Prof. Ohmi's Paper

January – December, 1998

E753 (C)	Tadahiro OHMI and Masaki Hirayama, "Next Generation TFT Production Line and Technologies," <u>1998 Display Manufacturing Technology</u> <u>Conference</u> , pp. 1-2, San Jose, invited, January 1998.
E754 (F)	Nobukazu Ikeda, Yasuyuki Shirai, Tadahiro Ohmi, and Michio Yamaji, "Highly reliable fitting for gas delivery systems," <u>J. Vac. Sci. Technol. A,</u> Vol. 16, No. 1, pp. 181-187, January/February 1998.
E755 (M)	Tadahiro Ohmi, Kazuhide Ino, Katsuyuki Sekine, and Tadashi Shibata, "Developing an ultraclean pumping system for low-pressure, high-gas-flow applications," <u>MICRO</u> , Vol. 16, No. 2, pp. 53-61, February 1998.
E756 (C)	Toshihiro Ii, Kazuhiko Kawada, Hiroshi Morita, Masatoshi Hashino, Noboru Kubota, and Tadahiro Ohmi, "The Removal of Colloidal and Metallic Impurities in UPW by Hollow Fiber Type Membrane Module," <u>1998</u> <u>Semiconductor Pure Water and Chemicals Conference</u> , pp. 43-57, Santa Clara, March 1998.
E757 (C)	Takayuki Jizaimaru, Hiroaki Kanetaka, Syunkichi Omae, and Tadahiro Ohmi, "Mechanism of Potassium Adhesion to CVD Oxide and Cleaning with Hot UPW," <u>1998 Semiconductor Pure Water and Chemicals Conference</u> , pp. 281-291, Santa Clara, March 1998.
E758 (C)	Nakamori Mitsunori, Kazuhiko Kawada, Hiroshi Morita, Shouichi Okano, Takahisa Nitta, and Tadahiro Ohmi, "The Quick Cleaning by the Spin Cleaner Based on UCT Cleaning Concept," <u>1998 Semiconductor Pure</u> Water and Chemicals Conference, pp. 309-321, Santa Clara, March 1998.
E759 (F)	Kei Kanemoto, Akira Nakada, and Tadahiro Ohmi, "Minimization of BF_2^+ -Implantation Dose to Reduce the Annealing Time for Ultra-Shallow Source/Drain Junction Formation below 600°C," Jpn. J. Appl. Phys., Vol. 37, No.3B, pp. 1166-1170, March 1998.
E760 (F)	Hiroyuki Komeda, Tohru Ueda, Sakae Wada, and Tadahiro Ohmi, "Gas Chemistry Dependence of Si Surface Reaction in a Fluorocarbon Plasma during Contact Hole Etching," Jpn. J. Appl. Phys., Vol. 37, No. 3B, pp. 1198-1201, March 1998.
E761 (C)	T. Ushiki, M. C. Yu, K. Kawai, T. Shinohara, K. Ino, M. Morita, and T. Ohmi, "Reduction of Plasma-Induced Gate Oxide Damage Using Low-Energy Large-Mass Ion Bombardment in Gate-Metal Sputtering Deposition," <u>1998 IEEE International Reliability Physics Symposium Proceedings</u> , pp. 307-311, Reno, Nevada, March-April 1998.
E762 (C)	Tatsuo Morimoto, Tadashi Shibata, and Tadahiro Ohmi, "Neuron-MOS Continuous-Time Winner-Take-All Circuit for Intelligent Data Processing," <u>1998 Second International Conference on Knowledge-Based Intelligent</u> <u>Electronic Systems</u> , pp. 436-441, Adelaide, Australia, April 1998.

- E763(C) Herzl Aharoni, Tadahiro Ohmi, Akira Nakada, Yukio Tamai, and Mauricio Massazumi Oka, "Surface Currents in Shallow n⁺p Silicon Junctions Made by Ultra Clean Technology," <u>Abstracts of The 44 th Annual Meeting of the Israel Physical Society</u>, Israel, p. 179, April 1998.
- E764 (F) Ning Mei Yu, Tadashi Shibata, and Tadahiro Ohmi, "A Real-Time Center-of-Mass Tracker Circuit Implemented by Neuron MOS Technology," <u>IEEE Transactions on Circuits and Systems-II: Analog and Digital Signal Processing</u>, Vol. 45, No. 4, pp. 495-503, April 1998.
