

## REFERENCES

1. H.J. Howel, in "Semiconductors and Semimetals" Ed. R.K. Willardson and A.C. Beer, Solar Cells, Vol. 11, (1975).
2. R.P. Choudhari and P.L. Howel, J.Electrochem Soc., 120, (1973) 1761.
3. A.J. Pawar, Ph.D. Thesis, Shivaji University, Kolhapur (1988), M.S. India..
4. K.L. Chopra, in "Thin Film Technology and Applications", (eds) K.L. Chopra and L.K. Malhotra, TMH Publishing Co. New Delhi, (1984), P.1.
5. S. Chandra and R.K. Pandey, Phy. Status Solidi (a) 72, (1982) 415.
6. A.J. Bard, Photochemistry 10, (1979) 50 and Science, 207, (1980) 139.
7. A.J. Nozik, Ann. Rev. Phys. Chem. 29, (1978) P.189.
8. A.S. Lakshmanan and C.V. Suryanarayana, Trans. SAEST 18, (1983) 281.
9. E. Béquerei, Compt. Rend. H.A. 9, (1839) 561.
10. H. Gerischer, in "Applied Physics" Vol.31 Solar Energy Conversion, (ed) B.O. Seraphin (Berlin, Springer Heidelberg), (1979), P.115.
11. A. Aruchamy, G.Aravamudan and G.V. SubbaRao, Bull. Mat. Sci. 4, (1982) 483.
12. K.Rajeshwar, P.Singh and J.Dubow, Electrochimica Acta 23, (1978) 1117.
13. N.Müller and D.Cahen Solar Cells 9, (1983) 229.
14. Y. Uno, H.Minoura, T.Nishikawa and M.Tsuiki J.Electrochem Soc. 130, (1983) 43.

15. R.K. Cook and R.W. Christy, J.Appl. Phys. 51, (1980) 668.
16. T.N. Bhar and J.S. Linder, Thin Solid Films 21, (1974) 267.
17. J.S. Curren, R.Philippe, J.Josheph and A. Gaynaire, Chemical Phys. Lett 89, (1982) 511.
18. R.N. Bhattacharya and P. Pramanik, J.Electrochem. Soc. 129, (1982) 332.
19. W.A. Gerrard and J.R. Owen, Mat. Res. Bull. 12, (1977) 677.
20. B. Miller and A. Heller, Nature, 262, (1972) 680.
21. A. Fujishima and K. Honda, Nature, 238, (1972) 37.
22. G. Hodes, J.Manaseen and D. Caben, Nature, 261, (1976) 403.
23. A.B. Ellis, S.W. Kaiser and M.S.Wrighton, J. Am. Chem. Soc. 98, (1976) 1635.
24. B. Miller, A. Heller, M.Robbins, C.Menezes, K.C. Chang and J.Thompson, J.Electrochem Soc. 124, (1977) 1019.
25. J.C. Phillips, in "Bonds and Bands in Semiconductors", Academic Press, New York (1973) 176.
26. A.K. Ghosh and H.D. Maruska, J. Electrochem. Soc. 124, (1977) 1516.
27. M.S. Wrighton, D.S. Ginley, P.T. Wolezanski, A.B. Ellis, D.L. Morse and A.Linz, Proc. Nat. Acad. Soc. USA 72, (1975) 1518.
28. C.D. Lokhande and S.H. Pawar, Mat. Chem. Phys. 11, (1984) 201.
29. S.H. Pawar and L.P. Deshmukh, Mat. Chem. Phys. 10,

