

Prof. Ohmi's Paper

January – December, 2005

- E1118(W) T.Ohmi, K.Kawamura, H.Ishikawa, T.Nozawa, T.Goto, A.Teramoto and T.Matsuoka, "LOW-K DIELECTRIC FILM FORMATION AND REACTIVE ION ETCHING USING DAMAGE-FREE PLASMA PROCESS FOR NEXT GENERATION ULSI DEVICES," THE 2nd INTERNATIONAL SYMPOSIUM ON SYSTEM CONSTRUCTION OF GLOBAL -NETWORK-ORIENTED INFORMATION ELECTRONICS (IGNOIE-COE04), Tohoku University, 21th Century COE Program, pp.81-86, January 2005.
- E1119(C) A. Teramoto and T.Ohmi, "High Current Drivability MOSFET Fabricated on Si(110) surface," 2005 MRS SPRING MEETING, March 2005.
- E1120(C) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "FAST ENCODING METHOD FOR VECTOR QUANTIZATION BASED ON A NEW MIXED PYRAMID DATA STRUCTURE," 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP2005), CD-ROM, March 2005.
- E1121(C) A. Teramoto, M. Komura, R. Kuroda, K. Watanabe, S. Sugawa, and T.Ohmi, "EOT Measurement for Ultra-Thin gate Dielectrics using LC Resonance Circuit," THE 2005 INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES (ICMTS 2005), CD-ROM, April 2005.
- E1122(C) Ichirou Takahashi, Tatsufumi Isogai, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi, "Low Voltage 3V Operation of the Ferroelectric Multi-Layer Stack MFIS Structure Device Formed by Plasma Physical vapor Deposition and Oxygen Radical Treatment," The 17th International Symposium on Integrated Ferroelectrics (ISIF 2005), CD-ROM, April 2005.
- E1123 (F) Atsushi Hidaka, Satoru Yamashita, Naoki Tanahashi, Hidekazu Ishii, Masafumi Kitano, Yasuyuki Shirai, Tadahiro Ohmi, "The Degradation Prevention of Resin Materials for Semiconductor Manufacturing Equipment by Applying the Ultra-High Purity Gas Supply Technology," Solid State Phenomena Vols.103-104, pp.255-258, April 2005.
- E1124 (C) Akihiro Morimoto, Masahiko Sugimura, Atsushi Kawata, Masafumi Kawasaki, Yasuhiro Wakizaka, and Tadahiro Ohmi, "High-Speed Signaling Interconnects using Flat-surface and Low-dielectric-loss Resin," Proceedings of International Conference on Electronics Packaging, pp.284-289, April 2005.
- E1125 (F) Atsushi Hidaka, Satoru Yamashita, Hidekazu Ishii, Takeyoshi Kato, Naoki Tanahashi, Masafumi Kitano, Tetsuya Goto, Akinobu Teramoto, Yasuyuki Shirai and Tadahiro Ohmi, "Adsorption Behavior of Various Fluorocarbon Gases on the Silicon Wafer Surface," Special Issue for SSDM 2004 of Japanese Journal of Applied Physics (JJAP) Part 1, pp.2245-2251, May 2005.

- E1126 (F) Tomoyasu Tate, Shigetoshi Sugawa, Koji Chiba, Koji Kotani and Tadahiro Ohmi, "A High S/N Ratio Object Extraction CMOS Image Sensor with Column Parallel Signal Processing," Special Issue for SSDM 2004 of Japanese Journal of Applied Physics (JJAP) Part 1, pp.2093-2098, May 2005.
- E1127 (F) Hiroyuki Hashiguchi, Yoshiya Egashira, Hiroyuki Furukawa, Taishi Endo, Tetsuya Kosaka, Koji Kosaka, Kiyohiko Uozumi, Masayuki Watanabe, Takahiro Yamakawa, Noboru Miyata, Akira Nakada, Hiroshi Kubota and Tadahiro Ohmi, "Highly Reliable Piezoelectric Actuator for Precision Stage System," Japanese Journal of Applied Physics (JJAP) Part 1, pp.3307-3312, May 2005.
