

Bibliography

- [1] K. D. Hirschman, L. Tsybeskov, S. P. Suttagupta, and P. M. Fauchet, *Nature* **384**, 338 (1996).
- [2] S. Tiwari et al., *Appl. Phys. Lett.* **68**, 1377 (1996).
- [3] L. T. Canham, *Appl. Phys. Lett.* **57**, 1046 (1990).
- [4] D. J. Griffiths, *Introduction to Quantum Mechanics*, Prentice-Hall, Upper Saddle River, NJ, 1995.
- [5] R. T. Collins, P. M. Fauchet, and M. A. Tischler, *Phys. Today* **50**, 24 (1997).
- [6] M. S. Hybertsen, *Phys. Rev. Lett.* **72**, 1514 (1994).
- [7] L. E. Brus et al., *J. Am. Chem. Soc.* **117**, 2915 (1995).
- [8] B. Garrido et al., *Appl. Phys. Lett.* **77**, 3143 (2000).
- [9] M. V. Wolkin, J. Jorne, P. M. Fauchet, G. Allan, and C. Delerue, *Phys. Rev. Lett.* **82**, 197 (1999).
- [10] R. A. Sorel, *Proc. IEEE* **81**, 1687 (1993).
- [11] S. Lazarouk, A. Leshok, V. Borisenko, C. Mazzoleni, and L. Pavesi, *Micro. Eng.* **50**, 81 (2000).
- [12] L. T. Canham, T. I. Cox, A. Loni, and A. J. Simons, *Appl. Surf. Sci.* **102**, 436 (1996).
- [13] P. G. Kik, M. L. Brongersma, and A. Polman, *Appl. Phys. Lett.* **76**, 2325 (2000).
- [14] C. S. Lent, P. D. Tougaw, and W. Porod, *Appl. Phys. Lett.* **62**, 714 (1993).
- [15] A. O. Orlov, I. Amlani, G. H. Bernstein, C. S. Lent, and G. L. Snider, *Science* **277**, 928 (1997).
- [16] G. L. Snider et al., *J. Appl. Phys.* **85**, 4283 (1999).
- [17] A. N. Korotkov, *Int. J. Electronics* **86**, 511 (1999).
- [18] J. De Blauwe et al., *IEDM Tech. Dig.*, 683, (2000).
- [19] K. Yano, T. Ishii, T. Hashimoto, F. Murai, and K. Seki, *IEEE Trans. Electron. Devices* **41**, 1628 (1994).

- [20] L. Guo, E. Leobandung, and S. Y. Chou, *Science* **275**, 649 (1997).
- [21] H. I. Hanafi, S. Tiwari, and I. Khan, *IEEE Trans. Elect. Dev.* **43**, 1553 (1996).
- [22] T. Futatsugi, A. Nakajima, and H. Nakao, *Fujitsu Scientific and Technical Journal* **34**, 142 (1998).
- [23] R. P. Camata, H. A. Atwater, K. J. Vahala, and R. C. Flagan, *Appl. Phys. Lett.* **68**, 3162 (1996).
- [24] G. Binnig, C. Quate, and C. Gerber, *Phys. Rev. Lett.* **56**, 930 (1986).
- [25] Y. Martin, D. W. Abraham, and H. K. Wickramasinghe, *Appl. Phys. Lett.* **52**, 1103 (1988).
- [26] R. P. Camata, thesis, California Institute of Technology, 1998.
- [27] J. J. Wu, H. V. Nguyen, and R. C. Flagan, *Langmuir* **3**, 266 (1987).
- [28] S.-H. Zhang, Y. Akutsu, L. M. Russell, R. C. Flagan, and J. H. Seinfeld, *Aerosol Sci. Technol.* **23**, 357 (1995).
- [29] Y. Martin, C. C. Williams, and H. K. Wickramasinghe, *J. Appl. Phys.* **61**, 4723 (1987).
- [30] Q. Zhong, D. Inniss, K. Kjoller, and V. B. Elings, *Surf. Sci.* **290**, L688 (1993).
- [31] T. Junno, K. Deppert, L. Montelius, and L. Samuelson, *Appl. Phys. Lett.* **66**, 3627 (1995).
- [32] C. Baur et al., *J. Vac. Sci. Technol. B* **15**, 1577 (1997).
- [33] M. Otake, H. Yajima, and S. Oda, *Appl. Phys. Lett.* **72**, 1089 (1998).
- [34] D. M. Schaadt, E. T. Yu, S. Sankar, and A. E. Berkowitz, *Appl. Phys. Lett.* **74**, 472 (1999).
- [35] H. Hamaker, *Physica* **IV**, 1058 (1937).
- [36] K. L. Johnson, K. Kendall, and A. D. Roberts, *Proc. Roy. Soc. Lond. A* **324**, 301 (1971).
- [37] Y. Shi, K. Saito, H. Ishikuro, and T. Hiramoto, *J. Appl. Phys.* **84**, 2358 (1998).
- [38] C. Schonenberger and S. F. Alvarado, *Phys. Rev. Lett.* **65**, 3162 (1990).
- [39] C. C. Williams, J. Slinkman, W. P. Hough, and H. K. Wickramasinghe, *Appl. Phys. Lett.* **55**, 1662 (1989).
- [40] B. D. Terris, J. E. Stern, D. Rugar, and H. J. Mamin, *Phys. Rev. Lett.* **63**, 2670 (1989).

