

## Paper List

*January–December, 2015*

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- E2015-1(F) Atomically Flattening of Si Surface of Silicon on Insulator and Isolation-Patterned Wafers  
Japanese Journal of Applied Physics, Vol.54, 04DA04, February 2015.  
Tetsuya Goto, Rihito Kuroda, Naoya Akagawa, Tomoyuki Suwa, Akinobu Teramoto, Xiang Li, Toshiki Obara, Daiki Kimoto, Shigetoshi Sugawa, Tadahiro Ohmi, Yutaka Kamata, Yuki Kumagai, and Katsuhiko Shibusawa  
<https://doi.org/10.7567/JJAP.54.04DA04>
- E2015-2(F) Analysis of breakdown voltage of area surrounded by multiple trench gaps in 4 kV monolithic isolator for communication network interface  
Japanese Journal of Applied Physics, Vol.54, No.4S, 04DB01-1-04DB01-6, February 2015.  
Yusuke Takeuchi, Rihito Kuroda and Shigetoshi Sugawa  
<https://doi.org/10.7567/JJAP.54.04DB01>
- E2015-3(C) Analysis of Pixel Gain and Linearity of CMOS Image Sensor using Floating Capacitor Load Readout Operation  
SPIE-IS&T Electronic Imaging, 9403, pp.94030E-1-94030E-10, San Francisco February, 2015.  
Shunichi Wakashima, Fumiaki Kusuhara, Rihito Kuroda, Shigetoshi Suagawa  
<https://doi.org/10.1117/12.2083111>
- E2015-4(C) [Invited Paper] UV/VIS/NIR imaging technologies: challenges and opportunities  
SPIE Sensing Technology and Applications, 9481, pp.948108-1-948108-8, Baltimore, May, 2015.  
Rihito Kuroda, Shigetoshi Sugawa  
<https://doi.org/10.1117/12.2180060>

- E2015-5(C) Crystallinity Improvement of Ferroelectric BiFeO<sub>3</sub> Thin Film by Oxygen Radical Treatment  
227th Meeting of The Electrochemical Society, Abs.1351, Chicago, May 2015.  
Fuminobu Imaizumi, Tetsuya Goto, Akinobu Teramoto, Shigetoshi Sugawa and Tadahiro Ohmi
- E2015-6(P) Crystallinity Improvement of Ferroelectric BiFeO<sub>3</sub> Thin Film by Oxygen Radical Treatment  
ECS Transactions, Vol.66, Issue5, Advanced CMOS-Compatible Semiconductor Devices 17, pp.261-267, May 2015.  
F. Imaizumi, T. Goto, A. Teramoto, S. Sugawa, and T. Ohmi  
<https://doi.org/10.1149/06605.0261ecst>
- E2015-7(C) Ultra-Low Temperature Flattening Technique of Silicon Surface Using Xe/H<sub>2</sub> Plasma  
227th Meeting of The Electrochemical Society, Abs.1353, Chicago, May 2015  
Tomoyuki Suwa, Akinobu Teramoto, Tetsuya Goto, Masaki Hirayama, Shigetoshi Sugawa and Tadahiro Ohmi
- E2015-8(P) Ultra-Low Temperature Flattening Technique of Silicon Surface Using Xe/H<sub>2</sub> Plasma  
ECS Transactions, Vol.66, Issue5, Advanced CMOS-Compatible Semiconductor Devices 17, pp.277-283, May 2015.  
Tomoyuki Suwa, Akinobu Teramoto, Tetsuya Goto, Masaki Hirayama, Shigetoshi Sugawa, and Tadahiro Ohmi  
<https://doi.org/10.1149/06605.0277ecst>
- E2015-9(C) Low Temperature Atomically Flattening of Si Surface of Shallow Trench Isolation Pattern 227th Meeting of The Electrochemical Society, Abs.1354, Chicago, May 2015  
Tetsuya Goto, Rihito Kuroda, Tomoyuki Suwa, Akinobu Teramoto, Naoya Akagawa, Daiki Kimoto, Shigetoshi Sugawa, Tadahiro Ohmi, Yutaka Kamata, Yuki Kumagai and Katsuhiko Shibusawa

