

## **Fon-Shan Yeh Huang**

### **LIST OF PUBLICATIONS**

#### **(A) Journal Papers**

1. H R. Rechenberg, L. H. Bieman, F S. Huang, and A. M. de Graaf, (1978), "Remanent Magnetization of  $C_0Q - Al_2O_3 \cdot Si.O_2$  Glass: A log t Law", J. Appl. Phys. 49, 1638.
2. F. S. Huang, L. H. Bieman, A. M. de Graaf, and H. R. Rechenberg, (1978), "Frequency Dependent Susceptibility of Cobalt and Manganese Aluminosilicate Spin Glass" J. Phys. C : Solid State Phys. 11, L271.
3. J. R- Chen, C. P. Sung, F. S. Yen, Y. C. Liu and C. C. Wang, (1982), "SAM Studies on High Temperature Annealing of Vanadium Thin Films on Oxidized Silicon Wafers", J. Vac. Sci. Technol. 20, 804.
4. F. S. Huang, (1982), "Electrical Resistivity in Spin Glass CuMn", J Appl. Phys. 53, 7705.
5. F. S. Huang, (1983), "Ultrasonic; Measurement of the Critical Exponent for Spin Glass CuMn", J. App. Phys. 54 5718.
6. J R. Chen, H. R. Liauh, Y. C. Liu, and F. S. Huang, (1983), "Investigation on Solid State Reactions Between Tantalum Thin Films and Oxidized Silicon Crystals", J. Vac. Sci. Technol. (A). 1, 570.
7. F. S. Yeh, L. J. Chen and S. J. Huang, (1983), "The Studies of Amorphous Silicon-based Alloy", Proc. Nath. Sci. Counc. ROC (A). 7, 212.
8. F S. Huang, H. Chang, J. R. Chen, Y. C. Liu, (1984), "Investigations on localized States of Amorphous Silicon Hydrogenated Alloy", J. J. Appl. Phys. 23, 6.
9. F. S. Huang, and Y. Y. Wang, (1984), "Alternate Method to Fabricate Doped Hydrogenated Amorphous Silicon Film" J Vac. Sci. Technol-A, April-June, 461.
10. R. M. Huang, F. S. Yeh, and R. S. Huang, (1984), "Double diffusion differential Amplification Magnetic Sensor" IEEE Trans. on Electron Devices, ED-31, 1001.
11. F. S. Huang, and J. C. Guo, (1985), "Regrowth of Deposited Amorphous Silicon Film by IR Light Annealing", 111, Microscopy of Semi conducting Materials, Institute of Physics, Oxford.
12. W. S. Chen, N. T. Shin, C. H. Chu, S. L. Huang, and F. S. Yeh, (1988), "Arsenic Implants for shallow  $n^+$  Si layer. " IEDMS, 303.
13. Jiann-Ruey Chen, Li-Di Chang, and F. S. Yeh, (1989). "Effects of The Film Thickness on The Interfacial Reaction of  $pt/\{lll\} Si$ " J. Vac. Sci.

Technol.-A. A7, 1345.

14. C. H. Kao, F. S. Huang, and S. L. Huang, (1989) "High Temperature Stable  $TaSi_x/GaAs$  Schottky Barrier" J. Vac. Sci. Tech. A7, 780.
15. C. H. Kao F. S. Huang, and J R. Chen, (1990) "The Interface State of  $TaSi_x/GaAs$  Schottky Barrier" J. Vac. Sci. Technol. A. 8, 2090.
16. F. S. Huang, W. S. Chen, T. M. Hsu and C. W. Lee, (1991), "Rapid Thermal Annealing of The Through-Film Silicon Implantation" Nuclear Instruments and Methods in Physics Research. B 59/60, 1003.
17. L. S. Wang M. L. Lin, C. S. Yoo, and F. S. Huang, "Improvement of Oxide Quality by Rapid Thermal Annealing in  $N_2$ ", (1993) J. Appl. Phys. 74, 3966.
18. W. C. Wang, T. S. Chang, and F. S. Huang, "Diffusion Barrier Study on  $TaSi_x$  and  $TaSi_xNy$ " (1993) Thin solid Film, 235, 169.
19. W. C. Wang, T. S. Chang, and F. S. Huang, "Study on Tantalum-Based Diffusion Barriers between Al and Si" (1994) Solid State Electronics, 37, 65.
20. T. S. Chang, W. C. Wang, L. P. Wang, J. C. Hwang, and F. S. Huang, "Thermal Stability Study of  $TiN/TiSi_2$  diffusion harrier between Cu and  $n^+Si$ " (1994), J. Appl. Phys. 75, 7847.
21. T. S Chang, W, C. Wang, F. S. Huang, L. P. Wang, and J. C. Hwang, "Rapid Thermal Nitridation of Titanium on Cu/Si contact system" (1995), Solid-State Electronics, 38, 815,
22. W. H. Hsu, C. C, Tu, W. S, Chen, and F. S. Huang, "A Fabrication process of Self-Aligned  $TaSi_x$  gate GaAs MESFET" Jpn. J. Appl. Phys. Vol. 35, 2578 (1996).
23. Feng-Lin Jeng, Jiann-Ruey Chen, Bor-Yir Chen, and Fon-Shan Yeh, "Simulation For The Microcrystalline Silicon Thin Film Transistors By Considering The Change of Acceptor-like state and Miciocrystal Grain Size Effect" (1997) J.J.A.P.,36, 4246.
24. L. S. Wang, F. S. Huang, and M. S. Lin, "Quantitative study of charge-to-breakdown of thin gate oxide for a  $P^+$ -poly-Si MOS capacitor". Journal of the Electrochemical Society. (1997) Vol. 144, 2, 698 and Vol. 144, 5, 1S90.
25. L. P. Wang, A Chuang, C. D. Chang, F. S. Huang, and J. Hwang, "Oriented Wedge-like hillocks on Al 0.5 wt % Cu / TiN /  $SiO_2$  Si multiplayer structure" (2000) Thin Solid Films, 358, 292
26. Ting-chang chang, Po-Tasun Liu, Tsung-Ming Tasi, Fon-shan Yeh, T-Y

