

REFERENCES

1. G Cao, *Nanostructures & Nanomaterials* (Imperial College Press 2006)
2. Charles P. Poole, Jr and Frank J. Owens, *Introduction to Nanotechnology* (Wiley 2010)
3. R Feynman, “ There's Plenty of Room at the Bottom”, *Eng. Sci.* **23** (1960) 22
4. A Uhler, *Bell Sys. Tech. J.* **35** (1956) 333
5. P Mochahari, “ *Some Studies on Synthesis, Characterization and Properties of CdS and ZnS Nanoparticles and Nanostructured Films*” Ph.D Thesis submitted to Gauhati University in the Faculty of Technology in Instrumentation (August, 2015)
6. N Taniguchi, in *Proc. Int. Conf. Prod. Eng., Tokyo Part II, Japan Society of Precision Engineering* (1974) p.18
7. E. K. Drexler, *Engines of Creation: The Coming Era of Nanotechnology* (New Yorks, Anchor Books 1986)
8. G Hodes, *Chemical Solution Deposition of Semiconductor Films* (Marcel Dekker Inc. 2003)
9. A Goswami, “Thin Film Fundamentals” (New Age International, 2008)
10. W Buckel, R Hilsch, *Z. Physik* **138** (1954) 109
11. S Chaliha, “*Studies of Znse And Indium Tin Oxide Based Thin Film Schottky Barriers And Heterojunctions for Their Electrical And Optical Properties*” Ph.D Thesis submitted to Gauhati University in the Faculty of Science in Physics (June, 2008)
12. C.D. Lokhande, *Mater. Chem. Phys.* **27** (1991) 1
13. J.G. Ibanez et.al, *J. Chem.Edu.* **74** (1997) 1205
14. C. D Lokhande, S. H Pawar, *Solid State Commun.* **44**(1982) 1137

15. T. L.Chu et.al, *J.Electrochem. Soc.* **139** (1992) 2443
16. A. G Shikalgar, S. H Pawar, *Thin Solid Films* **61** (1979) 313
17. I. Kaur, D. K.Pandya, K. L.Chopra, *J. Electrochem. Soc.***127** (1980) 943
18. S.Chandra, R. K. Pandey, R. C. Agrawal, *J. Phys. D: Appl.Phys.* **13** (1980)1757
19. D. Lincot, R. Ortega-Borges, M. Froment, *Phil. Mag. B* **68** (1993)185
20. S.M. Pawar et.al, *Current Applied Physics* **11** (2011) 117
21. S.H. Pawar, C.H. Bhosale and R.N. Patil, in *C.D. Lokhande and S.H. Pawar (eds.) Proc. of Workshop on Solid State Energy Conversion* (1985)
22. D.J. Pietrzyk, C.W. Frank, *Analytical Chemistry: an Introduction* (Academic Press, New York, 1974)
23. D.A. Skoog, D.M. West, *Fundamentals of Analytical Chemistry, 2nd Edition* (Holt, Rinehart & Winston, New York, 1963)
24. C. Kittel, *Introduction to Solid State Physics* 8th edition, (John Wiley and Sons Inc., 1999)
25. H Kanazawa, S Adachi, *Journal Of Applied Physics* **83** (1998) 5997
26. Svane et.al, *Physical Review B* **81** (2010) 245120
27. R. Dalven, in *Solid State Physics, edited by H. Ehrenreich, F. Seitz, and D. Turnbull* (Academic, New York) **28** (1973) 179
28. H. Maoet al., *Physica E* **27** (2005)124
29. Titova et.al, <https://arxiv.org/pdf/cond-mat/0606427.pdf>
30. D. G. Bell et.al, *Proc. R. Soc. Lond. A* **217** (1953) 71
31. J. M. An et.al, *Nano Letters* **6** (2006) 2728
32. U Elfurawi “*Optical and Electronic Properties of PbS Colloidal Nanocrystals*”

Ph.D Thesis submitted to the University of Nottingham (January 2012)

