

REFERENCES

REFERENCES

1. F. Reinitzer, Monatsh, 9, 421 (1888).
2. O. Lehmann, Z. Phys. Chem. (Leipzig), 4, 462 (1889).
3. G.Friedel, Colloid Chem. Vol.1, J. Alexander, Ed.,
The Chemical Catalog Company, Inc., New York,
P.102 (1926).
4. G. Friedel and E. Friedel, Z. Krist. 1, 79 (1931).
5. G.H. Brown and W.G. Shaw, Chem. Rev. 57, 1052 (1957).
6. A.S.C. Lawarence, Trans. Faraday Soc., 29, 1008 (1933).
7. E.E. Jelley, Physical Methods of organic Chemistry,
Ed. by Weissberger, II edition, Vol.1, Part I, p. 890,
Inter Science Publishers, Inc, New York (1949).
8. G.W.Gray and P.A. Winsor, Eds. Liquid Crystals and
Plastic Crystals, Vol.1, Ellis Harwood Ltd., Chichester,
p-10, England 1974; Mol.Cryst. Liq. Cryst. 26, 305 (1974).
9. P.E. Cladis; W.B. Daniels and P.A.Keyes, High Pressure
Sci. Technol. Proc. Int. ATRAPT Conf. 7th 1979 (Pub.
1980), 2,655-61 (Eng). CA:95, 124139h.
10. L.Gattermann and A.A. Ritschke, Ber., 23, 1738 (1890).
11. D. Vorlander, Kristallinisch-flussige substanzen,
Vol.12, 9-10 Heft., F. Enke, Stuttgart⁹ (1908).
12. G. Tamman, Ann. Physik., 4, 524 (1901); 8, 103 (1902);
19, 421 (1906).
13. W. Nerst, Z. Elektrochem. 12, 431 (1906).
14. F. Quincke, Annaalen, 53, 613 (1894).

15. G. Bredig and G. Von Schukowsky, Ber., 37, 3419 (1904).
16. A. Cohen, Z. Electrochem., 10, 856 (1904).
17. R. Schencke, Ann. Phys., 9, 1053 (1902).
18. D. Vorlander, Ber., 41, 2033 (1908).
19. A.C. de Kock, Z. Phys. Chem., 48, 129 (1904).
20. P.N.Pawloff, Z. Russ. Phys. Chem.Soc., 41, 685 (1909).
21. G. Wulff, Z. Krist. Min., 46, 261 (1909).
22. W. Voight, Phys. Z., 17, 305 (1916).
23. G. Friedel, Ann. Phys. (Paris), 18, 273 (1922).
24. F. Grandjean, Compt. rend., 166, 165 (1917).
25. W. Bragg, Nature, 133, 445 (1934).
26. K. Herrmann, Trans. Faraday Soc., 29, 972 (1933).
27. H. Sackmann and D. Demus, Fortschr. Chem. Forsch., 12, 349 (1969); Mol. Crystals, 2, 81 (1966); Mol. Cryst. Liq. Cryst., 21, 239 (1973).
28. W.H.DeJeu and J.A.De Poorter, Phys. Lett. A., 61A (2), 114-16 (1977) (Eng.).
29. A.de Vries, Mol.Cryst. Liq. Cryst., 24, 337 (1973); Pramana Suppl., No.1, 93 (1975).
30. A.de Vries, J.Chem. Phys., 70(6), 2705-9 (1979).
CA: 91, 30830s.
31. P.G. de Gennes, Mol.Cryst. Liq. Cryst., 21, 49 (1973).
32. R.A.Wise; D.H. Smith and J.W. Doane, Phys. Rev., A7, 1366 (1973).
33. D. Demus; S. Diele; M. Klapperstuck; V. Link and H. Zashke, Mol. Cryst. Liq. Cryst., 15, 161 (1971).

46. S. Sakagami; A. Takase and M. Nakamizo, Mol. Cryst. Liq. Cryst., 36(3-4), 261 (1976).
47. S. Diele; P. Brand and H. Sackmann, Mol. Cryst. Liq. Cryst., 17, 163 (1972).
48. M. Sorai; K. Tani; H. Yoshika and H. Suga, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
49. G. Pelzl; N.K.Sharma; S. Diele and D. Demus, Z. Phy. Chem. (Leipzig), 262 (5), 815-19 (1981) (Ger.); CA: 96, 13874v.
50. H.T. Nguyen; N.B. Chanh; M. Cotrait; J. Gautlier; Y. Haget; C. Polycarpe and E. Torreilles, Mol.Cryst. Liq. Cryst., 101(1-2), 129-41 (1983).
51. A. de Vries and D.L.Fishel, Mol. Cryst. Liq. Cryst., 16, 311 (1972).
52. S. Meiboom and J.W. Doane, Private Commu. (1974).
53. A. de Vries, J. Chem. Phys., 61(6), 2367-71 (Eng.).
54. J.W. Goodby and G.W. Gray, J. Phys., Colloq.(Orsay,Fr.), 3, 363-70 (1979) (Eng.).
55. F. Hardouin; H.T. Nguyen; M.F. Achard and A.M.Levelut, J. Phys; Lett. 43(9), 327-31 (1982) (Eng.), CA: 97, 15100j.
56. H.T.Nguyen; F. Hardouin and C. Destrade, Mol.Cryst. Liq. Cryst., 82(7), 247-51 (1982).
57. A.J.Leadbetter; P.A. Tucker; G.W. Gray and A.R. Tajbakhsh, Mol. Cryst. Liq.Cryst., 1(1-2), 19-24 (1985).

58. E. Bose, Phys. Z., 10, 32230 (1909).
59. W. Nernst, Z. Electrochem, 16, 702 (1910).
60. E. Bose, Phys. Z., 12, 60 (1911).
61. T. V. Barker, in Ann. Reports, 11, 260 (1915).
62. R. Riwlin, Dissertation, Utrecht (1923).
63. L.S.Ornstein and F. Zernicke, Proc. Acad. Sci. Amsterdam, 21, 115 (1917).
64. W.J.H. Moll and L.S. Ornstein, Verslag Acad. Wetenschappen, Amsterdam, 25, 682,112 (1917).
65. W. Kast, Phys.,71, 39 (1931).
66. L. S. Ornstein and W. Kast, Trans. Faraday Soc., 29, 931 (1933).
67. H. Zocher, Phys. Z., 28, 790 (1927).
68. G.H. Brown and W.G. Shaw, Chem. Rev., 57, 1049 (1957).
69. J.D. Bernal and D.Crowfoot, Trans. Faraday Soc., 29, 1032 (1933).
70. G.W.Gray, Molecular Structure And The Properties Of Liquid Crystals, Academic Press, London, 68-86 (1962).
71. W. Mayer and A. Saupe, Z. Naturforsch., 13a, 564 (1958); 14a, 882 (1959); 15a, 287 (1960).
72. W.M. Gelbert, J. Phys. Chem., 86(22), 4298-307 (1982) (Eng.). CA: 97, 172893n.
73. S. Chandrasekhar; B.K. Sadashiva and K.A.Suresh, Pramana, 9, 471 (1977).
74. J. Billard; J.C. Dubois; H.T. Nguyen and A.Zann, Nouv. J. de Chim., 2(15), 535-40 (1978)(Fr.).

