

## Gary Rubloff - PUBLICATIONS

1. "[A Normal Incidence Scanning Reflectometer of High Precision](#)", U. Gerhardt and G. W. Rubloff, Applied Optics 8, 305 (1969).
2. "[Normal-Incidence Reflectance, Optical Properties, and Electronic Structure of Zn](#)", G. W. Rubloff, Phys. Rev. B 3, 285 (1971).
3. "[Far-Ultraviolet Reflectance Spectra of Ionic Crystals](#)", G. W. Rubloff, J. Freeouf, H. Fritzsche, and K. Murase, Phys. Rev. Lett. 26, 1317 (1971).
4. "[Far-Ultraviolet Spectroscopy of Solids in the Range 6-36 eV Using Synchrotron Radiation from an Electron Storage Ring](#)", G. W. Rubloff, H. Fritzsche, U. Gerhardt, and J. Freeouf, Rev. Sci. Instr. 42, 1507-1513 (Oct 1971).
5. "[Far-Ultraviolet Reflectance Spectra and the Electronic Structure of Ionic Crystals](#)", G. W. Rubloff, Phys. Rev. B 5, 662 (1972).
6. "[Piezo-optical Evidence for  \$\Delta\$  Transitions at the 3.4 eV Optical Structure of Silicon](#)", F. H. Pollak and G. W. Rubloff, Phys. Rev. Lett. 29, 789 (1972).
7. "[Effects of Uniaxial Stress on Resonance Raman Scattering near the E1 Gap in InSb](#)", E. Anastassakis, F. H. Pollak, and G. W. Rubloff, Proceedings of the 11th Internat'l. Conf. on the Physics of Semiconductors, Warsaw, Poland, 1972 (PWN-Polish Scientific Publishers, Warsaw, 1972), p. 1188.
8. "Optical Spectroscopy of Surfaces: Reflectance Studies of Chemisorption", G. W. Rubloff, J. Anderson and P. J. Stiles, Surface Science 37, 75 (1973).
9. "Optical Reflectance Studies of Chemisorption on a Clean Metal Surface", J. Anderson, G. W. Rubloff and P. J. Stiles, Solid State Commun. 12, 825 (1973).
10. "[Local-Field Effects in the Optical Properties of Solids: the Far-Ultraviolet Spectra of Ionic Crystals](#)", T. K. Bergstresser and G. W. Rubloff, Phys. Rev. Lett. 30, 794 (1973).
11. "Resonance Raman Scattering in InAs near the E1 Gap", G. W. Rubloff, E. Anastassakis, and F. H. Pollak, Solid State Commun. 13, 1755 (1973).
12. "[Resonance Raman Scattering under \[111\] Uniaxial Stress in the Region of the E1 Gap in InAs](#)", E. Anastassakis, F. H. Pollak, and G. W. Rubloff, Phys. Rev. B 9, 551 (1974).
13. "[Surface Reflectance Spectroscopy \(SRS\) Studies of Chemisorption on W\(100\)](#)", J. Anderson, G. W. Rubloff, M. A. Passler, and P. J. Stiles, J. Vac. Sci. Technol. 11, 271 (1974).
14. "[Optical Reflectance Spectroscopy of Surface States in H<sub>2</sub> Chemisorption on W\(100\)](#)", G. W. Rubloff, J. Anderson, M. A. Passler, and P. J. Stiles, Phys. Rev. Lett. 32, 667 (1974).
15. "[Surface Reflectance Spectroscopy Studies of Chemisorption on W\(100\)](#)", J. Anderson, G. W. Rubloff, M. A. Passler, and P. J. Stiles, Phys. Rev. B 10, 2401 (1974).
16. "[Orbital Shifts Associated with Chemical Bonding of Organic Molecules on ZnO Nonpolar Surfaces](#)", G. W. Rubloff, H. Luth and W. D. Grobman J. Vac. Sci. Technol. 13, 333 (1976).
17. "Ultraviolet-Photoemission Studies of Formic Acid Decomposition on ZnO Nonpolar Surfaces", H. Luth, G. W. Rubloff, and W. D. Grobman, Solid State Commun. 18, 1427 (1976).
18. "Orbital Energy Shifts Associate with Chemical Bonding of Organic Molecules on ZnO Nonpolar Surfaces", G. W. Rubloff, H. Luth, and W. D. Grobman, Chem. Phys. Lett. 39, 493 (1976).
19. "[Unusual Extramolecular Relaxation-Polarization Shifts of Low-Lying Orbitals in the UV Photoemission Spectra of Adsorbed Organic Molecules](#)", G. W. Rubloff, W. D. Grobman, and H. Luth, Phys. Rev. B 14, 1450 (1976).

20. ["Ultraviolet Photoemission and Flash Desorption Studies of the Chemisorption and Decomposition of Methanol on Ni\(111\)"](#), G. W. Rubloff and J. E. Demuth, J. Vac. Sci. Technol. 14, 419 (1977).
21. "Chemisorption and Decomposition Reactions of Oxygen-Containing Organic Molecules on Clean Pd Surfaces Studied by UV Photoemission", H. Luth, G. W. Rubloff, and W. D. Grobman, Surface Science 63, 325 (1977).
22. ["Exciton Transport in SiO<sub>2</sub> as a Possible Cause of Surface State Generation in MOS Structures"](#), Z. A. Weinberg and G. W. Rubloff, Appl. Phys. Lett. 32, 184 (1978).
23. "Chemisorption of Organic Molecules on ZnO(1100) Surfaces: C<sub>5</sub>H<sub>5</sub>N, (CH<sub>3</sub>)<sub>2</sub>CO and (CH<sub>3</sub>)<sub>2</sub>SO", H. Luth, G. W. Rubloff, and W. D. Grobman, Surface Science 74, 365 (1978).
24. "Cyclohexane Dehydrogenation on Clean Pd Surfaces Studied by UV Photoemission", G. W. Rubloff, H. Luth, J. E. Demuth, and W. D. Grobman, J. Catalysis 53, 423 (1978).
25. "Selection Rule Effects in Electronic Excitations of Chemisorbed Molecules as Studied by Energy Loss Spectroscopy", G. W. Rubloff, Solid State Commun. 26, 523 (1978).
26. ["Surface Optical Excitations Associated with CO Chemisorption on Ni\(111\)"](#), G. W. Rubloff and J. L. Freeouf, Phys. Rev. B 17, 4680 (1978).
27. "Exciton Transport in SiO<sub>2</sub>", Z. A. Weinberg and G. W. Rubloff, The Physics of SiO<sub>2</sub> and Its Interfaces, ed. by S. T. Pantelides (Pergamon Press, N. Y., 1978), p. 24.
28. ["Transmission, Photoconductivity, and the Experimental Band Gap of Thermally Grown SiO<sub>2</sub> Films"](#), Z. A. Weinberg, G. W. Rubloff, and E. Bassous, Phys. Rev. B 19, 3107 (1979).
29. ["Exciton or Hydrogen Diffusion in SiO<sub>2</sub>?"](#), Z. A. Weinberg, D. R. Young, D. J. DiMaria, and G. W. Rubloff, J. Appl. Phys. 50, 5757 (1979).
30. "Time-Resolved Spectroscopic Studies of Surface Reactions", G. W. Rubloff, Proc. of the 4th Symposium on Fluid-Solid Surface Interactions (sponsored by the Office of Naval Research and held at NBS, Oct. 18-20, 1978), p. 190.
31. ["Chemical and Structural Properties of the Pd/Si Interface During the Initial Stages of Silicide Formation"](#), P. S. Ho, T. Y. Tan, J. E. Lewis and G. W. Rubloff, J. Vac. Sci. Technol. 16, 1120 (1979).
32. "Photoemission Studies of Time-Resolved Surface Reactions: Isothermal Desorption of CO from Ni(111)", G. W. Rubloff, Surface Science 89, 566 (1979).