- (1984) 83.
30. P. Salvador, Mat. Res. Bull. 15, (1980) 1217.
  31. S.N. Sahu, N.Khare, R.P. Singh and S.Chandra, Proc. National Solar Energy Conversion, (1981) Bangalore, Allied Publisher P.B.003.
  32. A.Heller, G.P. Schwartz, R.G. Vadimsky, S.Menezes and B.Miller, J. Electrochem. Soc. 125, (1978) 1156.
  33. P. Allen, A. Hickling, Trans Farady Soc. 73, (1975) 1626.
  34. G. Hodes, J. Manaseen and D.Cahen, J.Appl. Electrochem. 7, (1977) 181.
  35. J.Manaseen, G.Hodes and D.Cahen, in "Semiconductor Liquid Junction Solar Cells", (ed) A.Heller, The Electrochem. Soc. Inc. Princeton, N.J., (1977) P.34.
  36. K.L. Chopra and I.J. Kaur, in "Thin Film Device Applications", Plenum Press, N.Y., (1983).
  37. K.L. Chopra and S.R. Das, in "Thin Film Solar Cells", Plenum Press, New York, (1983).
  38. K.L. Chopra, in "Thin Film Phenomena", McGraw Hill, New York, (1969).
  39. R.F. Bunshah, "Deposition Technologies For Thin Films and Coatings", Noyes Publications, N.J., (1982).
  40. L.I. Maissel and R. Glang, in "Hand Book of Thin Film Technology", McGraw Hill, New York, (1970).
  41. D.M. Mattrox, in "Deposition Technologies for Thin Films and Coatings", Noyes Publications, N.J., (1982).
  42. V.D. Vankar, in "Thin Film Technology and Applications" Proc. International Workshop on T.F.T. and Applications

- Nov. 19-30 (1984), New Delhi (India). (eds) K.L. Chopra and L.K. Malhotra, TMH Publishing Co. India P.14
43. L.P. Deshmukh, A.B. Palwe and V.S. Sawant, Solar Eng. Mat., 20, (1990) 341.
44. C.V. Suryanarayana, A.S. Lakshmanan, V. Subramanian and R.K. Kumar, Bull. Electrochem 2, (1986) 57.
45. L.P. Deshmukh, A.B. Palwe and V.S. Sawant, Solar Cells 28, (1990) 1.
46. L.P. Deshmukh, K.V. Zipse, A.B. Palwe, B.P. Rane, P.P. Hankare and A.H. Manikshete, Sol. Eng. Mat and Solar Cells, 28, (1992) 249.
47. A.F. Janzen in "Solar Energy Conversion", (eds) A.E. Dixon and J.D. Leslie, (Pergamon Press) G.B., (1978) P.885.
48. H.Gerischer, in "Advances in Electrochemistry and Electrocchemical Engineering", Vol.1, Paul Delaphy (Interscience Publishers, New York), (1961), P.139.
49. D.R. Crow, in "Principles and Applications of Electrochemistry" (Chapman and Hall, London), (1979).
50. W.H. Brattain and G.B. Garret, Bell. Syst. Tech. J-34, (1955) 129.
51. W.H. Brattain and G.B. Garret, Bell. Syst. Tech. J-34, (1955) 1.
52. H.Gerishcher, Z.Phys. Chem. 26, (1960) 223.
53. H.Gerishcher, Z.Phys. Chem. 26, (1960) 325.
54. H.Gerishcher, Z.Phys. Chem. 27, (1961) 48.
55. H.Helmpholtz, Wied. Ann. 7, (1979) 337.
56. A.Gouy, J. Physique 4, (1910) 457.

57. D.L. Chapman, Phil. Mag. (Ser 6), 26, (1913) 475.
58. E.O. Stern, Z.Electrochem, 30, (1924) 508.
59. D.Y.C. Chan, D.J. Mitchell and B.W. Ninham, J. Chem. Phys. 70, (1979) 2946.
60. J.O.M. Bockris and A.K.N. Reddy in "Modern Electrochemistry (eds) J.O.M. Bockris and A.K.N. Reddy Vol. 2, (Plenum Press, New York), (1973) 862.
61. R.Parson, in "Advances in Electrochemistry and Electrochemical Engineering, (eds) P.Delaphy and C.W. Tobias, Vol.1 (Interscience Publishers, New York), (1961).
62. P. Delaphy, in "Double layer and Electrode Kinetics", (Wiley, New York), (1965).
63. C.A. Barlow Jr. in "Physical Chemistry An Advanced Treatise,ed. H.Eyring Vol.9A (Academic Press, New York), (1970).
64. R.Memming, J.Electrochem, Soc. 125, (1978) 117.
65. R.Memming, Phil. Tech. Rev. 38, (1979) 160.
66. V.A. Myamlin and Y.V. Pleskov, in "Electrochemistry of Semiconductors". (Academic Press, New York), (1967).
67. S. Chandra in "Photoelectrochemical Solar Cells", (eds) D.S. Campbell (Gorden and Breach Science Publishers, New York, U.S.A.), (1985).
68. W.M. Latimer, in "The Oxidation State of The Elements and Their Potentials in Aqueous Solutions" (Prentice Hall, N.J.), (1952).
69. G.Lewis, M.Randall, K.Pidfzer and L.Breverre Thermodynamics (Mc Graw Hill, New York), (1961).



