Prof. Ohmi's Paper

January – December, 2003

- E1024(C) Tadahiro Ohmi, and Atsuyoshi Koike, "Fluctuation Free Semiconductor Manufacturing in 300 mm Wafer Fab," 2003 SEMI Technology Symposium (STS), pp. 121,123 124, January 2003.
- E1025(C) Tadahiro Ohmi, "Radical Reaction Based Semiconductor Manufacturing for Small Volume and Very High Speed Production with a Very Wide Variety of Semiconductor Chips," <u>Asia and South Pacific Design Automation Conference</u> 2003(ASP-DAC 2003), Keynote Address II, January 2003.
- E1026(C) Masanori Fujibayashi, Toshiyuki Nozawa, Takahiro Nakayama, Kenji Mochizuki, Koji Kotani, Shigetoshi Sugawa, and Tadahiro Ohmi, "A Still Image Encoder Based on Adaptive Resolution Vector Quantization Employing Needless Calculation Elimination Architecture," <u>Asia and South Pacific Design Automation Conference 2003(ASP-DAC 2003)</u>, University LSI Design Contest, 6D-5, pp. 567 568, January 2003.
- E1027(P) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A practical high-speed and low-bit-rate encoding method for vector quantization using storong correlation among nearby image blocks," <u>International Conference on Computational Intelligence for Modelling, Control & Automation(CIMCA2003)</u>, pp. 301-308, February 2003.
- E1028(C) Masato Toita, Shigetoshi Sugawa, Akinobu Teramoto, and Tadahiro Ohmi, "1/F NOISE DEGRADATION CAUSED BY FOWLER-NORDHEIM TUNNELING STRESS IN MOSFETS", 2003 IEEE International Reliability Physics Symposium 41st Annual, March 2003.
- E1029(C) Tadahiro Ohmi, Akinobu Teramoto, Hiroaki Tanaka, and Masaki Hirayama, "VERY HIGH INTEGRITY THIN FILM FORMATIONS AT VERY LOW TEMPERATURES," 2003 Materials Research Society (MRS) Spring Meeting, pp. 29, April 2003.
- E1030(F) Tetsuya GOTO, Masaki HIRAYAMA, Hiroshi YAMAUCHI, Makoto MORIGUCHI, Shigetoshi SUGAWA, and Tadahiro OHMI, "A New Microwave-Excited Plasma Etching Equipment for Separating Plasma Exicited Region from Etchikg Process Region," Jpn. J. Appl. Phys., Vol. 42, Part 1, No.4B, pp. 1887-1891, April 2003.
- E1031(F) Hiroaki TANAKA, Zhong CHUANJIE, Yukio HAYAKAWA, Masaki HIRAYAMA, Akinobu TERAMOTO, Shigetoshi SUGAWA, and Tadahiro OHMI, "High-Quality Silicon Oxide Film Formed by Diffusion Region Plasma Enhanced Chemical Vapor Deposition and Oxygen Radical Treatment Using Microwave-Excited High-Density Plasma," Jpn. J. Appl. Phys., Vol. 42, Part 1, No.4B, pp. 1911-1915, April 2003.