33. ["Microscopic Compound Formation at the Pd/Si\(111\) Interface"](#), J. L. Freeouf, G. W. Rubloff, P. S. Ho, and T. S. Kuan, Phys. Rev. Lett. 43, 1836 (1979).
34. ["Reactive Schottky Barrier Formation: the Pd/Si Interface"](#), J. L. Freeouf, G. W. Rubloff, P. S. Ho, and T. S. Kuan, J. Vac. Sci. Technol. 17, 916 (1980).
35. ["Chemical Bonding and Electronic Structure of Pd<sub>2</sub>Si"](#), P. S. Ho, G. W. Rubloff, J. E. Lewis, V. L. Moruzzi, and A. R. Williams, Thin Film Interfaces and Interactions, ed. by J. E. E. Baglin and J. M. Poate (The Electrochemical Society, 1980), p. 85.
36. "Photoemission Studies of Chemical Bonding and Reactions at the Metal/Silicon Interface", G. W. Rubloff, Proceedings of the 8th International Vacuum Congress, Cannes, France, Sept. 22-26, 1980, Vol. I, Thin Films, p. 562.
37. ["Chemical Bonding and Electronic Structure of Pd<sub>2</sub>Si"](#), P. S. Ho, G. W. Rubloff, J. E. Lewis, V. L. Moruzzi, and A. R. Williams, Phys. Rev. B15 22, 4784 (1980).
38. ["Chemical Bonding and Reactions at the Pd/Si Interface"](#), G. W. Rubloff, P. S. Ho, J. L. Freeouf, and J. E. Lewis, Phys. Rev. B15 23, 4183 (1981).

39. "[Electronic Structure of the V/Si Interface](#)", J. G. Clabes and G. W. Rubloff, J. Vac. Sci. Technol. 19, 262 (1981).
40. "[Electronic States and Atomic Structure at the Silicide/Si Interface](#)", P. E. Schmid, P. S. Ho, H. Foll, and G. W. Rubloff, J. Vac. Sci. Technol. 18, 937 (1981).
41. "[Interface States at the Pt-Silicide/Si Interface](#)", G. W. Rubloff, Phys. Rev. B15 25, 4307 (1982).
42. "[The Formation of the Schottky Barrier at the V/Si Interface](#)", J. G. Clabes, G. W. Rubloff, B. Reihl, R. J. Purtell, P. S. Ho, A. Zartner, F. J. Himpsel, and D. E. Eastman, J. Vac. Sci. Technol. 20, 684 (1982).
43. "Electronic States and Microstructure at the Silicide-Silicon Interface", P. S. Ho and G. W. Rubloff, Thin Solid Films 89, 433 (1982).
44. "Electronic Structure of the Silicide/Si Interface", G. W. Rubloff and P. S. Ho, Thin Solid Films 93, 21 (1982).
45. "Schottky Barrier Formation at Pd/Si(111) and V/Si(111) Interfaces", R. Purtell, J. G. Clabes, G. W. Rubloff, P. S. Ho, B. Reihl, and F. J. Himpsel, J. Vac. Sci. Technol. 21, 615 (1982).
46. "[Microscopic Properties and Behavior of Silicide Interfaces](#)", G. W. Rubloff, Surface Science 132, 268-314 (1983).
47. "Formation of the Schottky Barrier at the Pd/Si Interface", R. J. Purtell, P. S. Ho, G. W. Rubloff, and P. E. Schmid, Physica 118B, 834 (1983) (Proceedings of the 16th International Conference on the Physics of Semiconductors, Montpellier, France, Sept. 6-10, 1982).
48. "[Schottky Barrier Formation at Pd, Pt, and Ni/Si\(111\) Interfaces](#)", R. Purtell, G. Hollinger, G. W. Rubloff, and P. S. Ho, J. Vac. Sci. Technol. A 1, 566 (1983).
49. "[Chemical Bonding and Reactions at Ti/Si and Ti/oxygen/Si Interfaces](#)", R. Butz, G. W. Rubloff, and P. S. Ho, J. Vac. Sci. Technol. A 1, 771-775 (1983).
50. "[Chemical Bonding and Schottky Barrier Formation at V/Si Interfaces](#)", J. G. Clabes, G. W. Rubloff, and T. Y. Tan, Phys. Rev. B15 29, 1540 (1984).
51. "Microscopic Properties and Behavior of Metal/Semiconductor Interfaces", G. W. Rubloff, Advances in Solid State Physics, Festkorperprobleme Vol. XXIII p. 179, ed. by P. Grosse, (Vieweg, Braunschweig, F.R. Germany, 1983).
52. "Soft X-Ray Photoemission Measurement of Schottky Barrier Formation at the Pd/Si Interface", R. Purtell, P. S. Ho, G. W. Rubloff, and G. Hollinger, Proceedings of the Materials Research Society Symposium on Interfaces and Contacts, 1983, ed. by R. Ludeke and K. Rose, Vol. 18, p. 337.
53. "[Chemical Reaction and Silicide Formation at the Pt/Si Interface](#)", R. Matz, R. J. Purtell, Y. Yokota, G. W. Rubloff, and P. S. Ho, J. Vac. Sci. Technol. A 2, 253 (1984).
54. "[Raman Spectroscopy of PtSi Formation at the Pt/Si\(100\) Interface](#)", J. C. Tsang, Y. Yokota, R. Matz, and G. W. Rubloff, Appl. Phys. Lett. 44, 430 (1984).
55. "Raman Spectroscopy of Silicide Formation at the Pt/crystalline Si Interface", J. C. Tsang, R. Matz, Y. Yokota, and G. W. Rubloff, J. Vac. Sci. Technol. A 2, 556 (1984).
56. "[Chemical Bonding at the Polyimide Surface](#)", P. Hahn, G. W. Rubloff, and P. S. Ho, J. Vac. Sci. Technol. A 2, 756 (1984).
57. "Silicide/Silicon Interface Bonding", G. W. Rubloff, Ultramicroscopy 14, 107 (1984).
58. "Chemical Interactions at Metal-Polymer Interfaces", P. O. Hahn, G. W. Rubloff, J. W. Bartha, F. LeGoues, R. Tromp, and P. S. Ho, Proceedings of Materials Research Society Symposium on Electronic Packaging Materials Science Boston, Nov. 27-29, 1984, Vol. 40, p. 251, ed. by E. A. Giess, K. N. Tu, and D. R. Uhlmann, (Mat. Res. Soc., Pittsburgh, 1985).

59. "High Resolution Synchrotron Photoemission Study of Silicon-Metal Interfaces", R. Purtell, A. Levi, G. Rubloff, and P. S. Ho, *J. Vac. Sci. Tech. A* 3, 690 (1985).
60. "[Chemical Reactions at Pt/oxide/Si and Ti/oxide/Si Interfaces](#)", M. Liehr, F. LeGoues, G. W. Rubloff, and P. S. Ho, *J. Vac. Sci. Tech. A* 3, 983 (1985).
61. "[Chemical Bonding and Reaction at Polymer Surfaces and Metal/Polymer Interfaces](#)", P. S. Ho, P. O. Hahn, G. W. Rubloff, F. K. LeGoues, and D. Silverman, *J. Vac. Sci. Tech. A* 3, 739 (1985).
62. "[Chemical and Structural Aspects of Reaction at the Ti/Si Interface](#)", R. Butz, G. W. Rubloff, T. Y. Tan, and P. S. Ho, *Phys. Rev. B* 30, 5421 (1984).
63. "Metal-Semiconductor Interfaces and Schottky Barriers", G. W. Rubloff, *Dynamical Phenomena at Surfaces, Interfaces, and Superlattices*, Proceedings of the International School of Material Science and Technology, Ettore Majorana Centre for Scientific Culture, Erice (Sicily), Italy, July 1 - 14, 1984 (Springer-Verlag, Berlin, 1985), p. 220.