- [41] S. Morita et al., Jpn. J. Appl. Phys. **32**, L1701 (1993).
- [42] J. T. Jones, P. M. Bridger, O. J. Marsh, and T. McGill, Appl. Phys. Lett. **75**, 1326 (1999).
- [43] K. S. Min et al., Appl. Phys. Lett. **69**, 2033 (1996).
- [44] C. M. Yang, thesis, California Institute of Technology, 1997.
- [45] A. Bugacov et al., Probe Microscopy **1**, 345 (1999).
- [46] Thermomicroscopes, formally Park Scientific.
- [47] Y. Takakuwa, M. Nihei, T. Horie, and N. Miyamoto, J. Non-Cryst. Sol. **179**, 345 (1994).
- [48] M. Fujinami and N. B. Chilton, Appl. Phys. Lett. **62**, 1131 (1993).
- [49] J. F. Ziegler, J. P. Biersack, and U. Littmark, **The Stopping and Range of Ions in Solids**, Pergamon, New York, 1985.
- [50] From Transene Co. Inc.: 7.2% hydrofluoric acid, 36% ammonium fluoride, balance distilled water.
- [51] M. L. Brongersma, A. Polman, K. S. Min, and H. A. Atwater, J. Appl. Phys. **86**, 759 (1999).
- [52] G. Y. Chen, R. J. Warmack, A. Huang, and T. Thundat, J. Appl. Phys. **78**, 1465 (1995).
- [53] M. Ostraat, private communication, 1998.
- [54] S. Tiwari, F. Rana, K. Chan, and H. Hanafi, Appl. Phys. Lett. **69**, 1232 (1996).
- [55] M. Lenzlinger and E. H. Snow, J. App. Phys. **40**, 278 (1969).
- [56] D. J. Dumin, Microelecron. Reliab. **37**, 1029 (1997).
- [57] H. Hieda, K. Tanaka, and N. Gemma, J. Vac. Sci. Technol. B **14**, 1234 (1996).
- [58] E. A. Boer, L. D. Bell, M. L. Brongersma, H. A. Atwater and R. C. Flagan, Appl. Phys. Lett., submitted, 2000.
- [59] E. A. Boer et al., Appl. Phys. Lett., submitted, 2000.
- [60] J. E. Stern, B. D. Terris, H. J. Mamin, and D. Rugar, Appl. Phys. Lett. **53**, 2717 (1988).
- [61] D. M. Taylor, Thin Solid Films **331**, 1 (1998).
- [62] N. A. Burnham, R. J. Colton, and H. M. Pollock, Phys. Rev. Lett. **69**, 144 (1992).