99. O. Kazuchika; T. Akira; M. Hiromitsu; Y. Iwao; M. Kei;
I. Tamotsu and M.Yusei, CA: 105, 200982v (1986).
100. J.M.Lehn; J. Malthete and A.M.Levelut, CA:105, 15747j
(1986).
101. J.E.Zimmer and J.L.White, Mol.Cryst.Liq.Cryst., 38,
177 (1977).
102. H. Marsh; D.Augustyn; C. Carnfard; D.Crowford and C.Hermon,
Program Beian Conf. Carbon, 12, 117-118 (1972) (Eng.).
103. Yu.A.Lebedev; A.N.Chuvyrov and V.M.Kornilov, CA:104,
75535c (1986).
104. L.S.Singer; I.C. Lewis and R.A.Greinke, Mol.Cryst. Liq.
Cryst., 132(1-2), 65-79 (1986), CA:104, 112541z (1986).
105. H.T.Nguyen; A.Zann; J.C.Dubois and J.Billard, Mol.Cryst.
Liq. Cryst., 56(10), 323-30 (1980).
106. G. Sigaud; H.T. Nguyen; F. Hardouin and H. Gasparoux, Mol.
Cryst. Liq. Cryst., 69(1-2), 81-102 (1981).
107. H.T.Nguyen; C.Destrade and H. Gasparoux, Mol. Cryst. Liq.
Cryst., 72(7-8), 247-53 (1982).
108. L.D.Landau and E.M.Lifshitz, "Statistical Physics", Addison-
Wesley Publishing Co., Reading, Mass. 1965, Chap. XIV.
109. D.D.Klug and E. Whalley, J.Chem. Phys., 71(4), 74 (1979).
N.A.Clark, J. Physique, 40, C-3-345 (1979).
110. P.E.Cladis, Phys. Rev. Letters, 35, 48 (1975).
111. G.Riblet and K. Winzer, Sol. St. Comm. 9,116 3(1971);
11, 175 (1972).
112. N.V.Madhusudana; B.K.Sadashiva and K.P.L.Moodithaya, Curr.
Sci., 48, 613 (1979).

113. H.T. Nguyen and H. Gasparoux, Mol. Cryst. Liq. Cryst. Lett., 49, 287 (1979).
114. E. Engelen; G. Heppke; R. Hopt and F. Schueider, Mol. Cryst. Liq. Cryst. Lett., 49, 193 (1979).
115. P.E. Cladis; R.K. Bogardus and D. Aadsen, Phy. Rev., A18, 2292 (1978).
116. N.V. Madhusudana and S. Chandrasekhar, Pramana Suppl., 1, 57 (1973); B.R. Ratna and R. Shashidhar, Pramana, 6, 278 (1976).
117. C. Druon and S.M. Wacrenier, Ann. Phys., 3, 199 (1978).
118. P.E. Cladis; R.K. Bogardus; W.B. Daniels and G. N. Taylor, Phys. Rev. Lett., 39, 720 (1977). CA: 87, 144309b (1977).
119. A.J. Leadbetter; J.L. Durrant and J. Rusman, Mol. Cryst. Liq. Cryst., 34, 231 (1977).
120. G. W. Gray and J. E. Lydon, Nature (London), 252, 221 (1974). J.E. Lydon and C.J. Coakley, J. Phys., 36, C1-45 (1975).
121. K. P. L. Moodithaya and N. V. Madhusudana, Proceedings of an International Conference held at Raman Research Institute, Bangalore, Dec. 3-8, 1979.
122. F. Hardouin; G. Sigaud; M.F. Achard and H. Gasparoux, Phys. Lett., A; 71A(4), 347-9 (Eng) (1979).

123. W. Weissflog and G. Pelzl, Z. Chem., 22(4), 142-3 (Ger.) (1981), CA: 97, 15097p (1982).
124. H. T. Nguyen; J. Malthele; C. Destrade and H. Gasparoux, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. 1982.
125. D. Guillon; P. E. Cladis; D. Aadsen and W.B. Daniels, Phys. Rev. A.; 21(2), 658-65 (1980) (Eng), CA: 92, 172756g (1980).
126. G. Pelzl; U. Boettger; S. Kallweit; D. Demus and H. Sackmann, Cryst. Res. Technol., 16(9), k119-122 (1981) (Eng), CA: 96, 113950k.
127. D. Guillon; P. E. Cladis and J. Stamatoff, Phy. Rev. Lett., 41(23), 598-601 (1978). CA: 90, 64716d (1979).
128. R. Shashidhar, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
129. H. T. Nguyen; C. Destrade; F. Hardouin and M.F. Achard, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
130. H. T. Nguyen; F. Hardouin; C. Destrade and A.M. Levelut, J. Phys. Lett., 43(2), 33-7 (1982) (Eng.).
131. H. T. Nguyen, Mol. Cryst. Liq. Cryst., 91(3-4), 285-94 (1983) (Eng.).

132. W. Weissflog; G. Pelzl and D. Demus, Mol. Cryst. Liq. Cryst., 76(3-4), 261-8 (1981) (Eng).
133. G. Pelzl; S. Kallweit; I. Latif and W. Weissflog, Cryst. Res. Technol., 17(9), K95-k99, (1982) (Eng).
CA: 98, 44707p.
134. M. S. R. Urs; B.K. Sadashiva; K. A. Suresh and S. Krishna Prasad, Mol. Cryst. Liq. Cryst., 103(1-4), 235-41 (1983).
135. B. K. Sadashiva, Mol. Cryst. Liq. Cryst., 110(1-4), 309-13 (1984).
136. H. T. Nguyen and C. Destrade, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
137. N. A. Clark, J. Phys. Colloq. (Orsay, Fr.), 3, 345-9 (1979) (Eng.).
138. L. Longa and W. H. de Jeu; Phys. Rev. A., 26(3), 1632-47 (1982) (Eng.).
139. W. Helfrich and C. S. Chow, Mol. Cryst. Liq. Cryst., 14, 289 (1971).
140. P. Chatelain, Bull. Soc. Frane, Mineral Cryst., 77, 323 (1954).
141. G. W. Gray, J. Chem. Soc., 3733 (1956).
142. J. H. Muller, U. S. Dept. Comm. A.d., 634627 (1966).

143. D. Vorlander and F. Jänecke, Z. Phys. Chem., 85, 691 (1914).
144. M. Lederer; J. Billard and J. Jaques, Mol. Cryst. Liq. Cryst., 8, 367 (1969). C.R. Acad. Sci., Paris, 266, 654 (1968).
145. G. W. Gray, Mol. Cryst. Liq. Cryst., 7, 127 (1969).
146. F. Stumpf, Phys. Z., 11, 780 (1910).
147. J. Mathieu, Bull. Soc. Franc. Miner. Cryst., 61, 174 (1938), CA: 33, 2009 (1939).
148. C. Oseen, Trans. Faraday Soc., 29, 883 (1933).
149. J. L. Ferguson, Mol. Cryst., 1, 293 (1966).
150. W. J. A. Goossen, Phys. Lett., 51A, 335 (1975).
151. J. Mathieu, Bull. Soc. Trans. Mineral, 34, 13 (1911).
152. A. Saupe, in Liquid Crystals and Plastic Crystals Vol.1, G. W. Gray and P. A. Winsor, Ed. Ellis Harwood Ltd., Chichester, Eng. p.18, (1974).
153. J. Malthe; Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
154. J. Malthe; H. T. Nguyen and C. Destrad, CA: 104 120448q (1986).
155. P. F. Crooker, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).

156. B.M.,Leon Fong and J.A.Martin-Pereda; Paper presented at the IXth International Liq.Cryst. Liq. Conf., Bangalore, India, Dec. (1982).
157. D. Armitage and R.J. Cox; Mol.Cryst. Liq.Cryst., 64, 41 (1981).
158. P.L.Finn and P.E. Cladis, Mol.Cryst. Liq.Cryst., 84, 159 (1982).
159. P.J.Collins and J.R.McColl, J. Chem. Phys., 69, 3371 (1978).
160. J.W. Doane; Z. Yaniv; G. Chidichimo; and M.E. Neubert, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
161. O. Lehmann; Ann. Phys.(3); 56, 771 (1895).
162. N.H. Harteharne and A. Stewart, Crystals and Polarizing microscope, 4th Ed., Edward Pub. Ltd., London, p.543, (1970).
163. D.G. Dervichian, Mol.Cryst. Liq. Cryst., 40(1-4), 19-31, (1977).
164. P. Ekwall, in "Advance in Liq.Crysts", Vol.1, G.H.Brown Ed. Academic Press, London p-1 (1975).
165. R. Subramanian; R.F. Wittebort and D.B. Duprè, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
166. C. Robinson, Trans. Faraday Soc., 52, 571 (1956); Tetrahedran, 13, 219 (1961).