64. "[Material Reaction and Silicide Formation at the Refractory Metal/Silicon Interface](#)", G. W. Rubloff, R. M. Tromp, and E. J. van Loenen, *Appl. Phys. Lett.* 48, 1600 (1986).
65. "[High-Temperature SiO<sub>2</sub> Decomposition at the SiO<sub>2</sub>/Si Interface](#)", R. Tromp, G. W. Rubloff, P. Balk, F. K. LeGoues, and E. J. van Loenen, *Phys. Rev. Lett.* 55, 2332 (1985).
66. "[Influence of Thin SiO<sub>2</sub> Interlayers on Chemical Reaction and Microstructure at the Ni/Si\(111\) Interface](#)", M. Liehr, H. Lefakis, F. K. LeGoues, and G. W. Rubloff, *Phys. Rev. B* 33, 5517 (1986).
67. "Bonding and Adhesion of Polymer Interfaces", D. L. Allara, F. M. Fowkes, J. Noolandi, G. W. Rubloff, and M. Tirrell, Chapter 5 in "Panel Report on Interfacial Bonding and Adhesion", *Materials Science and Engineering* 83, 213 (1986).
68. "Semiconductor Interfaces", G. Margaritondo, L. J. Brillson, V. Brusica, J. R. Chelikowsky, R. W. Grant, and G. W. Rubloff, Chapter 6 in "Panel Report on Interfacial Bonding and Adhesion", *Materials Science and Engineering* 83, 227 (1986).
69. "High Temperature Decomposition of SiO<sub>2</sub> at the Si/SiO<sub>2</sub> Interface", G. W. Rubloff, R. M. Tromp, E. J. van Loenen, P. Balk, and F. K. LeGoues, *J. Vac. Sci. Technol. A* 4, 1024 (1986).
70. "[Low Temperature Material Reaction at the Ti/Si\(111\) Interface](#)", R. M. Tromp, G. W. Rubloff, and E. J. van Loenen, *J. Vac. Sci. Technol. A* 4, 865 (1986).
71. "Competing Initial Reactions at Transition-Metal/Silicon Interfaces", G. W. Rubloff, *Proceedings of Materials Research Society Symposium on Thin Films - Interfaces and Phenomena*, Boston, Dec. 2 - 6, 1985, *MRS Symposia Proceedings Vol. 54*, ed. by R. J. Nemanich, P. S. Ho, and S. S. Lau, (Mat. Res. Soc., Pittsburgh, 1986), p. 3.
72. "Alumina-Ti Interface Reactions Studied by AES and UPS", H. Lefakis, M. Liehr, G. W. Rubloff, and P. S. Ho, *Proceedings of Materials Research Society Symposium on Thin Films - Interfaces and Phenomena*, Boston, Dec. 2 - 6, 1985, *MRS Symposia Proceedings Vol. 54*, ed. by R. J. Nemanich, P. S. Ho, and S. S. Lau, (Mat. Res. Soc., Pittsburgh, 1986), p. 133.
73. "[Defect Formation in Thermal SiO<sub>2</sub> by High Temperature Annealing](#)", K. Hofmann, G. W. Rubloff, and R. A. McCorkle, *Appl. Phys. Lett.* 49, 1525 (1986).
74. "Effect of Low Pressure Oxygen Annealing on Defect-Related Breakdown in SiO<sub>2</sub> Films", K. Hofmann, G. W. Rubloff, and D. R. Young, *J. Appl. Phys.* 61, 4584 (1987).
75. "Hole Trapping in SiO<sub>2</sub> Films Annealed in Low Pressure Oxygen Atmosphere", K. Hofmann, D. R. Young, and G. W. Rubloff, *J. Appl. Phys.* 62, 925 (1987).
76. "Defect Generation in MOS Structures Correlated with the Interface Reaction of Si and SiO<sub>2</sub>", K. Hofmann, G. W. Rubloff, D. R. Young, and S. I. Raider, *Proceedings of the European Materials*

- Research Society Meeting Symposium A: "Dielectric Layers in Semiconductors: Novel Technologies and Devices", ed. by G. G. Bentini (Les editions de physique, France), Strasbourg, France, June 17-20, 1986.
77. "Void Formation in SiO<sub>2</sub> Films Correlated with Crystalline Defects in the Substrate", S. I. Raider, K. Hofmann, and G. W. Rubloff, Fall Electrochemistry Society Extended Abstracts, Abst. No. 395, San Diego, 1986.
  78. "Fundamentals of Laser Photoemission for Testing High Speed Devices and Circuits", G. W. Rubloff and H. Beha, Characterization of Very High Speed Semiconductor Devices and Circuits, Ravi Jain, Editor, SPIE Vol. 795, p. 256 (1987).
  79. "[Integrated System for Studies of Thin Film Chemical Growth Processes on Si Wafers](#)", M. Renier, M. Liehr, S. M. Gates, J. O'Sullivan, G. W. Rubloff, and B. S. Meyerson, J. Vac. Sci. Technol. A 5, 2098 (1987).
  80. "[Kinetics of High Temperature Thermal Decomposition of SiO<sub>2</sub> on Si\(100\)](#)", M. Liehr, J. E. Lewis, and G. W. Rubloff, J. Vac. Sci. Technol. A 5, 1559 (1987).
  81. "[Defect Microchemistry at the SiO<sub>2</sub>/Si Interface](#)", G. W. Rubloff, K. Hofmann, M. Liehr, and D. R. Young, Phys. Rev. Lett. 58, 2379 (1987).
  82. "High Temperature Reaction and Defect Chemistry at the Si/SiO<sub>2</sub> Interface", K. Hofmann, G. W. Rubloff, M. Liehr, and D. R. Young, Appl. Surface Science 30, 25 (1987) (Proceedings of the International Conference on Insulating Films on Semiconductors, Leuven, Belgium, April 13-15, 1987).
  83. "Defect Microchemistry at the SiO<sub>2</sub>/Si Interface", G. W. Rubloff, Proceedings of Materials Research Society Symposium on SiO<sub>2</sub> and Its Interfaces, Boston, Nov. 30 - Dec. 5, 1987, MRS Symposia Proceedings Vol. 105, ed. by G. Lucovsky and S. T. Pantelides, (Mat. Res. Soc., Pittsburgh, 1988), p. 11.
  84. "The SiO<sub>2</sub>/Si Interface Probed with Positrons", B. Nielsen, K. G. Lynn, T. C. Leung, D. O. Welch, and G. Rubloff, Proceedings of Materials Research Society Symposium on SiO<sub>2</sub> and Its Interfaces, Boston, Nov. 30 - Dec. 5, 1987, MRS Symposia Proceedings Vol. 105 ed. by G. Lucovsky and S. T. Pantelides, (Mat. Res. Soc., Pittsburgh, 1988), p. 241.
  85. "Defect Generation at SiO<sub>2</sub>/Si(100) Interfaces by Metal Contamination", M. Liehr, H. Dallaporta, J. E. Lewis, G. B. Bronner, and G. W. Rubloff, Extended Abstracts of the 20th (1988 International) Conference on Solid State Devices and Materials, Toyko, Japan, Aug. 24-26, 1988 (Japan Society of Applied Physics, 1988), p. 209.
  86. "[Microvoids at the SiO<sub>2</sub>/Si Interface](#)", B. Nielsen, K. G. Lynn, D. O. Welch, T. C. Leung, and G. W. Rubloff, Phys. Rev. B 40, 1434 (1989).
  87. "Variable-Energy Positron Beams as a Probe of Submicroscopic Defects at Interfaces", Bent Nielsen, K. G. Lynn, D. O. Welch, T. C. Leung, G. J. van der Kolk, and G. W. Rubloff, World Materials Congress: Interface Science and Engineering, Chicago, Sept. 25-30, 1988.
