

## 7. 研究成果リスト

### 7.1 学術論文

#### 2003 年

1. 森 勇藏, 芳井熊安, 安武 潔, 垣内弘章, 大参宏昌, 和田勝男: 大気圧プラズマ CVD 法によるエピタキシャル Si の低温かつ高速成長(第 1 報)—エピタキシャル Si 成長条件の検討—, 精密工学会誌, 69 (2003) 865.
2. Y. Mori, H. Kakiuchi, K. Yoshii, K. Yasutake and H. Ohmi: Characterization of Hydrogenated Amorphous  $\text{Si}_{1-x}\text{C}_x$  Films Prepared at Extremely High Rates Using Very High Frequency Plasma at Atmospheric Pressure, Journal of Physics D: Applied Physics, 36 (2003) 3057.
3. Y. Mori, K. Yoshii, K. Yasutake, H. Kakiuchi, H. Ohmi and K. Wada: High-Rate Growth of Epitaxial Silicon at Low Temperatures (530-690°C) by Atmospheric Pressure Plasma Chemical Vapor Deposition, Thin Solid Films, 444 (2003) 138.
4. A. Shinozaki, K. Arima, M. Morita, I. Kojima and Y. Azuma: (1) “FTIR-ATR Evaluation of Organic Contaminant Cleaning Methods for  $\text{SiO}_2$  Surfaces”, ANALYTICAL SCIENCES, 19 (2003) 1557.
5. K. Takamatsu, N. Ozaki, K. A. Tanaka, T. Ono, K. Nagai, M. Nakai, T. Watari, A. Sunahara, M. Nakano, T. Kataoka, H. Takenaka, M. Yoshida, K. Kondo and T. Yamanaka: Eqation-of-state measurements of polyimide at pressures up to 5.8 TPa using low-density foam with laser driven shock waves, Physical Review E, 67 (2003) 056406
6. 押鐘寧, 片岡俊彦, 遠藤勝義, 野口彰宏, 井上晴行, 中野元博: 光ファイバからの点光源回折球面波を計測の絶対基準とした位相シフト光干渉計の開発, 精密工学会誌, 69 (2003) pp. 678-382
7. N. Ozaki, K. A. Tanaka, Y. Sasatani, K. Takamatsu, M. Nakano, M. Yoshida, K. Okada, Y. Owadano, H. Takenaka and K. Kondo: Hugoniot measurements for polyimide with laser and explosives, Physics of Plasmas, 10 (2003) 2475.
8. 中野元博, 山内良昭, 尾崎典雅, 田中和夫: 三層構造飛翔体のレーザー加速によるスペースデブリ模擬衝突試験, 日本航空宇宙学会論文集, 51 (2003) 690.
9. 山内良昭, 中野元博, 尾崎典雅, 田中和夫: レーザー衝撃によるCFRP積層材の超高速破壊, 材料, 53 (2004) 254.
10. M. Akai-Kasaya, K. Shimizu, Y. Watanabe, A. Saito, M. Aono and Y. Kuwahara: Electronic Structure of a Polydiacetylene Nanowire Fabricated on Highly Ordered Pyrolytic Graphite, Physical Review Letters, 91 (2003) 255501.
11. A. Saito, K. Matoba, T. Kurata, J. Maruyama ,Y. Kuwahara, K. Miki and M. Aono: Structural Analysis of Bismuth Nanowire by X-Ray Standing Wave Method, Japanese Journal of Applied Physics, 42 (2003) 2408.
12. 桑原裕司, 赤井恵, 大川祐司, 青野正和: 一次元重合分子鎖の構築と電子状態評価, 応用物理, 72 (2003) pp.1291-1295
13. 森勇藏, 佐野泰久, 山村和也, 森田諭, 森田瑞穂, 大嶋一郎, 斎藤祐司, 須川成利, 大見忠弘: 数

- 值制御プラズマCVM(Chemical Vaporization Machining)によるSOIの薄膜化 一デバイス用基板としての加工面の評価ー, 精密工学会誌, 69 (2003) 721.
14. Y. Mori, K. Yamauchi, K. Yamamura, H. Mimura, A. Saito, Y. Sano, K. Endo, A. Souvorov, M. Yabashi, K. Tamasaku and T. Ishikawa M. Shimura, Y. Ishizaka: Fabrication technology of hard X-ray aspherical mirror optics and application to nanospectroscopy, Proceedings of SPIE, 5193(2003) 11.
  15. Y. Mori, K. Yamauchi, K. Yamamura, H. Mimura, Y. Sano, A. Saito, K. Ueno, K. Endo, A. Souvorov, M. Yabashi, K. Tamasaku and T. Ishikawa: Developement of figure correction method having spatial resolution close to 0.1mm., Proceedings of SPIE, 5193 (2003) 105.
  16. Y. Mori, K. Hirose, K. Yamauchi, H. Goto, K. Yamamura and Y. Sano: Ultra-Precision Machining based on Physics and Chemistry, Sensors and Materials, 15 (2003) 1.
  17. 山内和人, 山村和也, 三村秀和, 佐野泰久, 斎藤彰, 久保田章亀, 金岡政彦, Alexei Souvorov, 玉作賢治, 矢橋牧名, 石川哲也, 森勇藏: 硬X線用斜入射平面ミラーの形状誤差が反射X線強度・位相分布に及ぼす影響の波動光学的評価, 精密工学会誌, 69 (2003) 997.
  18. 山内和人, 山村和也, 三村秀和, 佐野泰久, 久保田章亀, 関戸康裕, 上野一匡, Alexei Souvorov, 玉作賢治, 矢橋牧名, 石川哲也, 森勇藏: 高精度 X 線ミラーのための干渉計を利用した形状計測システムの開発, 精密工学会誌, 69 (2003) 856-860
  19. K. Yamauchi, K. Yamamura, H. Mimura, Y. Sano, A. Saito, K. Ueno K. Endo, A. Souvorov, M. Yabashi, K. Tamasaku, T. Ishikawa and Y. Mori: Microstitching interferometry for x-ray reflective optics, Review of Scientific Instruments, 74 (2003) 2894.
  20. K. Yamauchi, K. Yamamura, H. Mimura, Y. Sano, A. Saito, K. Endo, A. Souvorov, M. Yabashi, K. Tamasaku, T. Ishikawa and Y. Mori: Two-dimensional Submicron Focusing of Hard X-rays by Two Elliptical Mirrors Fabricated by Plasma Chemical Vaporization Machining and Elastic Emission Machining, Japanese Journal of Applied Physics, 42 (2003) 7129.
  21. Y. Fujimoto and K. Hirose: First-principles treatments of electron transport properties for nanoscale junctions, Physical Review B, 67(2003) 195315.
  22. T. Ono, S. Tsukamoto and K. Hirose: Magnetic orderings in Al nanowires suspended between electrodes, Applied Physics Letters, 82 (2003) 4570.
  23. T. Ono and K. Hirose: First-principles study of Peierls instability in infinite single-row Al wires, Physical Review B, 68 (2003) 45409.
  24. Y. Fujimoto, H. Okada, K. Inagaki, H. Goto, K. Endo and K. Hirose: Theoretical Study on the Scanning Tunneling Microscopy Image of Cl-Adsorbed Si(001), Japanese Journal of Applied Physics, 42 (2003) 5267.
  25. 後藤英和, 広瀬喜久治, 小畠巖貴, 當間康, 稲田敬, 森勇藏: 超純水のみによる電気化学的加工法の研究—Al(001)表面の陰極反応素過程の第一原理分子動力学シミュレーション, 精密工学会誌論文集, 69 (2003) 1332.
  26. T. Ono and K. Hirose: First-principles study on field evaporation for silicon atom on Si(001) surface, Journal of Applied Physics, 95 (2004) 1568.
  27. M. Otani, T. Ono and K. Hirose: First-principles study of electron transport through C<sub>20</sub> cages, Physical Review B, 69 (2004) 121408.

28. T. Ozaki, I. Fujimoto, K. Mizuno, S. Iida, K. Kajiwara, T. Taira, J. Yoshimura, T. Shimura and Y. Chikaura: Low Temperature Laue Topography of Strontium titanate at SPring-8, Nuclear Instruments and Methods in Physics Research B, 199 (2003) 81.
29. K. Fukuda, T. Yoshida, T. Shimura, K. Yasutake and M. Umeno: Large-Area X-ray Topographs of Lattice Undulation of Bonded Silicon-on-insulator Wafers, Japanese Journal of Applied Physics, 42 (2003) L117.
30. O. Sakata, Y. Furukawa, S. Goto, T. Mochizuki, T. Uruga, K. Takeshita, H. Ohashi, T. Ohata, T. Matsushia, S. Takahashi, H. Tajiri, T. Ishikawa, M. Nakamura, M. Ito, K. Sumitani, T. Takahashi, T. Shimura, A. Saito and M. Takahashi: Beamline for Surface and Interface Structures at SPring-8, Surface Review and Letters, 10 (2003) 543.
31. K. Tatsumura, T. Watanabe, D. Yamasaki, T. Shimura, M. Umeno and I. Ohdomari: Effects of Thermal History on Residual Order of Thermally Grown Silicon Dioxide, Japanese Journal of Applied Physics, 42 (2003) 7250.
32. H. Watanabe: Roughness at ZrO<sub>2</sub>/Si Interfaces Induced by Accelerated Oxidation due to the Metal Oxide Overlayer, Applied Physics Letters, 83 (2003) 4175.
33. H. Watanabe, N. Ikarashi and F. Ito: La-Silicate Gate Dielectrics Fabricated by Solid Phase Reaction Between La Metal and SiO<sub>2</sub> Underlayers, Applied Physics Letters, 83 (2003) 3546.
34. K. Endo, T. Ono, K. Arima, Y. Uesugi, K. Hirose, Y. Mori: Atomic Structure of Si(001)-c(4 x 4) Formed by Heating Processes after Wet Cleaning and its First-Principles Study, Japanese Journal of Applied Physics, 42 (2003) 4646.
35. K. Yamamura, K. Yamauchi, H. Mimura, Y. Sano, A. Saito, K. Endo, A. Souvorov, M. Yabashi, K. Tamasaku, T. Ishikawa and Y. Mori: Fabrication of elliptical mirror at nanometer-level accuracy for hard x-ray focusing by numerically controlled plasma chemical vaporization machining., Review of Scientific Instruments, 74 (2003) 4549.