- E1032(F) Ichirou TAKAHASHI, Hiroyuki SAKURAI, Atsuhiro YAMADA, Kiyoshi FUNAIWA, Kentaro HIRAI, Shinichi URABE, Tetsuya GOTO, Masaki HIRAYAMA, Akinobu TERAMOTO, Shigetoshi SUGAWA, and Tadahiro OHMI, "Ferroelectric Sr2(Ta1—x, Nbx)2O7 with a Low Dielectric Constant by Plasma Physical Vapor Deposition and Oxygen Radical Treatment," Jpn. J. Appl. Phys., Vol. 42, Part 1, No.4B, pp. 2050-2054, April 2003.
- E1033(F) Koutarou TANAKA, Kazufumi WATANABE, Hideki ISHINO, Shigetoshi SUGAWA, Akinobu TERAMOTO, Masaki HIRAYAMA, and Tadahiro OHMI, "A Technology for Reducing Flicker Noise for ULSI Applications," Jpn. J. Appl. Phys., Vol. 42, Part 1, No.4B, pp. 2106-2109, April 2003.
- E1034(F) Naoto MIYAMOTO, Leo KARNAN, Koji KOTANI, and Tadahiro OHMI, "A Fine—Grained Programmable Logic Module with Small Amount of Configuration Data for Dynamically Reconfigurable Field- Programmable Gate Array," Jpn. J. Appl. Phys., Vol. 42, Part 1, No.4B, pp. 2167-2170, April 2003.
- E1035(C) Tadahiro Ohmi, "Radical Reaction Based Semiconductor Manufacturing For Very Advanced ULSI Process Integration," 203rd Meeting of The Electrochemical Society, Abstract No.950, Paris, April—May 2003.
- E1036(C) Shigetoshi Sugawa, Tomoyasu Tate, Koji Chiba, Koji Kotani, and Tadahiro Ohmi, "A High S/N Ratio CMOS Image Sensor with Real Time Object Categorizing Function," 2003 IEEE Workshop on Charge—Coupled Devices and Advanced Image Sensors, Germany, May 2003.
- E1037(C) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A POST-PROCESSING METHOD FOR VECTOR QUANTIZATION TO ACHIEVE HIGHER PSNR AND NEARLY CONSTANT BIT RATE," The 2003 IEEE International Symposium on Circuits and Systems(ISCAS2003), pp. II -436-439, May 2003.
- E1038(F) Masanori Fujibayashi, Toshiyuki Nozawa, Takahiro Nakayama, Kenji Mochizuki, Masahiro Konda, Koji Kotani, Shigetoshi Sugawa, and Tadahiro Ohmi, "A Still-Image Encoder Based on Adaptive Resolution Vector Quantization Featuring Needless Calculation Elimination Architecture," <u>IEEE JOURNAL OF SOLID-STATE CIRCUITS</u>, Vol. 38, No. 5, pp. 726 733, May 2003.
- E1039(C) Takeshi Ohkawa, Toshiyuki Nozawa, Masanori Fujibayashi, Naoto Miyamoto, Karnan Leo, Soichiro Kita, Koji Kotani, and Tadahiro Ohmi, "The Flexible Processor Dynamically Reconfigurable Logic Array for Personal use Emulation System," 2003 SYMPOSIUM ON VLSI CIRCUITS, DIGEST OF TECHNICAL PAPERS, pp.279-282, June 2003.
- E1040 (F) Takahiro J. Yamaguchi, Mani Soma, Masahiro Ishida, Toshifumi Watanabe, and Tadahiro Ohmi, "Extraction of Instantaneous and RMS Sinusoidal Jitter Using an Analytic Signal Method," <u>IEEE Transactions on CIRCUITS AND SYSTEMS</u>, Vol.50, No.6, pp. 288-298, June 2003.