33. S Wei, A Zunger, *Physical Review B* **55** (1997) 13605
34. *Numerical Data and Functional Relationships in Science and Technology*, edited by O. Madelung, M. Schulz, and H. Weiss, Landolt-Börnstein, New Series, Vol. 17 (Springer-Verlag, Berlin, 1982)
35. D. L. Mitchell, E. D. Palik, and J. N. Zemel, in *Physics of Semiconductors: Proceedings of the Seventh International Conference, Paris, 1964*, edited by M. Hulin (Academic, New York, 1964)
36. R. Dalven, *Phys. Rev. B* **3** (1971), 3359
37. E. Grodzicka et.al, in *Proceedings of the Tenth International Conference on Ternary and Multinary Compounds Stuttgart, Germany, 1995*, edited by H. W. Schock and T. C. Walter (Akademie Verlag, Berlin, 1996)
38. F. F. Sizov et.al, *Acta Physica Pol. A* **87** (1995) 441
39. S.-H. Wei, A. Zunger, *Phys. Rev. B* **53** (1996), R 10457
40. S.-H. Wei, A. Zunger, *J. Appl. Phys.* **78** (1995), 3846
41. A. A. Andreev, *J. Phys. C* **4** (1968), 50
42. M. Schluter, G. Martinez, M. L. Cohen, *Phys. Rev. B* **12** (1975) 650
43. Z. Wang, B. A. Bunker, *Phys. Rev. B* **46** (1992), 11277
44. J. C. Mikkelsen, J. B. Boyce, *Phys. Rev. Lett.* **49** (1982) 1412
45. J. C. Mikkelsen, J. B. Boyce, *Phys. Rev. B* **28** (1983) 7130
46. [https://en.wikipedia.org/wiki/Lead\(II\)_sulfide](https://en.wikipedia.org/wiki/Lead(II)_sulfide)
47. Madelung, O. *Semiconductors: Data Handbook*. (Springer, 2004)
48. C. Puscher, *Dingl. J.* **190** (1869) 421

49. J Emerson-Reynolds, *J. Chem. Soc.* **45** (1884) 162
50. D E Bode, in *Physics of Thin Films. Vol.3*, (Academic Press, New York, 1996)
51. D. J. Lovell, *American Journal of Physics* **37** (1969) 467
52. F. Kicinski, *J. Soc. Chem. Ind.* **17** (1948) 54
53. Sosnowski et al., *Nature*, **159** (1947) 818
54. R. P Chasmar, *Nature*, **161**(1948) 281
55. Schwarz, *Proc. Phys. Soc. A*, **62** (1949) 530
56. A F Gibson *Proc. Phys. Soc. B* **63** (1950) 756
57. Pentia et.al, *Journal of Optoelectronics and Advanced Materials* **3** (2001) 525
58. Popa et.al, *Journal Of Optoelectronics And Advanced Materials* **8** (2006) 43
59. D. Kumar et.al, *J.Alloys Compd.* **484** (2009) 463
60. Z Q. Mamiyev, N O. Balayeva, *Optical Materials* **46** (2015) 522
61. Yücel et.al, *Journal of Alloys and Compounds* **642** (2015) 63
62. K. M. Gadave, S. A. Jodgudri C. D. Lokhande, *Thin Solid Films*, **245** (1994) 7
63. Parra et.al, *Journal of Physics and Chemistry of Solids* **61** (2000) 659
64. Carrillo-Castillo et.al, *Materials Letters* **121** (2014) 19
65. Larramendi et.al, *Thin Solid Films* **389** (2001) 301
66. Ghamsari et.al, *Materials Science and Engineering B* **133** (2006) 113
67. Popescu et.al, *Chalcogenide Letters* **6** (2009) 503
68. Raniero et.al, *Physica B* **405** (2010) 1283
69. Kotadiya et.al, *Appl Phys A* **108** (2012) 819
70. Popescu et.al, *Chalcogenide Letters* **12** (2015) 363
71. Pérez-García et.al, *Chalcogenide Letters* **12** (2015) 579