- E765 (F)
 Koji Kotani, Tadashi Shibata, Makoto Imai, and Tadahiro Ohmi, "Clock-Controlled Neuron-MOS Logic Gates," <u>IEEE Transactions on</u> <u>Circuits and Systems-II: Analog and Digital Signal Processing</u>, Vol. 45, No. 4, pp. 518-522, April 1998.
- E766 (C) Takayuki Jizaimaru and Tadahiro Ohmi, "Environmental Friendly Total Room Temperature Wet Cleaning Method for Si Surface," <u>Fifth International</u> <u>Environment Safety & Health Conference of the Semiconductor Industry</u>, Korea, May 1998.
- E767 (C) T. Hashimoto, Y. Kishida, Y. Shirai, T. Ohmi, M. Itano, and H. Aoyama, "Process Gas Recycling System," <u>Fifth International Environment Safety &</u> <u>Health Conference of the Semiconductor Industry</u>, Korea, May 1998.
- E768 (F) Koji Kotani, Tadashi Shibata, and Tadahiro Ohmi, "CMOS Charge-Transfer Preamplifier for Offset-Fluctuation Cancellation in Low-Power A/D Converters," <u>IEEE Journal of Solid-State Circuits</u>, Vol. 33, No. 5, pp. 762-769, May 1998.
- E769 (F)
 M. Takeya, W. S. Park, G. S. Jong, and T. Ohmi, "Plasma conditions for as-grown low temperature poly-si formation on SiO2 substrate by sputtering and plasma enhanced chemical vapor deposition processes," J. Vac. Sci. Technol., Vol. A16, No. 3, pp. 1917-1920, May/June 1998.
- E770 (C) Tadahiro Ohmi, "Message to ISPSD'98 Facing with 10th Anniversary," <u>Proceeding of 1998 International Symposium on Power Semiconductor</u> <u>Devices & ICs</u>, p. 3, Kyoto, June 1998.
- E771 (C)
 K. Ino, T. Ushiki, K. Kawai, I. Ohshima, T. Shinohara, and T. Ohmi, "Highly-reliable, Low-Resistivity bcc-Ta Gate MOS Technology Using Low-Damage Xe-Plasma Sputtering and Si-Encapsulated Silicidation Process," Digest of Technical Papers, <u>1998 Symposium on VLSI</u> <u>Technology</u>, pp. 186-187, Honolulu, June 1998.
- E772 (F) Hajime Kumami, Wataru Shindo, Kazuhide Ino, and Tadahiro Ohmi, "Enhancement of Silicon Epitaxy by Increased Phosphorus Concentration in a Low-Energy Ion Bombardment Process," Jpn. J. Appl. Phys., Vol. 37, pp. 3268-3271, June 1998.
- E773 (C)
 Kazuyuki Maruo, Takahiro Yamaguchi, Tadashi Shibata, and Tadahiro Ohmi, "Automatic Defects Classification of LSI Wafer Using Advanced Image Processing Techniques," <u>Silicon, Software, and Smart Machines:</u> <u>Manufacturing Integration in the Semiconductor Industry</u>, Austin, June 1998.

- E774 (C) Masaki Hirayama, Kazuhide Ino, and Yasuyuki Shirai, "Low-cost, High-Productivity ULSI manufacturing in 300mm Wafer Era," <u>Silicon,</u> <u>Software, and Smart Machines: Manufacturing Integration in the</u> <u>Semiconductor Industry</u>, Austin, June 1998.
- E775 (M) Masaki Hirayama and Tadahiro Ohmi, "New era of Semiconductor Manufacturing(III)," <u>Ultra Clean Technology</u>, Vol. 10, Supplement 1, June 1998.
- E776 (C)
 H. Kumami, W. Shindo, J. Kakuta, and T. Ohmi, "Plasma-Induced Deactivation of P, B, Sb by Low-Energy (<30eV) Ion Bombardment During Low-temperature Silicon Epitaxy," <u>Digest of Papers Microprocesses and Nanotechnology '98</u>, pp. 27-28, Korea, July 1998.
- E777 (C) Tadahiro Ohmi, Masaki Hirayama, Kazuhide Ino, and Yasuyuki Shirai, "Contamination Free Manufacturing for 300mm Wafer Processing," <u>Semicon West 98:Symposium on Contamination - Free Manufacturing</u> (CFM) for Semiconductor Processing, pp. A1-A19, San Francisco, keynote, July 1998.