- E1128 (C) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "Improved Fast Encoding Method for Vector Quantization Based on Subvector Technique," 2005 IEEE International Symposium on Circuits and Systems (ISCAS2005), CD-ROM, May 2005.
- E1129 (C) Cheng Weitao, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa and Tadahiro Ohmi, "Impact of High Performance Accumulation-Mode Fully Depleted SOI MOSFETs," 2005 Asia-Pacific Workshop on fundamentals and Applications of Advanced Semiconductor Devices (AWAD2005), pp.59-62, June 2005.
- E1130 (F) Zhibin PAN, Koji KOTANI, and Tadahiro OHMI, "Fast Encoding Method for Image Vector Quantization Based on Multiple Appropriate Features to Estimate Euclidean Distance," OPTICAL REVIEW Vol.12. No.3 (2005), pp.161-169, May /June 2005.
- E1131 (W) Cheng Weitao, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa and Tadahiro Ohmi, "Impact of High Performance Accumulation-Mode Fully Depleted SOI MOSFETs," IEICE Technical Report Electron Devices Vol.105 No.152 ED2005-67~84, pp.59-62, June 2005.
- E1132 (C) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "Fast Search Method for Image Vector Quantization Based on Equal-Average Equal-Variance and Partial Sum Concept," 2005 IEEE International Conference on Multimedia & Expo (ICME2005), CD-ROM, July 2005.
- E1133 (F) Taishi ENDO, Yoshiya EGASHIRA, Hiroyuki FURUKAWA, Hiroyuki HASHIGUCHI, Kouji KOSAKA, Masayuki WATANABE, Noboru MIYATA, Shirou MORIYAMA, Shunichi SASAKI, Akira NAKADA, Tadahiro OHMI and Hiroshi KUBOTA, "Slip-Free Driving Method for Nonresonant Piezoelectric Actuator," Japanese Journal of Applied Physics (JJAP) Part 1, Vol.44, No.7A, pp.5264-5268, July 2005.
- E1134 (L) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A generalized multiple projection axes method for fast encoding of vector quantization," Pattern Recognition Letters Vol.26, Issue9, pp.1316-1326, July 2005.
- E1135 (F) Naoto Miyamoto, Koji Kotani and Tadahiro Ohmi, "A 3.7x3.7mm² 310.9mW 105.2msec 512x512-pixel Phase Only Correlation Processor," Journal of Robotics and Mechatronics, Vol.17, No.4, pp.395-400, August 2005.
- E1136 (L) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Recursive computation method for fast encoding of vector quantization based on 2-pixel-merging sum pyramid data structure," Pattern Recognition Letters, Volume 26, Issue 11, pp. 1684-1690, August 2005.
- E1137 (C) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Fast Encoding Method for Vector Quantization By Dramatically Constructing Subvectors," 2005 IEEE International 48th Midwest Symposium on Circuits and Systems (MWSCAS 2005), pp.219-222, August 2005.

- E1138 (F) Chuan Jie Zhong, Hiroaki Tanaka, Shigetoshi Sugawa and Tadahiro Ohmi, "Improvement of the electrical properties of PECVD silicon oxide using high-density and low-ion-energy plasma post-treatment," JOURNAL OF NON-CRYSTALLINE SOLIDS, Vol.351, No.27-29 (2005), pp.2232-2237, (2005 Elsevier B.V.) August 2005.
- E1139 (C) Masato Toita, L. K. J. Vandamme, Shigetoshi Sugawa, Akinobu Teramoto and Tadahiro Ohmi, "Geometry and Bias Dependency of Low-Frequency Random Telegraph Signal and 1/F Noise Levels in MOSFETs," 20th Annual Meeting of Japanese Association for Science, Art and Technology of Fluctuations, pp.24-26, September 2005.
- E1140 (C) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Fast Encoding Method for Image Vector Quantization by Using Partial Sum Concept Walsh Domain," 13th European Signal Processing Conference, CD-ROM, September 2005.
- E1141(C) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Enhanced Fast Encoding Method for Vector Quantization by Finding an Optimally-Ordered Walsh Transform Kernel," 2005 International Conference on Image Processing, CD-ROM, September 2005.