72. Nair et.al, *J. Phys. D: Appl. Phys.* **24** (1991) 1466
73. A P. Gaiduk, P I. Gaiduk, A N Larsen, *Thin Solid Films* **516** (2008) 3791
74. Rakesh K Joshi et.al, *Physica E* **25**(2005) 374
75. Sadovnikov et.al, *Russian Journal of Inorganic Chemistry* **56** (2011) 1864
76. Sadovnikov et.al, *Thin Solid Films* **548** (2013) 230
77. Ubale et.al, *Turk J Phys* **31** (2007) 279
78. Seghaier et.al, CP935, *Fundamental and Applied Spectroscopy-ISC2007*, ed. M. Telmini, N. T. Mliki, E. Sediki (American Institute of Physics 2007)
79. Göde et.al, *Journal of Luminescence* **147** (2014) 41
80. Castelo-González et.al, *Journal of Electronic Materials* **46**(2017) 393
81. Abbas et.al, *Energy Procedia* **6** (2011) 241
82. Fouda et.al, *Silicon* (2016) DOI:10.1007/s12633-015-9399-z
83. E. Güneri et al, *Thin Solid Films* **589** (2015) 578
84. Valenzuela-Jauregui et.al, *Thin Solid Films* **441** (2003) 104
85. Y Xu et.al, *Applied Surface Science* **317** (2014) 1035
86. P. Srinivasan, P. Rajesh, *Elixir Thin Film Tech.* **42** (2012) 6206
87. Slonopas et.al, *Electrochimica Acta* **151** (2015) 140
88. S. Zaman et.al, *IOP Conf. Series: Materials Science and Engineering* **146** (2016)
doi:10.1088/1757-899X/146/1/012034
89. M.M. Abbas et.al, *Thin Solid Films* **519** (2011) 4917
90. J.J.L.Hmar, T. Majumder, S.P. Mondal, *Thin Solid Films* **598** (2016) 243
91. Kaci et.al, *Optics Communications* **283** (2010) 3355
92. A. Osharov, V. Ezersky, Y. Golan, *Journal of Crystal Growth* **308** (2007) 334

93. S. Seghaier et.al, *Mater. Chem.Phys.* **97**, 71 (2006)
94. L. Beddek et.al, *Journal of Alloys and Compounds* **666** (2016) 327
95. K. C. Preetha,T. L. Remadevi, *J Mater Sci: Mater Electron* **24** (2013) 489
96. N Choudhury, B K Sarma, *Indian Journal of Pure & Applied Physics* **46** (2008) 261
97. S Zaman et.al, *IOP Conf. Series: Materials Science and Engineering* **60** (2014) 012057 doi:10.1088/1757-899X/60/1/012057
98. Guo et.al, *Braz J Phys* **44** (2014) 697
99. Hussain et.al, *Indian J Phys* **86** (2012) 697
100. Rekha Bai et.al, *Acta Materialia* **131** (2017)11
101. Chattarki et.al, *Materials Letters* **67** (2012) 39
102. E Yücel, Y Yücel, B Beleli, *Journal of Crystal Growth* **422** (2015) 1
103. K.C. Preetha et.al, *Current Applied Physics* **12** (2012) 53
104. T. L. Remadevi, K. C. Preetha, *J Mater Sci: Mater Electron* **23** (2012) 2017
105. L. Beddek et.al, *International Journal of Scientific Research & Engineering Technology* **3** (2015) 138
106. R K Joshi et.al, *Applied Surface Science* **221** (2004) 43
107. Carrillo-Castillo et.al, *Chalcogenide Letters* **10** (2013) 105
108. Kuljanin et.al, *Materials Chemistry and Physics* **95** (2006) 67
109. Y Yang, S Hu, *Thin Solid Films* **516** (2008) 6048
110. S. Jana et.al, *Physica E* **40** (2008) 3121
111. Ezugwu et.al, *Optoelectronics And Advanced Materials – Rapid Communications* **3** (2009) 528