- E778 (F)
 Kazuhide Ino, Katsuyuki Sekine, Tadashi Shibata, Tadahiro Ohmi, and Yasushi Maejima, "Improvement of turbomolecular pumps for ultraclean, low-pressure, and high-gas-flow processing," <u>J. Vac. Sci. Technol. A</u>, Vol. 16, No. 4, pp. 2703-2710, July/August 1998.
- E779(F) Kazuhide Ino, Yoshiyuki Taniguchi, and Tadahiro Ohmi, "Formation of Ultra-Shallow and Low-Reverse-Bias-Current Tantalum-silicided Junctions Using a Si-Encapsulated Silicidation Technique and Low-Temperature Furnace Annealing below 550°C," Jpn. J. Appl. Phys., Vol.37, Part 1, No. 8, pp. 4277-4283, August 1998.
- E780 (C) Tadahiro Ohmi and Masaki Hirayama, "A New Concept Cluster Tool with a radial Line Slot Antenna(RLSA) Plasma Source," <u>Extended Abstracts of International Symposium on Advanced ULSI Technology Challenges and Breakthroughs</u>, pp. 19-22, Tokyo, September 1998.
- E781(C) Katsuyuki Sekine, Yuji Saito, Masaki Hirayama, and Tadahiro Ohmi, "Low-temperature, Low-energy Plasma Nitridation of Silicon for Gate Dielectrics," <u>Extended Abstracts of International Symposium on Advanced</u> <u>ULSI Technology - Challenges and Breakthroughs</u>, pp. 29-30, Tokyo, September 1998.
- E782-1 (C) Hiroshi Morita, Jun-ichi Ida, Tetsuo Mizuniwa, and Tadahiro Ohmi, "Hydrogenated Ultrapure Water Production System for Future Wet Cleaning Process," <u>Fourth International Symposium on Ultra Clean Processing of</u> <u>Silicon Surfaces(UCPSS'98)</u>, Abstract Book, pp. 3-4, Ostende, Belgium, September 1998.
- E782-2 (P)
 H. Morita, J. Ida, T. Mizuniwa and T. Ohmi, "Hydrogenated Ultrapure Water Procuction System for Future Wet Cleaning Process," Edited by M. Heyns, M. Meuris and P. Mertens, <u>Solid State Phenomena</u>, Vols. 65-66, pp. 7-10, 1999

- E783-1 (C) Takayuki Jizaimaru, Hiroaki Kanetaka, Syunkichi Omae, and Tadahiro Ohmi, "Potassium Adhesion to various CVD Oxide and the surface cleaning with hot UPW," <u>Fourth International Symposium on Ultra Clean Processing of</u> <u>Silicon Surfaces(UCPSS'98)</u>, Abstract Book, pp. 26-27, Ostende, Belgium, September 1998.
- E783-2 (P)
 T. Jizaimaru, H. Kanetaka, S. Omae, and T. Ohmi, "Potassium Adhesion to various CVD Oxide and the Surface Cleaning with Hot UPW," Edited by M. Heyns, M. Meuris and P. Mertens, <u>Solid State Phenomena</u>, Vols. 65-66, pp. 67-70, 1999.
- E784-1 (C)
 K. Kanetaka, T. Kujime, H. Yazaki, T. Kezuka, and T. Ohmi, "Influence of the dissolved gas in cleaning solution on Si wafer cleaning efficiency," Fourth International Symposium on Ultra Clean Processing of Silicon Surfaces(UCPSS'98), Abstract Book, pp. 54-55, Ostende, Belgium, September 1998.
- E784-2 (P)
 H. Kanetaka, T. Kujime, H. Yazaki, T. Kezuka, and T. Ohmi, "Influence of the dissolved gas in cleaning solution on Silicon wafer cleaning efficiency," Edited by M. Heyns, M. Meuris and P. Mertens, <u>Solid State Phenomena</u>, Vols. 65-66, pp. 43-48, 1999.
- E785-1 (C)
 M. Yoshida, Y. Shirai, M. Nagase, M. Kitano, M. Gozyuki, Y. Hashimoto, and T. Ohmi, "Construction of the Distribution System for Ozonized Water Used in the Wet cleaning of Si-Wafer Surfaces," <u>Fourth International Symposium on Ultra Clean Processing of Silicon Surfaces (UCPSS'98)</u>, Abstract Book, pp. 68-69, Ostende, Belgium, September 1998.