167. D.N.Small and M. Bourges; Mol.Cryst., 1, 541 (1966).
168. D.N.Small; M. Bourges and D.G. Bervichian, Nature; 211, 616 (1966).
169. K.D. Lawson and T.J.Flautt, in Liquid Crystals, G.H. Brown; G.J.Dienes; M.M. Labes, Proceedings of the International Conference on Liquid Crystals held at Kent State University, August 16-20, 1965, Garden and Breach Science Publishers, New York, p.37.
170. A. Derzhanski; and I. Bivas Phys. Lett. A 74A(5), 372-4 (1979). CA: 92, 67882g.
171. O. Lehmann, Ann. Phys. (Paris), 55, 81 (1918).
172. H. Sandquist, Ber. 48, 2054 (1915).
173. I.E. Balaban and H. Kind, J.Chem. Soc., 3068 (1927).
174. F. Bramer, Nord. Kemikernade, Forh, 5, 207 (1939). CA:38, 2872 (1944).
175. J.F. Dreyer, J. Phys. Colloid. Chem; 52, 808 (1948).
176. H. Zocher and K. Caper; Z. Physik. Chem; 132, 259 (1928).
177. S.S.Marsden (Jr.) and J.W. MacBain; J. Phys and Colloid Chem.,52, 110 (1948).
178. J.W. MacBain; Colloid Chem., Ed. J. Alexander, Vol.1, p-138, The Chemical Catalog Co., Inc. New York (1926).
179. S.E. Sheppard, Rev. Mol.Phys.,14, 303 (1942).
180. B. Kohne; K. Praefcke; T. Derz; H. Hoffmann and B. Schwander, CA: 105, 70538s (1986).
181. M.A.Marcus and P.L.Finn, Mol. Cryst. Liq. Cryst., 2(5), 159-66 (1985), CA:105,52543k.

182. J. Timmermanns, J. Phys. Chem. Solids, 18, 1 (1961). 341
183. J. Timmermanns, Bull. Soc. Chem. Belg. 44, 17 (1935).
184. J. Timmermanns, J. Chim. Phys. 35, 331 (1938).
185. P.A.Winsor, in "Liquid Crystals and Plastic Crystals" Vol.1, Ed. G.W. Gray and P.A.Winsor, p.50, Ellis Harwood Ltd., Chichester, (Eng) (1974).
186. G.J.Osterm, Gem. Physiology, 33, 445 (1950).
187. F. Cser; K. Nyibroi and G. Hardy, ACS, Symp., Ser.74, 95 (1978).
188. H. Finkelmann, Angew Chem., 90, 993 (1978).
189. A. Rovialls and A. Sirigu, Eur. Poly. J., 15, 61 (1979).
190. Y.B. Amerik; J.J.Konstantinov; B.A. Krentsel; E.M. Malachaew and Vysokomol Soedin, Ser.A9, 259 (1967).
191. Y. Tanaka; F. Yamaguchi; M. Chiralu and A.Okada, J. Polym. Sci. Polym. Chem; Ad.16, 1027 (1978).
192. A. Blumstein; N. Kilagawa and R. Blumstein, Mol. Cryst. Liq. Cryst., 12, 215 (1971).
193. W.E. Bacon, J. Phys (Paris) Colloq., I, A09-12 (1975)(Eng.).
194. R.V.Talrase; F.I.Karakhanoua; T.I. Barison; L.I. Burshtein; N.A. Nikenoroua; V.P.Shibaev; N.A.Plata and Vysokomol Soedin; Ser A20, 1835 (1978).
195. F.N. Caer; Hyibraik and G. Hardy, J. Polymer Sci., 61, 9 (1977).
196. M. Finkelmann; M. Ringadarf; N. Sial and J.H.Wondorff, Aca. Symp.; Series 74, 22 (1978).
197. E. Perplies; H. Ringadarf and J.H. Wondorff, Macromol. Chem.; 175, 553 (1974).

198. E. Perplies; H. Ringadarf and J.H. Wondorff, Midland Macromol. Monographs; Vol.3, 149 (1977).
199. J.H. Wondorff; E. Perplies and H. Ringadarf; Prog. Colloid. Sci., Vol.57, 272 (1975).
200. V. P. Shibaev; V.M. Moiseenko; N. Yu. Lukin; N.A.Kuznestov; Z.A. Roganova; A.L. Smolyanaki; N.A.Plate and Vysokomol Soedin; Ser.A.29(9), 2122-35 (Russ) (1978), CA:90,6791p (1979).
- 201 J. Preston; Liq. Cryst. Order Polym.; 141-66 (Eng), Ed. A. Blumstein; Academic, N.Y. (1978).
202. W.G.Miller, Annu. Rev. Phys. Chem., 22,519-35 (Eng)(1978).
203. S.M.Aharoni; J.K. Moscicki and G. Williams, Paper presented at the IXth International Liq. Cryst. Conf., Bangalore, India, Dec. (1982).
204. S.N.Bhadani and D.G. Gray; Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
205. R.A.Vora; N.Dixit; G.D. Karadkar and R.G.Patel, Paper presented at the IXth International Liq.Cryst.Conf., Bangalore, India, Dec. (1982).
206. H. Blades, U.S.Patent, No.3,767,75c (1972).
207. S.L.Kwolek, U.S.Patent No.3,671,542 (1972).
208. J.B.White and J.F. Fellen, J. Appl. Polym. Sci., Appl. Polym. Symp., 33, 137 (1978).
209. Alexandre Blumstein, "Liquid Crystal ordered polymers" Ed. by A. Blumstein (Academic Press, N.Y.) N.Y. (1978).

210. R. Virchow, Virchow's Arch. Pathol. Anat., U. Physiol. 6, 562 (1854).
211. A.S.C. Lawrence, Trans. Faraday Soc., 29, 1008 (1933).
212. J.D.Bernal, Trans. Faraday Soc., 29, 1082 (1933).
213. G.T. Steward, Nature (Lond), 183, 873 (1959).
214. G.T. Stewart, Adv. Chem. Ser. Am. Chem.Soc., 63, 141 (1967).
215. J.D.Bernal and I.G. Faukuchen, Gen. Phys. 25, 147 (1941).
216. A.L. Muralt and J.T. Edsall, Trans. Faraday Soc., 26, 837 (1930).
217. A.G.E. Pearse, Histochemistry Ch.
218. M.F. Perutz; A.M. Lignori and S. Birich, Nature, 167, 929 (1951).
219. A. Engstrom and J.B. Finean in 'Biological Ultrastructure', Academic Press, N.Y. (1958).
220. G.T. Stewart in "Liquid Crystals" Ed. G.H. Brown, G.J. Dienes, M.M.Labes, Proceedings of the International Conference on Liq. Crystals held at Kent State University, August 16-20, 1965, Gordon and Breach, Science Publishers, N.Y., p.243 (1965).
221. B.J.Ambrose, Pramana, Suppl., No.1, p.523 (1975).
222. F.F. Knapp and H.J. Nicholas, Mol.Cryst. Liq.Cryst., 6, 319 (1970).
223. Yu. Evdokimov; S. Skuridin; V. Salyanov and N.Akimenko, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).