- Tseng, M-S. Tsai, B-C. Chen, and S. M. Sze, (2001) "Elimination of Dielectric Degradation for Chemical-Mechanical Planarization of low-k Hydrogen Silsesquioxane" Jpn. J. Appl. Phys. Vol. 40, 3143.
27. C. H. Chen, F. S. Huang, (2003) "Surface Modification on Methylsilsesquioxane Low k Dielectric Material" Thin Solid Films, vol.441, p: 248.
  28. F. S. Yeh, "Copper Nanowire Fabrication, " Engineering Science & Technology Bulletin, NSC (2003) 70, 106.
  29. C. H. Chen, C. P. Chang, and F. S. Huang, "The Leakage Current Conduction Mechanism of Cu/Porous Silica Damascene Scheme with Nano-Cluster TaSi<sub>x</sub> Barrier," (2005) Jpn J. Appl. Phys, vol.44, 1A,102.
  30. Henry J. H. Chen, Jen-Fu Liu, Yung Jen Hsu, Jay C C Syu, and Fon-shan Huang (2005) "Fabrication of Au nanowires on hydrogen silsesquioxane by nanoimprint transfer" Nanotechnology 16, 2913.(SCI:3.32)
  31. Sun Zen Chen, Jen-Fu Liu, Henry J. H. Chen, and Fon-shan Huang "A study of nanoimprint pattern transfer on Hydrogen silsesquioxane " 2006 The Journal of Vacuum Science and Technology B Vol. 24, no.4 p1934-1940, I.F.:1.597
  32. T. S. Chang, T.C. Chang, P. T. Liu, T. S. Chang, C. H. Tu, and F. S. Yeh "Improvement of Hydrogenated Amorphous-silicon TFT Performances with low-k Siloxane-Based Hydrogen Silsesquioxane (HSQ) Passivation Layer " 2006 IEEE ELECTRON DEVICE LETTERS, Vol. 27, p902, I.F. : 2.716
  33. C. Y. Liang, F. Y. Gan, P. T. Liu, F. S. Yeh, S. H. L. Chen, and T. C. Chang "A Novel Self-Aligned Etch-Stopper Structure with Lower photo Leakage for AMLCD and Sensor Applications" 2006 IEEE ELECTRON DEVICE LETTERS, Vol.27, p978, I.F. :2.716
  34. Ta-Shan Chang, Ting-Chang Chang, Po-Tsun Liu, Tien-Shan Chang, and Feng-Sheng Yeh, "Integration Issues for Siloxane-Based Hydrogen Silsesquioxane (HSQ) Applied on TFT-LCDs", 2006 Thin Solid Films, 498, p70~74, I.F.:1.666
  35. T-S Chang, T-C Chang, P-T Liu, C-Y Chiang, S-C Chen, and F-S Yeh, "Application of the low dielectric methyl-silsesquioxane (MSZ) as a passivation layer on TFT-LCD", 2006 THIN SOLID FILMS, Vol.:515, p. 1117-1120, I.F.: 1.666
  36. Ming-Tse Dai, Kai-Yuen Lam, Henry J. H. Chen, and Fon-Shan Huang, "Nanocontact Printing Using a Hydrogen Silsesquioxane Stamp with Low E-Beam Dose " 2007 Journal of The Electrochemical Society, Vol.15,