## 2004 年

1. 森勇藏, 垣内弘章, 大参宏昌, 芳井熊安, 安武潔, 中濱康治: 大気圧プラズマ CVD 法による SiN の成膜特性, 精密工学会誌, 70 (2004) 292.
2. 森勇藏, 芳井熊安, 安武潔, 垣内弘章, 大参宏昌, 中濱康治, 江畠祐介: 回転電極型大気圧プラズマ CVD 法による多結晶 Si の成膜特性, 精密工学会誌, 70 (2004) 144.
3. K. Yasutake, H. Ohmi, H. Kakiuchi, H. Watanabe, K. Yoshii, Y. Mori: Size and Density Control of Crystalline Ge Islands on Glass Substrates by Oxygen Etching, Japanese Journal of Applied Physics, 43 (2004) L1552.
4. 大参宏昌, 垣内弘章, 安武潔, 中濱康治, 江畠祐介, 芳井熊安, 森勇藏: 大気圧プラズマ CVD プロセスによる多結晶 Si の高速成膜プロセスにおける成膜速度の決定因子, 精密工学会誌, 70 (2004) 1418.
5. 垣内弘章, 大参宏昌, 中澤弘一, 安武潔, 芳井熊安, 森勇藏: 大気圧プラズマ CVD 法によるアモルファス SiC の高速成膜に関する研究(第 2 報)－成膜パラメータの最適化による膜構造の改善－,

- 精密工学会誌, 70 (2004) 1075.
- 6. 垣内弘章, 中濱康治, 大参宏昌, 安武潔, 芳井熊安, 森勇藏: 大気圧プラズマ CVD 法により高速形成した SiNx 薄膜の構造と成膜パラメータの相関, 精密工学会誌, 70 (2004) 956.
  - 7. 森勇藏, 垣内弘章, 芳井熊安, 安武潔, 大参宏昌, 江畠裕介, 中村恒夫, 竹内博明, 北條義之, 古川和彦: 大気圧プラズマ CVD による超高速形成アモルファス Si を発電層とした薄膜太陽電池の基礎特性, 精密工学会誌, 70 (2004) 562.
  - 8. S. Morita, A. Shinozaki, T. Okazaki, K. Nishimura, S. Urabe and M. Morita: (1) "Tunneling Current through Ultrathin Silicon Dioxide Films under Light Exposure", Japanese Journal of Applied Physics, 43 (2004) 7857.
  - 9. S. Urabe, K. Nishimura, S. Morita and M. Morita: (2) "Reaction of Hydrogen-Desorbed Si(100) Surfaces with Water during Heating and Cooling", Japanese Journal of Applied Physics, 43 (2004) 8242.
  - 10. K. Arima, H. Kakiuchi, M. Ikeda, K. Endo, M. Morita and Y. Mori: (3) "Scanning tunneling microscopy/spectroscopy observation of intrinsic hydrogenated amorphous silicon surface under light irradiation", Surface Science, 572 (2004) 449.
  - 11. K. Arima, H. Kakiuchi, M. Ikeda, K. Endo, M. Morita and Y. Mori: (4) "Visible Light Irradiation Effects on STM Observations of Hydrogenated Amorphous Silicon Surfaces", Japanese Journal of Applied Physics, 43 (2004) 1891.
  - 12. K. Arima, J. Katoh and K. Endo: (5) "Atomic-scale analysis of hydrogen-terminated Si(110) surfaces after wet cleaning", Applied Physics Letters, 85(2004) 6254.
  - 13. 小野貴俊, 田中和夫, 尾崎典雅, 塩田剛士, 長井圭治, 重森啓介, 中野元博, 片岡俊彦: 衝撃圧縮されたポリスチレンの温度・圧力・衝撃波速度の同時計測, プラズマ・核融合学会誌, 80 (2004) 476.
  - 14. K. Takami, J. Mizuno, M. Akai-kasaya, A. Saito, M. Aono and Y. Kuwahara: Conductivity Measurement of Polydiacetylene Thin Films by Double-Tip Scanning Tunneling Microscopy, The Journal of Physical Chemistry, 108 (2004) pp. 16053-16056
  - 15. A. Saito, H. Matsumoto, S. Ohnishi, M. Akai-Kasaya, Y. Kuwahara and M. Aono: Structure of Atomically Smoothed LiNbO<sub>3</sub> (0001) Surface, Japanese Journal of Applied Physics, 43 (2004) pp.2057-2060
  - 16. K. Takami, M. Akai-kasaya, A. Saito, M. Aono and Y. Kuwahara: Construction of Independently Driven Double-Tip Scanning Tunneling Microscope, Japanese Journal of Applied Physics, .44 (2004) L120.
  - 17. 森勇藏, 山内和人, 三村秀和, 稲垣耕司, 久保田章亀, 遠藤勝義: EEM (Elastic Emission Machining)による Si(001)表面の平坦化(第1報)－超清浄 EEM 加工システムの開発－, 精密工学会誌論文集, 70 (2004) 391.
  - 18. Y. Mori, K. Yamamura and Y. Sano: Thinning of silicon-on-insulator wafers by numerically controlled plasma chemical vaporization machining, Review of scientific instruments, 75 (2004) 942.
  - 19. 山内和人, 三村秀和, 久保田章亀, 有馬健太, 稲垣耕司, 遠藤勝義, 森勇藏: EEM (Elastic Emission Machining)による Si(001)表面の平坦化(第2報)－加工表面の原子像観察と構造評価－,

精密工学会誌論文集, 70 (2004) 547.

20. K. Yamauchi, K. Yamamura, H. Mimura, Y. Sano, S. Matsuyama, H. Yumoto, K. Ueno, M. Shibahara, K. Endo, M. Yabashi, K. Tamasaku, Y. Nishino, T. Ishikawa and Y. Mori: Fabrication technology of ultraprecise mirror optics to realize hard X-ray nanobeam, Proceedings of SPIE, 5533 (2004) 116.
21. H. Mimura, K. Yamauchi, K. Yamamura, A. Kubota, S. Matsuyama, Y. Sano, K. Ueno, K. Endo, Y. Nishino, K. Tamasaku, M. Yabashi, T. Ishikawa and Y. Mori: Image quality improvement in hard X-ray projection microscope using total reflection mirror optics, Journal of Synchrotron Radiation, 11 (2004) 343.
22. H. Mimura, H. Yumoto, K. Yamamura, Y. Sano, S. Matsuyama, K. Ueno, K. Endo, Y. Mori, M. Yabashi, K. Tamasaku, Y. Nishino, T. Ishikawa and K. Yamauchi: Microstitching Interferometry for hard X-ray nanofocusing mirrors, Proceedings of SPIE, 5533 (2004) 171.
23. S. Matsuyama, H. Mimura, K. Yamamura, H. Yumoto, Y. Sano, K. Endo, Y. Mori, M. Yabashi, K. Tamasaku, Y. Nishino, T. Ishikawa and K. Yamauchi: Wave-optical and ray-tracing analysis to establish a two dimensional focusing unit using K-B arrangement., Proceedings of SPIE. 5533 (2004) 181.
24. 土屋八郎, 後藤英和, 宮崎眞, 江頭快, 須藤孝司, 大野健: 懸架導体粒子が介在する極間ににおける液中放電現象 ー小鋼球による浮遊加工くずの模擬化ー, 電気加工学会誌, 38 (2004) 21.
25. T. Sasaki, Y. Egami, A. Tanide, T. Ono, H. Goto and K. Hirose: First-principles Calculation Method for Electronic Structures of Nanojunctions Suspended between Semi-infinite Electrodes, Materials Transactions, 45 (2004) 1419.
26. Y. Egami, T. Sasaki, S. Tsukamoto, T. Ono, K. Inagaki and K. Hirose: First-Principles Study on Electron Conduction Property of Monatomic Sodium Nanowire, Materials Transactions, 45 (2004) 1433.
27. 森勇藏, 後藤英和, 広瀬喜久治, 當間康, 小畠巖貴, 森田健一: 超純水のみによる電気化学的加工法のダマシン配線形成プロセスへの応用, 精密工学会誌論文集, 70 (2004) 665.
28. T. Ono and K. Hirose: Geometry and conductance of Al wires suspended between semi-infinite crystalline electrodes, Physical Review B, 70 (2004) 033403.
29. T. Sasaki, Y. Egami, T. Ono and K. Hirose: First-principles calculation of transport properties of single-row aluminum nanowires suspended between semi-infinite crystalline electrodes, Nanotechnology, 15 (2004) 1882.
30. T. Ono, T. Sasaki, J. Otsuka and K. Hirose: First-principles study on field evaporation of surface atoms from W(011) and Mo(011) surfaces, Surface Science, 577 (2005) 42.
31. S. Horie, T. Ono, K. Hirose and K. Endo: First-Principles Study on the Scanning Tunneling Microscopy Image of H-Adsorbed Si(001) Surface, Journal of the Surface Science Society of Japan, 26 (2005) 36.
32. T. Shimura, K. Fukuda, K. Yasutake and M. Umeno: Characterization of SOI wafers by synchrotron X-ray topography, Journal of Applied Physics, 27 (2004) 439.
33. H. Watanabe, M. Saito, N. Ikarashi and T. Tatsumi: High-Quality HfSiO Gate Dielectrics Fabricated by Solid Phase Interface Reaction Between Physical-Vapor-Deposited Metal-Hf and SiO<sub>2</sub> Underlayer, Applied Physics Letters, 85 (2004) 449.