- E785-2 (P)
 O. Nakamura, M. Yoshida, Y. Shirai, M. Nagase, M. Kitano, M. Gozyuki, Y. Hashimoto, and T.Ohmi, "Construction of the Distribution System for Ozonized Water Used in the Wet cleaning of Si-Wafer Surface," Edited by M. Heyns, M. Meuris and P. Mertens, Solid State Phenomena, Vols. 65-66, pp. 161-164, 1999.
- E786-1 (C)
 M. Mayusumi, M. Imai, S. Nakahara, K. Inoue, J. Takahashi, and T. Ohmi, "Silicon Surface Cleaning for Low Temperature Silicon Epitaxial Growth," Fourth International Symposium on Ultra Clean Processing of Silicon Surfaces(UCPSS'98), Abstract Book, pp. 104-105, Ostende, Belgium, September 1998.
- E786-2 (P)
 M. Mayusumi, M. Imai, S. Nakahara, K. Inoue, J. Takahashi, and T. Ohmi,
 "Silicon Surface Cleaning for Low Temperature Silicon Epitaxial Growth,"Edited by M. Heyns, M. Meuris and P. Mertens, <u>Solid State</u> <u>Phenomena</u>, Vols. 65-66, pp. 229-232, 1999.
- E787 (C)
 Yuji Saito, Katsuyuki Sekine, Masaki Hirayama, and Tadahiro Ohmi, "Ultra-Low-Temperature Formation of Si Nitride Film by Direct Nitridation Employing High-Density and Low-Energy Ion Bombardment," <u>Extended</u> <u>Abstracts of the 1998 International Conference on SOLID STATE</u> <u>DEVICES and MATERALS</u>, pp. 24-25, Hiroshima, September 1998.
- E788 (C) Shin-ichi Nakao, Masaki Numata, and Tadahrio Ohmi, "Thin Low-Resistivity Tantalum Nitride Diffusion Barrier and Giant-Grgain Copper Interconnects for Advanced ULSI Metallization," <u>Extended</u> <u>Abstracts of the 1998 International Conference on SOLID STATE</u> <u>DEVICES and MATERALS</u>, pp. 262-263, Hiroshima, September 1998.

- E789 (C) Tadahiro Ohmi, "New Developments in Ultraclean Technologies," <u>World</u> <u>Market Series Business Briefing ASEAN: Semiconductor Manufacturing</u> <u>Technology---An analysis of the Semiconductor Manufacturing technology</u> <u>Industry in the ASEAN region and perspective on the future</u>, US-ASEAN Business Council, pp. 88-91.1998.
- E790 (F)
 Katsuhisa Ogawa, Tadashi Shibata, Tadahiro Ohmi, Motomu Takatsu, and Naoki Yokoyama, "Multiple-Input Neuron MOS Operational Amplifier for Voltage-Mode Multivalued Full Adders," <u>IEEE Transactions on Circuits and Systems- II; Analog and Digital Signal Processing</u>, Vol. 45, No. 9, pp. 1307-1311, September 1998.
- E791 (F)
 T. Ohmi, M. Yoshida, Y. Matudaira, Y. Shirai, O. Nakamura, M. Gozyuki, and Y. Hashimoto, "Development of a stainless steel tube resistant to corrosive Cl₂ gas for use in semiconductor manufacturing," <u>J. Vac. Sci.</u> <u>Technol. B</u>, Vol. 16, No. 5, pp. 2789-2795, September/October 1998.
- E792(C) Katsuyuki Sekine, Yuji Saito, Masaki Hirayama, and Tadahiro Ohmi, "Direct Nitridation of Silicon Surface Ultra-Low-Temperature by High-Density and Low-Energy Ion Bombardment," <u>The Seventh</u> <u>International Symposium on Semiconductor Manufacturing</u>, Proceeding of ISSM98, pp. 145-148, Tokyo, October 1998.
- E793 (C) Toshikuni Shinohara and Tadahiro Ohmi, "High Efficiency Energy Supply System Employing Co-generation and Latent Thermal Storage for Low Running Cost Cleanroom Operation," <u>The Seventh International Symposium</u> <u>on Semiconductor Manufacturing</u>, Proceeding of ISSM98, pp. 196-199, Tokyo, October 1998.
