References

1. *R.D.H. Murrary, J. Mendez and S.A. Brown: "The Natural Coumarins" John wiley, New York, p.2 (1982).*
2. *W.H. Perkin; J. Chem. Soc., 21, 53 (1868).*
3. *A.S. Gupta, J.P. Merchant; Indian J. Chem. Vol. 17 B, 410 (1979).*
4. *W.H. Perkin; Justus Liebigs Ann. Chem., 147, 229 (1868).*
5. *W.H. Perkin; Justus Liebigs Ann. Chem., 157, 115 (1871).*
6. *W.H. Perkin; J. Chem. Soc., 31, 388 (1877).*
7. *F. Tiemann and H. Herzfield; Ber., 10, 283 (1877).*
8. *C. Taege; Ber., 20, 2109 (1887).*
9. *E. Spath; Ber., 70 A. 83 (1937).*
10. *E. Cingolani, A. Schiavello and C. Sebestiani; Gazz. Chem. Ital., 83, 647 (1953).*
11. *G.N. Walker; J. Am. Chem. Soc., 79, 1772 (1957).*
12. *G.N. Walker; J. Am. Chem. Soc., 80, 645 (1958).*
13. *N. R. Krishnaswamy, T.R. Sechadri and B.R. Sharma; Indian J. Chem., 4 (3), 120 (1966).*
14. *A.S. Gupta and J. R. Merchant; Indian J. Chem., Sect. B, 17B (4), 410 (1979).*
15. *J. Troger and F.R. Bolte; J. Prakt. Chem., 103, 163 (1921).*
16. *P.R. Bhandari, Arch. Pharm. 297 (11), 698 (1964); C.A., 62, 5252a (1965).*
17. *R. Raue and A. Brack; Fabrenfabriken Bayer Akt. Ges. Belg. 621, 380, Nov. 30, 1962; Ger. App. Aug. 19, 1961; 13 pp.; C.A., 58, 11506c (1963).*
18. *V. Deulofeu; Ber., 69 B, 2456 (1936).*

19. *G. Rodighiero and C. Antonello; Bull. Chim. Farm, 97, 592 (1958); C.A, 53, 9201a (1959).*
20. *S. M. Sethna and R.C. Shah; J. Indian, Chem. Soc., 17, 239 (1940).*
21. *H. Pechmann; Ber., 17, 929 (1884).*
22. *K. Ishifuku, H. Sakurai, H. Okamoto and S. Sato; J. Pharm. Soc. Japan, 73, 332 (1953); C.A., 48, 2695a (1954).*
23. *E.V.O. John and S.S. Israelstam; J. Org. Chem., 26. 240 (1961).*
24. *R. J. Molyneux and L. Jurd; Aust. J. Chem., 27 (12), 2697 (1974).; C.A., 82, 57518k (1975).*
25. *N. Viswanathan and V. Balakrishnan; Indian J. Chem., 12 (5), 450 (1974).*
26. *J. Li, A. Tang and M. Wang; Zhongcaoyao, 13 (11) 493, (1982); C.A., 98, 143234p (1983).*
27. *F. Baccichetti, F. Bordin, M.C. Bragadin, F. Carlassare, M. Cristofilini, F. Dall'Aqua, A. Guiotto, G. Pastorini, G. Recchia, et al. Ger. Offen. DE 3, 337, 207 (Cl. Co 7D 493/08), 19 Apr. 1984, IT Appl. 82/, 148, 18Oct. 1982; 39pp.; C.A., 101, 90910c (1984).*
28. *H. Pechmann and C. Duisberg; Ber., 16, 2119 (1883).*
29. *A. Robertson, R.B. Waters and E.T. Jones; J. Chem. Soc., 1681 (1932).*
30. *S. Ahmed and R.D. Desai, Proc. Indian Acad. Sci., 6 A, 7 (1937); Chem. Rev., 36, 20 (1945).*
31. *N.G. Kotwani, S.M. Sethna and G.D. Adwani; Proc. Indian Acad. Sci., 15 (A) 441 (1942); C.A., 37, 623 (1943).*
32. *N. G. Kotwani, S.M. Sethna and G.D. Adwani; J. Univ. Bombay, 10, 5, 143 (1942); C.A., 37, 624 (1943).*