- E1041 (F) Ichirou Takahashi, Hiroyuki Sakurai, Atsuhiko Yamada, Kiyoshi Funaiwa, Kentaro Hirai, Shinichi Urabe, Tetsuya Goto, Masaki Hirayama, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi, "Oxygen radical treatment applied to ferroelectric thin films," <u>Applied Surface Science</u>, Vol.216, pp. 239 -245, June 2003.
- E1042(P) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A FAST FULL SEARCH EQUIVALENT ENCODING METHOD FOR VECTOR QUANTIZATION BY USING APPROPRIATE FEATURES," 2003 IEEE International Conference on Multimedia and Expo, Proceedings, Vol. II of III, pp.261-264, July 2003.
- E1043(P) T.Nakayama, M.Konda, K.Takeuchi, K.Kotani, and T.Ohmi, "ADAPTIVE RESOLUTION VECTOR QUANTIZATION TECHNIQUE AND BASIC CODEBOOK DESIGN METHOD FOR COMPOUND IMAGE COMPRESSION," 2003 IEEE International Conference on Multimedia and Expo, Proceedings, Vol. II of III, pp.549-552, July 2003.
- E1044(C) Tadahiro Ohmi, "Radical Reaction Based Processings for Future Semiconductor Manufacturing," <u>SEMI Technology Symposium: Innovations in Semiconductor Manufacturing(SEMICON West 2003)</u>, July 2003.
- E1045(P) T.Nakayama, K.Takeuchi, M.Konda, K.Kotani, and T.Ohmi, "STILL IMAGE COMPRESSION METHOD BASED ON ADAPTIVE BLOCK SEGMENTATION VECTOR QUANTIZATION TECHNIQUE," 2003 IEEE International Conference on Image Processing(ICIP2003), Vol. II of III, pp.275-278, Barcelona, September 2003.
- E1046(P) Naoto Miyamoto, Leo Karnan, Kazuyuki Maruo, Koji Kotani, and Tadahiro Ohmi, "A Small-Area High-Performance 512-Point 2-Dimensional FFT Signal-Chip Processor," <u>29th European Solid-State</u> Circuits Conference, pp.603-606, September 2003.
- E1047(L) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A Fast Encoding Method For Vector Quantization Based on 2-Pixel-Merging Sum Pyramid Date Structure," IEICE TRANSACTIONS ON FUNDAMENTALS OF ELECTRONICS, COMMUNICATIONS AND COMPUTER SCIENCES, Vol.E86-A, No.9, pp.2419-2423, September 2003.
- E1048(P) Ichirou Takahashi, Hiroyuki Sakurai, Atsuhiro Yamada, Tetsuya Goto, Masaki Hirayama, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi, "A Low Dielectric Constant Sr2(Ta1—x, Nbx)2O7 Thin Film Controlling the Crystal Orientation on IrO2 Substrate for One Transistor Type Ferroelectric Memory Device," Extended Abstracts of the 2003 International Conference on SOLID STATE DEVICES and MATERALS, pp.36-37, September 2003.
- E1049(P) Leo Karnan, Naoto Miyamoto, Kazuyuki Maruo, Koji Kotani, and Tadahiro Ohmi, "Butterfly-Unit Based Programmable Computation Element Using Merged Module of Multiplication, Division and Square Root," MATERALS, pp.148-149, September 2003.

- E1050(P) Masanori Komura, Masaaki Higuchi, Weitao Cheng, Ichiro Ohshima, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa, and Tadahiro Ohmi, "Very High Reliability of Ultrathin Silicon Nitride Gate Dielectric Film for Sub-100nm Generation," Extended Abstracts of the 2003 International Conference on SOLID STATE DEVICES and MATERALS, pp.452-453, September 2003.
- E1051(P) Hiroshi Akahori, Keiichi Nii, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi, "Atomic Order Flattening of Hydrogen-Terminated Si(110)substrate For Next Generation ULSI Devices," Extended Abstracts of the 2003 International Conference on SOLID STATE DEVICES and MATERALS, pp.458-459, September 2003.
- E1052(P) Fuminobu Imaizumi, Tomohiko Hayashi, Katsuji Ishii, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa, and Tadahiro Ohmi, "High Performance Poly-Si Device with Thin Gate Oxide Film Grown by Plasma Oxidation Technology," Extended Abstracts of the 2003 International Conference on SOLID STATE DEVICES and MATERALS, pp.724-725, September 2003.
- E1053(P) Hiroaki Tanaka, Zhong Chuanjie, Yukio Hayakawa, Masaki Hirayama, Akinobu Teramoto, Shigetoshi Sugawa, and Tadahiro Ohmi, "High Quality Silicon Nitride Film Formed by Microwave-Excited Plasma Enhanced Chemical Vapor Deposition with Dual Gas Shower Head," Extended Abstracts of the 2003 International Conference on SOLID STATE DEVICES and MATERALS, pp.736-737, September 2003.
- E1054(P) Tetsuya Goto, Hiroshi Yamauchi, Takeyoshi Kato, Akinobu Teramoto, Masaki Hirayama, Shigetoshi Sugawa, and Tadahiro Ohmi, "High-Speed Damage-Free Contact Hole Etching using Dual Shower Head Microwave-Excited High-Density Plasma Equipment," Extended Abstracts of the 2003 International Conference on SOLID STATE DEVICES and MATERALS, pp.744-745, September 2003.
- E1055(L) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A Fast Encoding Method For Vector Quantization Using L1 and L2 Norms to Narrow Necessary Search scope," <u>IEICE TRANSACTIONS INF. &SYST.</u>, Vol.E86-D, No.11, pp.2483-2486, November 2003.
- E1056(C) Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, "A Fast Search Method for Vector Quantization by Estimating Enclidean Distance," 2003 IEEE International Symposium on Intelligent Signal Processing and Communication Systems(ISPACS2003), pp. 409-413, December 2003.
- E1057(C) Chen-Yung Hsu, Koji Kotani, and Tadahiro Ohmi, "Pupil Location Using a Binary Pattern Search, Region Filtering and Shape Matching," 2003 IEEE International Symposium on Intelligent Signal Processing and Communication Systems(ISPACS2003), pp. 862-865, December 2003.
- E1058(C) Qiu Chen, Koji Kotani, Yoshiyuki Taniguchi, Zhibin Pan, and Tadahiro Ohmi, "Robust Face Detection Using Skin Color Features, Template Matching and VQ Histogram Method Hieratically," 2003 IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS2003), pp. 872-876, December 2003.