224. A.C. Neville, Mol.Cryst. Liq. Cryst., 76(3-4), 279-86 (Eng), (1981).
225. R.S.Phadake; S. Srivastava and G.Govil, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
226. B.C.Panda, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
227. H.T.Nguyen; A. Zann and J.C. Dubois, Mol.Cryst. Liq. Cryst., 53(1-2), 43-~~54~~ (1979).
228. R.S.Gupta; Unpublished work, Ph.D. Thesis submitted to the Maharaja Sayajirao University, Baroda, (1980).
229. J.S.Dave (Jr.), Unpublished work, Ph.D. Thesis submitted to the Maharaja Sayajirao University, Baroda, (1980).
230. G.W. Gray and B. Jones, J.Chem. Soc., 4179 (1953).
231. G.W. Gray and B. Jones, J.Chem.Soc., 2556 (1954).
232. G.W. Gray and B.Jones, J.Chem.Soc., 1467 (1954).
233. G.W.Gray and B. Jones, J.Chem.Soc., 4179 (1953).
234. G.W.Gray; J.B. Hartley and B. Jones, J.Chem.Soc., 1412 (1955); G.W. Gray; B. Jones and F. Marson, J.Chem.Soc., 393 (1957).
235. M.J.S. Dewar and R.S.Goldberg, J. Am. Chem.Soc., 92, 1582 (1970).
236. J. Billard and L. Mamlok, Mol.Cryst. Liq. Cryst., 41, 217 (1978).
237. M.E. Neubert, M.E. Stahl and R.E. Cline, Mol.Cryst. Liq. Cryst., 89(1-4), 93-117 (1982)(Eng.).

238. W. Haase and R. Pendzialek, Mol. Cryst. Liq. Cryst., 97(1-4), 207-17 (1983) (Eng.).
239. R. Eidenschick; J. Krause; L. Pohl and J. Eichler, Paper presented at the International Liq. Cryst. Conf., Bangalore, India, 1979 " Liquid Crystals" Ed. S. Chandrasekhar, Heyden, Verlag, (1980).
240. D.L.Fishel and P.R. Patel, Mol.Cryst. Liq. Cryst.,17, 139 (1972).
241. W.R. Young, I. Haller and L. Williams, in "Liquid Crystals and Ordered Fluids" Ed. J.F. Johnson, R.S.Porter, Plenum Press, New York (1970).
242. D.M.Thakkar and K.N. Trivedi, Mol.Cryst.Liq. Cryst., 131(3-4), 193-200 (1985).
243. J.A.Nash and G.W. Gray, Mol.Cryst.Liq.Cryst.,25,299 (1974).
244. H. Schubert and Z. Wiss, Z. Univ. Halle XIX, 70M, H5, S.1 (1976).
245. H. Schubert and H. Zschke, J. Prakt. Chem., 312, 494 (1970).
246. M.J.S. Dewar; A.C. Griffin and R.M. Riddle, "Liquid Crystals and Ordered Fluids", Vol.2, Ed. J.F.Johnson and R.S.Porter, Page 733, Plenum Press, New York (1974).
247. M.J.S. Dewar and R.M. Riddle, J. Am.Chem.Soc., 97, 6658 (1975).
248. M.J.S. Dewar and A.C.Griffin, *ibid*,97,6662 (1975).
249. G.W.Gray, Molecular structure and Properties of Liquid Crystals, Academic Press, London and New York p.162 (1962).

250. G.W.Gray and B. Jones, J. Chem.Soc., 683 (1954),
P. Culling; G.W.Gray and D. Lewis, J. Chem.Soc., 2699
(1960).
251. R.A.Vora and R.S.Gupta, Mol.Cryst. Liq.Cryst. Lett.,
56, 31 (1979), "Liquid Crystals" Ed.S. Chandrasekhar
Heyden,Verlag (1980), p.589.
252. G.W.Gray, in "Liquid Crystals"; G.H. Brown; G.J.Dienes
and M.M.Labes, Proceedings of the International Conference
on Liquid Crystals held at Kent State University, August
16-20, 1965, Gordon and Breach Science Publishers,
New York, London, Paris, p.137.
253. J.S.Dave and J.M.Lohar, Journal de Physique, Supplement
No.9, 36, 1976, CI 393.
254. J.S.Dave and R.A.Vora in "Liquid Crystals and Plastic
Crystals" Ed. G.W.Gray, P.A.Winsor, Vol.I, Chapter 42,
Ellis Harwood, Chichester, Eng. (1974).
255. W. Kast, in "Londolt-Bornstein" 6th ed, Vol.II, Part 2a
P.266, et. seq. Springer, Verlag, Berlin and New York.
256. G.W.Gray and P.A.Winsor, "Liquid Crystals and Plastic
Crystals" Vol.1, Eds. Ellis Hardwood Ltd., Chichester,
England, 1974, p.122.G.W.Gray and A. Mosley, J.Chem.Soc.
Perkin II, 1976 (1), 97-102 (Eng). G.W.Gray, Mol.Cryst.,
1333 (1966).
257. P.J.Flory, Statistical Mechanics of Chain Molecules
Interscience, New York, 1969.
258. S. Marcelja, The Journal of Chemical Physics, 60, 9,3599
(1974).

259. G.W.Gray and K.J. Harrison, Previously unpublished results.
260. G.W.Gray and K.J. Harrison, Mol.Cryst. Liq. Cryst., 13, 37 (1971).
261. G.W.Gray and K.J. Harrison, Symposium of the Faraday Society, No.5, 54 (1971). D. Coates; G.W.Gray and K.J. Harrison, Mol.Cryst. Liq. Cryst., 22, 99 (1973).
262. G.W.Gray and B.M. Worrall, J. Chem.Soc., 1545 (1959).
263. G.W.Gray and B.Jones, J.Chem.Soc., 4179 (1953);
ibid 678, 683,1467, (1954), 236 (1955).
264. Z.G.Gardlund; R.J. Curlis and G.W. Smith,"Liquid Crystals and Ordered Fluids", Vol.II, P.541, Ed. J.F. Johnson and R.S.Porter, Plenum Press, New York,(1974).
265. W. Weissflog and D.Demus, Mol.Cryst. Liq.Cryst., 129(1-3), 235-43 (1985).
266. A.C.Griffin; D.L. Wertz and A.C.Griffin (Jr.), Mol.Cryst. Liq. Cryst., 44, 267-75 (1978).
267. S.L.Arora; J.L.Ferguson and T.R. Taylor, J.Org.Chem., 35, 4055 (1970).
268. C. Wiegand, Z. Naturforsch, 96, 516 (1954).
269. J.S.Dave; B.C.Joshi and G. Kurian, Curr.Sci.,42, 349 (1973).
270. J.S.Dave; B.C.Joshi and G.Kurian, Paper presented at the International Liq.Cryst. Conf., Bangalore, India (1979).
271. S.J.Branch; D.J. Hyron; G.W.Gray; A.Ibbotson and B.M. Worrall, J. Chem.Soc., 3279 (1964).
272. D.J. Byron; G.W. Gray; A. Ibbotson and B.M. Worrall, J. Chem. Soc., 2246 (1963).

273. D.Demus and W. Weissflog, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982), CA: 100, 165902c (1984).
274. A. Hauser; R. Rettig; C.Selbmann; W. Weissflog; J. Wulf and D. Demus, Cryst. Res. Technol., 19(2), 261-70 (1984) (Eng.), CA: 100, 2101362b (1984).
275. J.E. Fearon; G.W. Gray; A.D.Ifill and K.J.Joyne, Mol. Cryst. Liq. Cryst., 124(1-4), 89-103 (1985).
276. E. Huckel, Phys. Z., 22, 561 (1921).
277. E. Friedel and M. de Broglie, Compt. rend., 176, 475,738 (1923).
278. E. Friedel, Compt. rend.,180, 269 (1925).
279. J.R. Katz, Naturwiss, 16,758 (1928).
280. W. Kast, Natirwiss, 21,737 (1933), Ann. Phys.,19,571(1934).
281. W. Maier and A.Saupe, Z.Phys. Chem., 6, 327 (1956).
282. F.I.G. Rawline and A.M.Taylor, Infrared Analysis of molecular Spectra, Cambridge University Press, London, p.63 (1929).
283. D. Grasso, Spectrochim. Acta. Part A, 39A(8), 689-92 (1983) (Eng.).CA:100, 43446a.
284. B.J.Bulkin; Terry Kenelly and Wai Bong Lok, in Liquid Crystals and ordered fluids, Vol.2, Ed. J.F. Johnson, R.S.Porter, Plenum Press, New York, p.85 (1974).
285. B.J.Bulkin and K.Krishnan, J.Am.Chem.Soc., 92(23), 5997 (1971).