34. K. Fukuda, T. Yoshida, T. Shimura, K. Yasutake and M. Umeno: Synchrotron X-ray Topography of Lattice Undulation of Bonded Silicon-on-Insulator Wafers, Japanese Journal of Applied Physics, 43 (2004) 1081.
35. K. Tatsumura, T. Watanabe, D. Yamasaki, T. Shimura, M. Umeno and I. Ohdomari: Residual Order within Thermally Grown Amorphous SiO<sub>2</sub> on Crystalline Silicon, Physical Review B, 69 (2004) 085212.
36. M. Miyamura, K. Masuzaki, H. Watanabe, N. Ikarashi and T. Tatsumi: Origin of Flatband Voltage Shift in Poly-Si/Hf-Based High-k Gate Dielectrics and Flatband Voltage Dependence on Gate Stack Structure, Japanese Journal of Applied Physics, 43 (2004) 7843.
37. 柴原正文, 山村和也, 佐野泰久, 杉山剛, 遠藤勝義, 森勇藏: 数値制御プラズマCVMによる水晶ウエハへの高精度加工に関する研究－円筒型回転電極を用いた数値制御加工による水晶ウエハ厚さの均一化－, 精密工学会誌, 71 (2004) 655.
38. 堀江伸哉, 小野倫也, 広瀬喜久治, 遠藤勝義: 第一原理計算による H 原子吸着 Si(001)表面の STM 像の解析, 表面科学, 26 (2005) 102-106
39. 佐々木都至, 安弘, 遠藤勝義, 森勇藏: “ナノパーティクル測定機によるシリコンウエハ面のマイクロラフネス測定法”, 精密工学会誌, 70 (2004) 700-704

## 2005 年

1. K. Yasutake, H. Kakiuchi, H. Ohmi, K. Yoshii and Y. Mori: Defect-free growth of epitaxial silicon at low temperatures (500 - 800°C) by atmospheric pressure plasma chemical vapor deposition, Applied Physics A, 81 (2005) 1139-1144
2. H. Komoda, I. Nakatani, H. Watanabe and K. Yasutake: Antistatic Technique for Suppressing Charging in Focused Ion Beam Systems Using Microprobing and Ion-Beam-Assisted Deposition, Japanese Journal of Applied Physics, 44 (2005) 7907.
3. 大参宏昌, 垣内弘章, 中濱康治, 江畑祐介, 安武潔, 芳井熊安, 森勇藏: 大気圧プラズマ CVD により高速形成した多結晶 Si 薄膜の構造に対する SiH<sub>4</sub>濃度の影響, 精密工学会誌, 71 (2005) 1393
4. H. Kakiuchi, M. Matsumoto, Y. Ebata, H. Ohmi, K. Yasutake, K. Yoshii and Y. Mori: Characterization of intrinsic amorphous silicon layers for solar cells prepared at extremely high rates by atmospheric pressure plasma chemical vapor deposition, Journal of Non-Crystalline Solids, 351 (2005) 74.
5. H. Komoda, M. Yoshida, Y. Yamamoto, K. Iwasaki, H. Watanabe and K. Yasutake: Charge Neutralization Using Focused 500eV Electron Beam in Focused Ion Beam System, Japanese Journal of Applied Physics, 44 (2005) L515.
6. H. Kakiuchi, Y. Nakahama, H. Ohmi, K. Yasutake, K. Yoshii and Y. Mori: Investigation of deposition characteristics and properties of high-rate deposited silicon nitride films prepared by atmospheric pressure plasma chemical vapor deposition, Thin Solid Films, 479 (2005) 17.
7. S. Urabe, K. Nishimura, S. Nishikawa, S. Morita and M. Morita: (1) “Reaction of Hydrogen-Terminated Si(100) Surfaces with Oxygen at Very Low Pressures during Heating”, Japanese Journal of Applied Physics, 44 (2005) 8091.

8. K. Arima, J. Katoh, S. Horie, K. Endo, T. Ono, S. Sugawa, H. Akahori, A. Teramoto and T. Ohmi: (2) "Hydrogen termination of Si(110) surfaces upon wet cleaning revealed by highly resolved scanning tunneling microscopy", *Journal of Applied Physics*, 98 (2005) 103525.
9. N. Ozaki, T. Ono, K. Takamatsu, K. A. Tanaka, M. Nakano, T. Kataoka, M. Yoshida, K. Wakabayashi, M. Nakai, K. Nagai, K. Shigemori and K. Kondo: Equation-of-state measurements for polystyrene at multi-TPa pressures in laser direct-drive experiments, *Physics of Plasmas*, 12 (2005) pp. 124503
10. A. Saito, K. Yamasaki, K. Takami, S. Ohnishi, M. Akai-Kasaya, M. Aono and Y. Kuwahara: Structural Study of Initial Growth of Nickel on Yttria-Stabilized Zirconia by Coaxial Impact-Collision Ion Scattering Spectroscopy, *Japanese Journal of Applied Physics*, 44 (2005) 2630.
11. K. Takami, Y. Kuwahara, T. Ishii, M. Akai-Kasaya, A. Saito and M. Aono: Significant increase in conductivity of polydiacetylene thin film induced by iodine doping, *Surface Science*, 591 (2005) L273.
12. A. Saito, J. Maruyama, K. Manabe, K. Kitamoto, K. Takahashi, Y. Takagi, S. Hirotsune, Y. Tanaka, D. Miwa, M. Yabashi, M. Ishii, M. Akai-Kasaya, S. Shin, T. Ishikawa, Y. Kuwahara and M. Aono: Scanning Tunneling Microscope Combined with Hard X-ray Micro-Beam of High Brilliance from Synchrotron Radiation Source, *Japanese Journal of Applied Physics*, 45 (2006) 1913.
13. M. Akai-Kasaya, Y. Yamamoto, A. Saito, M. Aono and Y. Kuwahara: Polaron Injection into a One-dimensional Polydiacetylene Nanowire, *Japanese Journal of Applied Physics*, 45 (2006) 2049.
14. T. Uemura, S. Yamaguchi, M. Akai-Kasaya, A. Saito, M. Aono and Y. Kuwahara: Tunneling-current-induced light emission from individual carbon nanotubes, *Surface Science*, 600 (2006) L15.
15. M. Akai-Kasaya, K. Nishihara, A. Saito, M. Aono and Y. Kuwahara: Quantum Point Contact Switches Using Silver Particles, *Applied Physics Letters*, 88 (2006) 023107
16. K. Takami, M. Akai-Kasaya, A. Saito, M. Aono and Y. Kuwahara: Control of Conduction of Iodine-Doped Poly(3-octylthiophene) Thin Films by Double-Tip Scanning Tunneling Microscopy, *Chemical Physics Letters*, 419 (2006) 250.
17. 高見和宏, 赤井恵, 斎藤彰, 青野正和, 桑原裕司: 独立駆動二探針 STM システムの構築, 精密工学会誌, 72 (2006) 862.
18. Y. Higuchi, N. Ogami, M. Akai-Kasaya, A. Saito, M. Aono and Y. Kuwahara: Application of Simple Mechanical Polishing to Fabrication of Nanogap Flat Electrode, *Japanese Journal of Applied Physics*, 45 (2006) L145.
19. A. Saito, J. Maruyama, K. Manabe, K. Kitamoto, K. Takahashi, K. Takami, Y. Tanaka, D. Miwa, M. Tabashi, M. Ishii, Y. Takagi, M. Akai-Kasaya, S. Shin, T. Ishikawa, Y. Kuwahara and M. Aono: Development of Scanning Tunneling Microscope for In-Situ Experiments with Synchrotron Radiation Hard-X-Ray Microbeam, *Journal of Synchrotron Radiation*, 13 (2006) 216.
20. K. Yamauchi, K. Yamamura, H. Mimura, Y. Sano, A. Saito, K. Ueno, A. Souvorov, K. Tamasaku, M. Yabashi, T. Ishikawa and Y. Mori: Wave-optical evaluation of interference fringes and wavefront phase in hard X-ray beam totally reflected by mirror optics, *Applied Optics*, 44 (2005) 6927.
21. H. Mimura, S. Matsuyama, H. Yumoto, H. Hara, K. Yamamura, Y. Sano, M. Shibahara, K. Endo, Y. Mori, Y. Nishino, K. Tamasaku, M. Yabashi, T. Ishikawa and K. Yamauchi: Hard X-ray