No.7, p H636~ H641, I.F.:2.483

37. Chih-Tsung Tsai, Ting-Chang Chang, Po-Tsun Liu, Po-Yu Yang, Yu-Chieh Kuo, Kon-Tsu Kin, Pei-Lin Chang, and Fon-Shan Huang “Low-temperature method for enhancing sputter-deposited HfO<sub>2</sub> films with complete oxidization” 2007, Applied Physics Letters 91, 012109, I.F.:3.596
38. M. C. Wang, T. C. Chang, Po-Tsun Liu, R. W. Xiao, L. P. Lin, Y. Y. Li, F. S. Huang, and J. R. Chen”Suppression of Schottky leakage current in island-in amorphous silicon thin film transistor with the Cu/CuMg as source/drain metal” 2007, Applied Physics Letters 91, 062103. I.F.:3.596
39. Chih-Tsung Tsai, Po-Tsun Liu, Ting-Chang Chang, Chen-Wen Wang, Po-Yu, Yang, and Fon-Shan Yeh, “Low-Temperature Passivation of Amorphous-Silicon Thin-Film Transistors With Supercritical Fluids” 2007, IEEE Electron Device Letters, Vol. 28, NO.7, p584., I.F. :2.486
40. Ta-Shan Chang, Ting-Chang Chang, Po-Tsun Liu, Shu-Wei Tsao, and Feng-Shen Yeh, “Investigation of the low dielectric siloxane-based hydrogen silsesquioxane (HSQ) as passivation layer on TFT-LCD” 2007, Thin Solid Films 516, 374-377, I.F.:1.693
41. M-C Wang, T-C Chang, P-T Liu, R-W Xiao, L-F Lin, Y-Y Li, F-S Yeh, and J-R Chen, “n(+)-doped-layer-free microcrystalline silicon thin film transistors fabricated with the CuMg as source/drain metal”, 2007 APPLIED PHYSICS LETTERS, Vol. 91, 022113, I.F.:3.596
42. M-C Wang, T-C Chang, P-T Liu, Y-Y Li, F-S Huang, Y-H Mei, and J-R Chen, “Source-drain barrier height engineering for suppressing the a-Si : H TFTs photo leakage current”, 2007 THIN SOLID FILMS, Vol.:516, p. 470-474, I.F.:1.693
43. C-Y Liang, F-Y Gan, F-S Yeh, and T-C Chang, “Mechanisms for on/off currents in dual-gate a-Si : H thin-film transistors using indium-tin-oxide top-gate electrodes”, 2007 JOURNAL OF THE SOCIETY FOR INFORMATION DISPLAY, Vol. 15, p. 975-978, I.F.0.498
44. Chih-Chieh Hsu, Fang-Yee Shen, and Fon-Shan Huang, “The Gold Nanowires Fabricated by Immersion Plating”, 2008, Nanotechnology. 19, 195302, I.F.:3.446
45. Chih-Tsung Tsai, Ting-Chang Chang, Kon-Tsu Kin, Po-Tsun Liu, Po-Yu Yang, Chi-Feng Weng, and Fon-Shan Huang, “A low temperature fabrication of HfO<sub>2</sub> films with supercritical CO<sub>2</sub> fluid treatment” 2008, Journal of Applied Physics 103, 074108, I.F.2.201
46. Puru Lin, Ching-Yi Wu, Yung-Ming Cheng, Yuh-Jiuan Lin, Fon-Shan Huang and Star Ruey-Shing Huang, “Fabrication and Characterization of

- a Three- Dimensional Flexible Thermopile“ 2008 Japanese Journal of Applied Physics Vol. 47, No. 3, 2008, pp.1787-1793, I.F. :1.309
47. Tsai CT, Chang TC, Liu PT, Cheng YL, Huang FS, “Low temperature improvement on silicon oxide grown by electron-gun evaporation for resistance memory applications”, 2008 APPLIED PHYSICS LETTERS, Vol. 93, 052903, I.F.:3.726
  48. H-J Yang , A. Chin, S-H Lin , F-S Yeh, and S.P. McAlister, “Improved high temperature retention for charge-trapping memory by using double quantum barriers”, 2008 IEEE ELECTRON DEVICE LETTERS, vol.29, p. 386-388, I.F. :3.049
  49. H-J Yang , C-F Cheng , W-B Chen , S-H Lin, F-S Yeh, S.P. McAlister, and A. Chin, “Comparison of MONOS memory device integrity when using  $\text{Hf}_{1-x}\text{yN}_x\text{O}_y$  trapping layers with different N compositions”, 2008 IEEE TRANSACTIONS ON ELECTRON DEVICES, vol.55, p. 1417-1423, I.F. :2.730
  50. S-H Lin, H-J Yang , W-B Chen, F-S Yeh, S.P. McAlister, and A. Chin, “Improving the retention and endurance characteristics of charge-trapping memory by using double quantum barriers”, 2008 IEEE TRANSACTIONS ON ELECTRON DEVICES, vol.55, p. 1708-1713, I.F. :2.730
  51. C-H Cheng, S-H Lin, K-Y Jhou , W-J Chen, C-P Chou , F-S Yeh, J. Hu , M. Hwang , T. Arikado , and S.P. McAlister, “High density and low leakage current in  $\text{TiO}_2$  MIM capacitors processed at 300°C”, 2008 IEEE ELECTRON DEVICE LETTERS, vol.29, p. 845-847, I.F. :3.049
  52. C-H Cheng, H-C Pan, S-H Lin, H-H Hsu, C-N Hsiao, C-P Chou, F-S Yeh, and A. Chin, “High-Performance MIM Capacitors Using a High-k  $\text{TiZrO}$  Dielectric”, 2008 JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.155, G295-G298, I.F.:2.437
  53. Chen YT, Chen KM, Liao WS, Huang GW, and Huang FS, “Low-Frequency Noise Characteristics of SiGe p-Channel Metal-Oxide-Semiconductor Field-Effect Transistors with High-Compressive Interlayer-Dielectric- $\text{SiN}_x$  Stressing Layer”, 2009 JAPANESE JOURNAL OF APPLIED PHYSICS, Vol. 48, 04C042, I.F. :1.309
  54. Tsai CT, Chang TC, Liu PT, Cheng YL, Kin KT, Huang FS, “Application of Supercritical  $\text{CO}_2$  Fluid for Dielectric Improvement of  $\text{SiO}_x$  Film”, 2009 ELECTROCHEMICAL AND SOLID STATE LETTERS, Vol. 12, H35, I.F. :2.001
  55. Lin SH, Chiang KC, Yeh FS, and Chin A, “Improved Stress Reliability of Analog Metal-Insulator-Metal Capacitors Using  $\text{TiO}_2/\text{ZrO}_2$

