

References:

1. D. Fink, Fundamentals of Ion-Irradiated Polymers, Springer, Berlin, 2004.
2. E.M. Liston, L. Martinu, M.R. Wertheimer, J. Adhesion Sci. Technol. **7**, 1091 (1993).
3. D. Hegemann, H. Brunner, C. Oehr, Nucl. Instr. and Meth. B **208**, 281(2003).
4. T.R. Gengenbach, H.J. Griesser, Polymer **40**, 373 (1999).
5. S. Kitova, M. Minehev, G. Danev, J. Optoelectronics and Advanced Materials **7**, 2607(2005).
6. J. Friedrich, G. Kuhn, R. Mix, A. Fritz, A. Schonhals, J. Adhes. Sci Technol. **17**, 1591(2003).
7. V. Zaporojtchenko, J. Zekonyte, F. Faupel, Nucl. Instr. and Meth. B **265**, 139 (2007).
8. (a) Briggs, D.; Brewis, D. M.; Konieczko, M. B. J. Mater. Sci., **14**, 1344 (1979); (b) Garbassi, F.; Ochiello, E.; Polato, F. J. Mater. Sci., **22**, 207 (1987); (c) Sutherland, I.; Brewis, M. D.; Heath, R. J.; Sheng, E. Surface Interface Anal., **17**, 507 (1991).
9. Briggs, D., Brewis, D. M., Konieczko, M. B. Journal of Material Science, **14**, 1344 (1979).

10. Garbassi, F., Occhiello, E., Polato, F., Brown, A. Journal of Material Science, **22**, 1450 (1987).
11. Pijpers, A.P., Meier, R. J., Journal of Electron Spectroscopy, **121**, 299 (2001).
12. Savolainen, A., Kuusipalo, J. Tappi Press, pp 897-904 (1991).
13. Briggs, D. J. Adhesion, **13**, 287 (1982).
14. Chan, C.-M. Polymer surface modification and characterization, Hanser/Gardner Publications, Inc., Cincinnati, OH, 1994.
15. Cramm, R.H. Bibee D.V. Tappi Press (1981), pp 1-11.
16. Sun, Q.C., Dong, D.D., Zhang, D., Wadsworth, L.C. Tappi, Journal **81**(8), 177 (1998).
17. Hansen, H.M., Finlayson, M.F., Castille, M.J., Goins, J.D. Tappi Journal, **76**(2), 171 (1993).
18. Lahti, J. Dry Toner- Based Electrophotographic Printing on Extrusion Coated Paperboard, Ph.D Thesis, Tampere University of Technology, Publication 523, Finland 2005, 125p.
19. Maxwell, J.W., Markgraf, D.A., Salvati, L.S.Jr., Ferris, M. Tappi Press (1987) pp 153-158.
20. Strobel, J.M., Strobel, M., Lyons, C.S., Dunatov, C., Perron, S. J. Journal of adhesion science technology, **5**(2), 119 (1991).

21. A.K. Mohanty, M.A. Khan, G. Hinrichsen. Composites: Part A, **31**, 143 (2000).
22. H.R. Lohokare, S.C. Kumbharkar, Y.S. Bhole, U.K. Kharul. Journal of Applied Polymer Science, **101**, 4378 (2006).
23. Oh, N.; Jegal, J.; Lee, K. J Appl Polym Sci, **80**, 1854 (2001).
24. Chan C.-M., Ko, T.-M., Horaoka, H. Surface Science Reports, **24**(2), 1, (1996).
25. Kojima, M.; Satake, H. J. Polym. Sci. Polym. Phys. Ed., **20**, 2153 (1982).
26. Menno Thomas van Os, Surface modification by plasma polymerization: Film deposition, tailoring of surface properties and biocompatibility, Ph.D Thesis, University of Twente, Enschede, The Netherlands, 2000 (Private communication).
27. Yasuda, H. Plasma Polymerization, Academic Press Inc.: Orlando, FL, 1985.
28. Inagaki, N. Plasma Surface Modification and Plasma Polymerization, Technomic Publishing Company, Inc., Lancaster, PA, 1996.
29. Biederman, H.; Osada, Y. Plasma Polymerization Processes, Elsevier Science Publishers B.V.: Amsterdam, The Netherlands, 1992.
30. Loeb, L. B. Rev. Mod. Phys., **12**, 87 (1940).