  88. "[Surface Analysis of Realistic Semiconductor Microstructures](#)", G. S. Oehrlein, K. K. Chan, M. A. Jaso, and G. W. Rubloff, J. Vac. Sci. Technol. A 7, 1030 (1989).
  89. "[Selected Area Processing](#)", G. W. Rubloff, J. Vac. Sci. Technol. B 7, 1454 (1989).
  90. "Microvoids and Defect Chemistry at the Si/SiO<sub>2</sub> Interface Studied by Positron Annihilation Depth Profiling", G. W. Rubloff, B. Nielsen, K. G. Lynn, D. O. Welch, and T. C. Leung, Vacuum 41, 790 (1990).
  91. "[Defect Microchemistry in SiO<sub>2</sub>/Si Structures](#)", G. W. Rubloff, J. Vac. Sci. Technol. A 8, 1857 (1990).

92. "X-Ray Reflectivity Study of SiO<sub>2</sub> on Si", S. M. Heald, J. K. D. Jayanetti, A. A. Bright, and G. W. Rubloff, *J. Vac. Sci. Technol. A* 8, 2046 (1990).
93. "Role of Surface Passivation in the Integrated Processing of MOS Structures", M. Offenbergl, M. Liehr, S. R. Kasi, and G. W. Rubloff, *Digest of Technical Papers, 1990 Symposium on VLSI Technology*, IEEE Cat. No. 90CH2874-6 (Piscataway, N.J., IEEE Service Center, 1990), 10-1, pp. 117-118 (1990).
94. "[Ultraclean, Integrated Processing of Thermal Oxide Structures](#)", M. Offenbergl, M. Liehr, G. W. Rubloff, and K. Holloway, *Appl. Phys. Lett.* 57, 1254 (1990).
95. "[Centroid shift of  \$\gamma\$  rays from positron annihilation in the depletion region of metal-oxide-semiconductor structures](#)", T. C. Leung, Y. Kong, K. G. Lynn, B. Nielsen, Z. A. Weinberg, and G. W. Rubloff, *Appl. Phys. Lett.* 58, 86 (1991).
96. "HF surface passivation failure in integrated thermal oxidation processing", M. Liehr, M. Offenbergl, S. R. Kasi, G. W. Rubloff, and K. Holloway, *Extended Abstracts of the 22th (1990 International) Conference on Solid State Devices and Materials*, Sendai, Japan, Aug. 22-24, 1990 (Japan Society of Applied Physics, 1990), pp. 1099-1102.
97. "Surface etching and roughening in integrated processing of thermal oxides", M. Offenbergl, M. Liehr, and G. W. Rubloff, *J. Vac. Sci. Technol. A* 9 (3), 1058 (1991).
98. "[SiO<sub>2</sub>/Si interface properties using positrons](#)", P. Asoka-Kumar, K. G. Lynn, T. C. Leung, B. Nielsen, G. W. Rubloff, and Z. A. Weinberg, *Phys. Rev. B* 44 (11), 5885 (1991).
99. "Integrated Processing - from Research to Manufacturing", G. W. Rubloff, *Technical Proceedings of SEMICON/Korea 90*, Dec. 6-7, 1990, Seoul, Korea (Semiconductor Equipment and Materials Int'l., Mountain View, CA, 1990), pp. 2-3 - 2-11.
100. "Positron annihilation at the Si/SiO<sub>2</sub> interface", T. C. Leung, Z. A. Weinberg, P. Asoka-Kumar, B. Nielsen, G. W. Rubloff, and K. G. Lynn, *J. Appl. Phys.* 71 (1), 530 (1992).
101. "Positron annihilation studies in the field induced depletion regions of metal-oxide-semiconductor structures", P. Asoka-Kumar, T. C. Leung, K. G. Lynn, B. Nielsen, M. P. Forcier, Z. A. Weinberg, and G. W. Rubloff, *J. Appl. Phys.* 71 (11), 5606 (1992).
102. "[Integrated Processing for Microelectronics Science and Technology](#)", G. W. Rubloff and D. T. Bordonaro, *IBM J. Res. Devel.* 36 (2), 233-276 (1992).
103. "[Anomalous Diffusion of Fluorine in Silicon](#)", S.-P. Jeng, T.-P. Ma, R. Canteri, M. Anderle, and G. W. Rubloff, *Appl. Phys. Letters* 61 (11), 1310 (1992).
104. "[Kinetics of Nucleation and Growth of Si on SiO<sub>2</sub> in Very Low Pressure SiH<sub>4</sub> Chemical Vapor Deposition](#)", S. S. Dana, M. Liehr, M. Anderle, and G. W. Rubloff, *Appl. Phys. Letters* 61 (25), 3035 (1992).
105. "Detection of Titanium Silicide Formation by Picosecond Ultrasonics", H.-N. Lin, R. J. Stoner, H. J. Maris, J. M. E. Harper, C. Cabral, Jr., J.-M. Halbout, and G. W. Rubloff, *Proceedings of Materials Research Society Symposium on Advanced Metallization and Processing for Semiconductor Devices and Circuits - II*, San Francisco, April 27 - May 1, 1992, *MRS Symposia Proceedings*, Vol. 259, ed. by R. J. Nemanich, C. R. Helms, M. Hirose, and G. W. Rubloff (MRS, Pittsburgh, 1992), pp. .
106. "Detection of Thin Interfacial Layers by Picosecond Ultrasonics", G. Tas, R. J. Stoner, H. J. Maris, G. W. Rubloff, G. S. Oehrlein, and J.-M. Halbout, *Proceedings of Materials Research Society Symposium on Chemical Surface Preparation, Passivation, and Cleaning for Semiconductor Growth and Processing*, San Francisco, April 27 - May 1, 1992, *MRS Symposia Proceedings*, Vol. 259, ed. by R. J. Nemanich, C. R. Helms, M. Hirose, and G. W. Rubloff (MRS, Pittsburgh, 1992), pp. 231-236.

107. "Pre-Oxidation Si Cleaning and its Relation to MOS Reliability and Process-Induced Damage", S. R. Kasi, G. W. Rubloff, S. A. Cohen, and L. C. Hsia, Proceedings of Materials Research Society Symposium on Chemical Surface Preparation, Passivation, and Cleaning for Semiconductor Growth and Processing, San Francisco, April 27 - May 1, 1992, MRS Symposia Proceedings, Vol. 259, ed. by R. J. Nemanich, C. R. Helms, M. Hirose, and G. W. Rubloff, (MRS, Pittsburgh, 1992), pp. 125-130.
108. "[Nondestructive detection of titanium disilicide phase transformation by picosecond ultrasonics](#)", H.-N. Lin, R. J. Stoner, H. J. Maris, J. M. E. Harper, C. Cabral, Jr., J.-M. Halbout, and G. W. Rubloff, Appl. Phys. Lett. 61 (22), 2700 (1992).
109. "[Noninvasive picosecond ultrasonic detection of ultrathin interfacial layers: CF<sub>x</sub> at the Al/Si interface](#)", G. Tas, R. J. Stoner, H. J. Maris, G. W. Rubloff, G. S. Oehrlein, and J. M. Halbout, Appl. Phys. Lett. 61 (15), 1787 (1992).
110. "[CVD Growth of Rough-Morphology Silicon Films over a Broad Temperature Range](#)", S. S. Dana, M. Anderle, G. W. Rubloff, and A. Acovic, Appl. Phys. Lett. 63 (10), 1387-89 (6 Sept. 1993).
111. "[Integrated Processing of MOS Gate Dielectric Structures](#)", G. W. Rubloff, M. Offenbergl, and M. Liehr, IEEE Transactions on Semiconductor Manufacturing 7 (1), 96-100 (Feb, 1994).
112. "[Role of Implantation-Induced Defects in Surface-Oriented Diffusion of Fluorine in Silicon](#)", Cs. Szeles, B. Nielsen, P. Asoka-Kumar, K. G. Lynn, M. Anderle, T. P. Ma, and G. W. Rubloff, J. Appl. Phys. 76 (6), 3403 (1994).