- Dielectrics", 2009 IEEE ELECTRON DEVICE LETTERS, Vol. 30, 1287, I.F. :3.049
56. Lin SH, Cheng CH, Chen WB , Yeh FS, Chin A, "Low-Threshold-Voltage TaN/LaTiO n-MOSFETs With Small EOT", 2009 IEEE ELECTRON DEVICE LETTERS, Vol. 30, 999, I.F. :3.049
  57. Huang CC, Cheng CH, Liou BH, Yeh FS, Chin A, "Effect of Ta<sub>2</sub>O<sub>5</sub> Doping on Electrical Characteristics of SrTiO<sub>3</sub> Metal-Insulator-Metal Capacitors", 2009 JAPANESE JOURNAL OF APPLIED PHYSICS, Vol. 48, 081401, I.F. :1.309
  58. Chin A, Chang MF, Lin SH, Chen WB, Lee PT, Yeh FS, Liao CC, Li MF, Su NC, Wang SJ, Chin A, Chang MF, Lin SH, Chen WB, Lee PT, Yeh FS, Liao CC, Li MF, Su NC, Wang SJ, "Flat band voltage control on low V<sub>t</sub> metal-gate/high-kappa CMOSFETs with small EOT", 2009 MICROELECTRONIC ENGINEERING, Vol. 86, 1728, I.F. :1.583
  59. Lin SH, Chiang KC, Chin A, Yeh FS, "High-Density and Low-Leakage-Current MIM Capacitor Using Stacked TiO<sub>2</sub>/ZrO<sub>2</sub> Insulators", 2009 IEEE ELECTRON DEVICE LETTERS, Vol. 30, 715, I.F. :3.049
  60. Lin SH, Cheng CH, Chen WB, Yeh FS, Chin A, "Low-Threshold-Voltage TaN/Ir/LaTiO p-MOSFETs Incorporating Low-Temperature-Formed Shallow Junctions", 2009 IEEE ELECTRON DEVICE LETTERS, Vol. 30, 681, I.F. :3.049
  61. Lin SH, Chiang KC, Yeh FS, Chin A, "Improved Stress Reliability of Analog Metal-Insulator-Metal Capacitors Using TiO<sub>2</sub>/ZrO<sub>2</sub> Dielectrics", 2009 IEEE ELECTRON DEVICE LETTERS Vol. 30, 1287-1289, I.F. :3.049
  62. Cheng CH, Hsu HH, Chen WB, Chin A, and Yeh FS, "Characteristics of Cerium Oxide for Metal-Insulator-Metal Capacitors", 2010 ELECTROCHEMICAL AND SOLID STATE LETTERS, Vol 13, II16-II19, I.F. :1.837
  63. Lin CL, Chen YT, Huang FS, Yeh WK, and Lin CT, "The Impact of Oxide Traps Induced by SOI Thickness on Reliability of Fully Silicide Metal-Gate Strained SOI MOSFET", 2010 IEEE ELECTRON DEVICE LETTERS, Vol. 31 P.165-167, I.F. :2.685
  64. Hu CW , Chang TC, Tu CH, Huang YH, Lin CC, Chen MC, Huang FS, Sze SM, and Tseng TY, "High Density Ni Nanocrystals Formed by Coevaporating Ni and SiO<sub>2</sub> Pellets for the Nonvolatile Memory Device Application", 2010 ELECTROCHEMICAL AND SOLID STATE LETTERS, Vol. 13, H49-H51, I.F. :1.837
  65. Cheng CH, Hsu HH, Hsieh IJ, Deng CK, Chin A, and Yeh FS,

- “High-kappa TiCeO MIM Capacitors with a Dual-Plasma Interface Treatment”, 2010 ELECTROCHEMICAL AND SOLID STATE LETTERS, Vol. 13, I112-I115, I.F. :1.837
66. Cheng CH, Deng CK, Hsu HH, Chen PC, Liou BH, Chin A, Yeh FS, “Lanthanide-Oxides Mixed TiO<sub>2</sub> Dielectrics for High-kappa MIM Capacitors”, 2010 JOURNAL OF THE ELECTROCHEMICAL SOCIETY, Vol. 157, H821-H824, I.F. :2.241
  67. Cheng CH, Hsu HH, Chen PC, Liou BH, Chin A, Yeh FS, “Higher-kappa titanium dioxide incorporating LaAlO<sub>3</sub> as dielectrics for MIM capacit”, 2010 SOLID-STATE ELECTRONICS, Vol. 54, p.646-649, I.F. :1.484
  68. Hsu CC, Huang FS, “Fabrication for Cu/Hydrogen Silsesquioxane Damascene Structure by Nanoimprint”, 2010 JOURNAL OF THE ELECTROCHEMICAL SOCIETY, Vol.157, p.H443-H448, I.F. :2.241
  69. Chen SC, Chang TC, Chen WR, Lo YC, Wu KT, Sze SM, Chen J, Liao IH, and Yeh FS, “Nonvolatile memory effect of tungsten nanocrystals under oxygen plasma treatments”, 2010 THIN SOLID FILMS, Vol. 518, p7339-7342, I.F. :1.727
  70. Cheng CH, Chin A, and Yeh FS, “Ultralow-Power Ni/GeO/STO/TaN Resistive Switching Memory”, 2010 IEEE ELECTRON DEVICE LETTERS, Vol.31, p. 1020-1022, I.F. :2.685
  71. Cheng CH, Huang CC, Hsu HH, Chen PC, Chiang KC, Chin A, and Yeh FS, “A Study on Frequency-Dependent Voltage Nonlinearity of SrTiO<sub>3</sub> rf Capacitor”, 2010 ELECTROCHEMICAL AND SOLID STATE LETTERS, Vol. 13, p. H436-H439, I.F. :1.837

