

## REFERENCES

1. K.L.Chopra And I.J.Kaur, 'Thin Film Device Applications', Plenum Press, New York, (1983).
2. K.L.Chopra And S.R.Das, 'Thin Film Solar Cells', Plenum Press, New York, (1983).
3. L.I.Maisel And R.Glang (eds.), 'Handbook Of Thin Film Tech.', Mc Graw-Hill, New York, (1970).
4. K.L.Chopra, 'Thin Film Phenomena', McGraw-Hill, New York, (1969).
5. R.F.Bunshah, 'Deposition Technologies For Films And Coatings', Noyes Publications, New Jersey, (1982)
6. Holland, L., "Vacuum Deposition Of Thin Films," Chapman and Hall, Ltd., London, p.98, (1956).
7. K.S.Fancey, P.A.Robinson, A.Leyland, A.S.James, A.Mathews : Materials Science And Eng A 140, 576, (1991).
8. R.S.Upadhye, E.J.Hsieh : J.Vac.Sci.Tech. A 8, 1348, (1990).
9. S.Swann, Vacuum 38, 791, (1988).
10. S.Swann, S.A.Collectt, I.R. Scarlett. J.Vac. Sci. Tech. A 8, 1299, (1990).
11. B.N.Chapman, J.Vac.Sci.Tech. 11(4), 106, (1974).
12. H.K.Pulker, A.J.Perry Surface Tech.14, 25, (1981).
13. H.Hieber, Thin Solid Films, 37, 335, (1976).
14. C.Weaver : J.Vac. Sci. Tech., 12, 18, (1975).
15. P.Benjamin, C.Weaver; Proc.Roy.Soc.Lond A 516,(1961)
16. H.Harach, B.Chapman : Thin Solid Films, 22, 305, (1974).
17. K.L.Mittal : Electro.Comp.Sci.and Tech. 3, 21, (1976).

18. Strong, J.Rev. Sci. Instr. ,6, 97, (1945).
19. D.W.Butter : J.Phys. E Sci. Instr. 3, 979,(1979).
20. J.W.Beams, W.E.Walker, H.S.Morton : Phys.Rev 87 (1952).
21. J.J.Garrido, D.Geistenberg, R.W.Berry : Thin Solid Films,41,87, (1977).
22. E.Tsunasawa, K.Inagagi, K.Yamanaka : J.Vac.Sci. Tech. 14, 651, (1977).
23. A.Kinbara, J.Baba, N.Matuda : Thin Solid Film Vol.141, no.2, P.229. (1st Aug.1986).
24. A.J.Peny : Thin Solid Films, 78,77, (1981).
25. S.A.Jacobs, A.L.Hrycinetal : Thin Solid Films Vol.144,no.1,P.69,(1 Nov 1986).
26. F.Schlossberger, K.D.Franksen Vacuum 9,28, (1959).
27. C.A.Nergebawer, M.B.Webb : J.Appl. Phys, 33,74, (1962).
28. W.G.Dorfeld : Thin Solid Films 47,241, (1977).
29. Heavens,O.S., J.Phys. Radium,11,355, (1950).
30. Townsley,M.G.,Rev.Sci,Instr.,16,143, (1945).
31. Schossberger,F., K.D.Franson,Vacuum,9,28, (1959).
32. Beams,J.W.,J.B.Freazeale, and W.L.Bart, Phys Rev. 100, 1657, (1955).
33. S.T.Moses,R.K.Witt : Ind Eng Chem 41,2334,(1949).
34. R.W.Hoffman : Physics Of Thin Films.3,211,(1966).
35. W.Buckel : J.Vac.Sci.Tech. 6,606, (1969).
36. P.M.Alexander, R.W.Hoffman : J.Vac.Sci.Technology 13, 96, (1976).
37. M.Laugier : Thin Solid Film. 79,15, (1981).
38. H.K.Pulker : Thin Soild Films. 89, 91, (1982).