70. V.A. Tyagi and G. Kolbasou, Surface Sci. 28, (1971) 423.
71. W.H. Lafriere, F.Cardon and W.P. Gomes, Surface Sci. 44, (1979) 541.
72. E.C. Dutoit, F.Cardon and W.P. Gomes, Ber. Bunsenges Phys.Chem. 79, (1975) 1205.
73. J.H. Kennedy and K.W. Frese, Jr. J.Electrochem Soc. 125, (1978) 709.
74. J.H. Kennedy and K.W. Frese, Jr. J.Electrochem. Soc. 125, (1978) 723.
75. F.Cardon and W.P. Gomes, J.Phys. D11. (1978), L.63.
76. M.A. Butler and D.S. Ginley, Chem. Phys. Lett. 47, (1979) 319.
77. M.A. Butler and D.S. Ginley, J.Electrochem. Soc. 125, (1978) 228.
78. S.U.M. Khan and W.Schwickler, J.Electroanal Chem. 108, (1980) 329.
79. M.A. Butler and D.S. Ginley, J. Mat. Sci. 15, (1980). 1.
80. H.Gerischer, in "Solar Energy Conversion (ed) B.O. Seraphin, Springer Verlag", Berlin (1979).
81. D.S. Ginley and M.A. Butler, in "Photoeffects at Semiconductor-Electrolyte Interface", (ed) A.J. Nozik ACS Symposium Series (1981), (Am. Chem. Soc. Washington D.C.), 146
82. H. Gerischer, J. Pure and Applied Chem. 52, (1980) 2449.
83. F.El. Guibabay and K.Colbow, Can J. Phys. 59, (1981) 1682.
84. A.Grove, in "Physics and Technology of Semiconductor Devices", (Wiley New York) 1967; P.185.
85. H.Gerischer, in "Semiconductor Liquid Junction Solar

Cells", (ed) A.Heller, The Electrochem Soc. INC., Princeton, N.J., (1977) P.1.

86. J.J. Loferski, J.Appl. Phys. 27, (1956) 777.
87. M.D. Archer, J.Appl. Electrochem. 5, (1975) 17.
88. T.Ohnishi, Y.Nakato and H.Tsubomura, Ber.Bunsenges, Phys. Chem. 79, (1975) 523.
89. I.Kaur, D.K. Pandya and K.L. Chopra, J.Electrochem. Soc. 127, (1980) 943.
90. N.R. Pavaskar, C.A. Menezes and A.P.B. Sinha, J.Electrochem. Soc. 124, (1977) 743.
91. R.C. Kainthala, D.K. Pandya and K.L. Chopra, J.Electrochem. Soc. 127, (1980) 277.
92. M.R. Rajebhonsale and S.H. Pawar, Ind. J.Pure and Appl. Phys. 20, (1982) 652.
93. S.H. Pawar and L.P. Deshmukh, "Proc. National Solar Energy Convension", (1984), Bhopal, Allied Publishers, New Delhi, (India).
94. J.Bougnot, M.Pertain, J.Maruchi, M.Sirkis and M.Saveli, Proc. 12th IEEE, Photovoltaic Specialists Conf. 5, (1976) 19.
95. L.P. Deshmukh, Ph.D. Thesis, Shivaji University, Kolhapur, M.S. (India), (1985) P.60.
96. M.D. Upadhye and S.H. Pawar, Mater Chem. Phys. 10, (1984) 465.
97. S.H. Pawar and L.P. Deshmukh, Ind. J.Pure and Appl. Phys. 22, (1984) 315.
98. S.Jatar, A.C. Restogi and V.G. Bhide, Pramana, 16, (1978) 477.
99. S.Ray, R.Banerjee and A.K. Barua, Thin Solid Films.