31. M. White, "The removal of die bond/epoxy bleed material by oxygen plasma", Proceedings 32nd IEEE Electronic Components Conference, 1982, p.262.
32. H.K. Yasuda, Plasma polymerization, Academic Press, New York, 1985.
33. D.M. Manos, D.L. Flamm, Plasma Etching: An Introduction, Academic Press, New York, 1989.
34. L. Wood, C. Fairfield et.al., "Plasma cleaning of chip scale packages for improvement of wire bond strength," Chip Scale Seminar, December 2000.
35. Jurgita Zekonyte, Sputtering and surface modification of thermoplastic polymers with low energy ion beams, Ph.D Thesis, University of Kiel, 2005 (Private communication).
36. F. Garbassi, M. Morra, E. Occhiello, "Polymer surfaces: from Physics to technology", John Wiley & Sons, Chichester, 1998.
37. H.G. Elias, "Introduction to polymer science", VCH, Weinheim, 1997.
38. G. Fourche, Polym. Eng. Sci., **35**, 957 (1995).
39. A.J. Kinloch, "Adhesion and Adesives: Science and Technology", Chapman & Hall, London, 1994.
40. M.C. van der Leeden, G. Frens, Adv. Eng. Mat., **4**(5) 280 (2002).
41. Tsuji H, Satoh, Ikeda S, Ikemoto N, Gotoh Y and Ishikawa, J. Surf.

Coat. Technol., **124**, 103 (1998).

42. Upadhyay D J, Cui N Y, Anderson C A and Brown N M D, Appl. Surf. Sci., **229**, 352 (2004).
43. Borcia G, Anderson C A and Brown N M D, Appl. Surf. Sci., **221**, 203 (2004).
44. Svorcik V, Tomasova P, Dvorankova B, Hnatowicz V, Ochsner R and Ryssel H, Nucl. Instr. and Meth. B, **215**, 366 (2004).
45. Suzuki Y, Nucl. Instr. and Meth. B, **206**, 501 (2003).
46. Brown W L, Radiat. Eff., **98**, 115 (1986).
47. Egitto F D and Matienzo L J, IBM J. Res. Develop., **38**, 423 (1994).
48. Cho, Jun-Sik, Choi, Won-Kook, Jung, Hyung-Jin, Koh and Seok-Keun, J. Mater. Res, **12**, 277 (1997).
49. Koh S K, Choi S C, Choi W K, Jung H J and Hur H H., Mat. Res. Soc. Symp. Proc., **438**, 505 (1997).
50. Seidel C, Kopf H, Gotsmann B, Vieth T, Fuchs H and Reihls K, Appl. Surface Sci., **150**, 19 (1999).
51. Hofrichter A, Bulkin P and Drevillon B, J. Vacuum Sci. & Tech. A, **20**, 245 (2002).
52. Hegemann D, Brunner H and Oehr C Nucl. Instrum. & Method B, **208**, 281 (2003).

53. Boldyryeva H, Kishimoto N, Umeda N, Kono K, Plaksin O A and Takeda Y, Nucl. Instrum.& Meth. B, **219-220**, 953 (2004).
54. Kitova S, Minchev M and Danev G, J. Optoelectronics and Advanced Materials, **7**, 2607 (2005).
55. Sira M, Trunec D, St'ahel P Bursikova V and Navratil Z, J. Phys. D,Appl.Phys., **41**, 015205-015212 (2008).
56. E.H. Lee, G.R. Rao and L.K. Mansur, Mat. Sci. Forum, **248/249**, 135 (1997).
57. T. Nishino, A. Nozawa, M. Kotera, K. Nakamae, Rev. Scientific Instr., **71**, 2094 (2000).
58. K. W. Oh, D. J. Kim and S. H. Kim, Journal of Applied Polymer Science, **84**, 1369 (2002).
59. N. Inagaki, S. Tasaka, K. Narushima, H. Kobayashi, Journal of Applied Polymer Science, **85**, 2845 (2002).
60. M. Yoshida, S. Watanabe, T. Takagi, M. Shinohara, J. W. Lee, Nucl. Instrum. & Methods B, **206**, 712 (2003).
61. M. Ueda, I. H. Jan, R. S. Dallaqua, J.O. Rossi, J. J. Barroso and M.H. Tabaeniks, Nucl. Instrum. & Methods B, **206**, 760 (2003).
62. N. Sakudo, D. Mizutani, Y. Ohmura, H. Endo, R. Yoneda, N. Ikenaga, H. Takikawa, Nucl. Instrum & Methods B, **206**, 687 (2003).

