on GaN Formed by Plasma Pretreatment Using Microwave-Excited Plasma-Enhanced Chemical Vapor Deposition  
IEEE Transactions on Electron Devices, Vol.63, Issue4, pp.1795-1801, April 2016.  
Tadashi Watanabe, Akinobu Teramoto, Yukihiisa Nakao, Shigetoshi Sugawa, and Tadahiro Ohmi  
<https://doi.org/10.1109/TED.2016.2525766>

- E2016-7(F) Detection of short range order in SiO<sub>2</sub> thin-films by grazing-incidence wide and small-angle X-ray scattering  
Journal of Applied Physics, Vol.119, 154103(2016), April 2016.  
Kohki Nagata, Atsushi Ogura, Ichiro Hirosawa, Tomoyuki Suwa, Akinobu Teramoto and Tadahiro Ohmi  
<https://doi.org/10.1063/1.4947053>
- E2016-8(F) Analysis and Reduction Technologies of Floating Diffusion Capacitance in CMOS Image Sensor for Photon-Countable Sensitivity  
ITE Transactions on Media Technology and Applications, Vol.4, No.2, pp.91-98, April 2016.  
Fumiaki Kusuhara, Shunichi Wakashima, Satoshi Nasuno, Rihito Kuroda, Shigetoshi Sugawa  
<https://doi.org/10.3169/mta.4.91>
- E2016-9(F) Floating Capacitor Load Readout Operation for Small, Low Power Consumption and High S/N Ratio CMOS Image Sensors  
ITE Transactions on Media Technology and Applications, Vol.4, No.2, pp.99-108, April 2016.  
Shunichi Wakashima, Fumiaki Kusuhara, Rihito Kuroda, Shigetoshi Sugawa  
<https://doi.org/10.3169/mta.4.99>
- E2016-10(F) A High Quantum Efficiency High Readout Speed 1024 Pixel Ultraviolet-Visible-Near Infrared Waveband Photodiode Array  
ITE Transactions on Media Technology and Applications, Vol.4, No.2, pp.109-115, April 2016.  
Rihito Kuroda, Takahiro Akutsu, Yasumasa Koda, Kenji Takubo, Hideki Tominaga, Ryuta Hirose, Tomohiro Karasawa, Shigetoshi Sugawa  
<https://doi.org/10.3169/mta.4.109>
- E2016-11(F) A CMOS Image Sensor with 240  $\mu\text{V}/e^-$  Conversion Gain, 200 ke- Full Well Capacity, 190-1000 nm Spectral Response and High Robustness to UV light  
ITE Transactions on Media Technology and Applications, Vol.4, No.2, pp. 116-122, April 2016.  
Satoshi Nasuno, Shunichi Wakashima, Fumiaki Kusuhara, Rihito Kuroda, Shigetoshi Sugawa  
<https://doi.org/10.3169/mta.4.116>
- E2016-12(F) A 20Mfps Global Shutter CMOS Image Sensor with Improved Light Sensitivity and Power Consumption Performances  
ITE Transactions on Media Technology and Applications, Vol.4, No.2, pp. pp.149-154, April 2016.  
Rihito Kuroda, Yasuhisa Tochigi, Ken Miyauchi, Tohru Takeda, Hidetake Sugo, Fan Shao, Shigetoshi Sugawa  
<https://doi.org/10.3169/mta.4.149>