79, (1981) 155.

100. C.D. Lokhande and S.H. Pawar, Solid State Commun., 44, (1982) 1137.
101. J.E. Bauerle, P.H. Sutter and R.W. Ure, Jr. in "Thermoelectricity: Science and Technology" (eds) R.R. Heikel and R.W. Ure, Jr. Interscience Publishers, (1961) Pt. 285.
102. J.C. Joshi and B.K. Sachar, Thin Solid Films. 88, (1982) 189.
103. L.D. Pertain, G.J. Sullivan and C.E. Birchenall, J.Appl. Phys. 5, (1975) 551.
104. C.D. Lokhande, Ph.D. Thesis, Shivaji University, Kolhapur M.S. (India), 1983.
105. B.Millar, and A. Heller, J. Electrochem. Soc. 124, (1977) 697.
106. R.W. Smith, Phys. Rev. 92, (1953) 857.
107. J.P. Mitchel and D.G. Denure, Thin Solid Films. 16, (1973) 285.
108. K.Rajeshwar, R.Thomson, P.Singh, R.C. Kainthla and K.L. Chopra, J.Electrochem. Soc. 128, (1981) 1177.
109. R.Williams, J.Electrochem. Soc., 114, (1967) 1173.
110. G.C. Jain, S.N. Singh, K.N. Arora, and B.K. Das, "Proc. National Solar Energy Convention, Allied Publishers, New Delhi," (1980), P.317.
111. M.A. Butler, J.Appl. Phys., 48, (1977) 1914.
112. D.S. Ginley and M.A. Butler, J. Appl. Phys., 48, (1977) 2019.

113. J.R. Wilson and S.M. Park, *J.Electrochem. Soc.* 128, (1981) 2369.
114. L.P. Deshmukh, P.P. Hankare and V.S. Sawant, *Solar Cells*, 31, (1991) 549.
115. J.Reichman and M.A. Russak, in *Photoeffects at Semiconductor Electrolyte Interface*; Ed. A.J. Nozik, ACS Sym, 146, (1981), P. 359.
116. C.D. Lokhande, M.D. Upadhye and S.H. Pawar, *Ind. J. Pure and Appl. Physics*, 21, (1983) 78.
117. H. Gerischer, *J.Electroanal. Chem.* 150, (1983) 553.
118. L.Formarini, A.J. Nozik and B.A. Parkinson, *J. Phys. Chem.* 881, (1984) 323B.
119. A. Heller, K.C. Chang and B.Miller in "Semiconductor Liquid Junction Solar Cells", Ed. A.Heller, The Electrochem. Soc. Inc. Princeton, N.J., (1977). P. 54.
120. W.W. Gartner, *Phys. Rev.*, 116, (1956) 84.

BIOGRAPHICAL DATA

NAME : BELLE MAHADEV IRANNA

DATE OF BIRTH : 1st June, 1961.

EDUCATIONAL  
QUALIFICATION :

	Year of Passing	Degree
Shri Chattrapati High School Solapur (M.S.)	1978	High School
D.B.F. Dayanand College of Arts & Science, Solapur (M.S.)	1983	Graduation
Department of Physics, Shivaji University, Kolhapur (M.S.).	1985	Post Graduation

DATE OF REGISTRATION : August 1991.

OTHER QUALIFICATIONS : I) Diploma in Computer Science.  
Walchand Institute of Technology,  
Solapur.  
  
II) Teaching experience (7 years)  
D.B.F. Dayanand College of Arts  
and Science, Solapur. (M.S.)