- E2015-10(P) Low Temperature Atomically Flattening of Si Surface of Shallow Trench Isolation Pattern  
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T. Goto, R. Kuroda, T. Suwa, A. Teramoto, N. Akagawa, D. Kimoto, S. Sugawa, T. Ohmi, Y. Kamata, Y. Kumagai, and K. Shibusawa  
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- E2015-11(C) Effect of Hydrogen on Silicon Nitrides Formation by Microwave Excited Plasma Enhanced Chemical Vapor Deposition  
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Akinobu Teramoto, Yukihiisa Nakao, Tomoyuki Suwa, Keiichi Hashimoto, Tsukasa Motoya, Masaki Hirayama, Shigetoshi Sugawa, and Tadahiro Ohmi
- E2015-12(P) Effect of Hydrogen on Silicon Nitrides Formation by Microwave Excited Plasma Enhanced Chemical Vapor Deposition  
ECS Transactions, Vol.66, Issue 4, Silicon Compatible Materials, Processes, and Technologies for Advanced Integrated Circuits and Emerging Applications 5, pp.151-159, May 2015.  
A. Teramoto, Y. Nakao, T. Suwa, K. Hashimoto, T. Motoya, M. Hirayama, S. Sugawa, and T. Ohmi  
<https://doi.org/10.1149/06604.0151ecst>
- E2015-13(C) Effect of Process Temperature of Al<sub>2</sub>O<sub>3</sub> Atomic Layer Deposition Using Accurate Process Gasses Supply System  
227th Meeting of The Electrochemical Society, Abs.1399, Chicago, May 2015.  
Hisaya Sugita, Yasukasa Koda, Tomoyuki Suwa, Rihito Kuroda, Tetsuya Goto, Hidekazu Ishii, Satoru Yamashita, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi
- E2015-14(P) Effect of Process Temperature of Al<sub>2</sub>O<sub>3</sub> Atomic Layer Deposition Using Accurate Process Gasses Supply System  
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E2015-15(C) Surface Metal Cleaning of GaN Surface Based on Redox Potential of Cleaning Solution

227th Meeting of The Electrochemical Society, Abs.1404, Chicago, May 2015.

Kenji Nagao, Kenichi Nakamura, Akinobu Teramoto, Yasuyuki Shirai, Fuminobu Imaizumi, Tomoyuki Suwa, Shigetoshi Sugawa, and Tadahiro Ohmi

E2015-16(P) Surface Metal Cleaning of GaN Surface Based on Redox Potential of Cleaning Solution

ECS Transactions, Vol.66, Issue 7, State-of-the-Art Program on Compound Semiconductors 57 (SOTAPOCS 57), pp.11-21, May 2015.

K. Nagao, K. Nakamura, A. Teramoto, Y. Shirai, F. Imaizumi, T. Suwa, S. Sugawa, and T. Ohmi

<https://doi.org/10.1149/06607.0011ecst>

E2015-17(C) Low Work Function LaB6 thin Films Prepared By Nitrogen Doped LaB6 target Sputtering

227th Meeting of The Electrochemical Society, Abs.2288, Chicago, May 2015.

Hidekazu Ishii, Kentaro Takahashi, Tetsuya Goto, Shigetoshi Sugawa and Tadahiro Ohmi

<https://doi.org/10.1149/MA2015-01/44/2288>

E2015-18(P) Low Work Function LaB6 Thin Films Prepared By Nitrogen Doped LaB6 Target Sputtering

ECS Transactions, Vol.66, Issue 41, Solid State Topics General Session, pp.23-28, May 2015.

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- E2015-19(F) Structural Analyses of Thin SiO<sub>2</sub> Films Formed by Thermal Oxidation of Atomically Flat Si Surface by Using Synchrotron Radiation X-Ray Characterization  
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<https://doi.org/10.1149/2.0131508jss>
- E2015-20(C) High quality pentacene film formation on nitrogen-doped LaB<sub>6</sub> donor layer  
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Yasutaka Maeda, Shun-ichiro Ohmi, Tetsuya Goto, and Tadahiro Ohmi
- E2015-21(C) Drastic Suppression of the 1/f Noise in MOSFETs: Fundamental Fluctuations of Mobility Rather Than Induced Mobility Fluctuations  
2015 International Conference on Noise and Fluctuations (ICNF2015), Invited, Xi'an, June 2015.  
Philippe Gaubert, Akinobu Teramoto, Shigetoshi Sugawa  
<https://doi.org/10.1109/ICNF.2015.7288580>
- E2015-22(C) A 80% QE High Readout Speed 1024 Pixel Linear Photodiode Array for UV-VIS-NIR Spectroscopy  
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Rihito Kuroda, Takahiro Akutsu, Yasumasa Koda, Kenji Takubo, Hideki Tominaga, Ryuuta Hirose, Tomohiro Karasawa and Shigetoshi Sugawa
- E2015-23(C) Analysis and Reduction of Floating Diffusion Capacitance Components of CMOS Image Sensor for Photon-Countable Sensitivity  
INTERNATIONAL IMAGE SENSOR WORKSHOP, pp.120-123, Vaals, The Netherlands, June 2015.  
Fumiaki Kusuhara, Shunichi Wakashima, Satoshi Nasuno, Rihito