- Diffraction-Limited Nanofocusing with Kirkpatrick-Baez Mirrors, Japanese Journal of Applied Physics, 44 (2005) L539.
- 22. H. Mimura, H. Yumoto, S. Matsuyama, K. Yamamura, Y. Sano, K. Ueno, K. Endo, Y. Mori, Y. Nishino, K. Tamasaku, M. Yabashi, T. Ishikawa and K. Yamauchi: Relative angle determinable stitching interferometry for hard X-ray reflective optics, Review of Scientific Instruments, 76 (2005) 045102.
  - 23. S. Matsuyama, H. Mimura, H. Yumoto, H. Hara, K. Yamamura, Y. Sano, K. Endo, Y. Mori, M. Yabashi, Y. Nishino, K. Tamasaku, T. Ishikawa and K. Yamauchi: Hard x-ray nano-focusing at 40nm level using K-B mirror optics for nanoscopy/spectroscopy, Proceedings of SPIE, 5918 (2005) 591804.
  - 24. S. Matsuyama, H. Mimura, H. Yumoto, K. Yamamura, Y. Sano, K. Endo, Y. Mori, M. Yabashi, K. Tamasaku, Y. Nishino, T. Ishikawa and K. Yamauchi: Diffraction-limited two-dimensional hard-X-rays focusing in 100nm level using K-B mirror arrangement, Review of Scientific Instrument, 76 (2005) 083114.
  - 25. H. Yumoto, H. Mimura, S. Matsuyama, K. Yamamura, Y. Sano, K. Ueno, K. Endo, Y. Mori, Y. Nishino, M. Yabashi, K. Tamasaku, T. Ishikawa and K. Yamauchi: "Fabrication of elliptically figured mirror for focusing hard X-rays to size less than 50 nm", Review of Scientific Instruments, 76 (2005) 063708.
  - 26. 湯本博勝, 三村秀和, 松山智至, 山村和也, 佐野泰久, 上野一匡, 遠藤勝義, 森 勇藏, 西野吉則, 玉作賢治, 矢橋牧名, 石川哲也, 山内和人: 硬 X 線ナノ集光用超高精度楕円ミラーの作製と 1 次元集光性能の評価, 精密工学会誌論文集, 71 (2005) 1137.
  - 27. M. Shimura, A. Saito, S. Matsuyama, T. Sakuma, Y. Terui, K. Ueno, H. Yumoto, K. Yamauchi, K. Yamamura, H. Mimura, Y. Sano, M. Yabashi, K. Tamasaku, K. Nishio, Y. Nishino, K. Endo, K. Hatake, Y. Mori, Y. Ishizaka and T. Ishikawa: Element Array by Scanning X-ray Fluorescence Microscopy after Cis-Diamminedichloro-Platinum(II) Treatment, Cancer Research, 65 (2005) 4998.
  - 28. 久保田章亀, 三村秀和, 稲垣耕司, 森勇藏, 山内和人: EEM (Elastic Emission Machining)プロセスにおける微粒子表面の形態が加工表面に及ぼす影響, 精密工学会誌論文集, 71 (2005) 762.
  - 29. 久保田章亀, 三村秀和, 湯本博勝, 森勇藏, 山内和人: EEM (Elastic Emission Machining)プロセスにおける加工液が Si(001)表面のラフネスに及ぼす影響), 精密工学会誌論文集, 71 (2005) 628.
  - 30. 久保田章亀, 三村秀和, 佐野泰久, 山村和也, 山内和人, 森勇藏: EEM (Elastic Emission Machining)による 4H-SiC(0001)表面の平滑化, 精密工学会誌論文集, 71 (2005) 477.
  - 31. A. Kubota, H. Mimura, K. Inagaki, K. Arima, Y. Mori and K. Yamauchi: Preparation of Ultrasmooth and defect-free 4H-SiC(0001) Surfaces by Elastic Emission Machining, Journal of Electronic Material, 34 (2005) 439.
  - 32. A. Kubota, H. Mimura, K. Inagaki, H. Yumoto, Y. Mori and K. Yamauchi: Morphological Stability of Si (001) Surface in Mixture Fluid of Ultrapure Water and Silica Powder Particles in Elastic Emission Machining, Japanese Journal of Applied Physics, 44 (2005) 5893.
  - 33. L. Assoufid, A. Rommeveaux, H. Ohashi, K. Yamauchi, H. Mimura, J. Qian, O. Hignette, T. Ishikawa, C. Morawe, A. Macrander, A. Khounsary and S. Goto: Results of x-ray mirror round-robin metrology measurements at the APS, ESRF, and SPring-8 optical metrology laboratories, Proceedings of SPIE, 5921 (2005) 59210.
  - 34. Y. Egami, T. Sasaki, T. Ono and K. Hirose: First-principles study on electron-conduction in sodium

- nanowire, *Nanotechnology*, 16 (2005) S161.
- 35. T. Ono and K. Hirose: First-Principles Study on Electron-Conduction Properties of Helical Gold Nanowires, *Physical Review Letters*, 94 (2005) 206806.
  - 36. Y. Fujimoto, K. Hirose and T. Ohno: Calculations of surface electronic structures by the overbridging boundary-matching method, *Surface Science*, 586 (2005) 74.
  - 37. 佐々木孝, 江上喜幸, 谷出敦, 小野倫也, 後藤英和, 広瀬喜久治: 半無限電極に挟まれたナノジャンクションの第一原理電子状態計算法, 日本金属学会誌, 69(2005) 457.
  - 38. Y .Mori, K. Yamamura, K. Endo, K. Yamauchi, K. Yasutake, H. Goto, H. Kakiuchi, Y. Sano and H. Mimura: Creation of perfect surfaces, *Journal of Crystal Growth*, 275 (2005) 39.
  - 39. T. Ono and K. Hirose: First-principles study of dielectric properties of bulk NaCl and ultrathin NaCl films under a finite external electric field, *Physical Review B*, 72 (2005) 085105.
  - 40. T. Ono and K. Hirose: Real-space electronic-structure calculations with a time-saving double-grid technique, *Physical Review B*, 72 (2005) 085115.
  - 41. 荒木真, 谷口淳, 小野倫也, 広瀬喜久治, 宮本岩男: ダイヤモンドからの電界電子放出に関する研究, 精密工学会誌論文集, 71 (2005) 1015.
  - 42. S. Horie, K. Arima, K. Hirose, J. Katoh, T. Ono and K. Endo: First principles study on scanning tunneling microscopy images of different hydrogen-terminated Si(110) surfaces, *Physical Review B*, 72 (2005) 113306.
  - 43. Y. Egami, T. Ono, K. Hirose: Even-odd oscillation in conductance of a single-row sodium nanowire, *Physical Review B*, 72 (2005) 125318.
  - 44. Y. Ichii, Y. Mori, K. Hirose, K. Endo, K. Yamauchi and H. Goto: Electrochemical etching using surface carboxylated graphite electrodes in ultrapure water, *Electrochimica Acta*, 50 (2005) 5379.
  - 45. 森田健一, 後藤英和, 山内和人, 遠藤勝義, 森勇藏: 超純水・高速せん断流による洗浄法の開発(第1報)－Si 基板表面の Cu 汚染の洗浄効果－, 精密工学会誌論文集, 72 (2006) 89.
  - 46. 森田健一, 後藤英和, 山内和人, 遠藤勝義, 森勇藏: 超純水・高速せん断流による Si 基板洗浄法の研究－Si 基板表面の DOP 汚染の洗浄効果－, 精密工学会誌論文集, 72 (2006) 387.
  - 47. Y. Egami, T. Sasaki, T. Ono, H. Goto and K. Hirose: First-principles study on electron conduction properties of single-row gold nanowires, *Japanese Journal of Applied Physics*, 45 (2006) 2132.
  - 48. S. Horie, T. Ono, Y. Kuwahara, K. Endo and K. Hirose: First-Principles Calculation of Tunneling Current of H<sub>2</sub>- or NH<sub>3</sub>-Adsorbed Si(001) Surface in Scanning Tunneling Microscopy, *Japanese Journal of Applied Physics*, 45 (2006) 2154.
  - 49. K. Takahashi, K. Manabe, A. Morioka, T. Ikarashi, T. Yoshihara, H. Watanabe and T. Tatsumi: High-Mobility Dual Metal Gate MOS Transistors with High-k Gate Dielectrics, *Japanese Journal of Applied Physics*, 44 (2005) 2210.
  - 50. K. Manabe, K. Takahashi, T. Ikarashi, A. Morioka, H. Watanabe, T. Yoshihara and T. Tatsumi: Fully Silicided NiSi Gate Electrodes on HfSiON Gate Dielectrics for Low-Power Applications, *Japanese Journal of Applied Physics*, 44 (2005) 2205.
  - 51. N. Umezawa, K. Shiraishi, T. Ohno, H. Watanabe, T. Chikyow, K. Torii, K. Yamabe, K. Yamada, H. Kitajima and T. Arikado: First-principles studies of the intrinsic effect of nitrogen atoms on reduction

- in gate leakage current through Hf-based high-k dielectrics, *Applied Physics Letters*, 86 (2005) 143507.
52. M. Saitoh, M. Terai, N. Ikarashi, H. Watanabe, S. Fujieda, T. Iwamoto, T. Ogura, A. Morioka, K. Watanabe, T. Tatsumi and H. Watanabe: 1.2nm HfSiON/SiON Stacked Gate Insulators for 65-nm-Node MISFETs, *Japanese Journal of Applied Physics*, 44 (2005) 2330.
53. T. Shimura, K. Yasutake, M. Umeno and M. Nagase: X-ray diffraction measurements of internal strain in Si nanowires fabricated using a self-limiting oxidation process, *Applied Physics Letters*, 86(2005) 071903.
54. T. Shimura, K. Fukuda, K. Yasutake, T. Hosoi and M. Umeno: Comparison of Ordered Structure in Buried Oxide Layers in High-dose, Low-dose, and Internal-thermal-oxidation Separation-by-implanted-oxygen Wafers, *Thin Solid Films*, 476 (2005) 125.
55. K. Tatsumura, T. Shimura, E. Mishima, K. Kawamura, D. Yamasaki, H. Yamamoto, T. Watanabe, M. Umeno and I. Ohdomari: Reaction and diffusion of atomic and molecular oxygen in the  $\text{SiO}_2$  network, *Physical Review B*, 72 (2005) 045205.
56. H. Watanabe, S. Kamiyama, N. Umezawa, K. Shiraishi, S. Yoshida, Y. Watanabe, T. Arikado, T. Chikow, K. Yamada and K. Yasutake: Role of Nitrogen Incorporation into Hf-based High-k Gate Dielectrics for Termination of Local Current Leakage Paths, *Japanese Journal of Applied Physics*, 44 (2005) L1333.
57. Y. Naitou, A. Ando, H. Ogiso, S. Kamiyama, Y. Nara, K. Nakamura, H. Watanabe and K. Yasutake: Spatial fluctuation of dielectric properties in Hf-based high-k gate films studied by scanning capacitance microscopy, *Applied Physics Letters*, 87 (2005) 252908.
58. M. Tagawa, C. Sogo, K. Yokota, A. Yoshigoe, Y. Teraoka and T. Shimura: Oxidation of Si(001) with a hyperthermal O-atom beam at room temperature: Suboxide distribution and residual order structure, *Applied Physics Letters*, 88 (2006) 133512.
59. 山村和也, 柴原正文, 佐野泰久, 杉山剛, 遠藤勝義, 森勇藏: “数値制御プラズマCVMによる水晶ウエハへの高精度加工に関する研究—加工装置の開発と基本的加工特性の取得—”, *精密工学会誌*, 71 (2005) 455.
60. S. Horie, T. Ono, Y. Kuwahara, K. Endo and K. Hirose: First-principles calculation of tunneling current of H<sub>2</sub>- or NH<sub>3</sub>-adsorbed Si(001) surface in scanning tunneling microscopy, *Japanese Journal of Applied Physics*, 45 (2006) pp.2154-2157
61. S. Horie, K. Arima, K. Hirose, J. Katoh, T. Ono and K. Endo: First-principles study on scanning tunneling microscopy images of different hydrogen-terminated Si(110) surfaces, *Physical Review B*, 73 (2006) 245314.
62. M. Shibahara, K. Yamamura, Y. Sano, T. Sugiyama, K. Endo and Y. Mori: Improvement of Thickness Distribution of Quartz Crystal Wafer by Numerically Controlled Plasma Chemical Vaporization Machining, *Review of Scientific Instruments*, 76 (2005) 096103.