- E1142 (C) Ichirou Takahashi, Hiroyuki Sakurai, Tatsunori Isogai, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi, "Study of the Metal-Ferroelectric-Insulator-Si Structure Device Formation by Controlling Properties of High Frequency and Microwave Excited Plasma," Extended Abstracts of the 2005 International Conference on SOLID STATE DEVICES and MATERIALS, pp.1034-1035, September 2005.
- E1143 (C) Tetsuya Goto, Masato Terasaki, Hirokazu Asahara, Hiroshi Nakazawa, Atsutoshi Inokuchi, Jiro Yamanaka, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa and Tadahiro Ohmi, "Damage-Free Microwave-Excited Plasma Contact Hole Etching without Carrier Deactivation at the Interface between Silicide and Heavily-Doped Si," Extended Abstracts of the 2005 International Conference on SOLID STATE DEVICES and MATERIALS, pp.536-537, September 2005.
- E1144(C) Cheng Weitao, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa and Tadahiro Ohmi, "Impact of The Improved High Performance Si(110) Oriented MOSFETs by Using Accumulation-Mode Fully Depleted SOI Devices," Extended Abstracts of the 2005 International Conference on SOLID STATE DEVICES and MATERIALS, pp.258-259, September 2005.
- E1145 (L) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Performance Comparison between Equal-Average Equal-Variance Equal-Norm Nearest Neighbor Search (EEENNS) Method and Improved Equal-Average Equal-Variance Nearest Neighbor Search (IEENNS) Method for Fast Encoding of Vector Quantization," IEICE TRANSACTIONS on Information and Systems Vol.E88-D No.9, pp.2218-2222, September 2005.
- E1146 (L) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Fast Encoding Method for Vector Quantization Using Modified L₂-Norm Pyramid," IEEE SIGNAL PROCESSING LETTERS VOL.12, No.9, pp.609-612, September 2005.
- E1147 (C) P. Gaubert, A. Teramoto, K. Kotani, and T. Ohmi, "Reduction of 1/f noise in Si(110) nad (110) surface MOSFET using a new clearing technology," Proceedings of 20th Annual Meeting of Japanese Association for Science, Art and Technology of Fluctuations, September 2005.
- E1148 (P) P. Gaubert, A. Teramoto, T. Hamada, M. Yamamoto, K. Nii, H. Akahori, K. Kotani, and T. Ohmi, "Impact of interface micro-roughness on low frequency noise in (110) and (100) pMOSFETs," Proceedings of 18th International Conference on NOISE AND FLUCTUATIONS-ICNF2005, pp.199-202, September 2005.

- E1149 (W) Tomoyasu Tate, Shigetoshi Sugawa, Koji Kotani, and Tadahiro Ohmi, "A High S/N Ratio CMOS Image Sensor with Column Parallel A/D Converter for Object Extraction," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.115-117, October 2005.
- E1150 (W) Rihito Kuroda, Kazufumi Watanabe, Akinobu Teramoto, Shigetoshi Sugawa and Tadahiro Ohmi, "A NEW NBTI LIFETIME PREDICTION METHOD FOR PMOSFETS WITH ULTRA THIN GATE FILMS," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.127-130, October 2005.
- E1151 (W) M. Higuchi, A. Teramoto, M. Komura, S. Shinagawa, E. Ikenaga, H. Nohira, K. Kobayashi, T. Hattori, S. Sugawa, and T. Ohmi. "High Quality Si₃N₄ Gate Dielectric For Sub-100nm ULSI Devices," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.143-146, October 2005.
- E1152 (W) Cheng Weitao, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa and Tadahiro Ohmi, "High Performance CMOS Devices Using Accumulation-Mode Fully Depleted SOI MOSFETs for Analog Integrated Circuits," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.151-154, October 2005.
- E1153 (W) H. Wakamastu, M. Higuchi, A. Teramoto, and T. Ohmi, "High-k Gate Dielectric Films Formed by Plasma-Enhanced Metal-Organic Chemical Vapor Deposition," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.159-162, October 2005.
- E1154 (W) Qiu Chen, Koji Kotani, Feifei Lee, and Tadahiro Ohmi, "Eye Detection Using Separability Filter and Vector Quantization Histogram Method," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.241-244, October 2005.