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- E2015-24(C) A 20Mfps Global Shutter CMOS Image Sensor with Improved Sensitivity and Power Consumption  
INTERNATIONAL IMAGE SENSOR WORKSHOP, pp. 166-169, Vaals, The Netherlands, June 2015.  
Shigetoshi Sugawa, Rihito Kuroda, Tohru Takeda, Fan Shao, Ken Miyauchi and Yasuhisa Tochigi
- E2015-25(C) A CMOS Image Sensor with  $240\mu\text{V}/e^-$  Conversion Gain,  $200ke^-$  Full Well Capacity and 190-1000nm Spectral Response  
INTERNATIONAL IMAGE SENSOR WORKSHOP, pp.312-315, Vaals, The Netherlands, June 2015.  
Satoshi Nasuno, Shunichi Wakashima, Fumiaki Kusuhara, Rihito Kuroda, Shigetoshi Sugawa
- E2015-26(C) A Linear Response Single Exposure CMOS Image Sensor with  $0.5e^-$  Readout Noise and  $76ke^-$  Full Well Capacity  
SYMPOSIUM ON VLSI CIRCUITS, pp.C88-C89, Kyoto, 2015.  
Shunichi Wakashima, Fumiaki Kusuhara, Rihito Kuroda and Shigetoshi Sugawa  
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- E2015-27(F) Measurement and Analysis of Seismic Response in Semiconductor Manufacturing Equipment  
IEEE Transactions on Semiconductor Manufacturing, Vol.28, Issue3, pp.289-296, August 2015.  
Kaori Komoda, Masashi Sakuma, Masakazu Yata, Yoshio Yamazaki, Fuminobu Imaizumi, Rihito Kuroda, and Shigetoshi Sugawa  
<https://doi.org/10.1109/TSM.2015.2427807>
- E2015-28(C)  $1/f$  Noise Performances and Noise Sources of Accumulation Mode Si(100) n-MOSFETs  
Extended Abstracts of the 2015 International Conference on Solid State Devices and Materials, PS-3-7, pp.96-97, Sapporo, September 2015.  
Philippe Gaubert, Akinobu Teramoto, Shigetoshi Sugawa

- E2015-29(C) Proposal of Tunneling and Diffusion Current Hybrid MOSFET  
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- E2015-30(C) Analysis and reduction of leakage current of 2kV monolithic isolator with wide trench spiral isolation structure  
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Yusuke Takeuchi, Rihito Kuroda and Shigetoshi Sugawa
- E2015-31(C) Effect of Oxygen Impurity on Nitrogen Radicals in Post-Discharge Flows  
228th Meeting of The Electrochemical Society, Abs.1848, Phoenix, October 2015.  
Yoshinobu Shiba, Akinobu Teramoto, Tomoyuki Suwa, Kensuke Watanabe, Shinichi Nishimura, Yasuyuki Shirai, and Shigetoshi Sugawa  
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- E2015-32(P) Effect of Oxygen Impurity on Nitrogen Radicals in Post-Discharge Flows  
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Y. Shiba, A. Teramoto, T. Suwa, K. Watanabe, S. Nishimura, Y. Shirai, and S. Sugawa  
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- E2015-33(W) Electrical Properties of MOSFETs Introducing Atomically Flat Gate Insulator/Silicon Interface  
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- E2015-34(F) Observation of sputtering of yttrium from Y<sub>2</sub>O<sub>3</sub> ceramics by low-energy Ar, Kr, and Xe ion bombardment in microwave-excited plasma  
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Tetsuya Goto and Shigetoshi Sugawa  
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- E2015-35(F) Introduction of Atomically Flattening of Si Surface to Large-Scale Integration Process Employing Shallow Trench Isolation  
ECS Journal of Solid State Science and Technology, Vol.5, Issue2,  
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- E2015-36(C) An Ultraviolet Radiation Sensor Using Differential Spectral Response of Silicon Photodiodes  
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