- E794(C) Daiji Nakajima, Yoshio Ishihara, and Tadahiro Ohmi, "Economical Clean Dry Air System for Closed Manufacturing System," <u>The Seventh</u> <u>International Symposium on Semiconductor Manufacturing</u>, Proceeding of ISSM98, pp. 412-415, Tokyo, October 1998.
- E795 (C) Hiroshi Morita, Jun-ichi Ida, Tetsuo Mizuniwa, Norikuni Yabumoto, Sonomi Kushibe, and Tadahiro Ohmi, "Dissolved-Gas Controlled Ultrapure Water Production System for Wet Cleaning Processes," <u>The Seventh International Symposium on Semiconductor Manufacturing</u>, Proceeding of ISSM98, pp. 428-431, Tokyo, October 1998.
- E796(C)
 W. Shindo, S. Sakai, W. S. Park, and T. Ohmi, "Low-Temperature (300 °C)Large-Grain Polycrystalline Silicon Deposition by Microwave-Excited PECVD Using SiH4/Xe," <u>The Seventh International Symposium on Semiconductor Manufacturing</u>, Proceeding of ISSM98, pp. 460-463, Tokyo, October 1998.
- E797 (F) Atsushi Ohki, Tadahiro Ohmi, Junichi Date, and Takahiko Kijima, "Highly Purified Silane Gas for Advanced Silicon Semiconductor Devices," <u>J.</u> Electrochem. Soc., Vol. 145, No.10, pp. 3560-3569, October 1998.
- E798 (C)
 K. Sekine, R. Kaihara, Y. Saito, M. Hirayama, and T. Ohmi, "Ultra-Low-Temperature Growth of High-Integrity Silicon Oxide and Nitride Films by High-Density Plasma with Low Bombardment Energy," Abstract, <u>AVS 45th International Symposium</u>, p. 25, Baltimore, November 1998.

- E799 (C)
 W. Shindo, S. Sakai, and T. Ohmi, "Low-Temperature Large-Grain As-Deposited Poly-Si Formation by Microwave-Excited PECVD Using SiH₄/Xe," Abstract, <u>AVS 45th International Symposium</u>, p. 25, Baltimore, November 1998.
- E800 (C)
 R. Kaihara, T. Ohmi, H. Komeda, Y. Hirayama, and M. Hirayama, "Balanced Electron Drift Magnetron Plasma Source for Uniform SiO₂ Etching," Abstract, <u>AVS 45th International Symposium</u>, p.25, Baltimore, November 1998.
- E801 (C) Y. Shirai, O. Nakamura, N. Ikeda, R. Dohi, and T. Ohmi, "Precise Control of Gas Ratio in Process Chamber," Abstract, <u>AVS 45th International</u> <u>Symposium</u>, p. 25, Baltimore, November 1998.
- E802(C) K. Ando, I. Akutsu, and T. Ohmi, "Gradational Lead Screw Pump Development," Abstract, <u>AVS 45th International Symposium</u>, pp. 25-26, Baltimore, November 1998.
- E803 (F) Takeo Ushiki, Kunihiro Kawai, Mo-Chiun Yu, Toshikuni Shinohara, Kazuhide Ino, Mizuho Morita, and Tadahiro Ohmi, "Improvement of Gate Oxide Reliability for Tantalum-Gate MOS Devices Using Xenon Plasma Sputtering Technology," <u>IEEE Transaction Electron Devices</u>, Vol. 45, No. 11, pp. 2349-2354, November 1998.
- E804 (W) Geun-Min Choi, Katsuyuki Sekine, Hiroshi Morita, Jong-Soo Kim, and Tadahiro Ohmi, "The Nature of Metallic Contamination and Removal Efficiency on Crystalline and Amorphous Silicon Substrates", <u>the 9th</u> <u>Microelectronics Conference Proceeding</u>, pp.7-13, November 1998.
- E805 (W) T. Ushiki, M.C. Yu, K. Kawai, T. Shinohara, K. Ino, M. Morita, and T. Ohmi "Reduction of Plasma-Induced Gate Oxide Damage Using Low-Energy Large-Mass Ion Bombardment in Gate-Metal Sputtering Deposition", <u>the 9th Microelectronics Conference Proceeding</u>, pp.45-46, November 1998.
- E806 (W) Kazuhide Ino, "低抵抗 bcc-Ta を用いたメタルゲート MOS デバイス技術", the 9th Microelectronics Conference Proceeding, pp.49-59, November 1998.