- E1155 (W) Feifei Lee, Koji Kotani, Qiu Chen, and Tadahiro Ohmi, "Video-shot-change Detection Using the Adjacent Pixel Intensity Difference Quantization Histogram Method," PROCEEDINGS OF THE 3RD STUDENT-ORGANIZING INTERNATIONAL MINI-CONFERENCE ON INFORMATION ELECTRONICS SYSTEM (SOIM-COE05), PP.249-252, October 2005.
- E1156 (W) Philippe GAUBERT, Akinobu TEARAMOTO, Tatsufumi HAMADA, Masashi YAMAMOTO, and Tadahiro OHMI, "Suppression of the low frequency noise level in (100) and (110) oriented silicon p-MOSFETs induced by an alkali-free cleaning process," Technical Report of IECE, SDM2005-173~179, SDM-179, pp.31-35, October 2005.
- E1157 (F) Kazumasa Kawase, Hiroshi Umeda, Masao Inoue, Shimpei Tsujikawa, Yasuhiko Akamatsu, Tomoyuki Suwa, Masaaki Higuchi, Masanori Komura, Akinobu Teramoto and Tadahiro Ohmi, "Control of Nitrogen Depth Profile and Chemical Bonding State in Silicon Oxynitride Films Formed by Radical Nitridation," Japanese Journal of Applied Physics (JJAP) Part 1 Vol.44 No.10, pp.7395-7399, October 2005.

- E1158-1 (C) K. Watanabe, R.Kuroda, A. Teramoto, S. Sugawa, and T.Ohmi, "New NBTI Lifetime Prediction Method for Ultra Thin SiO₂ Films," The 208th Electrochemical Society Meeting, No.738, CD-ROM, October 2005.
- E1158-2 (P) K. Watanabe, R.Kuroda, A. Teramoto, S. Sugawa, and T.Ohmi, "New NBTI Lifetime Prediction Method for Ultra Thin SiO₂ Films," ECS Transactions Vol.1 No.1 Physics and Chemistry of SiO₂ and the Si-SiO₂ Interface-5, pp.147-160, October 2005.
- E1159-1 (C) M. Higuchi, A. Teramoto, M. Komura, S. Shinagawa, E. Ikenaga, H. Nohira, K. Kobayashi, T. Hattori, S. Sugawa, T. Ohmi, "High resolution X-ray photoelectron spectroscopy study on Si₃N₄/Si interface structures and its correlation with hysteresis in C-V curves," The 208th Electrochemical Society Meeting, No.748, CD-ROM, October 2005.
- E1159-2 (P) M. Higuchi, A. Teramoto, M. Komura, S. Shinagawa, E. Ikenaga, H. Nohira, K. Kobayashi, T. Hattori, S. Sugawa, T. Ohmi, "High resolution X-ray photoelectron spectroscopy study on Si₃N₄/Si interface structures and its correlation with hysteresis in C-V curves," ECS Transactions Vol.1 No.1 Physics and Chemistry of SiO₂ and the Si-SiO₂ Interface-5, pp.267-276, October 2005.
- E1160 (C) M. Yamamoto, K. Nii, H. Morinaga, A. Teramoto, and T. Ohmi, "Suppression of Surface Micro-Roughness of Silicon Wafer by Addition of Alcohol into Ultra Pure Water for Rinsing Process," The 208th Electrochemical Society Meeting, No.758, CD-ROM, October 2005.
- E1161(C) Koji Kotani, Naoto Miyamoto, Takeshi Ohkawa, Amir Jamak, Soichiro Kita, Tadahiro Ohmi, "A Personal-Use Single-Chip Emulator Using Dynamically Reconfigurable Logic Array," IEEE Asian Solid-State Circuits Conference (A-SSCC) 2005, pp.329-332, November 2005.
- E1162 (C) T.Nishizuka, C.Tian, S.Y.Kang, T.Nozaawa, T.Goto, and T.Ohmi, "Highly Selective W Etching by using Advanced Microwave Plasma Source with RLSA," 2005 Dry Process International Symposium, pp.273-274, November 2005.