### **(B) Conference Papers**

1. F. S. Yeh, C. H. Kno and J. R. Chen, (1981), "Calorimetric Investigation of A  $MnO.AlO_3.SiO_2$  Glass", Proceeding of International Symposium on engineering Sciences and Necgabucs, 2, 1487.
2. L. T. Chen, F. S. Yeh, and J. T. Lue, (1982), "Properties of a-Si:H:F and a-Si:H alloys", Electronic, Devices & Material Symposium, 556.
3. C. Y. Wu, Y. T. Ling, and F. S. Yeh, (1983), "A New High-Density Low-Power Bipolar Static RAM Cell", Proceeding of International Symposium on VLSI, 121.
4. H. L. Hsu and F. S. Yeh, (1983), "DLTS Measurement and Schottky Barrier Study of Hydrogenated Amorphous Silicon", Proceedings of Electron Device & Material Symposium, 64.
5. F. C. Chao and F. S. Yeh, (1984), "Amorphous Silicon Thin Film

Metal-Semiconductor Field Effect Transistor" Electronic Device and Material, 133.

6. R. S. Huang, S. Y. Wang and F. S. Yeh, (1985), "Gettering Effects on the Minority Carrier Lifetime of Silicon by Phosphorus Implantation", 754 IREE Conventions, Melbourne.
7. J. R. Chen, L. D. Chang, and F. S. Yeh, (1987), "The Substrate Heating Effects on the Interfacial Reaction of Pt/(III)Si", The General Conference of the Condensed Matter Division.
8. C. H. Kao and F. S. Huang, (1988), "High temperature stable TaSi<sub>x</sub>-GaAs Schottky Barrier" The American Vacuum Society, 35th National Vacuum Symposium and Topical Conferences, Atlanta, Ca.
9. C. H. Kao and F. S. Huang, (1988), "The through-film implantation on GaAs" The Electrochemical Society, State-of-The-Art Program on Compound Semiconductors, Chicago, 111.
10. C. W. Lee and F. S. Huang, (1989), "Rapid Thermal Annealing of The Through-Film Implantation on GaAs" MRS .Symposia-Spring. San Diego, CA, U.S.A.
11. N. T. Shih, F. S. Huang, C. H. Chu, and W. S. Chen, (1989). "Rapid thermal Annealing of As in Si" Mat. Res. Soc. Symp. Proc. Vol. 146, 371 (1989),
12. N. T. Shih, J. S. Sheu, and F. S. Huang, "Hot Electron Effect Reduction on Rapid Thermal Annealed Single-Diffusion Drain". (1989) IREECON '89, Melbourne, Australia.
13. C. H. Kao and F. S. Huang, "The Interface State of TaSi<sub>2</sub>/GaAs Schottky Barrier". (1989) The 36th National Symposium of AVS, Boston, MA. U.S.A.
14. F. S. Huang, W. S. Chen, T. M. Ksu, and C. W. Lee "Rapid Thermal Annealing of The Through-Film Silicon Implantation". (1990) Ion Beam Modification of Materials 1990, Knoxville, TN. U.S.A.
15. F. S. Huang, W. S. Chen, and T. M. Hsu, " Rapid Thermal Annealing of The Through-Ta<sub>5</sub>Si<sub>3</sub> film Implantation on GaAs ". (1990) SPIE proceedings-Rapid Thermal Related Processing Techniques, 172, Santa Clara, Ca U.S.A.
16. L. S. Wang, M. L. Lin, N. S. Tsai, and F. S. Huang, "Improvement of Oxide Quality by Rapid Thermal Annealing in N<sub>2</sub> " Mat. Res. Soc. Symp Proc. Vol. 224, 425 (1991).
17. W. G. Wang, T. S. Chang, W. S. Chen, and F. S. Huang. (1991), "A