1. H. Kakiuchi, H. Ohmi, M. Aketa, K. Yasutake, K. Yoshii and Y. Mori: Effect of hydrogen on the structure of high-rate deposited SiC on Si by atmospheric pressure plasma chemical vapor deposition using high-power-density condition, *Thin Solid Films*, 496 (2006) 259.
2. M. Shimizu, H. Ohmi, H. Kakiuchi and K. Yasutake: Lifetime measurement of metastable fluorine atoms using electron cyclotron resonance plasma source, *Journal of Vacuum Science and Technology A*, 24 (2006) pp. 2133-2138
3. K. Yasutake, H. Watanabe, H. Ohmi and H. Kakiuchi: Ge Nuclei for Fabrication of Poly-Si Thin Films on Glass Substrates *ECS Transactions*, *Thin Film Transistor Technology* 8, 3 (2006) pp. 215-225
4. H. Ohmi, H. Kakiuchi, N. Tawara, T. Wakamiya, T. Shimura, H. Watanabe and K. Yasutake: Low-Temperature Growth of Epitaxial Si Films by Atmospheric Pressure Plasma Chemical Vapor Deposition Using Porous Carbon Electrode, *Japanese Journal of Applied Physics*, vol. 45, (2006) pp. 3601-3605
5. H. Kakiuchi, H. Ohmi, R. Nakamura, M. Aketa and K. Yasutake: Structural Characterization of Polycrystalline 3C-SiC Films Prepared at High Rates by Atmospheric Pressure Plasma Chemical Vapor Deposition Using Monomethylsilane, *Japanese Journal of Applied Physics*, 45 (2006) 8381.
6. H. Ohmi, H. Kakiuchi, K. Nishijima, H. Watanabe and K. Yasutake: Low temperature crystallization of amorphous silicon by atmospheric-pressure plasma treatment in H<sub>2</sub>/He or H<sub>2</sub>/Ar mixture, *Japanese Journal of Applied Physics*, 45 (2006) 8488-8493
7. H. Komoda, M. Yoshida, Y. Yamamoto, K. Iwasaki, I. Nakatani, H. Watanabe and K. Yasutake: Novel Charge Neutralization Techniques Applicable to Wide Current Range of FIB Processing in FIB-EB Combined System, *Microelectronics Reliability*, in press
8. H. Komoda, C. Moritani, K. Takahashi, H. Watanabe and K. Yasutake: Sample Tilting Technique for Preventing Electrostatic Discharge during High-current FIB Gas-assisted Etching with XeF<sub>2</sub>, *Microelectronics Reliability*, in press
9. K. Yasutake, H. Ohmi, H. Kakiuchi, T. Wakamiya and H. Watanabe: Characterization of Epitaxial Si Films Grown by Atmospheric Pressure Plasma Chemical Vapor Deposition Using Cylindrical Rotary Electrode, *Japanese Journal of Applied Physics*, 45 (2006) pp.3592-3597
10. H. Kakiuchi, H. Ohmi, Y. Kuwahara, M. Matsumoto, Y. Ebata, K. Yasutake, K. Yoshii and Y. Mori: High-Rate Deposition of Intrinsic Amorphous Silicon Layers for Solar Cells Using Very High Frequency Plasma at Atmospheric Pressure, *Japanese Journal of Applied Physics*, 45 (2006) 3587.
11. H. Ohmi, H. Kakiuchi, K. Yasutake, Y. Nakahama, Y. Ebata, K. Yoshii and Y. Mori: Influence of H<sub>2</sub>/SiH<sub>4</sub> Ratio on the Deposition Rate and Morphology of Polycrystalline Silicon Films Deposited by Atmospheric Pressure Plasma Chemical Vapor Deposition, *Japanese Journal of Applied Physics*, 45 (2006) pp. 3581-3586
12. S. Nishikawa, H. Hashimoto, M. Chikamoto, K. Horikoshi, M. Aoki, K. Arima, J. Uchikoshi and M. Morita: (1) "Photo current through SnO<sub>2</sub>/SiC/p-Si(100) Structures", *Thin Solid Films*, 508 (2006) 385.
13. K. Arima, K. Hiwa, R. Nakaoka and M. Morita: (2) "Surface Hall Potentiometry for Characterizing Semiconductor Films", *Japanese Journal of Applied Physics*, 45 (2006) 3601.
14. K. Arima, T. Shigetoshi, H. Kakiuchi and M. Morita: (3) "Surface photovoltage measurements of

- intrinsic hydrogenated amorphous Si films on Si wafers on the nanometer scale”, Physica B, 376-377 (2006) 893.
15. 井上晴行, 片岡俊彦, 長尾祥浩, 押鐘寧, 中野元博, 越智保文, 有馬健太, 森田瑞穂: レーザ光散乱法による Si ウエハ表面上の極薄酸化膜段差の計測, 精密工学会誌, 72 (2006) pp. 1363-1367
  16. T. Uemura, M. Furumoto, T. Nakano, M. Akai-Kasaya, M. Aono, A. Saito and Y. Kuwahara: Tunneling-Current-Induced Light Emission from Copper Phthalocyanine Thin Films, e-Journal of Surface Science and Nanotechnology, 4 (2006) 559.
  17. M. Nakaya, T. Nakayama, Y. Kuwahara and M. Aono: Fabrication of Nanostructures by Selective Growth of C<sub>60</sub> and Si on Si(001) Substrate, Surface Science, 600 (2006) 2810.
  18. Y. Sano, M. Watanabe, K. Yamamura, K. Yamauchi, T. Ishida, K. Arima, A. Kubota and Y. Mori: Polishing characteristics of silicon carbide by plasma chemical vaporization machining, Japanese Journal of Applied Physics, 45 (2006), pp. 8277-8280
  19. A. Kubota, H. Mimura, K. Inagaki, Y. Mori and K. Yamauchi: Effect of Particle Morphology on Removal Rate and Surface Topography in Elastic Emission Machining, Journal of The Electrochemical Society, 153 (2006) G560.
  20. K. Arima, A. Kubota, H. Mimura, K. Inagaki, K. Endo, Y. Mori and K. Yamauchi: Highly resolved scanning tunneling microscopy study of Si(001) surfaces flattened in aqueous environment, Surface Science, 600 (2006) L185.
  21. H. Hara, Y. Sano, H. Mimura, K. Arima, A. Kubota, K. Yagi, J. Murata and K. Yamauchi: Novel Abrasive-Free Planarization of 4H-SiC(0001) Using Catalyst, Journal of Electronic Materials, 35 (2006) L11.
  22. M. Yabashi, J.B. Hastings, M.S. Zolotorev, H. Mimura, H. Yumoto, S. Matsuyama, K. Yamauchi and T. Ishikawa: Single-Shot Spectrometry for X-Ray Free-Electron Lasers, Physical Review Letters, 97 (2006) 084802.
  23. S. Matsuyama, H. Mimura, H. Yumoto, H. Hara, S. Handa, K. Yamamura, Y. Sano, K. Endo, Y. Mori, M. Yabashi, Y. Nishino, K. Tamasaku, T. Ishikawa and K. Yamauchi: Development of mirror manipulator for hard x-ray nanofocusing at sub-50nm level, Review of Scientific Instruments, 77 (2006) 093107.
  24. S. Matsuyama, H. Mimura, H. Yumoto, K. Yamamura, Y. Sano, M. Yabashi, Y. Nishino, K. Tamasaku, T. Ishikawa and K. Yamauchi: Development of scanning X-ray fluorescence microscope with spatial resolution of 30nm using K-B mirrors optics, Review of Scientific Instruments, 77 (2006) 103102.
  25. H. Yumoto, H. Mimura, S. Matsuyama, S. Handa, Y. Sano, M. Yabashi, Y. Nishino, K. Tamasaku, T. Ishikawa and K. Yamauchi: At-wavelength figure metrology for hard x-ray focusing mirrors, Review of Scientific Instruments, 77 (2006) 063712.
  26. D. Nakagawa, K. Kutsuki, T. Ono and K. Hirose: First-principles study of leakage current through thin SiO<sub>2</sub> films, Physica B, 376-377 (2006) 389.
  27. J. Otsuka, T. Ono, K. Inagaki and K. Hirose: First-principles calculations of dielectric constants of C<sub>20</sub> bulk using Wannier functions, Physica B, 376-377 (2006) 320.
  28. K. Inagaki, T. Miyata, K. Endo, K. Hirose and Y. Mori: Differential reflectance spectrum measurement