- E1163 (F) Kenta Arima, Jun Katoh, Shinya Horie, Katsuyoshi Endo, Tomoya Ono, Shigetoshi Sugawa, Hiroshi Akahori, Akinobu Teramoto and Tadahiro Ohmi, "Hydrogen termination of Si(110) surfaces upon wet cleaning revealed by highly resolved scanning tunneling microscopy," Journal of Applied Physics, Vol.98, No.10, pp.103525-1-8, November 2005.
- E1164 (W) Tadahiro Ohmi, Masaki Hirayama, and Akinobu Teramoto, "New Era of Silicon Technologies Due to Radical Reaction Based Semiconductor Manufacturing," The 17th International Micro Electronics Conference Proceeding, pp.67-104, November 2005.
- E1165 (L) MASATO TOITA, LODE K. J. VANDAMME, SHIGETOSHI SUGAWA, AKINOBU TERAMOTO, and TADAHIRO OHMI, "GEOMETRY AND BIAS DEPENDENCE OF LOW-FREQUENCY RANDOM TELEGRAPH SIGNAL AND 1/f NOISE LEVELS IN MOSFETS," Fluctuation and Noise Letters, Vol. 5, No. 4 (2005), L539-L548, December 2005.
- E1166 (C) Rihito Kuroda, Kazufumi Watanabe, Akinobu Teramoto, Michihiko Mifuji, Takahisa Yamaha, Shigetoshi Sugawa and Tadahiro Ohmi, "Accurate Circuit Performance Prediction Model and Lifetime Prediction Method of NBT Stressed Devices for Highly Reliable ULSI Circuits," IEEE International ELECTRON DEVICES meeting (IEDM) 2005, pp.29.5.1.- 29.5.4., IEDM05- 717-720, December 2005.

- E1167-1 (C) T.Suwa, S.Sugawa, H.Takahashi, A.Teramoto and T.Ohmi, "Statistical evaluation of very low gate leakage current for bit error evaluation in Flash Memory," The 16th Symposium of The Materials Research Society of Japan, pp.169, December 2005.
- E1167-2 (P) T.Suwa, S.Sugawa, H.Takahashi, A.Teramoto and T.Ohmi, "Statistical evaluation of very low gate leakage current for bit error evaluation in Flash Memory," Transactions of the Materials Research Society of Japan, Vol.31 No.1, pp.141-144, March 2006.
- E1168 (C) Zhibin Pan, Koji Kotani and Tadahiro Ohmi, "Verification Results for the Choice of Projection Axes Used in Fast Encoding Method of Vector Quantization," 2005 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS2005), pp. 829-832, December 2005.
- E1169 (B) Tadahiro Ohmi, "Preface," Scientific Wet Process Technology for Innovative LSI/FPD Manufacturing, Taylor & Francis, December 2005.
- E1170 (B) Tadahiro Ohmi, "Chapter 1-Surface Chemical Electronics at the Semiconductor Surface," Scientific Wet Process Technology for Innovative LSI/FPD Manufacturing, pp.1-33, Taylor & Francis, December 2005.
- E1171 (B) Senri Ojima and Tadahiro Ohmi, "Chapter 7-Wet Vapor Resist Stripping Technology," Scientific Wet Process Technology for Innovative LSI/FPD Manufacturing, pp.285-291, Taylor & Francis, December 2005.
- E1172 (B) Ikunori Yokoi, Masaaki Nagase, Koji Nishino, Nobukazu Ikeda, Masafumi Kitano, Hiroto Izumi, and Tadahiro Ohmi, "Chapter 10-Advanced Ultrapure Water and Liquid Chemical Supply System and Materials for Fluctuation-Free Facility," Scientific Wet Process Technology for Innovative LSI/FPD Manufacturing, pp.331-378, Taylor & Francis, December 2005.
- E1173 (F) Chuan Jie Zhong, Hiroaki Tanaka, Shigetoshi Sugawa and Tadahiro Ohmi, "Effect of power density on the structure properties of microcrystalline silicon film prepared by high-density low-ion-energy microwave plasma," Thin Solid films, Vol.493, No.1-2 (2005), pp.54-59, (2005 Elsevier B.V.) December 2005.