- [63] S. Gómez-Moñivas and J. J. Sáenz, *Appl. Phys. Lett.* **76**, 2955 (2000).
- [64] S. Belaidi, P. Girard, and G. Leveque, *J. Appl. Phys.* **81**, 1023 (1997).
- [65] X. de la Broïse, M. Lannoo, and C. Delerue, *J. Appl. Phys.* **82**, 5589 (1997).
- [66] S. Watanabe, K. Hane, T. Ohye, M. Ito, and T. Goto, *J. Vac. Sci. Technol. B* **11**, 1774 (1993).
- [67] Z.-Y. Li, B.-Y. Gu, and G.-Z. Yang, *Phys. Rev. B* **57**, 9225 (1998).
- [68] P. J. S. Baird, J. R. Bowler, and G. C. Stevens, in *Inst. Phys. Conf. Ser. No. 163*, Cambridge, England, 1999, Electrostatics 1999, 10th Int. Conf.
- [69] R. Nishi et al., *Jpn. J. Appl. Phys.* **37**, L417 (1998).
- [70] J. Chen, R. K. Workman, D. Sarid, and H. R., *Nanotechnology* **5**, 199 (1994).
- [71] N. A. Burnham et al., *Nanotechnology* **6**, 67 (1997).
- [72] J. P. Spatz et al., *Nanotechnology* **6**, 40 (1995).
- [73] J. Tamayo and R. Garcia, *Langmuir* **12**, 4430 (1996).
- [74] M. Hoummady, E. Rochat, and E. Farnault, *Appl. Phys. A* **66**, S935 (1998).
- [75] G. Bar, R. Brandsch, and M.-H. Whangbo, *Surf. Sci.* **411**, L802 (1998).
- [76] L. Wang, *Appl. Phys. Lett.* **73**, 3781 (1998).
- [77] L. Nony, R. Boisgard, and J. Aimé, *J. Chem. Phys.* **111**, 1615 (1999).
- [78] S. Belaidi, P. Girard, and G. Leveque, *Microelectron. Reliab.* **37**, 1627 (1997).
- [79] J. Jackson, *Classical Electrodynamics*, John Wiley and Sons, New York, 2nd edition, 1975.
- [80] D. Sarid, *Scanning Force Microscopy*, Oxford University Press, New York, 1994.
- [81] B. G. Streetman, *Solid State Electronic Devices*, Prentice Hall, Englewood Cliffs, NJ, 3rd edition, 1990.
- [82] K. N. Tu, J. W. Mayer, and L. C. Feldman, *Electronic Thin Film Science*, Macmillan, New York, 1992.
- [83] C. Kittel, *Introduction to Solid State Physics*, John Wiley and Sons, New York, 7th edition, 1996.
- [84] G. Y. Chen, R. J. Warmack, T. Thundat, D. P. Allison, and A. Huang, *Rev. Sci. Instrum.* **65**, 2532 (1994).

- [85] Tip dimensions provided by distributor (Digital Instruments).
- [86] D. S. Rimai, D. J. Quesnel, and A. A. Busnaina, *Colloids and Surfaces A* **165**, 3 (2000).
- [87] W. Unertl, *J. Vac. Sci. Technol. A* **17**, 1779 (1999).
- [88] H. Hertz, *J. reine und angewandte Mathematik* **92**, 156 (1881).
- [89] B. V. Derjaguin, V. M. Muller, and Y. P. Toporov, *J. Colloid Interface Sci.* **53**, 314 (1975).
- [90] D. Maugis, **Contact, Adhesion and Rupture of Elastic Solids**, Springer, Berlin, 2000.
- [91] V. M. Muller, V. S. Yushenko, and B. V. Derjaguin, *J. Colloid Interface Sci.* **77**, 91 (1980).
- [92] B. D. Hughes and L. R. White, *J. Mech. Appl. Math.* **32**, 445 (1979).
- [93] J. Berg and G. A. D. Briggs, *Phys Rev. B* **55**, 14899 (1997).
- [94] M. V. Salapaka, D. J. Chen, and J. P. Cleveland, *Phys. Rev. B* **61**, 1106 (2000).
- [95] V. M. Muller, B. V. Derjaguin, and Y. P. Toporov, *Colloids and Surfaces* **7**, 251 (1983).
- [96] J. Israelachvili, **Intermolecular and Surface Forces**, Academic Press, London, 2nd edition, 1992.
- [97] V. K. Kumikov and K. B. Khokonov, *J. Appl. Phys.* **54**, 1346 (1983).
- [98] E. Papirer and H. Balard, **The Surface Properties of Silicas**, John Wiley and Sons, New York, 1998.
- [99] E. A. Brandes and G. B. Brook, editors, **Smithells Metals Reference Book**, Reed Educational and Professional Publishing Ltd., Oxford, 7th edition.
- [100] **Properties of Silicon**, INSPEC, London, 1988.
- [101] A. Kühle, A. H. Sørensen, and J. Bohr, *J. Appl. Phys.* **81**, 6562 (1997).
- [102] M. Marth, D. Maier, J. Honerkamp, R. Brandsch, and G. Bar, *J. Appl. Phys.* **85**, 7030 (1999).
- [103] P. Gleyzes, P. K. Kuo, and A. C. Boccara, *Appl. Phys. Lett.* **58**, 2989 (1991).
- [104] B. Anczykowski, J. P. Cleveland, D. Krüger, V. Elings, and H. Fuchs, *Appl. Phys. A* **66**, S885 (1998).
- [105] B. Anczykowski, D. Krüger, and H. Fuchs, *Phys. Rev. B* **53**, 15485 (1996).