- Comparison of Sputtered  $\text{TaN}_x$ ,  $\text{Ta-Si-N}$ , And  $\text{TaSi}_x$  Diffusion Barrier in Al-Metallization for Si" (1991), IREECON '91, Sydney, Australia.
18. Chi-Ping ChEn, Kuen-Sane Ding, and Fon Shan Huang, (1991), "Reactive Ion Etching of  $\text{TaSi}_x/\text{CaAs}$  in a  $\text{CF}_4\text{-O}_2$  Discharge", Mat. Res. Soc. Symp. Proc. Vol. 240, 379 (1991).
  19. W. G. Wang, C. S. Chang, and F. S. Huang, "The Thermal Stability Study on  $\text{Al/Ta-Si-N/Si}$ ". 1992 Fall Meeting, Mat. Res. Soc. Boston, MA. U.S.A.
  20. T. S. Chang, W. C. Wang, I. P. Wang, J. C. Hwang, and F. S. Huang, (1993) "The Thermal Stability Study on  $\text{Cu/TiN/TiSi}_2/\text{Si}$ " Mat. Res. Soc. Sym. Proc. (1993),
  21. L. P. Wang, C. D. Chang, F. S. Huang, J. C. Hwang, "The Effect of TiN Layer on Electromigration" (1995) Mat. Res. Soc. Sym. San Francisco, U. S. A.
  22. T. S. Chang, K. Y. Yang, and F. S. Huang, "Characterization of LPCVD TiN Films Deposited Using Horizontal Tube Reactor", (1995), Mat. Res. Soc. Sym. Proc, San Francisco, U.S.A.
  23. T. S. Chang, W.C. Wang, and F. S. Huang, "The Study of Diffusion Barrier Layer TiN in  $\text{Cu/TiN/TiSi}_2/\text{Si}$  Contact System" (1995) International Symp. On VLSI Technology, Systems, and Applications. 185, Taipei, Taiwan.
  24. Y. C. Chang, Y. J. Guo, and F. S. Huang. "Affect of Pretreatment on Microstructure and Electromigration of Al-Cu alloy," (1996), Mat. Res. Soc. Sym. Boston, U. S. A.
  25. J. P. Wang, A Chuangs, F. S. Huang, and J. Hwang, " The Effect of Ti Interlayer on The Hillock Formation of Al-0.5 wt% Cu films on The  $\text{TiN/Ti/SiO}_2/\text{Si}$  multilayer structure" (1997), Proc. Mat. Res. Sec. 473,421
  26. Hsu Ping, F. S. Huang, and Su-Jen Huang "The Stress Effect on The Leakage Current of  $\text{Al/TiN/TiSi}_2^+/\text{n p}$  Ultra-shallow Junction," (1997), Mat. Res. Soc Fall Meeting, Boston, M. A. U.S.A.
  27. L. P. Wang, A. Chuang, L. T. Cin, F. S. Huang, K. Perng. and J. Hwang "Effect of Ar Sputtering Pretreatment on The Electromigration Resistance in  $\text{Al-Cu/TiN/Ti}$  Interconnects. " (1998), Mat. Res. Soc. Sym. Vol. 516, 103
  28. Yuan-Pu Liao, Meng-Yi Sun, Chung-Hsien Chen and Fon-Shan Huang, "After-Glow Chemical Vapor Deposition of Aluminum for Metallztion in

- ULSI" Mat Res. Soc. Sym. (1999) Spring meeting, San Francisco, Ca. U. S. A.
29. Wei-Chang Wang, and Fon-Shan Huang, "Enhancement of the Formation of  $\text{TiSi}_2\text{C}_{54}$  Phase on Co-Sputtering Deposited Ti-Ta-Si film " Mat Res. Soc. Sym. (1999) Spring meeting, San Francisco, Ca, U. S. A.
  30. L. P. Wang, A. Chuang, F. S. Huang and J. Hwang. "The Bilayer Structure of Al-0.5 wt% Cu Film Induced by Ar Sputtering Pretreatment" (2000), Int. conf. Metall. Coat. Thin Film, San Diago, U. S.A.
  31. Ching-Han Jan, Xuan-Kai Wang, and Fon-Shan Huang, " A Low Cost Cu Seed Layer Deposition for ULSI Metallization" (2001) Mat Res. Soc. Sym. Spring Meeting, San Francisco, Ca, U. S. A.
  32. Shih-Chan Huang, Yu-Jen Chen, Xing-Jian Guo, and Fon-Shan Huang, "Sputtered Ta-Si Diffusion Barrier in Cu/Low K Metallization", (2001) Mat. Res. Soc. Sym. Spring Meeting, San Francisco, Ca, U. S. A.
  33. Da-Wei Lin, Shih-Chan Huang, Yu-Jen Chen, Xing-Jian Guo, and Fon-Shan Huang, (2001) "Ta-Rich Tantalum Silicide Nano-Cluster Diffusion Barrier in ULSI Metallization" ICSICT, Proc. Vol. 1. 496.
  34. Min-Shuong Lin, Fon-Shan Huang, and C. K. Lee, (2002) "Application of MEMS in Biotechnology, Automation, Semiconductor, Information, and communication-Taiwan perspective" (2002) 8<sup>th</sup> world Micromachine summit, Maastricht, the Netherlands.
  35. Yei Wen Huang, Hong-Da Chang, and Fong Shan Huang, "Novel Cu Seed Layer Deposition for ULSI Metallization," (2002), 19th VLSI Multilevel Interconnection Conference Proceeding, 203, Singapore.
  36. Da-Wei Lin, Li-Sheng Ke, and Fong Shan Huang, "Nano-Cluster Ta-Si Diffusion Barrier," (2002), 19th VLSI Multilevel Interconnection Conference Proceeding, 351, Singapore.
  37. C. H. Chen, C. P. Chang, M. S. Tsai, and F. S. Huang, "The Leakage Current Study of Cu/Silica Damascence Structure with Nano-Cluster  $\text{TaSi}_x$  Barrier," (2002), 19th VLSI Multilevel Interconnection Conference Proceeding, 289, Singapore.
  38. Chung Hsien Chen, Chin Piao Chang, Ming Shih Tsai, and Fon-Shan Huang, "The Leakage Current Mechanism Study of Cu/Porous  $\text{SiO}_2$  Damascene Structure with Nano-Cluster  $\text{TaSi}_x$  Barrier," (2003) Mat. Res. Soc. Sym. 2003 Spring Meeting, San Francisco, Ca, U. S. A.
  39. L. S. Ke, J. F. Liu, and F. S. Huang, "The Process Integration Study on Copper/Porous  $\text{SiO}_x\text{N}_y$ , " (2003) 20<sup>th</sup> IVMIC, Marina del Rey, Cal., U.S.A.