39. M.F.Doerner, W.D.Nix : Rev.Solid State, Mat 14(3), 225, (1988).
40. H.K.Pulker,J.Maser Thin Solid Films 59,65,(1979).
41. P.Chaudhari : J.Vac Sci Tech 9,520, (1972).
42. R.W.Hoffman : Thin Solid Films 34,185, (1976).
43. J.H.Vander Merwe : J.Appl. Physics 34, 117,(1963)  
ibid.34, 3420,(1963).
44. Graham A.H.,R.W. Lindsay, H.J.Read, J.Electrochem. Soc. 112, 401, (1965).
45. H.Watkins, A-Kolk : J.Electrochem.Soc., 108, 1018, (1961).
46. A.E.Ennos : Appl opt. 5,51, (1966).
47. H.K.Pulkar : Coatings on glass : Elsevier Amsterdam P- 353, (1984).
48. M.Born And E.Wolf : "Principles Of Optics". Pergamon Press, Third ed(1965).
49. W.K.H.Panofsky, M. Phillips, "Classical Electricity and Magnetism" : Addisonwesley Publishing Company. Inc. USA.(1962).
50. A.Vasicek, "Optics Of Thin Films". North Holland, Amsterdam, (1960).
51. J.Strong, J.Opt. Soc. Amer. Vol. 26, P.73,(1936).
52. A.H.Pfund J.Opt.Soc.Amer.Vol. 24, P.99,(1934).
53. O.S.Heavens, "Optical Properties Of Thin Solid Films", Butterworth's London, (1955).
54. H.A.Macleod, " Thin Film Optical Filters", Adam Hilger Ltd., London, (1986).

55. G.Hass, C.D.Salzburg : J.Opt.Soc.Amer.,  
Vol. 44, P.181, (1954).
56. E. Ritter : "Dielectric Film Materials For Optical  
Applications", Physics Of Thin Films, Vol.8;  
P.28, (1975).
57. H.K.Pulker : Appl.Opt.Vol.18, No.12, P.1969, (1979).
58. E.Ritter : "Physics Of Thin Films ", Vol.8;  
P.28, (1975).
59. S.Ogura, N.Sugawara, R.Hiraga : Thin Solid Films,  
Vol.30, P. 3, (1975).
60. V.D.Wedenskii : Sov.J.Opt.Tech.53, 9, P.525, (Sep.1986).
61. R.K.Puri, K.Vijaya, R.N.Karekar : Pramana Vol. 21,  
No. 5, P.311, (Nov.1983).
62. C.Weaver : Adv.Phys.Vol II (42), P.83,(1962).
63. H.Koch,Phys. Stats Solidi : Vol 12, P.533, (1965).
64. H.Hiraga, N.Sugawara, S.Ogura, S.Amano : Jap.J.Appl.  
Phys. Suppl 2, Pt 1, P. 689, (1974).
65. Vijaya K. : Ph.D. Thesis, Pune University,(1982).
66. K.Vijaya, R.K. Puri, R.N.Karekar : Thin Solid  
Films, 70, 105, (1980).
67. K.Vijaya, R.K.Puri, R.N.Karekar : Pramana J.Phys  
Vol.28, No.3, P.277, (March 1987).
68. Vijaya Puri, R.K.Puri, R.N.Karekar : Jap.J.Appl.Phys.  
Vol.29, No. 12, P.2789,(Dec.1990).
69. S.Ogura : Ph.D. Thesis, New Castle Upon Tyne  
Polytechnique, (1975).
70. K.H.Guenther, H.K.Pulkar : Appl.Opt.Vol.15, No.12,  
P.2992, (1976).