- to evaluate defects introduced by wet cleaning process, *Physica B*, 376-377 (2006) 922.
- 29. Y. Ichii, Y. Mori, K. Hirose, K. Endo, K. Yamauchi and H. Goto: Electrochemical Etching Using Surface-Sulfonated Electrodes in Ultrapure Water, *Journal of The Electrochemical Society*, 153 (2006) C344.
  - 30. 森田健一, 後藤英和, 山内和人, 遠藤勝義, 森勇藏: 超純水・高速せん断流による洗浄法の開発(第2報)－超純水・高速せん断流によるCu除去メカニズムの研究－, 精密工学会誌論文集, 72 (2006) 529.
  - 31. T. Ono, S. Horie, K. Endo and K. Hirose: First-principles study of the tunnel current between a scanning tunneling microscopy tip and a hydrogen-adsorbed Si(001) surface, *Physical Review B*, 73 (2006) 245314.
  - 32. Y. Ichii and H. Goto: Development of Eco-Friendly Electrochemical Etching Process of Silicon on Cathode, *Journal of The Electrochemical Society*, 153 (2006) C694.
  - 33. T. Sasaki, T. Ono and K. Hirose: Order-N first-principles calculation method for self-consistent ground-state electronic structures of semi-infinite systems, *Physical Review E*, 74 (2006) 056704.
  - 34. T. Ono and K. Hirose: First-Principles Study on Electron-Conduction Properties of C<sub>60</sub> Bridges, *Physical Review Letters*, 98 (2007) 026804.
  - 35. Y. Ichii and H. Goto: Fabrication of flat silicon surfaces using ion-exchange particles in ultrapure water, *Electrochimica Acta*, 52 (2007) 2927.
  - 36. K. Manabe, K. Takahashi, T. Hase, N. Ikarashi, M. Oshida, T. Tatsumi, H. Watanabe, H. Watanabe and K. Yasutake: Analysis of the Origin of Threshold Voltage Change Induced by Impurity in Fully Silicided NiSi/SiO<sub>2</sub> Gate Stacks, *Japanese Journal of Applied Physics*, 45 (2006) 2919.
  - 37. K. Fukuda, T. Yoshida, T. Shimura, K. Yasutake, M. Umeno and S. Iida: White X-ray Topography of Lattice Undulation in Bonded Silicon-on-Insulator Wafers, *Japanese Journal of Applied Physics*, 45 (2006) 6795.
  - 38. T. Shimura, M. Shimizu, S. Horiuchi, H. Watanabe, K. Yasutake and M. Umeno: Self-limiting oxidation of SiGe alloy on silicon-on-insulator wafers, *Applied Physics Letters*, 89 (2006) 111923.
  - 39. H. Watanabe, S. Yoshida, Y. Watanabe, T. Shimura, K. Yasutake, Y. Akasaka, Y. Nara, K. Nakamura and K. Yamada: Thermal Degradation of HfSiON Dielectrics Caused by TiN Gate Electrodes and Its Impact on Electrical Properties, *Japanese Journal of Applied Physics*, 45 (2006) 2933.
  - 40. N. Umezawa, K. Shiraishi, T. Ohno, M. Boero, H. Watanabe, T. Chikyow, K. Torii, K. Yamabe, K. Yamada and Y. Nara: Unique Behavior of F-Centers in High-k Hf-based Oxides, *Physica B: Condensed Matter*, 376-377 (2006), pp. 392-394
  - 41. A. Uedono, T. Naito, T. Otsuka, K. Shiraishi, K. Yamabe, S. Miyazaki, H. Watanabe, N. Umezawa, T. Chikyow, Y. Akasaka, S. Kamiyama, Y. Nara and K. Yamada: Introduction of defects into HfO<sub>2</sub> gate dielectrics by metal-gate deposition studied by x-ray photoelectron spectroscopy and positron annihilation, *Journal of Applied Physics*, 100 (2006) 064501.
  - 42. K. Manabe, T. Hase, T. Tatsumi, H. Watanabe and K. Yasutake: Mechanism for Fermi Level Pinning at Electrode/Hf-Based Dielectric Interface: Systematic Study of Dependence of Effective Work Functions for Polycrystalline Silicon and Fully Silicided NiSi Electrodes on Hf Density at Interface, *Japanese*

Journal of Applied Physics, 45 (2006) 9053.

43. Y. Akasaka, G. Nakajima, K. Shiraishi, N. Umezawa, K. Yamabe, O. Ogawa, M. Lee, T. Amiaka, T. Kasuya, H. Watanabe, T. Chikyow, F. Ootsuka, Y. Nara and K. Nakamura: Modified Oxygen Vacancy Induced Fermi Level Pinning Model Extendable to P-metal Pinning, Japanese Journal of Applied Physics, 45 (2006) L1289.
44. K. Manabe, T. Hase, T. Tatsumi, H. Watanabe and K. Yasutake: Mechanism of Suppressed Change in Effective Work Functions for Impurity-Doped Fully Silicided NiSi Electrodes on Hf-Based Gate Dielectrics, Japanese Journal of Applied Physics, 46 (2007) 91.
45. N. Umezawa, K. Shiraishi, H. Watanabe, K. Torii, Y. Akasaka, S. Inumiya, M. Boero, A. Uedono, S. Miyazaki, T. Ohno, T. Chikyow, K. Yamabe, Y. Nara and K. Yamada: Extensive Studies for Effects of Nitrogen Incorporation into Hf-based High-k Gate Dielectrics, ETS Trans.2, (1) 63 (2006)
46. T. Shimura, M. Shimizu, S. Horiuchi, H. Watanabe and K. Yasutake: Oxidation Saturation of SiGe Alloy on Silicon-on-Insulator Wafers, ETS Trans.3, (7) 1033 (2006)
47. K. Ohmori, P. Ahmet, K. Shiraishi, K. Yamada, H. Watanabe, Y. Akasaka, N. Umezawa, K. Nakajima, M. Yoshitake, T. Nakayama, K.^S. Chang, K. Kakushima, Y. Nara, M.L. Green, H. Iwai, K. Yamada and T. Chikyow: Wide Controllability of Flatband Voltage in  $\text{La}_2\text{O}_3$  Gate Stack Structures - Remarkable Advantages of  $\text{La}_2\text{O}_3$  over  $\text{HfO}_2$  -, ETS Trans.3, (3) 351 (2006)
48. T. Nakayama, K. Shiraishi, S. Miyazaki, Y. Akasaka, T. Nakaoka, K. Torii, A. Ohta, P. Ahmet, K. Ohmori, N. Umezawa, H. Watanabe, T. Chikyow, Y. Nara, H. Iwai and K. Yamada: Physics of Metal/High-k Interfaces, ETS Trans.3, (3) 129 (2006)
49. K. Yamamura, K. Kato, Y. Sano, M. Shibahara, K. Endo and Y. Mori: High Spatial Resolution Machining Utilizing Atmospheric Pressure Plasma -Machining Characteristics of Silicon-, Japanese Journal of Applied Physics, 45 (2006) 8281-8285.
50. K. Yamamura, Y. Sano, M. Shibahara, K. Yamauchi, H. Mimura, K. Endo and Y. Mori: Ultraprecision Machining Utilizing Numerically Controlled Scanning of Localized Atmospheric Pressure Plasma, Japanese Journal of Applied Physics, 45 (2006) 8270-8276.
51. K. Yamamura, M. Shibahara, Y. Sano, Y. Yamamoto, T. Morikawa and Y. Mori: Improvement of the Thickness Distribution of AT Cut Quartz Crystal Wafer by Open-air Type Plasma Chemical Vaporization Machining, e-Journal of Surface Science and Nanotechnology, 5 (2007) 41.
52. 柴原正文, 稲垣官司, 山村和也: 大気圧プラズマ処理によるポリエチレンテレフタレートの表面改質, 表面技術誌 58, (2007) 124-129.
53. J. Katoh, K. Arima, A. Kubota, H. Mimura, K. Inagaki, Y. Mori, K. Yamauchi and K. Endo: Atomic-Scale Evaluation of Si(111) Surfaces Finished by the Planarization Process Utilizing  $\text{SiO}_2$  Particles Mixed with Water, Journal of The Electrochemical Society, 153 (2006) G560.
54. 柴原正文, 山村和也, 佐野泰久, 杉山剛, 山本雄介, 遠藤勝義, 森勇藏: 数値制御プラズマ CVM による水晶ウエハの高精度加工に関する研究 一回転電極とパイプ電極を併用した数値制御加工による水晶ウエハ厚さの均一化-, 精密工学会誌, 72 (2006) 934-938.
55. 篠原亘, 小平正和, 遠藤勝義: モノシランとオゾンの反応を用いた常圧光 CVD 法による酸化シリコン薄膜の形成, 精密工学会誌, 72 (2006) 523-528.

56. 安弘, 佐々木都至, 遠藤勝義, 森勇蔵: 光散乱法を用いたナノパーティクル測定機の開発—標準ナノ粒子を用いた検出精度と洗浄効果の評価—, 精密工学会誌, 72 (2006) 296.

## 2007 年

1. H. Kakiuchi, H. Ohmi and K. Yasutake: High-Rate and Low-Temperature Film Growth Technology Using Stable Glow Plasma at Atmospheric Pressure, *Thin Solid Films*, (2008) in press
2. T.Ikuta, Y. Miyanami, S.Fujita, H. Iwamoto, S. Kadomura, T. Simura, H. Watanabe and K. Yasutake: Heavy arsenic doping of silicon grown by atmospheric pressure selective epitaxial cheical vapor deposition, *Science and Technology of Advanced Marerials*, 8 (2007) 142.
3. H. Kakiuchi, H. Ohmi, M. Harada, H. Watanabe and K. Yasutake: Formation of Silicon Dioxide Layers at Low Temperatures (150-400 °C) by Atmospheric Pressure Plasma Oxidation of Silicon, *Science and Technology of Advanced Marerials*, 8 (2007) 137.
4. T. Ikuta, Y. Minami, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: Atmospheric In situ Arsenic-Doped SiGe Selective Epitaxial Growth for Raised-Extension N-type Metal-Oxide-Semiconductor Field-Effect Transistor, *Japanese Journal of Applied Physics*, 46 (2007) pp. 1916-1920
5. K. Yasutake, N. Tawara, H. Ohmi, Y. Terai, H. Kakiuchi, H. Watanabe and Y. Fujiwara: Photoluminescence Study of Defect-Free Epitaxial Silicon Filmes Grown at Low Temperatures by Atmospheric Pressure Plasma Chemical Vapor Deposition, *Japanese Journal of Applied Physics*, 46 (2007) pp. 2510-2515
6. H. Kakiuchi, H. Ohmi, M. Harada, H. Watanabe and K. Yasutake: Highly efficient oxidation of silicon at low temperatures using atmospheric pressure plasma, *Applied Physics Letters*, 90 (2007) 091909.
7. H. Kakiuchi, H. Ohmi, M. Harada, H. Watanabe and K. Yasutake: Significant enhancement of Si oxidation rate at low temperatures by atmospheric pressure Ar/O<sub>2</sub> plasma, *Applied Physics Letters*, 90 (2007) 151904.
8. 安武潔, 大参宏昌, 堀内弘章: 大気圧プラズマ CVD 法による Si の低温・高速エピタキシャル成長, *応用物理*, 76 (2007) 1031-1036
9. H. Ohmi, H. Kakiuchi, Y. Hamaoka and K. Yasutake: SILICON FILM FORMATION BY CHEMICAL TRANSPORT IN ATMOSPHERIC-PRESSURE PURE HYDROGEN PLASMA, *Journal of Applied Physics*, 102 (2007) 023302-1-8
10. H. Kakiuchi, H. Ohmi, M. Harada, H. Watanabe and K. Yasutake: Low-temperature formation of SiO<sub>2</sub> layers using a two-step atmospheric pressure plasma-enhanced deposition-oxidation process, *Applied Physics Letters*, 91 (2007) 161908.
11. H. Ohmi, K. Yasutake, Y. Hamaoka and H. Kakiuchi: Metal induced hydrogen effusion from amorphous silicon, *Applied Physics Letters*, 91 (2007) 241901.
12. H. Kakiuchi, H. Ohmi and K. Yasutake: Formation of Silicon Carbide at Low Temperatures by Chemical Transport of Silicon Induced by Atmospheric Pressure H<sub>2</sub>/CH<sub>4</sub> Plasma, *Thin Solid Films*, (2008) in press