286. N.M.Amer and Y.R.Shen, J. Chem.Phys., 56(6),2654-64 (1972).
287. J.M.Schnur; M. Han and W.L.Adair, Phys. Lett., A, 41(4),326 (1972).
288. N.M.Amer and Y.R. Shen, Solid State Commun., 12(4),263 (1973).
289. J.M.Schnur and J.P.Sheridon, "Liquid Crystals", Proceedings at International Conference, 1973, 175-88 (Eng.), Ed. S. Chandrasekhar (1975).
290. P.L.Jain; J.C. Lee and R.D. Spence, J.Chem.Phys., 23, 878 (1955).
291. R.D.Spence; H.A. Moses and P.L.Jain, J.Chem.Phys.,21, 380 (1953).
292. R.D.Spence; H.B. Gutowsky and C.H.Helm, J. Chem.Phys., 21, 189 (1953).
293. J.C.Rowell; W.D. Phillips; D.R.Melby and M.J.Panar, Chem. Phys.,43, 3442 (1965).
294. A. Saupe, Mol.Cryst., 1, 527 (1966).
295. J. Nehring and A.Saupe, Mol.Cryst. Liq.Cryst., 8, 403 (1969).
296. A. Saupe and G. Englert, Phys. Rev. Lett., 11, 462 (1963).
297. A. Saupe, Z. Naturwise, 19a, 161 (1964), ibid, 20a,572 (1965).
298. G. Englert and A.Saupe, Z. Naturf.,19a, 172 (1964).
299. G. Englert and A.Saupe, Z. Naturf., 20a, 40 (1965).
300. M.Louis; R.Cameran; E.Callenden and A.J.Kramar, Mol. Cryst. Liq. Cryst., 16(1-2), 75 (1972).

301. C.L.Khetrapal; A.C.Kunwar and A.V.Patankar, Pramana Suppl., No.1, 471 (1975).
302. Y.P.Lee; D.F. Gilson and R.Can., J.Chem., 54(7), 2783 (1976).
303. V.L.Khodzhaeva; M.V.Shishkina and I.I. Konstantinov, Mol. Cryst. Liq.Cryst., 31(1-2), 21-8 (Eng.), (1975).
304. M.M.M. Abdoh; N.C. Shivprakash and J.S.Prasad
 - a) J. Phys, Chem., 86(13); 2349-51 (Eng.) (1982). CA:97,
 - b) 15095m (1982).
 - b) Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
305. S. Moiboom and L. Synder, Science, 162, 1337 (1968).
306. C.E. Tarr and A.M.Fuller, Mol. Cryst. Liq. Cryst., 22(1-2), 123 (1973).
307. S. Moiboom and L. Synder, Science, 162, 1337 (1968).
308. P. Diehl and C.L.Khetrapal, "NMR - Basic Principles and Progress " Vol.1, p-1, Springel-Verlag-Berlin, (1969).
309. A. Carrington and G.R. Luckhurst, Mol. Phys., 8, 401 (1964).
310. G.C.Fryberg and E.Gelerinter, J. Chem. Phys., 52, 3378 (1970).
311. C.F.Schwerdtfecjer; M. Marusic, A.D. Mackay and Y.Ronald, Mol. Cryst. Liq. Cryst., 12(4), 335-44 (1971).
312. D.H.Chen and G.R. Luckhurst, Trans. Faraday Soc., 65, 565 (1969).
313. B. Sackmann and P. Krebs, Chem. Phys. Lett., 4, 65 (1969).
314. C.C.Fryburg; E. Geleninster and D.L.Fishel, Mol.Cryst. Liq. Cryst., 16(1-2), 39-52 (1972).
315. R. Schenck, Z. Phys. Chem., 25, 337 (1898).
316. E.Eichwold and B. Landolt, "Physikalisch-chemische Tabellen" Julius Springer, Berlin, Vol.III, p.64.

317. G.Bocherer and W.Kast, Ann. Physik, 41, 355 (1942).
318. A. Drzymala and H. Herba, Acta. Phys. Pol.A; A 55(5), 741-5 (Eng) (1979). CA:91, 47626c (1979).
319. N.P.Sing, Unpublished work, Ph.D. Thesis submitted to the Maharaja Sayajirao University, Baroda, (1981).
320. D. Vorlander, Trans. Faraday Soc., 29, 902 (1933).
321. J. Fritz, Pramana Suppl., No.1, p.31 (1975).
322. P. Martinoty and S. Candau in "Liquid Crystals-3", p.881, The 3rd International Liq. Cryst. Conf., Part II, Ed. G.H. Brown and M.M.Labes, Garden and Breach Science Publishers, London, (1970).
323. F.K.Gorskii; M.E. Mikhlin; A.I.Kubarko and Kinet Mekh, Krist, 176, (1973).
324. M.A. Shakespears and A.B. Ubbelohde, Trans. Faraday Soc., 60, 25 (1964).
325. A. Ferguson and S.J.Kennedy, Phil. Mag, 26, 41 (1938).
326. V. Naggiar; Ann. Phys., 18, 5 (1943).
327. W.M.Schwartz and K.W. Moseley, J. Phys. Colloid Chem., 51, 826 (1947).
328. D. Churchill and L.W. Bailey, Mol. Cryst. Liq. Cryst., 7, 285; (1969).
329. F.K.Gorskii and N.M. Sakewich, Sov. Phy. Crystallogr., 12, 586. (1968).
330. S. Krishnaswamy and R. Shashidhar, Pramana Suppl. No.1, 247 (1975).
331. B.V. Bhide and R.D. Bhide, Rasayanam, 1, 121 (1938).

332. V. Marinin and V. Tevetkov, Acta. Phys. Chem. USSR, 11, 837 (1939). CA: 34, 4625, (1940).
333. W. Maier, Phys. Z., 45, 285, (1944).
334. B.L.Funt and B.G.Mason, J. Chem; 29, 848, (1951).
335. M.N.Avadhanula and C.R.K. Murty, Pramana Suppl.,No.1, 289, (1975).
336. G.K.Gupta; V.K. Agarwal and B. Bahadur, International Liquid Crystal Conference, India, Dec. (1979).
"Liquid Crystals", Ed. S. Chandrasekhar, Heyden Verlag p.401 (1980).
337. B.R. Ratna; R. Shashidhar; M. Bock and G. Heppke, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
338. B.R.Ratna; R. Shashidhar; M. Block and G. Heppke, Paper presented at the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).
339. E.M.Barral; R.B. Porter and J.F. Johnson, J. Phys. Chem., 71(4), 895 (1967), Mol. Cryst. Liq. Cryst., 3(1), 103, (1967).
340. D. Marzotke and D.Demus, Pramana Suppl.,No.1, p.189 (1975).
341. M. Sorai; T. Nakamura and S. Seki, Pramana Suppl.,No.1, p.503 (1975).
342. M.J.S.Dewar and A.C. Griffin, J.Am. Chem.Soc.,(Comm.).
343. M.Sorai; K. Tsuji; H. Suga and S.Seki, International Liq.Cryst.Conf., Bangalore, India,Dec.(1979).Liq.Cryst., Ed. S.Chandrasekhar, Heyden, Verlog,p.41(1980).