- E2016-13(C) [Invited Paper] Advanced CMOS Image Sensors Development for High Sensitivity, High Speed and Wide Spectral Response  
International Workshop on Radiation Resistant Sensors and Related Technologies for Nuclear Power Plant Decommissioning (Collaborative Laboratories for Advanced Decommissioning Science, JAPAN ATOMIC ENERGY AGENCY), p.44, April 2016.  
Rihito Kuroda and Shigetoshi Sugawa
- E2016-14(C) Introduction of a High Selectivity Etching Process with Advanced SiNx Etch Gas in the Fabrication of FinFET Structures  
229th Meeting of The Electrochemical Society, Abs.1166, San Diego, May 2016.  
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- E2016-15(P) Introduction of a High Selectivity Etching Process with Advanced SiNx Etch Gas in the Fabrication of FinFET Structures  
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T. Kojiri, T. Suwa, K. Hashimoto, A. Teramoto, R. Kuroda, and S. Sugawa  
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- E2016-16(C) Low Leakage Current Al<sub>2</sub>O<sub>3</sub> Metal-Insulator-Metal Capacitors Formed By Atomic Layer Deposition at Optimized Process Temperature and O<sub>2</sub> Post Deposition Annealing  
229th Meeting of The Electrochemical Society, Abs.1174, San Diego, May 2016.  
Yasumasa Koda, Hisaya Sugita, Tomoyuki Suwa, Rihito Kuroda, Tetsuya Goto, Akinobu Teramoto and Shigetoshi Sugawa  
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- E2016-17(P) Low Leakage Current Al<sub>2</sub>O<sub>3</sub> Metal-Insulator-Metal Capacitors Formed By Atomic Layer Deposition at Optimized Process Temperature and O<sub>2</sub> Post Deposition Annealing  
ECS Transactions, Vol.72, Issue 4, Silicon Compatible Materials, Processes, and Technologies for Advanced Integrated Circuits and Emerging Applications 6, pp.91-100, May 2016.  
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<http://doi.org/10.1149/07204.0091ecst>
- E2016-18(F) High Quality Pentacene Film Formation on N-Doped LaB<sub>6</sub> Donor Layer  
IEICE TRANSACTIONS on Electronics, Special Section on Fundamentals and Applications of Advanced Semiconductor Devices 2015, Vol.E99-C, No.5, pp.535-540, May 2016.  
Yasutaka MAEDA, Shun-ichiro OHMI, Tetsuya GOTO, Tadahiro OHMI  
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- E2016-19(C) A Dead-time Free Global Shutter CMOS Image Sensor with in-pixel LOFIC and ADC using Pixel-wise Connections  
Symposium on VLSI Circuits, pp.224-225, Honolulu, June 2016.  
Hidetake Sugo, Shunichi Wakashima, Rihito Kuroda, Yuichiro Yamashita, Hirofumi Sumi, Tzu-Jui Wang, Po-Sheng Chou, Ming -Chieh Hsu and Shigetoshi  
<https://doi.org/10.1109/VLSIC.2016.7573544>
- E2016-20(C) Effect of Nitrogen-Doped LaB<sub>6</sub> Interfacial Layer on Device Characteristics of Pentacene-Based OFET  
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Yasutaka Maeda, Shun-ichiro Ohmi, Tetsuya Goto, Tadahiro Ohmi
- E2016-21(F) Evaluating Work-Function and Composition of ErSix on Various Surface Orientation of Silicon  
ECS Journal of Solid State Science and Technology, Vol.5, Issue10, pp. 608-613, September 2016.  
Akinobu Teramoto, Hiroaki Tanaka, Tomoyuki Suwa, Tetsuya Goto, Rihito Kuroda, Tsukasa Motoya, Kazumasa Kawase, and Shigetoshi Sugawa  
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- E2016-22(F) Effects of Oxygen Microbubbles on Photoresist Layers under Hot Water Conditions  
Journal of Photopolymer Science and Technology, Vol. 29, No. 4, pp.643-646, September 2016  
Masayoshi Takahashi, Yasuyuki Shirai, Akinobu Teramoto, Tunejirou Takahashi, Katsumi Tatera, Kouhei Matsuura, Hideo Horibe  
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- E2016-23(C) Formation Technology of Flat Surface after Selective-Epitaxial-Growth on Ion-implanted (100) Oriented Thin SOI Wafers  
Extended Abstracts of the 2016 International Conference on Solid State Devices and Materials, PS-1-03, pp.649-650, Tsukuba, September 2016.  
K. Furukawa, A. Teramoto, R. Kuroda, T. Suwa, K. Hashimoto, S. Sugawa, D. Suzuki, Y. Chiba, K. Ishii, A. Shimizu, and K. Hasebe
- E2016-24(C) Low Frequency Noise of Accumulation-Mode n-and p-MOSFETs fabricated on (110) Crystallographic Silicon-Oriented Wafers  
Extended Abstracts of the 2016 International Conference on Solid State Devices and Materials, PS-3-11, pp.717-718, Tsukuba, September 2016.  
Philippe Gaubert, Akinobu Teramoto and Shigetoshi Sugawa
- E2016-25(C) Oxidizing Species Dependence of the Interface Reaction during Atomic-Layer-Deposition Process and Post-Deposition-Anneal  
PACIFIC RIM MEETING ON ELECTROCHEMICAL AND SOLID-STATE SCIENCE (PRIME2016) /230<sup>th</sup> ECS Meeting, Meeting Abstracts, Abs.1836, G02-1836, Honolulu, Hawaii, October 2016.