113. "[Concepts in Competitive Microelectronics Manufacturing](#)", M. Liehr and G. W. Rubloff, J. Vac. Sci. Technol. B 12 (4), pp. 2727-40 (Jul/Aug 1994).
114. "Role of Implantation-Induced Defects in Surface-Oriented Diffusion of Fluorine in Silicon", Cs. Szeles, B. Nielsen, P. Asoka-Kumar, K. G. Lynn, M. Anderle, T. P. Ma, and G. W. Rubloff, Proceedings of the 10th Int. Conf. on Positron Annihilation (Materials Science Forum), Beijing, China, May 23-27, 1994.
115. "Research for the Competitive Marketplace: AVS Establishes a Multidisciplinary Forum for Manufacturing Science and Technology", Industry Observation, Semiconductor International, p. 112 (Sept. 1994).
116. "[Sub-Atmospheric CVD \(SACVD\) Ozone/TEOS Process for SiO<sub>2</sub> Trench Filling](#)", I. A. Shareef, G. W. Rubloff, M. Anderle, W. N. Gill, J. Cotte, and D. H. Kim, J. Vac. Sci. Technol. . B 13 (4), pp. 1888-92 (Jul/Aug 1995).
117. "[Real-Time Process and Product Diagnostics in RTCVD using In-Situ Mass Spectroscopic Sampling](#)", L. L. Tedder, G. W. Rubloff, I. Shareef, M. Anderle, D. H. Kim, and G. N. Parsons, J. Vac. Sci. Technol. B 13 (4), pp. 1924-27 (Jul/Aug 1995).
118. "[Role of Gas Phase Reactions in Sub-Atmospheric CVD Ozone/TEOS Processes for Oxide Deposition](#)", I. Shareef, G. W. Rubloff, and W. N. Gill, J. Vac. Sci. Technol. B 14(2), 772-774 (Mar/Apr 1996).
119. "[Dynamic Rate and Thickness Metrology during PolySi RTCVD from SiH<sub>4</sub> using Real-Time In-Situ Mass Spectrometry](#)", L. L. Tedder, G. W. Rubloff, B. Conaghan, and G. N. Parsons, J. Vac. Sci. Technol. A 14 (2), 267-270 (Mar/Apr 1996).
120. "Real-Time Equipment, Process and Wafer State Sensing of PolySi RTCVD from SiH<sub>4</sub> using Mass Spectrometry", L. L. Tedder and G. W. Rubloff, Proc. 187th Electrochem. Soc. Mtg, May, 1995.
121. "Real-Time Gas Sensor and Simulation for RTCVD Metrology and Control", L. L. Tedder, G. B. Lu, B. F. Conaghan, and G. W. Rubloff, Proc. Rapid Thermal Processing '95, Amsterdam, Nederland, Aug 30 - Sept 1, 1995.

122. ["Contamination Control for Gas Delivery from a Liquid Source in Semiconductor Manufacturing"](#), G. Lu, G. W. Rubloff, and J. Durham, IEEE Trans. Semicond. Manuf. 10 (4), pp. 425-432 (Nov., 1997).
123. ["Polysilicon RTCVD Process Optimization for Environmentally-Conscious Manufacturing"](#), G. Lu, M. Bora, and G. W. Rubloff, IEEE Trans. Semicond. Manuf. 10 (3), 390-398 (August 1997).
124. "Real-Time In-Situ Sensors and Dynamic Simulation for the Flexible Semiconductor Factory", Gary W. Rubloff, G. Brian Lu, and Laura L. Tedder, Proc. Government Microcircuit Applications Conference (GOMAC), Orlando, FL, March 18-21, 1996.
125. "Real-Time Sensing and Dynamic Simulation for CVD Optimization and Control", Gary W. Rubloff, Laura L. Tedder, and G. Brian Lu, Proc. 13th Int. Conf. on Chemical Vapor Deposition (CVD-XIII), ed. By T. M. Besmann, M. D. Allendorg, McD. Robinson, and R. K. Ulrich, ECS Proc. Vol. 96-5, pp. 163-170 (The Electrochemical Society, Inc., Pennington, NJ 08534, 1996), ISBN 1-56677-155-2.
126. ["Integrated Dynamic Simulation of Rapid Thermal Chemical Vapor Deposition of Polysilicon"](#), G. Lu, M. Bora, L. L. Tedder, and G. W. Rubloff, IEEE Trans. Semicond. Manuf. 11 (1), pp. 63-74 (Feb., 1998).
127. ["Education in Semiconductor Manufacturing Processes through Physically-Based Dynamic Simulation"](#), G. Brian Lu, Mansour Oveissi, David Eckard, and Gary W. Rubloff, Proc. 1996 Frontiers in Education Conference, Nov. 6-9, 1996, Salt Lake City, Utah (IEEE Service Center, Piscataway, NJ, 1996), ISBN 96CH35946, pp. 250-253.
128. ["Real-time Process Sensing and Metrology in Amorphous and Selective Area Silicon PECVD Using In-Situ Mass Spectrometry"](#), A. I. Chowdhury, W. W. Read, G. N. Parsons, G. W. Rubloff, and L. L. Tedder, J. Vac. Sci. Technol. B 15 (1), 127-132 (Jan/Feb 1997).
129. "Process Sensors, Simulation, and Control to Build In Reliability", 1996 Integrated Reliability Workshop Final Report, published by The Electron Device Society and The Reliability Society of the IEEE, ISBN 0-7803-3598-8, IEEE catalog no. 96TH8215 (IEEE Service Center, Piscataway, NJ, 1997), pp. 50-56 (1996).
130. ["Process Sensing and Metrology in Gate Oxide Growth by Rapid Thermal Chemical Vapor Deposition using SiH<sub>4</sub> and N<sub>2</sub>O"](#), G. Lu, L. L. Tedder, and G. W. Rubloff, J. Vac. Sci. Technol. B 17 (4), 1417-23 (Jul/Aug 1999).
131. "Evaluating the Impact of Process Changes on Cluster Tool Performance", J. W. Herrmann, N. Chandrasekharan, B. F. Conaghan, M-Q Nguyen, G. W. Rubloff, and R. Z. Shi, IEEE Trans. Semicond. Manuf. 13 (2), 181-192 (May 2000).
132. ["Dynamic Simulation of a Multichamber CVD Cluster Tool"](#), N. Gupta, Y. Xu, L. Henn-Lecordier, T. Gougousi, J. N. Kidder, Jr., and G. W. Rubloff, ISR Technical Report 97-21 (1997).
133. ["Some Experiments in Dynamic-Simulator-Based Control Education"](#), R. Sreenivasan, W. S. Levine, and G. W. Rubloff, Proc. of American Control Conference, June 2-4, 1999, San Diego, CA, vol. 1, pp. 485-489 (1999).
134. ["The Design of History Mechanisms and Their Use in Collaborative Educational Simulations"](#), C. Plaisant, A. Rose, G. W. Rubloff, R. Salter, and B. Shneiderman, Computer Support for Collaborative Learning, CSCL' 99. 348-359, May 1999, Palo Alto, CA and HCIL Technical Report 99-11 (May 1999)
135. ["Some Dynamic-Simulator-Based Control Education Modules"](#), R. Sreenivasan, W. S. Levine, and G. W. Rubloff, Proc. Of American Control Conference, June 28-30, 2000, Chicago, IL, vol. 5, pp. 3458-3462 (2000).
136. ["Application of CW-CRDS to monitor and control chemical vapor deposition"](#), D. S. Green, J. P. Looney, and G. W. Rubloff, Digest of the LEOS Summer Topical Meetings 2000, pp. 1115-1116 (2000).