63. J. Wang, C. J. Pan, S. C. H. Kwok, P. Yang, J.Y. Chen, G. J. Huang, P. K. Chu, *J. Vac. Sci. Technol.*, **A22** (1), 170 (2004).
64. N. Inagaki, K. Narushim, N. Tuchida, K. Miyazaki, *Journal of Polymer Science: Part B: Polymer Physics*, **42**, 3727 (2004).
65. N. L. Singh, A. Qureshi, N. Shah, A. K. Rakshit, S. Mukherjee, A. Tripathi, D. K. Avasthi, *Rad. Measurements*, **40**, 746, (2005).
66. I. A. Rusu, G. Borcia, S. O. Sayeda and J. L. Sullivana, *Journal of Optoelectronics and Advanced Materials*, **10**(3), 668 (2008).
67. Rory Wolf and Amelia Carolina Sparavigna, *Engineering*, **2**(6), 397 (2010).
68. A. Vesel, M. Mozetic and A. Zalar, "XPS characterization of PTFE after treatment with RF oxygen and nitrogen plasma", *Surf. Interface Anal.*, **40**, 661 (2008).
69. A. Vessel and M. Mozetic, "Surface functionalization of organic materials by weakly ionized highly dissociated oxygen plasma", *Journal of Physics*, **62**(1), 1, (2009).
70. D.J. Wilson, R.L. Williams and R.C. Pond, *Surf. Interface Anal.*, **31**, 385 (2001).
71. D.T. Clark and D.R. Hutton, *J. Poly. Sci. Part A*, **25**(10), 2643 (1987).
72. M. E. Ryan and J.P. Badyal, *Macromolec.*, **28**, 1377 (1995).

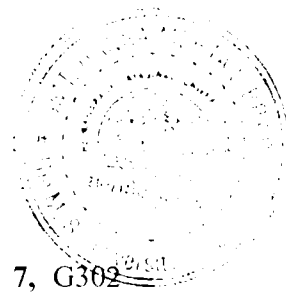
73. C.R. Shick, P. A. DePalma and R.K. Marcus, *Anal. Chem.*, **68**(13), 2113 (1996).
74. F. Arefi-Khonsari, M. Tatouliau, F. Bretagnol, O. Bouloussa and F. Rondelez, *Surf. Coat. Tech*, **200**, 14 (2005).
75. P.K. Chua, J.Y. Chena, L.P. Wanga and N. Huang, *Mat. Sci. Eng. R*, **36**, 143 (2002).
76. N. Vandencasstele and F. Reniers, *Surf. Interface Anal.*, **36**, 1027 (2004).
77. M. Chen, P. Zamora, P. Som, L.A. Pena and S. Osaki, *J. Biomater. Sci. Polymer Edn.*, **14**(9), 917 (2003).
78. Maher J., Polyethersulfone: high-temperature performer, *Advanced materials & processes*, **147**, 17 (1995).
79. M.A.C. Stuart, W.T.S. Huck, J. Genzer, M. Muller, C. Ober, M. Stamm, G.B. Sukhorukov, I. Szleifer, V.V. Tsukruk, M. Urban, F. Winnik, S. Zauscher, I. Luzinov, S. Minko, *Nature Material* **9**, 101 (2010).
80. R. Malaisamy, D. Berry, D. Holder, L. Raskin, L. Lepak, K.L. Jones, Development of reactive thin film polymer brush membranes to prevent biofouling, *Journal of Membrane Science* **350**, 361 (2010).
81. H.U. Lee, S.Y. Park, Y.H. Kang, S.Y. Jeong, S.H. Choi, K.Y. Jahng, C.R. Cho, Surface modification of and selective protein attachment to a