344. S.Miyajima; N. Nakamura and H. Chihara, Mol.Cryst. Liq. Cryst., 87(1-2), 41-51 (Eng.) (1982).
345. K. Tsuji; M. Sorai; H. Suga and S. Seki, Mol.Cryst. Liq. Cryst., 55(1-4), 71-87 (Eng.)(1979).
346. M. Fodor; P.K.Hodapyl and K.Ritvay, CA: 87, 46823v (1977). Therm. Anal. Proc. Int. Conf. 4th (1974), Pub. 2, 417-27 (1975) (Eng.) Ed. I, Buzas, Heyden, London (England).
347. N.K.Semendyaeva; G.L. Karpushkina; A.A.Kotylar and V.N.Shoshin, Proc.Eur. Symp. Therm. Anal. 1st 1976, 188-9 (Eng), Ed. D. Dollimore, Heyden, London, England. CA: 87, 60969d (1977).
348. W. Spratte and G.M.Schneider; Mol. Cryst. Liq. Cryst., 51(1-2), 101-15 (Eng), (1970).
349. J.M.Wilson and D.L.Uhrich, Mol.Cryst. Liq. Cryst.,25, 113 (1974).
350. L.C.Chow and D.F. Malino, J. Phys. Chem; 73, 1127 (1969), J. Phys. Chem.,75, 2005 (1971). Mol. Cryst. Liq.Cryst., 14, 293 (1971).
351. C.G.Kartha and A.R.K.L.Padmini, J. Phys. Soc.(Japan),28, 470 (1970). *ibid*, 31, 904 (1971).
352. S. Bhattacharya; I. Calder; B.Y. Cheng and J.B.Ketterson; Presented at International Liquid Crystal Conference, Bangalore, India, Dec. (1979).
353. P. Pincus, J. Appl. Phys., 41, 974, (1970).

354. J.R.Otia and A.R.K.L.Padmini, Paper Presented at
Poster Session in the IXth International Liquid Crystal
Conference, Bangalore, India, Dec. (1982).
355. C.G.Kartha; J.R.Otia and A.R.K.L.Padmini, Paper presented
at Poster Session in the IXth International Liquid
Crystal Conference, Bangalore, India, Dec. (1982).
356. A.N.Kalkura; R. Shashidhar; G. Venkatesh; M.E.Neubert
and I.P. Ferreto; Paper Presented at Poster Session of
the IXth International Liquid Crystal Conference,
Bangalore, India, Dec. (1982).
357. A.N.Kalkura and R.Shashidhar, Paper presented at Poster
Session of the IXth International Liquid Crystal
Conference, Bangalore, India. Dec. (1982).
358. O. Lehmann, 'Die Flussige Kristalle, Leipzig (1904).
359. M. Kleman in "Advance in Liquid Crystals", Vol.1, Ed.
G.H.Brown, Academic Press, London, p.267 (1975).
360. S.T.Lagerwall and B. Stebler, International Liq.Cryst.
Conf., Bangalore, India, Dec. (1979).
'Liquid Crystal' - Ed. S. Chandrasekhar, Heyden, Verlag
p.223 (1980).
361. D. Guillon and A.Skoulios; Mol.Cryst. Liq.Cryst.,
38(1-2), 139-57(Fr.), (1977).
362. R.M.Stimpfle; R.A.Orwoll and M.E. Schott, J. Phys.Chem.,
83(5), 613-17(Eng) (1979).
363. D. Armitage and F.P.Price, Phys. Rev.A., 15(5), 2069-71
(Eng.) (1977).

364. A.Smith, Z. Phys. Chem. (Leipzig), 67, 464 (1909).
365. R. Schenck, Z. Phys. Chem., 25, 337 (1898).
366. R. Schenck and F. Schneider, Z. Phys. Chem., 29, 546 (1899).
367. J.S.Dave and M.J.S.Dewar, J.Chem.Soc., 4616 and 4305 (1955).
368. J.S.Dave and J.M.Lohar, Proc. Nat. Acad. Sc. India, 29A, Part I 35 (1960); 32A, 105(1962), Chem. Ind. (London), 597(1959), Indian J.Chem., 4, 386 (1966); J.Chem.Soc.,(A), 1473 (1967).
369. J.S.Dave and K.L.Vasanth, Ind. J.Chem., 7, 498 (1969). Mol. Cryst., 2, 125 (1966), Pramana Suppl., No.1, 415 (1975).
370. J.M.Lohar and D.S.Shah, Mol. Cryst. Liq. Cryst., 28, 293 (1973).
371. J.M.Lohar and G.H.Patel, Curr. Sci., 44, No.24, Dec. 20, 1975. J.M.Lohar and G.H.Patel, International Liq.Cryst. Conf. Bangalore, India (1979) Published in 'Liq. Cryst.', Ed. S. Chandrasekhar, Heyden, Verlag, (1980). J.M.Lohar and G.H.Patel, Paper accepted for publication in Mol. Cryst. Liq.Cryst.
372. J.M.Lohar and U. Mashru, J. Ind.Chem.Soc.,LVII (1980). J.M.Lohar and U. Mashru, 'Liq. Cryst.' Ed. S. Chandrasekhar Heyden, Verlag (1980) p.543. J.M.Lohar and U.Mashru, paper accepted for publication in Ind. J. Chem.
373. J.M.Lohar and J.S.Dave (Jr), paper presented at the poster session of the IXth International Liq.Cryst. Conf., Bangalore, India, Dec. (1982).

374. A.D.Bogojawlensky and N. Winogradow, Z. Phys. Chem., 60, 433 (1907); 64, 229 (1908).
375. R. Walter, Ber., 58, 2303 (1925).
376. M.J.S. Dewar and R.S.Goldberg, J.Am. Chem.Soc., 92, 1582 (1970).
377. A.C.de Kock, Zeit, Physik.Chem.,48, 129 (1904).
378. D.J.Margerum; Wong Siu May; A.M.Lachner; J.E.Jensen and S.A. Verzwylvelt, Mol.Cryst. Liq. Cryst., 84(1-4), 79-92, (Eng) (1982).
379. H.Sackmann; D. Demus; G.W. Gray and A.Biering; Mol.Cryst. Liq. Cryst., 28, 275-292 (1974).
380. H. Sackmann, Appl. Chem., 38(4), 505-27 (Eng) (1974).
381. M. Domon, and J. Billard, Pramana, Suppl.,No.1, 131 (1975).
382. D.S.Hulme and E.P.Raynes, J. Chem. Soc. Chem.Comm., 98, (1974).
383. L.J.Yu and M.M.Labes, Mol. Cryst. Liq.Cryst.,54(1-2), 1-8 (1979). CA:92, 13894u (1980).
384. W. Waclawek; R. Dabrowski and A.Domagal, Mol. Cryst. Liq. Cryst., 84(1-4), 255-65 (Eng) (1982).
385. W. Wagner, Paper presented at the IXth International Liq.Cryst. Conf. Bangalore, India, Dec. (1982).
386. G. Derfel, Mol. Cryst. Liq. Cryst., 82(8), 277-80 (Eng) (1982).
387. Y. Iida, Bull.Chem.Soc. (Japan), 55(8), 2661-2 (Eng) 1982).
388. H. Mutsumara, Mol.Cryst.Liq.Cryst., 49(4), 105-12 (Eng) (1978).

389. C. Felick and J.W. Doane, Phys.Lett.A., 47(4), 331-2 (Eng) (1974).
390. M. Domon and J. Billard, J.Phys.Colloq. (orsay, Fr), (3), 413-18 (Fr), (1979).
391. M.A. Gidley and D. Stubley, J.Chem.Thermodyn., 14(8), 785-90 (Eng) (1982).
392. V.A. Trostina; A.I. Pirogov and V.I. Klopov, Zu.Fiz. Khim., 56(5), 1259-61 (Russ.) (1982).
393. A.I.Pirogov; V.A. Trostina and V.I. Klopov, Zu.Strukt Khim., 23(2), 153-5 (Russ), (1982).
394. Daisen Chen and G. Huang Jinah Liyi Xuebao, 8(2), 25-8 (1983) (Ch). CA: 100, 148962u (1984).
395. C. Tani; M. Kazulsumi and Y. Miyazawa, Japan, 7423, 106 (Cl. Coqkf. Go2b) 13 Jan. 1974, Appl. 7064, 476, 22nd July 1970, 4pp. CA: 82, 24780y (1975).
396. Veda Masaya Hari and Bunichi Kato Honpel, Japan, 7423, 105 (Cl. Coqk, Go9f, GP 2b) 13th Jan. 1974, Appl. 6043330, 22 May 1970, 3pp. CA: 82, 24779c (1975).
397. M.J. Gautherie, Phys. Radium, Paris, 30, c4, No.11-12, 122 (1969).
398. O.S. Selawry; H.S. Selawry and J.F. Holland in Liq. Cryst., Proc. 1st Int.Conf. on Liq. Cryst.(Ed. G.H. Brown, G.J. Dienes and M.M. Labes) Gordon and Breach New York, p. 175 (1967).
399. W.E. Woodmansee in Liq.Cryst., 2, Part I, Proc. 2nd International Conf. of Liq.Cryst. (Ed. G.H. Brown Gordon and Beach), New York, p. 228 (1968).
400. O. Selwary; I. Holland and K. Selwary, Mol.Cryst., 1, 445 (1966).