137. ["Process Diagnostics and Thickness Metrology using in-situ Mass Spectrometry for the Chemical Vapor Deposition of W from H<sub>2</sub>/WF<sub>6</sub>"](#), T. Gougousi, Y. Xu, J. N. Kidder, Jr., G. W. Rubloff, and C. R. Tilford, *J. Vac. Sci. Technol. B* 18 (3), 1352-63 (May/June 2000).
138. ["Influence of Gas Composition on Wafer Temperature Control in a Tungsten Chemical Vapor Deposition Reactor"](#), H.-Y. Chang, R. A. Adomaitis, J. N. Kidder, Jr., and G. W. Rubloff, *J. Vac. Sci. Technol. B* 19 (1), 230-38 (Jan/Feb 2001).
139. ["Understanding the Impact of Equipment and Process Changes with a Heterogeneous Semiconductor Manufacturing Simulation Environment"](#), J.W. Herrmann, B.F. Conaghan, L. Henn-Lecordier, P. Mellacheruvu, M-Q Nguyen, G.W. Rubloff, and R.Z. Shi, Proc. 2000 Winter Simulation Conference, December 10-13, 2000, Orlando, FL., ed. by J. A. Joines, R. R. Barton, K. Kang, and P. A. Fishwick, vol. 2, pp. 1491-1498 (2000).
140. ["Real-time Growth Rate Metrology for a Tungsten CVD Process by Acoustic Sensing"](#), L. Henn-Lecordier, J. N. Kidder, G. W. Rubloff, C. Gogol, and A. Wajid, *J. Vac. Sci. Technol. A* 19 (2), 621-626 (Mar/Apr 2001).
141. ["In-situ Sensing using Mass Spectrometry and its Use for Run-to-Run Control on a W CVD Cluster Tool"](#), T. Gougousi, R. Sreenivasan, Y. Xu, L. Henn-Lecordier, J. N. Kidder, Jr., G. W. Rubloff, and E. Zafiriou, Characterization and Metrology for ULSI Technology: 2000 International Conference, Gaithersburg, MD, 26-29 June 2000 (ed. By D. G. Seiler, A. C. Diebold, T. J. Shaffner, R. McDonald, W. M. Bullis, P. J. Smith, and E. M. Secula, AIP Conference Proceedings, Melville, NY, 2001), vol. 550, pp. 249-253.
142. "An Application Framework for Creating Simulation-Based Learning Environments", A. Rose, D. Eckard, and G. W. Rubloff, Technical Report CS-TR-3907, UMIACS-TR-98-32.
143. "Simulation Based Learning Environments and the Use of Learning Histories", A. Rose, R. Salter, S. Keswani, N. Kositsyna, C. Plaisant, G. Rubloff, and B. Shneiderman, Extended Proceedings of the ACM Conference on Human Factors and Computing Systems (CHI'2000), Den Haag, April 2000.
144. ["Run to Run Control in Tungsten CVD using H<sub>2</sub>/WF<sub>6</sub> at Low Pressures"](#), R. Sreenivasan, T. Gougousi, Y. Xu, J. Kidder, Jr., E. Zafiriou, and G. W. Rubloff, *J. Vac. Sci. Technol. B* 19 (5) 1931-41 (Sept/Oct 2001).
145. ["Thickness Metrology and End Point Control in W-CVD Process from SiH<sub>4</sub>/WF<sub>6</sub> Using in-situ Mass Spectrometry"](#), Y. Xu, T. Gougousi, L. Henn-Lecordier, Y. Liu, S. Cho, and G. W. Rubloff, *J. Vac. Sci. Technol. B* 20 (6), 2351-2360 (Nov/Dec 2002).
146. ["Voltage-Dependent Assembly of the Polysaccharide Chitosan onto an Electrode Surface"](#), Li-Qun Wu, Anand P. Gadre, Hyunmin Yi, Mark J. Kastantin, Gary W. Rubloff, William E. Bentley, Gregory F. Payne, and Reza Ghodssi, *Langmuir* 18 (26), 8620-25 (2002).
147. ["Spatially Selective Deposition of a Reactive Polysaccharide Layer onto a Patterned Template"](#), Li-Qun Wu, Hyunmin Yi, Sheng Li, Gary W. Rubloff, William E. Bentley, Reza Ghodssi, and Gregory F. Payne, *Langmuir* 19 (3), 519-524 (2003).
148. ["Electrochemically-Induced Deposition of a Polysaccharide Hydrogel onto a Patterned Surface"](#), Rohan Fernandes, Li-Qun Wu, Tianhong Chen, Hyunmin Yi, Gary W. Rubloff, Reza Ghodssi, William E. Bentley, and Gregory F. Payne, *Langmuir* 19 (10), 4058-4062 (2003).
149. ["Real-time, in-situ film thickness metrology in a 10 Torr W chemical vapor deposition process using an acoustic sensor"](#), L. Henn-Lecordier, J. N. Kidder, Jr., and G. W. Rubloff, *J. Vac. Sci. Technol. B* 21 (3), 1055-1063 (May/Jun 2003).
150. ["Material Characterization and the Formation of Nanoporous PMSSQ Low-K Dielectrics"](#), P. Lazzeri, L. Vanzetti, E. Iacob, M. Bersani, M. Anderle, J. J. Park, Z. Lin, R. M. Briber, G. W. Rubloff, and R. D. Miller, Proc. 2003 International Conference on Characterization and Metrology for ULSI Technology, Austin, TX, March 24-28, 2003, ed. by D. G. Seiler et. al., AIP Conf. Proc. Vol. 683, ISBN 0-7354-0152-7 (AIP, Melville NY, 2003), 551-555.

151. ["In-Situ Metrology: the Path to Real-Time Advanced Process Control"](#), Gary W. Rubloff, Invited Paper, Proc. 2003 International Conference on Characterization and Metrology for ULSI Technology, Austin, TX, March 24-28, 2003, ed. by D. G. Seiler et. al., AIP Conf. Proc. Vol. 683, ISBN 0-7354-0152-7 (AIP, Melville NY, 2003), 583-591.
152. ["Voltage-Programmable Biofunctionality in MEMS Environments using Electrodeposition of a Reactive Polysaccharide"](#), Li-Qun Wu, Hyunmin Yi, Sheng Li, David A. Small, Jung Jin Park, Gary W. Rubloff, Reza Ghodssi, William E. Bentley, and Gregory F. Payne, Proc. IEEE Transducers 2003, 1871-1874 (2003).
153. ["Nature-inspired Creation of Protein-Polysaccharide Conjugate and its Subsequent Assembly onto a Patterned Surface"](#), Tianhong Chen, David A. Small, Li-Qun Wu, Gary W. Rubloff, Reza Ghodssi, Rafael Vazquez-Duhalt, William E. Bentley, and Gregory F. Payne, Langmuir 19 (22), 9382-86 (2003).
154. ["Integrated Fabrication of Polymeric Devices for Biological Applications"](#), M. J. Kastantin, S. Li, A. P. Gadre, L-Q Wu, W. E. Bentley, G. F. Payne, G. W. Rubloff, and R. Ghodssi, Sensors and Materials (invited) 15 (6), 295-311 (2003).
155. ["AVS Leadership in Electronic Materials Processing: Past, Present, and Future"](#), Gerald Lucovsky and Gary W. Rubloff, invited, J. Vac. Sci. Technol. A 21 (5), S175-S181 (2003).
156. ["Chitosan at the Interface of Microfabrication and Biotechnology"](#), L.-Q. Wu, R. Fernandes, H. Yi, D. A. Small, G. W. Rubloff, R. Ghodssi, W. E. Bentley, and G. F. Payne, Advances in Chitin Science, EUCHIS 2003, pp. 78-82 (2003).
157. ["Dynamic Simulation and Optimization of Cu CVD Unit Process for Environmentally Benign Manufacturing"](#), Soon Cho, Wei Lei, Adam Melvin, and Gary W. Rubloff, IEEE Trans. Semi. Manuf. 17 (3), 455-469 (Aug 2004).