Tomoyuki Suwa, Akinobu Teramoto, Yasumasa Koda, Masaya Saito, Hisaya Sugita, Marie Hayashi, Junichi Tsuchimoto, Hidekazu Ishii, Yoshinobu Shiba, Yasuyuki Shirai and Shigetoshi Sugawa  
<https://doi.org/10.1149/MA2016-02/27/1836>

- E2016-26(P) Oxidizing Species Dependence of the Interface Reaction during Atomic-Layer-Deposition Process and Post-Deposition-Anneal  
ECS Transactions, Vol.75, Issue 5, Semiconductors, Dielectrics, and Metals for Nanoelectronics 14, pp.207-214, October 2016.  
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<https://doi.org/10.1149/07505.0207ecst>
- E2016-27(C) A High Sensitivity Compact Gas Concentration Sensor using UV Light and Charge Amplifier Circuit  
IEEE Sensors 2016, pp.877-879, Orlando, October 2016.  
Hidekazu Ishii, Masaaki Nagase, Nobukazu Ikeda, Yoshinobu Shiba, Yasuyuki Shirai, Rihito Kuroda and Shigetoshi Sugawa  
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- E2016-28(C) 190-1100 nm Waveband Multispectral Imaging System using High Light Resistance Wide Dynamic Range CMOS Image Sensor  
IEEE Sensors 2016, pp.283-285, Orlando, October 2016.  
Yasuyuki Fujihara, Satoshi Nasuno, Shunichi Wakashima, Yusuke Aoyagi, Rihito Kuroda and Shigetoshi Sugawa  
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- E2016-29(C) [Invited Paper] High Quality Film and Interface Formation using Appropriate Reaction Species  
AVS 63<sup>rd</sup> International Symposium & Exhibition, Plasma Science and Technology, Session PS+TF-WeA, Nashville, November 2016.  
Akinobu Teramoto
- E2016-30(C) [Invited Paper] A High Sensitivity 20Mfps CMOS Image Sensor with Readout speed of 1Tpixel/sec for Visualization of Ultra-high Speed Phenomena  
The 31st International Congress on High-speed Imaging and Photonics, Abstract p.163/ Proceeding pp.68-73, November 2016.  
Rihito Kuroda and Shigetoshi Sugawa
- E2016-31(C) [Invited Paper] A Dead-time free global shutter stacked CMOS image sensor with in-pixel LOFIC and ADC using pixel-wise connections  
3rd International Workshop on Image Sensors and Imaging Systems (IWISS2016) (Group of Information Photonics (IPG) +CMOS Working Group, the Optical Society of Japan & Technical Group on Information Sensing Technologies (IST), the Institute of Image Information and Television Engineers (ITE)), Vol.40, NO.40, pp.13-14, November 2016.  
Rihito Kuroda, Hidetake Sugo, Shunichi Wakashima, Shigetoshi Sugawa

- E2016-32(C) 190-1100 nm waveband multispectral imaging system using high UV-light resistance 94dB dynamic range CMOS image sensor  
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Yasuyuki Fujihara, Satoshi Nasuno, Shunichi Wakashima, Yusuke Aoyagi, Rihito Kuroda, Shigetoshi Sugawa
- E2016-33(F) Mirror-field confined compact plasma source using permanent magnet for plasma processings  
Review of Scientific Instruments, Vol.87, Issue12, 123508, December 2016.  
Tetsuya Goto, Kei-ichiro Sato, Yuki Yabuta, and Shigetoshi Sugawa  
<https://doi.org/10.1063/1.4972294>
- E2016-34(C) Electrical Characteristics of Si-Doped IGZO TFTs Fabricated Using Ion Implantation  
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Tetsuya Goto, Fuminobu Imaizumi, Shigetoshi Sugawa
- E2016-35(C) An Over 1Mfps Global Shutter CMOS Image Sensor with 480 Frame Storage Using Vertical Analog Memory Integration  
IEEE International Electron Devices Meeting, pp.212-215, San Francisco, December 2016.  
Manabu Suzuki, Masashi Suzuki, Rihito Kuroda, Yuki Kumagai, Akira Chiba, Noriyuki Miura, Naoya Kuriyama, Shigetoshi Sugawa  
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