401. C. Gros; N. Gautherie; P. Bourjat and F. Archer, Ann. Radiol. 13, 333 (1970).
402. G.H. Brown, et al., "Liquid Crystals" AD 725949, Techn., Rep. AFML-TR-71-20, April 1971.
403. P.L. Carrol, "Cholesteric Liquid Crystals - their Technology and Applications", 22, Grays Inn Road, London, WolxBHR, England, Oxum Ltd., (1973).
404. J.L. Fergason (Becton, Dickinson and Co.) Ger. Offen, 2,815,172 (Cl.Co9k3/34), 12 Oct. 1978, US Appl. 785, 609, 07 Apr. 1977, 34 pp. CA: 90, 56895 (1979).
405. K. Toriyama; T. Nakagomi; H. Sato; Y.Fujita; K. Morita and Y. Arai(Dainippon Ink and Chemicals, Inc. Hitachi Ltd.) Ger Offen 2,854,310 (Cl. CO9k3/34), 21 Jun 1979, Japan, Appl. 771150, 513, 16 Dec. 1977, 71 pp. CA: 91, 115369y (1979).
406. M.M. Labes (Temple University) Ger. Offen 2,848,421 (Cl. Co9k4/34) 17 May 1979, US Appl. 851,393, 14 Nov. 1977, 19 pp. CA: 91, 132163u (1979).
407. S. Matsumoto; K.Mizunoya and M.Kawamoto (Tokyo Shibaura Electric Co.Ltd.) Jpn. Kokai Tokkyo Koho 79 67,579 (Cl. Co9k3/34), 31 May 1979, Appl. 77/133, 573, 09 Nov. 1977, 3 pp. CA: 91, 166416u (1979).
408. R.C. Maze; E.P. Oppenheim and R.M. Reynolds (Motorola, Inc.) US 4, 162, 988 (Cl.252-299, Co7c143/68), 31 Jul. 1979, Appl. 707,479, 21 Jul. 1976, 4pp. CA: 92, 32031b (1980).

409. A. Beguin; J.C. Dubois and A. Zann (Thomson CSF S.A.)
Fr. Demande 2,400,546 (Cl. Co9k3/34), 16 Mar 1979, Appl.
77125, 180, 17 Aug. 1977, 11 pp. CA: 92, 189252x (1980).
410. M. Schadt; M.Petrzilka; P.R. Gerber; A.Villiger and
G. Trickes(Cent.Res. Units, F. Hoffmann-La Roche and
Co.Ltd., 4002 Basel, Switz). Mol.Cryst.Liq.Cryst., 94(1-2),
139-53 (1983), CA: 99, 45989q (1983).
411. D.H. Baltzer, Ger.Offen. 1,929,256 (1969), CA 72,
8003du (1970).
412. W.E. Woodmansee, Meter Evalution, 24, 504 (1966).
413. Westinghouse Electric Corporation, CA: 65, 17689c
(1966).
414. G.S. Chilaya; Z.M. Elavili; S.P.Ivchenko and K.D.Vinokur,
Presented at the poster session at the IXth International
Liq.Cryst. Conf., Bangalore, India (1982).
415. G.H. Heilmeyer, Sci. Amer., 222, 100 (1970). H.J.Coles,
Mol.Cryst.Liq.Cryst.(Lett.), 41, 281 (1977).
416. I. Goodman, J.Vac. Sci.Technol., 10, 5840 (1973).
417. R. Soref, Proc. S.I.D., 13, 95 (1972).
418. M. Hareng; R.Shelten and S.Berro, Presented at Internat-
ional Liq.Cryst.Conf., Bangalore, India, Dec. (1979).
419. C.S.F. Thomson, Brit.Patent No. 1,536,568 (1978).
420. Sharp Co.Ltd., Brit. Patent No.1,528,448.
421. S. Sato and S.Fukuda, Paper presented at the IXth
International Liq.Cryst.Conf., Bangalore, India, Dec.
(1982).

422. Eiji Kaneko; Hideaki, Kawakami; Yoshihanu Nagae and Akio Mukho, Paper presented at the IXth International Liq. Cryst.Conf., Bangalore, India, Dec. (1982).
423. M. Sayam; K. Ramkumar and Munisamy Anandan, Paper presented at the poster session of the IXth International Liq.Cryst.Conf., Bangalore, India (Dec. 1982).
424. E.P. Raynes, CA: 95, 159728b (1981).
425. T. Svedberg, Z. Kolloid, 18, 54, 101 (1966).
426. W.E. Bacon and G.H. Brown, Mol.Cryst.Liq.Cryst., 6, 155 (1969).
427. W.E. Barnett and W.H. Sohn, Chem. Communications, 1002 (1971).
428. W.J. Leigh, CA: 104, 5301z (1986).
429. S. Kobayashi, International Liq.Cryst.Conf., Bangalore, India. Dec. (1979). 'Liq.Cryst.'Ed., S.Chandrasekhar, Heydon, Verlog, p. 491 (1980).
430. Teruo Shimomura and Shusuke Kobayashi, International Liq. Cryst.Conf., Bangalore, India, Dec. (1979). Liq.Cryst.Ed., S.Chandrasekhar, Heyden, Verlag (1980). S.Kobayashi and T.Shimomura, International Liq.Cryst. Conf., Bangalore, India (1973). Pramana Suppl., 1, p.545.
431. H. Kelkar, Ber. Bunsenges, 67, 698 (1963).
432. M.S.Vigdergauz; R.V. Vigalok and G.V. Dmitrieva, USP Khim., 50(5), 943-72 (1981). (Russ), CA: 95, 54344v (1981).
433. M.J.S.Dewar and J.P. Schroeder, J.Am.Chem.Soc., 86, 5235 (1964).

434. D.E. Martire; A.Nikolic and K.L. Vasanth, J.Chromatogr., 178(2), 401-10(1979) (Eng). CA: 92, 47666m (1980).
435. D.G. Panse; K.P. Naikwadi; B.V.Bapat and B.B. Ghatge, India J.Technol., 19(2), 518-21 (1981) (Eng). CA: 96, 92096u (1982).
436. K.P. Naikwadi; D.G. Panse; B.V. Bapat and B.B. Ghatge, J.Chromatogr., 195(3), 309-16 (1980), CA: 93, 106498d.
437. K.P. Naikwadi; D.G. Panse; B.V. Bapat and B.B. Ghatge, J.Chromatogr., 206(2), 361-7 (1981), CA: 94, 127834w.
438. D.G.Panse; B.V. Bapat and B.B. Ghatge, J.Chromatogr., 284(1), 242-6 (1984), CA: 100, 127292 k.
439. Zoccolillo Leolio; G.Giancarlo and D.L. Ignio, Ann.Chim. (Rome), 79(9-10), 535-41 (1981) (Eng).
440. L.Sojak; G.Kraus; I.Ostrovsky; E.Kralovicova and P.Farkas, J.Chromatogr., 219(2), 225-34 (1981) (Ger.).
441. L.Sojak; G.Kraus; I.Ostrovsky. and E.Kralovicova, J.Chromatogr., 234(2), 347-56 (1982) (Ger.) and J.Chromatogr., 234(2), 357-63 (1982) (Eng). CA: 96: 58336n.
442. De Leone; M.E. Ramos. and A.Manjarrez, CA: 89, 208663p (1978).
443. Z.Witkiewicz; Z. Suprynowicz; J. Wojcik and R.Dabrowski, J.Chromatogr., 152(2), 323-8(1978). CA: 89, 52905f (1978).
444. Z.Witkeiwicz; J.Szulc; R.Dabrowski and J.Sadowsky, J.Chromatogr., 200, 65-84 (1980). CA: 94, 53360q (1981).
445. J.Szulc; Z.Witkiewicz and A.Ziolek, J.Chromatogr., 262, 161-74(1983). CA: 99, 59339q.