71. T.Chudoba : Thin Solid Films, Vol.131, No.1-2, P.95, (14th Sep.1985).
72. H.K.Pulkar Thin Solid Films ; Vol.9, P.57, (1971) .
73. M.Harris, H.A. Macleod, S.Ogura, E. Pelletier, B.Vidal : Thin Solid Films, Vol.57, No.1, P.173, (1979) .
74. H.K.Pulkar, G.Paesold, E.Ritter : Appl.Opt.Vol.15, P.2986, (1976).
75. S.Ogura, H.A.Macleod : Thin Solid Films, 34, 371, (1976).
76. K.H.Guenther : Appl.Opt.Vol.23, No.21, P.3807, (1st Nov.1984).
77. Sh.A.Furman, M.D.Levina : Opt. and Spec.Vol.30, P.404, (1971) .
78. A.F.Perveer, V.M.Zolotareo etal : Opt. and Sepec. Vol.32, P.322, (1972) .
79. E.B.Brik, I - I Petrova : Sov.J.Opt.Tech. Vol.59, No.1, P.54, (Jan 1992).
80. P.H.Lissberger, A.K.Roy, I.W.Salter, J.A.Shan : Optica Acta Vol.33, No.7, 925, (1986) .
81. J.R. Gee, I.A.Hodgkinson, H.A.Macleod : Appl. Opt.Vol.24, No.19, 3188, (1st Oct 1985) .
82. K.L.Chopra, S.K.Sharma, V.N. Yadava : Thin Solid Films, 20, 207, (1974) .
83. E.H.Hirsh : J.Phys (D) (GB) Vol.15, No.10, P.1991, (14th Oct 1982). Vol.13, No.2081, (1980) .

84. Sh.Furman, M.D.Levina : Opt. and Spec. Vol.30, P.404, (1971). ibid, Vol.28, No.1, P.412, (1970).
85. A.A.J. Al - Douri : J.Vac.Sci.Tech. A 4 (6), P.477, (Nov/Dec 1986).
86. M.S.Al.Robaee, K.Narasimha Rao, S.Mohan : J.Appl. Phys.(USA), 71(5), P.2380, (1st March 1992).
87. E.B.Brik, L.A.Tkacheva : Sov.J.Opt. Tech.56(2), P.93, (Feb 1989).
88. V.I.Irkov, A.V.Pestov : Sov.J.Opt.Tech. 56(8), P.498, (Aug 1989).
89. A.Kinbara, S.Baba, N.Matuda, K.Takamisawa : Thin Solid Films 89 ; P.125, (1982).
90. R.A.Riddle : J.Of Thermal Stress (USA) Vol.14, No.3, P.255, (July-Sept. 1991).
91. R.M.Mustaev, M.A.Gizin, A.L.Egorov : Sov.J.Opt.Tech.(USA) Vol.59, No.2, P.105,(Feb. 1992).
92. M.D.Levina, Sh.A.Furman, N.V.Korolev : Opt. and Spec.Vol.45, No.6, P.914, (1978).
93. P.Lostis : Compt. Rend 240, P.2135, (1955).
94. P.Lostis : Rev.Opt.38, P.1, (1959).
95. G.Hass : J.Opt.Soc.Amer.45, P.945, (1955).
96. S.D.Smith, T.S.Moss : J.Sci. Instr. 35, P.105, (1958).
97. H.Vonarbuig : Optik.20, P.43, (1963).
98. S.Fujiwara : J.Opt.Soc. Amer.53, P.1315, (1963)  
ibid 53, P.880, (1963).
99. J.T.Cox, G.Hass : Phys. Of Thin Films, P.123,  
Academic Press Inc. New York, (1963).

100. R.Kersten, H.F. Mahlein, W.Rauscher : Thin Solid Films, 28, P.369, (1980).
101. D.Smith, P.Baumeister : Appl.Opt., Vol.18, No.1, P.111, (1st Jan. 1979).
102. W.J.Coleman : Appl.Opt.13, P.946, (1974).
103. M.Varasi, C.Misiano, L.Lasapanaro : Proc.Int. Ion Eng.Cong. P.1041, (1983).
104. R.Schwab : Thin Solid Films, Vol.207, No.1-2, P.283, (1992).
105. P.F.Wahid, K.B.Sundaram, P.J.Sisk : Opt. And Laser Tech. (UK) Vol.24, No.5, P.263,(Oct 1992).
106. C.Misiana, E.Simonetti : Vacuum, 27, P.403, (1977).
107. J.Feldman, M.Fritz, F.Stetter : Res.Dev.27, P.49, (1976).
108. E.E.Khawaja, S.G.Tomlin : Thin Solid Films, 30, P.361, (1975).
109. R.P.Netterfield, W.G.Sainty, P.J.Martin, S.H.Sie : Appl. Opt.24, P.2267, (1985).
110. M.S.A. Robaee, M.G.Krishna, K.N.Rao, S.Mohan : J.Vac.Sci.Tech. A.9, P.3048, (1991).
111. R.J.Archer :`Manual On ellipsometry', Gaertner Scientific Corp. (1968).
112. R.J.Archer, C.V.Schank : J.Opt.Soc.Amer. Vol.57, 191, (1967).
113. M.Yamamoto : Opt.Comm.Vol.10, No.2, P.200, (1974).
114. H.Yokota, K.Kinosita, H.Sakata : Jap.J.Appl. Phys, Vol.3, No.12, P.805, (1964).
115. S.Kawabata, K.Ichiji, Surf.Sci.Vol.56, P.316, (1976).