- flexible microarray pattern using atmospheric plasma with a reactive gas, *Acta Biomaterialia*, **6**, 519 (2010).
82. L.P. Zhu, B.K. Zhu, L. Xu, Y.X. Feng, F. Liu, Y.Y. Xu, Corona-induced graft polymerization for surface modification of porous polyethersulfone membranes, *Applied Surface Science* **253**, 6052, (2007).
 83. T. Vatuňa, P. Špatenka, J. Píchal, J. Koller, L. Aubrecht, J. Wiener, PES fabric plasma modification, *Czechoslovak Journal of Physics*, **54**, C475-C482, (2009).
 84. B. Van Der Bruggen, Chemical modification of polyethersulfone nanofiltration membranes: A review, *Journal of Applied Polymer Science*, **114**, 630, (2009).
 85. T. He, M.H.V. Mulder, H. Strathmann, M. Wessling, Preparation of composite hollow fiber membranes: Co-extrusion of hydrophilic coatings onto porous hydrophobic support structures, *Journal of Membrane Science*, **207**, 143, (2002).
 86. M.L. Steen, A.C. Jordan, E.R. Fisher, Hydrophilic modification of polymeric membranes by low temperature H₂O plasma treatment, *Journal of Membrane Science*, **204**, 341 (2002).
 87. D.S. Wavhal, E.R. Fisher, Hydrophilic modification of polyethersulfone membranes by low temperature plasma-induced graft polymerization, *Journal of Membrane Science*, **209**, 255 (2002).
 88. K.R. Kull, M.L. Steen, E.R. Fisher, Surface modification with nitrogen-

- containing plasmas to produce hydrophilic, low-fouling membranes, *Journal of Membrane Science*, **246**, 203, (2005).
89. S. Kroll, L. Meyer, A.M. Graf, S. Beutel, J. Glökler, S. Döring, U. Klaus, T. Scheper, Heterogeneous surface modification of hollow fiber membranes for use in micro-reactor systems, *Journal of Membrane Science*, **299**, 181 (2007).
 90. E.S.A. Hegazy, H.A. AbdEl-Rehim, H. Kamal, K.A. Kandeel, Advances in radiation grafting, *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms*, **185**, 235 (2001).
 91. A. Charlesby, *Radiat. Phys. Chem.*, **40**, 117 (1992).
 92. F. J. Balta Calleja, *Adv. Polym. Sci.*, **66**, 117 (1985).
 93. G. R. Rao, L. Riester, and E. H. Lee, *Mat. Res. Soc. Symp. Proc.*, **345**, 363 (1995).
 94. J. Scheirs, *Modern Polymers: High Performance Polymers for Diverse Applications*, (John Wiley and Sons, New York, 1997), pp. 2-7.
 95. www.en.wikipedia.org
 96. Edward C. Combe, Brandon A. Owen, James S. Hodges, "A protocol for determining the surface free energy of dental materials", *Dental Materials*, **20**, 262 (2004).
 97. D. K. Owen and R. C. Wendt, *Appl. Polymer Sci.*, **13**, 1741 (1969).

98. Zisman, W. A., Influence of constitution on adhesion, *Ind. Eng. Chem.*, **55** (10), 18 (1963).
99. W.C. Oliver, G.M. Pharr, *J. Mater. Res.*, **19**, 3 (2004).
100. W.C. Oliver, G.M. Pharr, *J. Mater. Res.*, **7**, 1564 (1992).
101. M.F. Doerner and W. D. Nix, *J. Mater. Res.* **1**, 601 (1996).
102. I.N. Sneddon, *Int. J. Eng. Sci.* **3**, 47 (1965).
103. D. Briggs, "Surface Analysis of Polymers by XPS and SIMS", Cambridge University Press, 1998.
104. J.P. Biersack, in: "Ion-beam Modification of Insulators", P. Mazzoldi, G.W. Arnold, (eds.), Elsevier, Amsterdam, (1987).
105. G. Binning, H. Rohrer, *Helvetica Physica Acta*, **55**, 726 (1982).
106. F. Yves, Dufrene, *J. Bacteriolohy*, **184**, 5205 (2002).
107. F.J. Giessibl, *Rev. Mod. Phys.*, **75**, 949 (2003).
108. Suresh Chandra, "Molecular spectroscopy", Narosa publisher, 2009.
109. Selma Hokenek, Characterization of conductive polycarbonate films, Thesis, University of South Florida, 2009 (Private communication).
110. S. Pelagade, N. L. Singh , Sejal Shah, Anjum Qureshi , R. S. Rane, S. Mukherjee, U. P. Deshpande, V. Ganesan and T. Shripathi, *Journal of Physics: Conference Series*, **208**, 012107 (2010).