- [106] X. Chen et al., *Surf. Sci.* **460**, 292 (2000).
- [107] R. Garcia and A. San Paulo, *Phys. Rev. B* **60**, 4961 (1999).
- [108] R. Garcia and A. San Paulo, *Phys. Rev. B* **61**, R13381 (2000).
- [109] A. Kühle, A. H. Sørensen, J. B. Zandbergen, and J. Bohr, *Appl. Phys. A* **66**, S329 (1998).
- [110] R. Garcia and A. San Paulo, *Ultramicroscopy* **82**, 79 (2000).
- [111] S. J. T. Van Noort, K. O. Van der Werf, B. G. De Grooth, N. F. Van Hulst, and J. Greve, *Ultramicroscopy* **69**, 117 (1997).
- [112] G. Lévêque, P. Girard, S. Belaidi, and G. Cohen Solal, *Rev. Sci. Instrum.* **68**, 4137 (1997).
- [113] K. S. Min, thesis, California Institute of Technology, 1999.
- [114] C.-M. Mo, L. Zhang, C. Xie, and T. Wang, *J. Appl. Phys.* **73**, 5185 (1993).
- [115] K. S. Seol et al., *Phys. Rev. B* **62**, 1532 (2000).
- [116] Grown by J. Christopherson.
- [117] W. A. Saunders et al., *Appl. Phys. Lett.* **63**, 1549 (1993).
- [118] D. Briggs and M. P. Seah, editors, **Practical Surface Analysis, Vol. 1, Auger and X-ray Photoelectron Spectroscopy**, John Wiley and Sons, New York, 2nd edition, 1990.
- [119] D. J. O'Connor, B. A. Sexton, and R. S. C. Smart, editors, **Surface Analysis Methods in Materials Science**, Springer-Verlag, New York, 1992.
- [120] K. Siegbahn et al., **ESCA**, Almqvist & Wiksells Boktryckeri AB, Uppsala, 1967.
- [121] M. K. Weldon et al., *J. Chem. Phys.* **113**, 2440 (2000).
- [122] M. L. Brongersma, thesis, Utrecht University, The Netherlands, 1998.
- [123] M. L. Brongersma, private communication, 2000.
- [124] F. Reif, **Fundamentals of Statistical and Thermal Physics**, McGraw-Hill, New York, 1965.
- [125] R. M. Nyffenegger, R. M. Penner, and R. Schierle, *Appl. Phys. Lett.* **71**, 1878 (1997).
- [126] T. D. Krauss and L. E. Brus, *Phys. Rev. Lett.* **83**, 4840 (1999).

- [127] M. A. Kastner, *Phys. Today* **46**, 24 (1993).
- [128] M. Fujii, Y. Inoue, S. Hayashi, and K. Yamamoto, *Appl. Phys. Lett.* **68**, 3749 (1996).
- [129] M. Fujii, O. Mamezaki, S. Hayashi, and K. Yamamoto, *J. Appl. Phys.* **83**, 1507 (1998).
- [130] T. Junno, S.-B. Carlsson, H. Xu, L. Montelius, and L. Samuelson, *Appl. Phys. Lett.* **72**, 548 (1998).
- [131] M. D. Mason, G. M. Credo, K. D. Weston, and S. K. Buratto, *Phys. Rev. Lett.* **80**, 5405 (1998).