116. P.S.Hauge, F.H.Dill : IBM.J.Res. And Dev. Vol.17, No.6, P.472, (Nov. 1973).
117. D.E.Aspnes, P.S.Hauge : J.Opt.Soc.Am, Vol.66, No.9, (1976).
118. P.S.Hauge, Surf.Sci.Vol.90, P.108, (1980).
119. Y.Hayashi : Jap.J.Appl. Phys Pt 1, Vol.29, No.11, P.2514, (Nov. 1990).
120. F.Ferrier, J.H.Lecat : J.Electrochem.Soc.Vol.137, No.7, P.2203, (July 1990).
121. J.M.M.de Nijs, A.Van Silfhout : J.Opt.Soc.Am., A 5, 6, P.773, (1988).
122. S.Andrier, F.Ferrier, A.Arnaud d' Avitaya : J.Appl.Phys. A 49, P.719, (1989).
123. R.F.Cohn, J.W.Wagner, J.Kruger : Appl.Opt.27, 4664 (1988).
124. I.An, Y.M.Li, H.V.Nguyen etal : Rev, Sci. Inst. (USA) Vol.63, No.3, P.3842, (Aug. 1992).
125. J.Rivory, J.Frigario, M.Marques ; opt.comm. (Netherlands) Vol.89, No.5-6, P.482,(15th May 1992).
126. C.M.Marques, J.M.Frigerio, J.Rivory : J.Opt. Soc.Amer.Vol.8, No.12, P.2523,(Dec. 1991).
127. P.H.Smith : Surf.Sci., Vol.16, P.34, (1969).
128. Puri R.K., Vijaya Puri, Nerle U.V., Patil P.V., National Symposium Of Vac.Sci.Tech.(Oct.1993).
129. P.J.Martin, H.A.Macleod, R.P.Netterfield, C.G.Pacey, W.G.Sainty App.Opt.22, P.178, (1983).

130. Vijaya Puri, R.K Puri: Jpn.J.Appl.Phys., Vol.32, Part 1, NO.10, P.4699, (Oct. 1993).
131. Hass G., Ramsay J.B., Thun R., J.Opt. Soc.Am.48, P.324, (1958).
132. M.R.Lange, J.K.Mciver, A.H.Guenther, Thin Solid Film, 125, P.143, (1985).
133. A.P.Bradford, G.Hass, M.Mcfarland, App.Opt.11, 2342,(1972).

The following are the papers presented from this work:

I) INCREASE IN ADHESION OF REFRACTORY OXIDE THIN FILMS BY CHOPPING.

P.V.Patil, U.V.Nerle, R.K.Puri, Vijaya Puri.

Proceeding of seminar on 'Commercial materials and industrial application'. P.14-17, July 1993.

II) MECHANICAL AND OPTICAL PROPERTIES OF VACUUM EVAPORATED CHOPPED AND NONCHOPPED CERIUM OXIDE THIN FILMS.

Puri R.K., Vijaya Puri, Nerle U.V., Patil P.V.

Paper presented at 'National Symposium Of Vacuum Science And Technology'. Oct.1993.

III) IMPROVEMENT IN MECHANICAL PROPERTIES OF CERIUM OXIDE THIN FILM BY CHOPPING.

Vijaya Puri, R.K.Puri, P.V.Patil, U.V.Nerle.

Paper accepted for presentation in international conference on 'Metallurgical Coatings And Thin Films.' California USA. April 1994.