111. Anjum Qureshi, Sejal Shah, S. Pelagade, N. L. Singh, S. Mukherjee, A. Tripathi, U. P. Deshpande and T. Shripathi, Journal of Physics: Conference Series, **208**, 012108 (2010).
112. S. M. Pelagade, N. L. Singh, Anjum Qureshi, R. S. Rane, S. Mukherjee, U. P. Deshpande, V. Ganesan, T. Shripathi, Nuclear Inst. and Methods in Physics Research, B: Beam Interactions with Materials and Atoms, **289**, 34 (2012).
113. S. M. Pelagade, N. L. Singh, R. S. Rane, S. Mukherjee, U.P. Deshpande, V. Ganesan, T. Shripathi, Journal of Surface Engineered Materials and Advanced Technology, **2**, 132 (2012).
114. N. L. Singh, S. M. Pelagade, Chaitali Gavade, R. S. Rane, S. Mukherjee, U. P. Deshpande, V. Ganeshan, T. Shripathi. Pramana-Journal of Physics, **80** (1), 133 (2013).
115. Vesel A and Mozetic M, J. Phys.: Conf. Ser. **100**, 012027, (2008).
116. Rusu I A, Popa G, Saied S O and Sullivan J L, Journal of Optoelectronics and Advanced Materials, **8**, 1935 (2006).
117. X. Huang, X. Quyang, F. Ning, J. Wang, Polymer Degradation and Stability, **91**, 606 (2006)
118. N.L. Singh, N. Shah, K.P. Singh, Bull. Mater. Sci., **28**(6), 599 (2005).
119. R.G. Kraus, E.D. Emmons, J.S. Thompson, A. M. Covington, J. of Polymer Science: Part B: Polymer Physics, **46**, 734 (2008)
120. I. Novak, I. Chodak, J. Sedliacik, M. Steviar, A. Popelka, J. Kopny, Ann. WULS-SGGW, For and Wood Technol., **72**, 83 (2010).
121. I. Navak, A. Popelka, A.S. Luyt, M.M. Chehimi, M. Spirkova, I. Janigova, A. Kleinova, P. Stopka, M. Slouf, V. Vanko, I. Chodak, M. Valentin, Surface & Coatings Technology, **235**, 407 (2013).
122. M. Drobot, M. Aflori, V. Barboiu, Digest Journal of Nanomaterials and



- Biostructures, **5**(1), 35 (2010).
123. C.L. Timmons, D.W. Hess, *Electrochem. Solid-State Lett.*, **7**, G302 (2004).
124. C. Bi et al. *Journal of Power Sources*, **194**, 838 (2009).
125. Hua Xu, Zheng Hu, Shihua Wu, Yi Chen, *Materials Chemistry and Physics*, **80**, 278, (2003).
126. A.C. Christine, J.M. Thomas, *Macromolecules*, **20**, 2819 (1987).
127. E. Arkhangelsky, D. Kuzmenko and V. Gitis, *Journal of Membrane Science*, **305**, 176 (2007).
128. Papakonstantinou D, Amanatides E, Mataras D, Ioannidis V and Nikolopoulos P *Plasma Processes and Polymers*, **4**, S1057-S1062, (2007).
129. D. P. Subedi, L. Zajickova, V. Bursiokova, J. Janca, *Him J Sci.*, **1**(2), 115, (2003).
130. F. D. Egitto and L.J. Matienzo, *IBM J. Res. Develop.*, **38**, 423 (1994).
131. R. Bajpai, S. Sharma, V. K. Vastal and B. P. Chandra, *Bull. Mater. Sci.*, **26**(5), 537 (2003).
132. N. Shah, D. Singh, S. Shah, A. Qureshi, N L Singh and K P Singh, *Bull. Mater. Sci.*, **30**(5), 477 (2007).
133. G. Marletta, F. Iacona, *Materials and Processes for Surface and Interface Engineering*, Kulwer Academic Publishers, Dordrecht, 1995, p. 597.
134. J.F. Friedrich, W.E.S. Unger, A. Lippitz, R. Giebler, I. Koprinarov, St.

Weidner, G. Kühn, in: "Polymer surface modification: Relevance to adhesion", K.L. Mittal (ed.), **2**, 137 (2000).