- E1059(C) Koji Kotani, Feifei Lee, Qiu Chen, and Tadahiro Ohmi, "Face Recognition Based on the Adjacent Pixel Intensity Difference Quantization Histogram Method," 2003 IEEE International Symposium on Intelligent Signal Processing and Communication Systems(ISPACS2003), pp. 877-880, December 2003.
- E1060(C) A.Teramoto, T.Hamada, H.Akahori, K.Nii, T.Suwa, K. Kotani, M.Hirayama, S.Sugawa, and Tadahiro Ohmi, "Low Noise Balanced-CMOS on Si(110)surface for Analog/Digital Mixed Signal Circuits", 2003 IEEE International ELECTRON DEVICES MEETING, pp.33.4.1-33.4.4, December 2003.
- E1061(C) Yutaka HIROI, Eiji NAKANO, Takayuki TAKAHASHI, Shozo MAKINO, Akinori ITO, Koji KOTANI, Nobuo TAKATSU, and Tadahiro OHMI, "A Patient Care Service Robot System Based on a State Transition Architecture,"

 The International Conference on Mechatronics and Information Technology (ICMIT2003), pp. 231-236, December 2003
- E1062(C) Herzl Aharoni, Takeshi Ohkawa, Osamu Nakamura, Tadahiro Ohmi, "MOS transistors with thin SiO2 gate insulators films grown by Pt-catalytic water vapor generator," <u>ISRAEL PHYSICAL SOCIETY(IPS2003)</u>, pp.143, December 2003.
- E1063(C) Yutaka Hiroi, Eiji Nakano, Takayuki Takahashi, Shozo Makino, AkinoriIto, Koji Kotani, Nobuo Takatsu and Tadahiro Ohmi, "A Patient Care Service Robot System Based on a State Transition Architecture", <u>Proceeding of the 2nd Int'l Conf. on Mechatronics and Information Technology</u>, pp.231-236, Korea, December, 2003.
- E1064(F) Ichiro Ohshima, Weitao Cheng, Yasuhiro Ono, Masaaki Higuchi, Masaki Hirayama, Akinobu Teramoto, Shigetoshi Sugawa, Tadahiro Ohmi, "Reliability of silicon nitride gate dielectrics grown at 400°C formed by microwave-excited high-density plasma," <u>Applied Surface Science</u>, No.216, pp246-251, 2003.
- E1065(C) Qiu Chen, Koji Kotani, Tadahiro Ohmi, "Face Recognition Algorithm Using Vector Quantization Histogram Method," <u>Proceeding of the 1st Student-Organizing Int'l Mini-Conf. on Information Electronics System (SOIM-COE03)</u>, pp.186-190, 2003.