446. J. Szulc and Z. Witkiewicz, J. Chromatogr., 262, 141-59 (1983). CA: 99, 77386g.
447. V.A.Smirnov; I.A. Ovechkin and N.B. Kuznetsova, CA:104, 28184c (1986).
448. A. Ziolk; Z. Witkiewicz. and R. Dabrowski, J. Chromatogr., 294, 139-54 (1984). CA:101, 60632w.
449. A. Ziolk; R. Dabrowsky and Z. Witkiewicz, Mol. Cryst. Liq. Cryst., 109(2-4), 107-23 (1984). CA:101, 198649p (1984).
450. K. Naikwadi; A. Jadhav; S. Rokushika and H. Hatano, Mol. Cryst. Liq. Cryst., 2(6), 191-5 (1985). CA:105, 164182y (1986).
451. I.A.Ovechkin, CA:105, 126832 (1986).
452. Z. Witkiewicz; J. Szulc and R. Dabrowski, J. Chromatogr., 315, 145-59 (1984). CA:102, 67813k (1985).
453. S. Sakagami, CA:103, 93375j (1985).
454. A. Hildesheimer, Monatsch, Chem., 22, 497 (1901).
455. R. Stoermer and F. Wodarg, Chem. Ber., 61B, 2323 (1928).
456. C. Weygard and R. Gabler, J. Prakt. Chem., 155, 332 (1940) and 151, 215 (1938).
457. G.N.Vyas and N.M.Shah, Org. Synth. Coll. Vol.IV, (Revised edition of annual volumes 30-39), John Willey and Sons, Inc. New York, p.836 (1963).
458. J.S.Dave and R.A.Vora, Mol.Cryst.Liq.Cryst., 28, 3-4 (1974), pp. 269-273.
459. Nandor Mauthner, Math. Nature Ans. Ungar.Akad. Wiss., 57, 245-9 (1938). CA: 32, 6634⁸.

460. E. Klarmann; L.W. Gatzas and V.A.Shfernot, J. Am. Chem. Soc., 54, 298-305 (1932).
461. M.E. Neubert; L.T. Carlino; R.D.Sidocky and D.L.Fishel, Liq. Crystals and Ordered Fluids Vol.2, Ed. J.F.Johnson and R.S.Porter, Plenum Press. New York, London.
462. E. Klarmann; L.W. Gatzas and V.A.Shfernot, J. Am.Chem. Soc., 53, 3397-407 (1931). CA:25: 5408.
463. T.N.Mehta; V.S. Mehta and V.B.Thosar, J. Indian Chem.Soc., Ind. and News Ed.4, 170-4 (1941). CA: 36, 4486.
464. D. Chen and G. Huang, Jinan Liyi Xuebao, 8(2), 25-8 (1983) (Ch.). CA: 100, 148962u.
- 465a. J.S.Dave, Ph.D. Thesis submitted to M.S. University of Baroda, Baroda, India (1981).
- 465b. P.R.Vyas and J.M.Lohar, Paper presented at Gujarat Science Academy Science Congress held at Vallabh Vidyanagar, Gujarat, India (1986).
- 465c P.R.Vyas and J.M.Lohar, Paper sent in Poster Session at the 11th International liquid crystal conference held at Berkeley Campus of the University of California, U.S.A. (1986).
466. H.J.Dietrich and E.L.Steiger, Mol. Cryst. Liq. Cryst., 16, 263 (1972).
467. D. Demus and H.Sackmann, Z.Phys. Chem., 238,215 (1968).
468. G.W.Gray and P.A.Winsor, Liquid Crystals and Plastic Crystals, Vol.1, Ellis Harwood Ltd., Chichester, England, p-29 (1974).

- 469. P.B.Jones Jr. and J.J.Ratto, Liquid Crystals and ordered fluids, Vol.2, 1974, Ed. J.F. Johnson and R.S.Porter, Plenum Press, New York, p.727.
- 470. W.R.Young; H. Ivan and A.Arigh; Mol.Cryst. Liq. Cryst., Vol.15, pp 311-327 (1972).
- 471 D.Demus; H.J. Deutscher; D.Merzotko; H. Kresse and A. Wiegeleben, International Conference held at the Raman Research Institute, Bangalore, India, Dec 3-8, 1979.
- 472. V. Surendranath and M.Subramanya Raj Urs, Proceedings of an International Conference held at the Raman Research Institute, Bangalore, India, Dec. 3-8, 1979.
- 473. J.M.Lohar and J.S.Dave (Jr.), Paper presented at VII International Conference of Liquid Crystal, Kyoto, Japan, July 1980, Published in Mol. Cryst. Liq. Cryst., Vol.70, 279-287 (1981).
- 474. J.M.Lohar and G.H.Patel paper presented at XI National Conference on Crystallography, Calcutta, India, Jan 1980.
- 475. D.N.Dhabhai, Ph.D. Thesis submitted to the M.S.University of Baroda, (1985).
- 476. U.A.Mashru, Ph.D. Thesis submitted to M.S.University of Baroda, Baroda, India (1979).
- 477. J.M.Lohar and U.A.Mashtu, Ind. J. Chem.Soc., 20A, 125-128 (1981).
- 478. J.M.Lohar and U.A.Mashru, Ind.J.Chem.Soc., 57(9), 904-8, (1980).
- 479. S.S.Yadwadkar, Unpublished work, Ph.D.Thesis submitted to the M.S.University of Baroda, Baroda, India (1983).

480. J.M.Lohar and G.H.Patel, Paper sent in Poster Session at the VIII International Liquid Crystal Conference, Kyoto, Japan, May (1980).
481. G.H.Patel, Ph.D. thesis submitted to the M.S.University of Baroda, Baroda, India (1979).
482. U.A.Mashru, Ph.D.Thesis submitted to M.S.University of Baroda, Baroda, India, (1979).
483. A.J.Herbart; Trans. Faraday Soc., 63, 555 (1967).
484. E.M.Barrall (II); R.S.Porter and J.F.Johnson,
(a) *J. Phys. Chem.*, 70, 385 (1966).
(b) *Mol. Cryst. Liq.Cryst.*, 8, 1, (1969).
485. W.Elser and R.D.Ennulat, *J. Phys. Chem.*, 74, 1545 (1975).
486. J.Y.C. Chu, *J. Phys. Chem.*, 79, 119 (1975).
487. J.L.W. Pohlmann and W. Elser, *Mol. Cryst. Liq.Cryst.*, 8, 427 (1969).
488. G.W.Gray and P.A.Winsor, *Liquid Crystals and Plastic Crystals*, Vol.1, Ellis Harwood Ltd., Chichester, England, (1974), p.139, G.W. Gray, *Molecular structure and the properties of Liquid Crystals*, Academic Press, London (1962), p.165-167. J.S.Dave and P.R.Patel, *Mol. Cryst. Liq. Cryst.*, Vol.2, pp.115-123 (1966).
489. J.M.Lohar and D.S.Shah, *Mol. Cryst. Liq. Cryst.*, 28, 293 (1973).