13. H. Kakiuchi, H. Ohmi, M. Harada, H. Watanabe and K. Yasutake: SiO<sub>2</sub> Formation by Oxidation of Crystalline and Hydrogenated Amorphous Si in Atmospheric Pressure Plasma Excited by Very High Frequency Power, Japanese Journal of Applied Physics, (2008) in press
14. H. Kakiuchi, H. Ohmi, M. Aketa, R. Nakamura, and K. Yasutake: Heteroepitaxial growth of cubic SiC on Si using very high frequency plasma at atmospheric pressure, Surface and Interface Analysis, to be published
15. D. Kamada, K. Kishimoto, H. Kakiuchi, K. Yasutake and H. Ohmi: High-rate preparation of thin Si films by atmospheric-pressure plasma-enhanced chemical transport, Surface and Interface Analysis, to be published
16. Y. Kirihata, T. Nomura, H. Ohmi, H. Kakiuchi and K. Yasutake: In Situ B doped Si epitaxial growth at low temperatures by atmospheric pressure plasma CVD, Surface and Interface Analysis, to be published
17. T. Ikuta, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: Suppression of surface segregation and heavy arsenic doping into silicon during selective epitaxial chemical vapor deposition under atmospheric pressure, Applied Physics Letters, 91 (2007) 092115.
18. T. Ikuta, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: Characteristics of in-situ Phosphorus-Doped Silicon Selective Epitaxial Growth under Atmospheric Pressure, Japanese Journal of Applied Physics, in press.
19. T. Ikuta, Y. Miyanami, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: Investigation of In-situ Boron-doped Si Selective Epitaxial Growth by Comparing with Arsenic Doping, Japanese Journal of Applied Physics, in press.
20. T. Ikuta, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: Selective Epitaxial Growth of In-situ Carbon-Doped Si on Si Substrates, Surface and Interface Analysis, in press
21. T. Ikuta, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: In-situ arsenic doped Si<sub>1-y</sub>Cy selective epitaxial growth under atmospheric pressure, Applied Physics Letters, to be published.
22. A. Funamoto, S. Lee, Y. Kawabata, M. Ohira, D. Uchida, S. Aoyama and M. Morita: (1) “Nanohot embossing using curved stage to replicate antireflection nanostructures onto light guide”, Science and Technology of Advanced Materials, 8 (2007) 208.
23. H. Hashimoto, R. Yamada, T. Hirokane, K. Arima, J. Uchikoshi and M. Morita: (2) “Photodetective Characteristics of Metal-Oxide-Semiconductor Tunneling Structure with Aluminum Grid Gate”, Japanese Journal of Applied Physics, 46(2007) 2467.
24. N. Ajari, J. Uchikoshi, T. Hirokane, K. Arima and M. Morita: (3) “Characterization of Void in Bonded Silicon-on-Insulator Wafers by Controlling Coherence Length of Light Source using Near-Infrared Microscope”, Japanese Journal of Applied Physics, 46 (2007) 1994.
25. T. Shigetoshi, H. Inoue, T. Kawashima, T. Hirokane, T. Kataoka, M. Morita and K. Arima: (4) “Microscratches with Depths of Angstrom Order on Si Wafers Detected by Light Scattering and AFM”, Electrochemical and Solid-State Letters, 10 (2007) H206.
26. A. Teramoto, T. Hamada, M. Yamamoto, P. Gaubert, H. Akahori, K. Nii, M. Hirayama, K. Arima, K.

- Endo, S. Sugawa and T. Ohmi: (6) "Very High Carrier Mobility for High-Performance CMOS on a Si(110) Surface", IEEE Transactions on Electron Devices, 54 (2007) 1438.
27. Y. Oshikane, T. Kataoka, M. Okuda, S. Hara, H. Inoue and M. Nakano: Observation of nanostructure by scanning near-field optical microscope with small sphere probe, Science and Technology of Advanced Materials, 8 (2007), pp. 181-185
28. T. Matuura, S. Okagaki, T. Nakamura, Y. Oshikane, H. Inoue, M. Nakano and T. Kataoka: Measurement Accuracy in Phase-Shifting Point Diffraction Interferometer with Two Optical Fibers, Optical Review, 14 (2007) 401.
29. A. Saito, K. Takahashi, Y. Takagi, K. Nakamatsu, K. Hanai, Y. Tanaka, D. Miwa, M. Akai-kasaya, S. Shin, S. Matsui, T. Ishikawa, Y. Kuwahara and M. Aono: Study for noise reduction in synchrotron radiation based scanning tunneling microscopy by developing insulator-coat tip, Surface Science, 601 (2007) 5294.
30. 斎藤彰, 高橋浩史, 高木康多, 花井和久, 中松健一郎, 細川博正, 田中義人, 三輪大五, 矢橋牧名, 松井真二, 石川哲也, 辛埴, 桑原裕司, 青野正和: 放射光 STM を用いたナノスケール表面元素分析, 表面科学会誌, 28 (2007) 453.
31. 斎藤彰, 石川陽子, 宮村友輔, 中島匡司, 十河健司, 赤井恵, 桑原裕司, 平井義彦: ナノインプリントリソグラフィーによるモルフォ・ブルー量産技術の開発, 表面科学会誌, 28 (2007) 414.
32. T. Uemura, M. Furumoto, T. Nakano, M. Akai-Kasaya, A. Saito, M. Aono and Y. Kuwahara: Local-Plasmon-Enhanced Up-Conversion Fluorescence from Copper Phthalocyanine, Chemical Physics Letter, 448 (2007) 232
33. 石川陽子, 宮村友輔, 赤井恵, 桑原裕司, 斎藤彰: モルフォ・ブルー再現基板の作製と、その最適化, 粉体工学会誌, 45 (2008) in press.
34. Y. Sano, M. Watanabe, K. Yamamura, K. Yamauchi, T. Ishida, K. Arima, A. Kubota and Y. Mori: Polishing Characteristics of 4H-SiC Si-Face and C-Face by Plasma Chemical Vaporization Machining, Materials Science Forum, 556-557 (2007) 757.
35. K. Arima, H. Hara, J. Murata, T. Ishida, R. Okamoto, K. Yagi, Y. Sano, H. Mimura and K. Yamauchi: Atomic-scale flattening of SiC surfaces by electroless chemical etching in HF solution with Pt catalyst, Applied Physics Letters, 90 (2007) 202106.
36. H. Mimura, H. Yumoto, S. Matsuyama, Y. Sano, K. Yamamura, Y. Mori, M. Yabashi, Y. Nishino, K. Tamasaku, T. Ishikawa and K. Yamauchi: Efficient focusing of hard x-rays to 25nm by a total reflection mirror, Applied Physics Letters, 90 (2007) 051903.
37. A. Kubota, Y. Shinbayashi, H. Mimura, Y. Sano, K. Inagaki, Y. Mori and K. Yamauchi: Investigation of Surface Removal Process of Silicon Carbide in Elastic Emission Machining, Journal of Electronic Materials, 36 (2007) 92.
38. H. Hara, Y. Sano, H. Mimura, K. Arima, A. Kubota, K. Yagi, J. Murata and K. Yamauchi: Damage-free Planarization of 4H-SiC (0001) by Catalyst-Referred Etching, Materials Science Forum, 556-557 (2007) 749.
39. Y. Sano, K. Yamamura, H. Mimura, K. Yamauchi and Y. Mori: Fabrication of ultrathin and highly uniform silicon on insulator by numerically controlled plasma chemical vaporization machining,

Review of Scientific Instruments, 78 (2007) 086102.