158. ["In-situ mass spectrometry in a 10 torr W chemical vapor deposition process for film thickness metrology and real-time advanced process control"](#), Soon Cho, Laurent Henn-Lecordier, Yijun Liu, and Gary W. Rubloff, J. Vac. Sci. Technol. B 22(3) 880-887 (May/June 2004).
159. ["ToF-SIMS studies of nanoporous PMSSQ materials: kinetics and reactions in the processing of low-K dielectrics for ULSI applications"](#), P. Lazzeri, G. W. Rubloff, L. Vanzetti, R. M. Briber, M. Anderle, M. Bersani, J. J. Park, H.-C. Kim, W. Volksen, R. D. Miller, and Z. Lin, Surface and Interface Analysis 36, 304-310 (2004).
160. ["A Robust Technique for Assembly of Nucleic Acid Hybridization Chips Based on Electrochemically Templated Chitosan"](#), Hyunmin Yi, Li-Qun Wu, Reza Ghodssi, Gary W. Rubloff, Gregory F. Payne, and William E. Bentley, Anal. Chem. 76 (2), 365-372 (2004).
161. ["Simulation-Based Design and Experimental Evaluation of a Spatially Controllable Chemical Vapor Deposition Reactor"](#), Jae-Ouk Choo, Raymond A. Adomaitis, Gary W. Rubloff, Laurent Henn-Lecordier, and Yijun Liu, AIChE J. 51 (2) 572-584 (Feb 2005).
162. "A New Approach to Spatially Controllable CVD", invited paper, Jae-Ouk Choo, Raymond Adomaitis, Gary W. Rubloff, and Laurent Henn-Lecordier, Proc. American Control Conference 2004, IEEE Control Systems Society.
163. ["Thermo-Biolithography: a Technique for Patterning Nucleic Acids and Proteins"](#), Rohan Fernandes, Hyunmin Yi, Li-Qun Wu, Gary W. Rubloff, Reza Ghodssi, William E. Bentley, and Gregory F. Payne, Langmuir 20 (3), 906-913 (2004).
164. ["Real-time acoustic sensing and control of metalorganic chemical vapor deposition precursor concentrations delivered from solid phase sources"](#), L. Henn-Lecordier, J.N. Kidder, Jr., and G.W. Rubloff, J. Vac. Sci. Technol. A 22(5) 1984-1991 (Sept/Oct 2004).
165. ["In-situ chemical sensing in AlGaIn/GaN high electron mobility transistor metalorganic chemical vapor deposition process for real-time prediction of product crystal quality and advanced process control"](#), Soon Cho, Gary W. Rubloff, Michael E. Aumer, Darren B. Thomson, Deborah P.

- Partlow, Rinku Parikh, and Raymond A. Adomaitis, *J. Vac. Sci. Technol. B* 23 (4), 1386-1397 (Jul/Aug 2005).
166. [“In-situ chemical sensing in AlGaIn/GaN metal organic chemical vapor deposition process for precision film thickness metrology and real-time advanced process control”](#), S. Cho, D. S. Janiak, G. W. Rubloff, M. E. Aumer, D. B. Thomson, and D. P. Partlow, *J. Vac. Sci. Technol. B* 23 (5), 2007-2013 (Sep/Oct 2005).
167. [“Real-time material quality prediction, fault detection and contamination control in AlGaIn/GaN high electron mobility transistor metalorganic chemical vapor deposition process using in-situ chemical sensing”](#), Soon Cho, Gary W. Rubloff, Michael E. Aumer, Darren B. Thomson, and Deborah P. Partlow, *J. Vac. Sci. Technol. B* 23 (5), 1849-1855 (Sept/Oct 2005).
168. [“Data Management and Visualization of X-ray Diffraction Spectra from Thin Film Ternary Compound Spreads”](#), I. Takeuchi, C. J. Long, O. O. Famodu, M. Murakami, J. Hattrick-Simpers, G. W. Rubloff, M. Stukowski, and K. Rajan, *Rev. Sci. Instr.* 76, 062223-1 to 062223-8 (June 2005).
169. “Development of a fast-response microfluidic gas concentrating device”, S. Li, J.J. Park, J.C. Day, G. W. Rubloff, C.P. Cadou, R. Ghodssi, Prof. Eurosensors XIX, vol 2, W10, Barcelona, Spain, 11-14 September, 2005.
170. [“Development of a Spatially Controllable Chemical Vapor Deposition Reactor with Combinatorial Processing Capabilities”](#), J. O. Choo, R. A. Adomaitis, L. Henn-Lecordier, Y. Cai, and G. W. Rubloff, *Rev. Sci. Instr.* 76, 062217-1 to 062217-10 (June 2005).
171. [“Signal-Directed Sequential Assembly of Biomolecules onto Patterned Surfaces”](#), Hyunmin Yi, Li-Qun Wu, Reza Ghodssi, Gary W. Rubloff, Gregory F. Payne, and William E. Bentley, *Langmuir* 21 (6) 2104-2107 (Mar 15 2005).
172. [“Thin Film Transformations and Volatile Products in the Formation of Nanoporous Low-K PMSSQ-based Dielectric”](#), P. Lazzeri, L. Vanzetti, M. Anderle, M. Bersani, J. J. Park, Z. Lin, R. M. Briber, G. W. Rubloff, H. C. Kim, R. D. Miller, *J. Vac. Sci. Technol. B* 23, 908-917 (May/Jun 2005).
173. [“A fabrication platform for electrically mediated optically active biofunctionalized sites in BioMEMS”](#), Michael A. Powers, Stephan T. Koev, Arne Schleunitz, Hyunmin Yi, Vildana Hodzic, William E. Bentley, Gregory F. Payne, Gary W. Rubloff, and Reza Ghodssi, *Lab on a Chip* 5, 583-586 (2005).
174. [“Toward a Biophotonic MEMS Cell Sensor”](#), Michael A. Powers, Stephan T. Koev, Arne Scheunitz, Hyunmin Yi, Vildana Hodzic, William E. Bentley, Gregory F. Payne, Gary W. Rubloff, and Reza Ghodssi, *Proc. SPIE Microtechnologies for the New Millennium*, Seville, Spain, May 9-11, 2005.
175. [“Biofabrication with Chitosan”](#), Hyunmin Yi, Li-Qun Wu, William E. Bentley, Reza Ghodssi, Gary W. Rubloff, James N. Culver, and Gregory F. Payne, review paper, *Biomacromolecules* 6 (6) 2881-2894 (Nov/Dec 2005).
176. [“Chitosan-mediated In-situ Biomolecule Assembly in Completely Packaged Microfluidic Devices”](#), Jung Jin Park, Xiaolong Luo, Theresa M. Valentine, Hyunmin Yi, Gregory F. Payne, William E. Bentley, Reza Ghodssi, and Gary W. Rubloff, *Lab on a Chip* 6 (10), 1315-1321 (Oct 2006).
177. [“Electrochemical Study of Chitosan Films Deposited from Solution at Reducing Potentials”](#), Rebecca Zangmeister, Jung J. Park, Gary W. Rubloff, and Michael J. Tarlov, *Electrochimica Acta* 51, 5324-5333 (2006).
178. [“Validating Gallium Nitride Growth Kinetics using a Precursor Delivery Showerhead as a Novel Chemical Reactor”](#), Rinku P. Parikh, Raymond A. Adomaitis, Michael E. Aumer, Deborah P. Partlow, Darren B. Thomson, and Gary W. Rubloff, *J. Crystal Growth* 296 (1), 15-26 (Oct 15 2006).

179. [“Patterned Assembly of Genetically Modified Viral Nanotemplates via Nucleic Acid Hybridization”](#), Hyunmin Yi, Saira Nisar, Sang-Yup Lee, Michael A. Powers, William E. Bentley, Gregory F. Payne, Reza Ghodssi, Gary W. Rubloff, Michael T. Harris, and James N. Culver, Nano Letters 5 (10), 1931-36 (2005).