112. J D. Patel, T K. Chaudhuri, *Materials Research Bulletin* **44** (2009) 1647
113. Ezema et.al, *Chalcogenide Letters* 12 (2015) 11
114. N Choudhury, B K Sarma, *Bull. Mater. Sci.*,**32** (2009) 43
115. N Choudhury, B K Sarma, *Thin Solid Films* **519** (2011) 2132
116. Lokhande et.al, *Materials Chemistry and Physics* 91 (2005) 200
117. Basu et.al, *Journal Of Materials Science* **25** (1990) 4014
118. S B Patil, A K Singh, *Applied Surface Science* **256** (2010) 2884
119. Preetha et.al, *IOP Conf. Series: Materials Science and Engineering* **73** (2015)
doi:10.1088/1757-899X/73/1/012086
120. Puišo et.al, *Thin Solid Films* **428** (2003) 223
121. K.C. Preetha, T.L. Remadevi, *Mater. Sci. Semicond. Process.* **16** (2013) 605
122. R. Guo et.al, *Braz. J. Phys.* **44** (2014) 697
123. J. Hernández-Borja, Y.V. Vorobiev, R. Ramírez-Bon, *Solar Energy Mater. Solar Cells* **95** (2011) 1882
124. K.C. Preetha, T.L. Remadevi, *Mater. Sci. Semicond. Process.* **39** (2015) 178
125. Tohidi et.al, *Materials Science in Semiconductor Processing* **25** (2014) 197
126. Tohidi, Jamshidi-Ghaleh, *Appl. Phys. A* **118** (2014) 1247
127. Pentia et.al, *Thin Solid Films* **434** (2003) 162
128. Das, Kumar, *Materials Research Bulletin* **47** (2012) 239
129. C. Rajashree, A. R. Balu, V. S. Nagarethinam, *Surface Engineering* **31** (2015) 316
130. S. Thangavel et.al *Thin Solid Films* **520** (2012) 5206
131. Zheng et.al, *Materials Letters* **167** (2016) 128
132. R. Sakthi Sudar Saravanan et.al, *Journal of Alloys and Compounds* **627** (2015) 69

133. N Mathur et.al, *Physica E* **23** (2004) 56
134. A Gassoumi et.al, *Journal of Molecular Structure* **1116** (2016) 67
135. R K Joshi et.al, *Nanotechnology* **14** (2003) 809
136. S.Ravishankar et.al, *Optik - International Journal for Light and Electron Optics* **134** (2017) 121
137. Ravishankar, Balu *Surface Engineering* **33** (2017) 506
138. Touati et.al, *Materials Science in Semiconductor Processing* **34** (2015) 82
139. R Yousefi et al, *Chin. Phys. B* **23** (2014) 108101
140. Konstantatos et.al, *Adv. Funct. Mater.* **15** (2005) 1865
141. Hines,Scholes, *Adv. Mater.*, **15**(2003) 1844
142. Carrillo-Castillo et.al, *Thin Solid Films* **520** (2012) 3107
143. Morales-Fernández et.al, *Thin Solid Films* **519** (2010) 512
144. R K Joshi et.al, *Thin Solid Films* **447 – 448** (2004) 80
145. Li et.al, *Nanoscale Research Letters*, 8:67 (2013)
146. Peña-Cabrera et.al, *Journal of non-oxide glasses* **8** (2016) 59
147. D.H. Yeon et.al, *J. Mater. Chem. A* **2** (2014) 20112
148. Punnoose et.al, *RSC Adv.* **5** (2015) 33136
149. Patel et.al, *Appl. Phys. A* **117** (2014) 1791
150. Mehrabian et.al, *Optik* **126** (2015) 570
151. Yang and Wang, *Journal of Power Sources* **293** (2015) 577
152. Liu et.al, *Applied Surface Science* **257** (2011) 7041
153. Y. Chen et al, *Electrochimica Acta* **173** (2015) 812
154. D. Saikia, P. Phukan, *Thin Solid Films* **562** (2014) 239