40. H. Hara, Y. Sano, K. Arima, K. Yagi, J. Murata, A. Kubota, H. Mimura and K. Yamauchi: CAtalyst-Referred Etching of Silicon, Science and Technology of Advanced Materials, 8 (2007) 162.
41. H. Nakayama, T. Ono, H. Goto and K. Hirose: Electronic stuructures of peanut-shaped fullerene tubes, Science and Technology of Advanced Materials, 8 (2007) 196.
42. K. Iwami, H. Goto, K. Hirose and T. Ono: First-principles study of electronic structure of deformed carbon nanotube, Science and Technology of Advanced Materials, 8 (2007) 200.
43. K. Kutsuki, T. Ono and K. Hirose: First-principles study on electronic structure of Si/SiO<sub>2</sub> interface -effect of interface defects on local charge density-, Science and Technology of Advanced Materials, 8 (2007) 204.
44. K. Yagi, J. Murata, H. Hara, Y. Sano, K. Yamauchi and H. Goto: Fabrication of damascene Cu wirings using solid acidic catalyst, Science and Technology of Advanced Materials, 8 (2007) 166.
45. T. Ono, K. Kutsuki, Y. Egami, H. Watanabe and K. Hirose: First-principles study on electronic structures and dielectric properties of Si/SiO<sub>2</sub> interface, Journal of Physics: Condensed Matter, 19 (2007) 365202.
46. H. Goto, T. Ono and K. Hirose: A Path-Integration Calculation Method Based on the Real-Space Finite-Difference Scheme, Journal of Physics: Condensed Matter, 19 (2007) 365205.
47. Y. Egami, S. Aiba, K. Hirose and T. Ono: Relationship between geometric structure and conductance oscillation in nanowires, Journal of Physics: Condensed Matter, 19 (2007) 365201.
48. K. Inagaki, N. Okada, T. Noda, K. Endo and K. Hirose: Measurement and calculation of differential reflectance spectrum of hydrogen-terminated silicon surfaces having different crystal orientations, Journal of Physics: Condensed Matter, 19 (2007) 365227.
49. Y. Ichii and H. Goto: Fabrication of flat silicon surfaces using ion-exchange particles in ultrapure water, Electrochimica Acta, 52 (2007) 2927.
50. Y. Naitou, H. Ogiso, S. Kamiyama and H. Watanabe: Investigation of local charged defects within high-temperature annealed HfSiON/SiO<sub>2</sub> gate stacks by scanning capacitance spectroscopy, Japanese Journal of Applied Physics, 46 (2007) 083704.
51. H. Watanabe, S. Horie, T. Minami, N. Kitano, M. Kosuda, T. Shimura and K. Yasutake: Impact of Physical Vapor Deposition-Based In situ Fabrication Method on Metal/High-k Gate Stacs, Japanese Journal of Applied Physics, 46 (2007) 1910.
52. M. Zhao, K. Nakajima, M. Suzuki, K. Kimura, M. Uematsu, H. Watanabe, K. Shiraishi, T. Chikyow and K. Yamada: Isotopic labeling study of the oxygen diffusion in HfO<sub>2</sub>/SiO<sub>2</sub>/Si, Applied Physics Letters, 90 (2007) 133510.
53. N. Umezawa, K. Shiraishi, K. Torii, M. Boero, T. Chikyow, H.Watanabe, K. Yamabe, T.Ohno, K. Yamada and Y. Nara: Role of Nitrogen Atoms in Reduction of Electron Charge Traps in Hf-Based High-k Dielectrics, IEEE Electron Device Letters, 28 (2007) 363.
54. S. Yoshida, Y. Watanabe, Y. Kita, T. Shimura, H. Watanabe, K. Yasutake, Y. Akasaka, Y. Nara and K. Yamada: Interface reactions at TiN/HfSiON gate stacs: Dependence on the electrode structure and deposition method, Science and Technology of Advanced Marerials, 8 (2007) 219.

55. K. Ohomori, P. Ahmet, M. Yoshitake, T. Chikyow, K. Shiraishi, K. Yamabe, H. Watanabe, Y. Akasaka, Y. Nara, K.-S. Chang, M .L. Green and K. Yamada: Influences of annealing in reducing and oxidizing ambients on flatband voltage properties of HfO<sub>2</sub> gate stack structures, *Journal of Applied Physics*, 101 (2007) 084118.
56. H. Watanabe, S. Horie, H. Arimura, N. Kitano, T. Minami, M. Kosuda, T. Shimura and K. Yasutake: Interface Engineering by PVD-Based In-Situ Fabrication Method for Advanced Metal/High-k Gate Stacks, *ECS Transactions*, 6 (2007) 71.
57. K. Shiraishi, Y. Akasaka, G. Nakamura, T. Nakayama, S. Miyazaki, H. Watanabe, A. Ohta, K. Ohmori, T. Chikyow, Y. Nara, K. Yamabe and K. Yamada: Theoretical Studies on Metal/High-k Gate Stacks, *ECS Transactions*, 6 (2007) 191.
58. A. Uedono, T. Naito, T. Otsuka, K. Ito, K. Shiraishi, K. Yamabe, S. Miyazaki, H. Watanabe, N. Umezawa, T. Chikyow, T. Ohdaira, R. Suzuki, Y. Akasaka, S. Kamiyama, Y. Nara and K. Yamada: Characterization of Metal/High-k Structures Using Monoenergetic Posiron Beams, *Japanese Journal of Applied Physics*, 46 (2007) 3214.
59. Y. Naitou, A. Ando, H. Ogiso, S. Kamohara, F. Yano, A. Nishida and H. Watanabe: Correlation Between Surface Topography and Static Capacitance Image of Ultrathin SiO<sub>2</sub> Films Evaluated by Scanning Capacitance Microscopy, *Japanese Journal of Applied Physics*, 46 (2007) 5992.
60. T. Ikuta, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe and K. Yasutake: Suppression of surface segregation and heavy arsenic doping into silicon during selective epitaxial chemical vapor deposition under atmospheric pressure, *Applied Physics Letters*, 91 (2007) 092115.
61. A. Uedono, T. Naito, T. Otsuka, K. Ito, K. Shiraishi, K. Yamabe, S. Miyazaki, H. Watanabe, N. Umezawa, A. Hamid, T. Chikyow, T. Ohdaira, R. Suzuki, S. Ishibashi, S. Inumiya, S. Kamiyama, Y. Akasaka, Y. Nara and K. Yamada: Study of high-k gate dielectrics by means of positron annihilation (Invited), *Physica Status Solidi C*, 4 (2007) 3599.
62. A. Uedono, K. Shiraishi, K. Yamabe, S. Inumiya, Y. Akasaka, S. Kamiyama, T. Matsuki, T. Aoyama, Y. Nara, S. Miyazaki, H. Watanabe, N. Umezawa, T. Chikyow, S. Ishibashi, T. Ohdaira, R. Suzuki and K. Yamada: Vacancy-Type Defects in MOSFETs with High-k Gate Dielectrics Probed by Monoenergetic Positron Beams (Invited), *ECS Transactions*, 11 (2007) 81.
63. T. Kawahara, Y. Nishida, S. Sakashita, J. Yugami, N. Kitano, T. Minami, M. Kosuda, S. Horie, H. Arimura, T. Shimura and H. Watanabe: High Performance Gate-First pMISFET with TiN/HfSiON Gate Stacks Fabricated with PVD-Based In-Situ Method (Invited), *ECS Transactions*, 11 (2007) 585.
64. R. Hasunuma, T. Naito, C. Tamura, A. Uedono, K. Shiraishi, N. Umezawa, T. Chikyow, S. Inumiya, M. Sato, Y. Tamura, H. Watanabe, Y. Nara, Y. Ohji, S. Miyazaki, K. Yamada and K. Yamabe: Tight Distribution of Dielectric Characteristics of HfSiON in Metal Gate Devices (Invited), *ECS Transactions*, 11 (2007) 3.
65. M. Kadoshima, Y. Sugita, K. Shiraishi, H. Watanabe, A. Ohta, S. Miyazaki, K. Nakajima, T. Chikyow, K. Yamada, T. Aminaka, E. Kurosawa, T. Matsuki, T. Aoyama, Y. Nara and Y. Ohji: Improvement in Fermi-Level Pinning of p-MOS Metal Gate Electrodes on HfSiON by Employing Ru Gate Electrodes, *ECS Transactions*, 11 (2007) 169.

66. K. Shirashi, Y. Akasaka, G. Nakamura, M. Kadoshima, H. Watanabe, K. Ohmori, T. Chikyow, K. Yamabe, Y. Nara, Y. Ohji and K. Yamada: Theoretical Studies on Fermi Level Pining of Hf-Based High-k Gate Stacks Based on Thermodynamics (Invited), *ECS Transactions*, 11 (2007) 125.
67. M. Zhao, K. Nakajima, M. Suzuki, K. Kimura, M. Uematsu, K. Torii, S. Kamiyama, Y. Nara, H. Watanabe, K. Shirashi, T. Chikyow and K. Yamada: Interface Reaction of High-k Gate Stack Structures Observed by High-Resolution RBS (Invited), *ECS Transactions*, 11 (2007) 103.
68. Y. Naitou, H. Arimura, N. Kitano, S. Horie, T. Minami, M. Kosuda, T. Hosoi, T. Shimura and H. Watanabe: Charge trapping properties in TiO<sub>2</sub>/HfSiO/SiO<sub>2</sub> gate stacks probed by sanning capacitance microscopy, *Applied Physics Letters*, 92 (2008) 1.
69. K. Kutsuki, G. Okamoto, T. Hosoi, T. Shimura and H. Watanabe: Characteristics of Pure Ge<sub>3</sub>N<sub>4</sub> Dielectric Layers Formed by High-density Plasma Nitridation, *Japanese Journal of Applied Physics*, in press.
70. T. Ikuta, Y. Miyanami, S. Fujita, H. Iwamoto, S. Kadomura, T. Shimura, H. Watanabe, K. Yasutake: Investigation of In-situ Boron-doped Si Selective Epitaxial Growth by Comparing with Arsenic Doping, *Science and Technology of Advanced Materials*, 8 (2007) 142.
71. K. Yamamura: Fabrication of Ultra Precision Optics by Numerically Controlled Local Wet Etching, *Annals of the CIRP* 56 (2007) 541-544
72. K. Yamamura: Development of numerically controlled local wet etching, *Science and Technology of Advanced Materials*, 8 (2007) 158.
73. 柴原正文, 赤松正守, 神崎仁, 山村和也: 大気圧プラズマ処理によるポリテトラフルオロエチレンの表面改質, *表面技術誌*, 58 (2007) 124-129
74. N. Zettsu, H. Itoh and K. Yamamura: Plasma-chemical surface functionalization of flexible substrates at atmospheric pressure, *Thin Solid Films*, ASAP
75. Y. Higashi, Y. Takaie, K. Endo, T. Kume, K. Enami, K. Yamauchi, K. Yamamura, Y. Sana, K. Ueno and Y. Mori: Surface gragient integrated profiler for X-ray and EUV optics, *Science and Technology of Advanced Marerials*, 8 (2007) 177.