180. [“Real-time observation and optimization of tungsten ALD process cycle”](#), Wei Lei, Laurent Henn-Lecordier, Mariano Anderle, Gary W. Rubloff, Mario Barozzi, and Massimo Bersani, J. Vac. Sci. Technol. B 24 (2), 780-789 (Mar/Apr 2006).
181. [“Real-time sensing and metrology for atomic layer deposition processes and manufacturing”](#), Laurent Henn-Lecordier, Wei Lei, Mariano Anderle, and Gary W. Rubloff, J. Vac. Sci. Technol. B 25 (1), 130-139 (Jan/Feb 2007).
182. [“Demonstration of spatially programmable chemical vapor deposition: Model-based uniformity/nonuniformity control”](#), Ramaswamy Sreenivasan, Raymond A. Adomaitis, and Gary W. Rubloff, J. Vac. Sci. Technol. B 24 (6) 2716-2722 (Nov/Dec 2006).
183. [“Mechano-Transduction of DNA Hybridization and Dopamine Oxidation through Electrodeposited Chitosan Network”](#), Stephan T. Koev, Michael A. Powers, Hyunmin Yi, Li-Qun Wu, William E. Bentley, Gary W. Rubloff, and Reza Ghodssi, Lab on a Chip 7, 103-111 (2007).
184. [“A Nanotechnology Approach Towards an In Vivo Biological Factory”](#), Philip R. LeDuc, Michael S. Wong, Placid M. Ferreira, Richard E. Groff, Kiryn Haslinger, Michael P. Koonce, Woo Y. Lee, J. Christopher Love, J. Andrew McCammon, Nancy A. Monteiro-Riviere, Vincent M. Rotello, Gary W. Rubloff, Robert Westervelt, Minami Yoda, Nature Nanotechnology 2, 1-6 (Jan 2007).
185. [“TMV Microarrays: Hybridization-based Assembly of DNA-Programmed Viral Nanotemplates”](#), Hyunmin Yi, Gary W. Rubloff, and James N. Culver, Langmuir 23, 2663-2667 (2007).
186. [“Multiplexed Mass Spectrometric Sensing in a Spatially Programmable Chemical Vapor Deposition Reactor”](#), Yuhong Cai, Laurent Henn-Lecordier, Gary W. Rubloff, Ramaswamy Sreenivasan, Jae-Ouk Choo, and Raymond A. Adomaitis, J. Vac. Sci. Technol. B 25 (4), 1288-1297 (Jul/Aug 2007).
187. [“In-Situ Mass Spectrometry for Chemical Identification in SiC Epitaxial Deposition”](#), Brian H. Ponczak, James D. Oliver, Soon Cho, and Gary W. Rubloff, Materials Science Forum 556-557, 121-124 (2007).
188. [“A Comparative Study of Reactor Designs for the Production of Graded Films with Applications to Combinatorial CVD”](#), R. Sreenivasan, R. A. Adomaitis, and G. W. Rubloff, J. Crystal Growth 310 (2), 270-283 (15 Jan 2008), DOI: 10.1016/j.jcrysgro.2007.10.041.
189. [“Programmable Assembly of a Metabolic Pathway Enzyme in a Pre-packaged Reusable BioMEMS Device”](#), Xiaolong Luo, Angela T. Lewandowski, Hyunmin Yi, Gregory F. Payne, Reza Ghodssi, William E. Bentley, Gary W. Rubloff. Lab. Chip. 8, 420-430 (2008).
190. [“Protein Assembly onto Patterned Microfabricated Devices through Enzymatic Activation of Fusion Pro-Tag”](#), Angela T. Lewandowski, Hyunmin Yi, Xiaolong Luo, Gregory F. Payne, Reza Ghodssi, Gary W. Rubloff, and William E. Bentley, Biotechnology and Bioengineering 99 (3), 499-507 (15 Feb 2008), DOI 10.1102/bit.
191. [“Chitosan Biotinylation and Electrodeposition for Selective Protein Assembly”](#), Xiaowen Shi, Yi Liu, Angela T. Lewandowski, Li-Qun Wu, Hsuan-Chen Wu, Reza Ghodssi, Gary W. Rubloff, William E. Bentley, Gregory F. Payne. Macromolecular Bioscience 8, 451-457 (2008), DOI: 10.1002/mabi.200700220.
192. [“Towards Area-Based In Vitro Metabolic Engineering: Assembly of Pfs Enzyme onto Patterned Microfabricated Chips”](#), Angela T. Lewandowski, Hyunmin Yi, Gregory F. Payne, Reza Ghodssi, Gary W. Rubloff, William E. Bentley, Biotechnology Progress 24 (5), 1042-1051 (Sept-Oct 2008).

193. [“TEM-Based Metrology for HfO<sub>2</sub> Layers and Nanotubes Formed in Anodic Aluminum Oxide Nanopore Structures”](#), Israel Perez, Erin Robertson, Parag Banerjee, Laurent Henn-Lecordier, Gary W. Rubloff, Sang Jun Son, and Sang Bok Lee, *Small* 4, 1223 (2008), DOI: 10.1002/sml.200700815.
194. “Assembly of Bacterial Quorum Sensing Pathway Enzymes onto Patterned Microfabricated Chips”, Angela T. Lewandowski, Gregory F. Payne, Reza Ghodssi, Gary W. Rubloff, William E. Bentley. *Applied Microbiology and Biotechnology* (in preparation).
195. [“Electroaddressing of Cell Populations by Co-Deposition with Calcium Alginate Hydrogels”](#), Xiao-Wen Shi, Chen-Yu Tsao, Xiaohua Yang, Yi Liu, Peter Dykstra, Gary W. Rubloff, Reza Ghodssi, William E. Bentley, and Gregory F. Payne, *Advanced Functional Materials* 19 (13), 2074-2080 (Jul 10 2009), DOI: 10.1002/adfm.200900026.
196. “Spatial Resolution in Chitosan-Based Programmable Biomolecular Scaffolds”, Susan L. Buckhout-White, Erin C. Dreyer, Hyunmin Yi, and Gary W. Rubloff, *Soft Matter* (2009), DOI:10.1039/b820356c.
197. [“Design optimization for bioMEMS studies of enzyme-controlled metabolic pathways”](#), Xiaolong Luo, Dean Larios Berlin, Susan Buckhout-White, William E. Bentley, Gregory F. Payne, Reza Ghodssi, and Gary W. Rubloff, *Biomedical Microdevices* 10:6 (Dec 2008), DOI: 10.1007/s10544-008-9204-5.
198. [“Nanotubular Electrostatic Capacitors for Electrical Energy Storage”](#), Parag Banerjee, Israel Perez, Laurent Henn-Lecordier, Sang Bok Lee, and Gary W. Rubloff, *Nature Nanotechnology* 4, 292-296 (2009), DOI: 10.1038/nnano.2009.37.
199. “Strategies for characterization and optimization of Al<sub>2</sub>O<sub>3</sub> ALD process space to achieve wafer-scale uniformity in a cross-flow reactor”, Laurent Henn-Lecordier, Mariano Anderle, Erin Robertson, Parag Banerjee, and Gary W. Rubloff (submitted to *Chemical Vapor Deposition*).
200. “Chitosan to electroaddress biological components in lab-on-a-chip devices”, Y. Liu, X.-W. Shi, E. Kim, L. M. Robinson, C. K. Nye, R. Ghodssi, G. W. Rubloff, W. E. Bentley, G. F. Payne, *Proc. 11<sup>th</sup> Int’l. Conf. on Chitin and Chitosan & 8<sup>th</sup> Asia-Pacific Chitin and Chitosan Symposium*, Taipei, Taiwan, June 6-9, 2009.