40. Chung Hsien Chen, and Fon-Shan Huang, "The Leakage Current Study on Cu/TaSix/Porous Silica Damascence," (2004), Proceedug of Damascene on the physical and Failure Anaylysis of Integated circuits, 65.
41. Chen-Huang Peng, Uei-Juin Tseng, and Fon-Shan Yeh, "The Leakage Current Study on Cu/TaSi0.5/SiOC/ Damascence Structure,"(2004), International Electronics Devices and Materials symposia, Taiwan.
42. Guo-Zhung Hong, Jie-Ting Wu, Hong-Da Chang, Fu-Hsiang Ko, and Fon-Shan Yeh, "The study on copper Nanowire,"(2004), International Electronics Devices and Materials Symposia, Taiwan.
43. Jen Fu Liu, Yung Jen Hsu, Henry J. H. Chen, Fon-Shan Yeh, and Sun Zun Chen, "Transferring Au Nano -Wires on HSQ by Nano-Imprint,"(2004), Nano-Engineering and Micro-system Technology conference ,Taiwan.
44. Jen-Fu Liu, Sun-Zun Chen, Henry J.H. Chen, Fon-Shan Yeh, " Pattern Transferring and Degradation Study on HSQ by Nanoimprinting Technique" (2004), Nano-Engineering and Micro-system Technology Conference, Taiwan.
45. J. F. Liu, Y. J. Hsu, J. H. Chen, F. S. Huang, and S. Z. Chen "Au Nano-wire Transferring onto HSQ by Nano-imprinting Technology". Nanotech. (2005) p271. Anaheim, California U.S.A
46. J. F. Liu, S. Z. Chen, H. J. H. Chen, and F. S. Huang, "A highly Reliable Pattern Transfer of HSQ". Nanotech, (2005) p279. Anaheim, California U.S.A
47. M. T. Dai, C. L. Laio, L. L. W. Chen, H. J. H Chen, S. Z. Chen and F. S. Huang, "The Study of Nanocontact Printing on HSQ" 2005, EDMS, Kaohsiung, Taiwan
48. W. J. Ceng, C. L. Hsieh, C. K. Shu, and F. S. Yeh "Process Integration of Air-Gap Cu Interconnect Structures " 2005, EDMS, Kaohsiung, Taiwan
49. J. T. Wu, Y. C. Luo, and Fon-shan Huang "4 Point Probe Technique on Copper Nanowire" 2005, EDMS, Kaohsiung, Taiwan
50. J. C. C. Shu, J. T. Wu, C. C. Chao, and F. S. Huang "Nano- Imprint Transfer of Gold Nano-wire " 2005, EDMS, Kaohsiung, Taiwan
51. Yuan-Tsung Lin, Fang Yee Shen, Ching-Yi Wu, Yuh-Jiuan Lin and Fon-Shan Yeh " Low Temperature Process for Organic Thin Film Transistors on Flexible Substrate " 2005, EDMS, Kaohsiung, Taiwan
52. Sun-Zen Chen, Henry J. H. Chen and Fon Shan Huang, "An