155. Moreno-García et.al, *Thin Solid Films* **519** (2011) 2287
156. P. K. Nair and M T S Nair *J. Phys. D: Appl. Phys.* **23** (1990) 150
157. N I Sax *Dangerous Properties of Industrial Materials* (New York: Van Nostrand Reinhold 1984)
158. *CRC Handbook of Chemistry and Physics* (Boca Raton: CRC Press 1985)
159. B. D. Cullity, S. R. Stock, “ Elements of X-Ray Diffraction” (Pearson Education Limited, Indian edition by Dorling Kindersley India Pvt. Ltd. , 2015)
160. V. D. Mote, Y. Purushotham, B.N. Dole, *J. Theor. Appl. Phys.* 6:6 (2012)
161. S. O. Pillai, “Solid State Physics”(New Age International, 2010)
162. A J Dekker, “Solid State Physics” (Macmillan India, 2009)
163. B. Barman, K.C. Sarma, *Indian J. Phys.* **86** (2012) 703
164. S. K. Chatterjee, “X-Ray Diffraction-Its Theory and Applications” (PHI Learning Private Limited, 2010)
165. R. Guinebretière, “X-ray Diffraction by Polycrystalline Materials” (ISTE Ltd, 2007)
166. https://en.wikipedia.org/wiki/High-resolution_transmission_electron_microscopy
167. Jacques I. Pankove, “Optical Processes in Semiconductors”, (Dover Publications, Inc. 1975)
168. H. Mahfoz Kotb et.al, *J.Alloys Compd.* **512** (2012) 115
169. B. J. Baruah, K. C. Sarma, *Journal of Materials Science: Materials in Electronics* **28** (2017) 5913
170. R.J. Elliott, *Phys. Rev.* **108** (1957)1384
171. S. Srinivasan et.al, *Appl. Phys. Lett.* **80** (2002) 550

172. B. J. Baruah et.al, *Journal of Materials Science: Materials in Electronics* **27** (2016) 3911
173. A.K. Zak, A.M. Hashim, M. Darroudi, *Nanoscale Res. Lett.* **9** (2014) 399
174. O. S. Heavens “Optical Properties of Thin Solid Films” (Dover Publications, 1991)
175. M.A.M. Khan et.al, *J. Lumin.* **155** (2014) 275
176. K.S. Babu et.al, *Talanta* **66** (2005) 164
177. A.S. Obaid et.al, *Mater. Sci. Semicond. Process.* **15** (2012) 564
178. D. Kim et.al, *Phys. Rev. Lett.* **110** (2013) 196802
179. B.J. Baruah, K. C. Sarma, *Journal of Basic and Applied Engineering Research* **3** (2016) 1179
180. C. Rajashree, A.R. Balu, *Optik* **127** (2016) 8892
181. B. B. Nayak , H. N. Acharya, G. B. Mitra, *Bull. Mater. Sci.*, **3** (1981) 317
182. Kim et.al, *Thin Solid Films* **377-378** (2000) 798
183. J. I. Pankove, P . Algrain *Physical Review* **126** (1962) 956
184. K.K. Nanda et.al, *Phys. Rev. B* **58** (1998) 15405
185. F. Gode, O. Baglayan, E. Guneri, *Chalcogenide Lett.* **12** (2015) 519
186. A.V. Baranov et.al, *Condens. Matter Spectrosc.* **109** (2010) 301
187. S. Xiong et.al, *J. Phys. Chem. C* **111** (2007) 16761
188. R. Palomino-Merino et.al, *J. Nano-mater.* (2013). doi:10.1155/2013/507647
189. Z. Fang et.al, *J. Alloys Compd.* **493** (2010) L25
190. S O Kasap “Optoelectronics and Photonics: Principles and Practices” (Pearson 2009)