- Investigation of Nanoindentations of Hydrogen Silsesquioxane“ MRS 2006, Spring Meeting, Z.37, April 17-21, San Fransico, U.S.A.
53. Ming-Tse Dai, Ryan C. L. Laio, Leio L. W. Chen, Henry J. H. Chen, Sun-Zen Chen and Fon-Shan Huang, “The Study of The Nanocontact Printing by Hydrogen Silsesquioxane Stamp” MRS 2006, Spring Meeting, T5.19, April 17-21, San Fransico, U.S.A.
  54. Jay C. C. Shu, Jie ting Wu, Chih Chiang Chao and Fon Shan Huang, “Naon-Imprint Transfer of Gold Nano-Wires” MRS 2006, Spring Meeting, T3.3, April 17-21, San Fransico, U.S.A.
  55. Cheng-Liang Hsieh, Ming-Chang Lin and Fon-Shan Yeh, “Damascene Process for Air-Gap Cu Interconnects Using Sacrificial Layer HSQ” ICSICT 2006, B1.16, Oct. 23-26, Shanghai, China.
  56. K. Y. Lam, Leio L. W. Chen, Henry J. H. Chen and Fon-Shan Huang, “The Study on nanocontact Printing with Ink Aminosilane” ICSICT 2006, D3.12, Oct. 23-26, Shanghai, China.
  57. Yi Cheng Luo, Jin Hong Zhuo, Jie Ting Wu and Fon-Shan Yeh, “Cooper Nanowires Embedded in Flexible Substrate” ICSICT 2006, D3.11, Oct. 23-26, Shanghai, China.
  58. K. Y. Lam, Leio L. W. Chen, N. H. Chen, Henry J. H. Chen and Fon-Shan Huang, “Nanocontact Printing with Ink Aminosilane” NNT 2006, P48, Nov. 15-17, San Francisco, USA.
  59. C-L Liao, N-H Chen, J-H Chen, S-Z Chen and Fon-Shan Yeh, “Fabrication of High Aspect Ratio Template for Step And flash Imprint” NNT 2006, P43, Nov. 15-17, San Francisco, USA.
  60. Y.C. Luo, J.H. Zhuo, J.T. Wu, F. S. Huang, “Copper Nanowires Embedded in Flexible Substrate” IEDMS (2006) BC131
  61. C.L.Laio, C.C.Fu, L.W.Chen, J.H.Chen, S.Z. Chen, K. Y. Lam, F.S. Huang, “The Study of nanoimprint lithography with the novel UV-based mould” IEDMS (2006) BC 33.
  62. Chih-Kai Hsu, Ming-Chang Lin, Chih-Chieh Hsu, and Fon-Shan Huang, “Electromigration Study on Sn Capped Air-Gap Cu Damascene Structure”, 2007 MRS Spribg Meeting, 60, San Francisco, CA, U.S.A. (2007)
  63. Nian-Huei Chen, Chen-Liang Liao, Henry.J.H.Chen, Chun-Hung Lin, and Fon-Shan Huang, “The Lift-Off Technique for 20GHz Surface Acoustic Wave”, 2007 MRS Spring Meeting, 277, San Francisco, CA, U.S.A.(2007)
  64. Fon-Shan Huang, “Saw Filter Fabricated by U-V Nanoimprint”, 2007,  
1<sup>st</sup> Spain-Taiwan Nano-Electronics Workshop, Barcelona, Spain.(2007)

65. F-Y Shen, N-H Chen, K-Y Lam, J.H. Chen, and F-S Huang, "The Study of the Nanocontact Imprint with Aminosilane", Nanotechnology Conference and Trade Show 2008, Boston, U.S.A.
66. N-H Chen, H.J.H. Chen, C-H Lin, and F-S Huang, "10GHz Surface Acoustic Wave Filter Fabrication by UV Nano-Imprint", Nanotechnology Conference and Trade Show 2008, Boston, U.S.A
67. Chih-Chieh Hsu, Li-Wei Cheng and Fon-Shan Huang, "Gold Nanowires Imprinted by Hot-embossing on Parylene-C/Polyimide and Hydrogen Silsesquioxane", 2008 The 7th International Conference on Nanoimprint and Nanoprint Technology, Kyoto, Japan
68. N-H Chen, C-L Liao, H.J.H. Chen and F-S Huang, "GHz Band Surface Acoustic Wave Filter Fabrication by UV-Nanoimprint", 2008 The 7th International Conference on Nanoimprint and Nanoprint Technology, Kyoto, Japan
69. Lin SH, Chin A, Yeh FS, and McAlister SP, "Good 150 degrees C Retention and Fast Erase Characteristics in Charge-Trap-Engineered Memory having a Scaled Si<sub>3</sub>N<sub>4</sub> Layer", IEEE INTERNATIONAL ELECTRON DEVICES MEETING 2008, San Francisco, CA, USA
70. Nian-Huei Chen, Che-Yu Liu, Fang-Yee Shen, Chih-Chieh Hsu and Fon-Shan Huang, "Fabrication of Si Nanowires on Insulator by Nickel Silicide-Mediated Lateral Growth," 2009 Materials Research Society spring meeting, San Francisco, CA., U.S.A (2009)
71. Chih-Chieh Hsu, Li-Wei Cheng and Fon-Shan Huang, "The Study of Cu/hydrogen silsesquioxane Interconnects Fabricated by Hot-embossing", 2009 Materials Research Society Spring Meeting, San Francisco, CA., U.S.A (2009)
72. Fang-yee Shen, Nian-Huei Chen, Kai-Yuen Lam and Fon-Shan Huang, "The Study of The Nanocontact Imprint with Aminosilane for IC Fabrication", 2009 Materials Research Society Spring Meeting, San Francisco, CA., U.S.A (2009)
73. A. Chin, S. Lin, C. Tsa, and F. Yeh, "Improved Device Characteristics in Charge-Trapping-Engineered Flash Memory Using High-k Dielectrics",

216 ECS Meeting, Vienna, Austria (2009)

74. Nian-Huei Chen, Chiu-Yen Wang, Shu-Jen Huang and Fon-Shan Huang,  
“MOCVD Al Nanocrystal Embedded in AlN Thin Film for Nonvolatile  
Memory”, 2010 MRS Spring Meeting, San Francisco, CA .U.S.A (2010)
75. Li-Wei Cheng, Che-Wei Chen, Chih-Chieh Hsu and Fon-Shan Huang,  
“Fabrication of Metal Nano-array on Parylene-C/Polyimide by  
Immersion Plating”, 2010 MRS Spring Meeting, San Francisco,  
CA .U.S.A (2010)