33. K. Kojima and R. Osawa; J. Pharm Soc. Japan, 72, 916 (1952); C.A., 47, 3301h (1953).

34. Farbenfabriken Bayer; Brit. 683, 344. Nov. 26, (1952); C.A., 48, 2782h (1954).

35. S.L. Bafna and H.A. Shah; Current Sci. (India), 21, 185 (1952); C.A., 47, 10529g (1953).

36. J.P. Vila and L. V. del Arco; Anales Real Soc. Espan, Fis. Ya quim., 47B, 725 (1951); C.A., 47, 132c, (1953).

37. P. D. D. Gqola, D.W.S. Motse, A.M. Sipamla and D.H. Meiring; Fort Hare Pap., 6 (2), 107; C.A. 84, 105452x (1976).

38. H. Ritter, R. Beyerle and R. Nitz. U.S. 3, 259, 635 (Cl. 260-343/2), July 5, 1966, Appl. May 5, 1964, 6pp.; C.A., 65, 10568e (1966).

39. R.S. Bhute, V. Sankaran and G.S. Sidhu; Indian J. Chem., 4 (2) 96 (1966).

40. F.M. J. Vallet. (UNICLER S.A) Ger. Offen. 2, 751, 921 (Cl. Co 7D 311/08), 01Jun 1978, Fr. Appl. 76/35, 331, 24 Nov. 1976; 17pp.; C.A., 89, 109099c (1978).

41. M. V. Kulkarni, B.G. Pujar and V.D. Patil; Arch Pharm., (Weinheim, Ger). 316 (1), 15 (1983); C.A. 98, 143233n (1983).

42. M. Kamezawa, K. Kohara and H. Tachibana; Nippon Kagaku Kaishi, 12, 1956 (1982).; C.A, 98, 107121r (1983).

43. R. Schlecker , P. Schmidt, P. Thieme, D. Lenke, H. Teshendorf, M. Traut, C. Mueller, H.P. Hofman and H. Kreiskott. (BASFA.G.) Ger. Offen De 3, 243, 158 (Cl. Co 7D 311/16) 24 May 1984, Appl. 23 Nov. 1982; 26 pp.; C.A., 101, 90767m (1984).

44. N. Andric; Ann. Chim., 5. 1373 (1960); C.A., 56, 3328g (1962).

45. K.D. Kaufman, W.E. Russey and L.R. Worden, J. Org. Chem., 27, 875 (1962).

46. D.G. Crosby and R.V. Berthold; J. Org. Chem., 27, 3083 (1962).

47. A.A. Shamshurin and Yu. M. Revenko; Izv. Akad. Nauk Moldavsk. USSR, (10), 86 (1962); C.A., 62, 16102f (1965).

48. M. S. Malik, N.K. Sangwan and S.N. Rastogi; Chim Acta Turc., 14 (3), 307 (1986); C.A., 109, 128777v (1988).

49. A.C. Jain, A. Kumar and S.K. Mishra; Indian J. Chem., Sect. B 25B (8), 826 (1986).

50. K.R. Desai and S.K. Kapadia; J. Inst. Chem (India), 58 (3), 91 (1986); C.A., 108, 112398r (1988).

51. N.M. Shah and R.C. Shah; Ber., 71. 2075 (1938).

52. D. R. Kulkarni, R.L. Alimchandra and N.M. Shah; J. Indian Chem. Soc., 18, 113, 123 (1941).

53. R.H. Shah and N.M. Shah; J. Indian Chem. Soc., 19, 481, 486, 489 (1942).

54. S. Rangaswami and T.R. Seshadri; Proc. Indian Acad. Sci., 7A, 8, (1938); C.A., 32, 456i (1938).

55. R.D. Desai and M. Ekhlas; Proc. Indian Acad. Sci., 3 A, 194 (1938).

56. S.D. Limaye and D.B. Limaye; Rasayanam (suppl.) (1938); C.A., 33. 1699i (1939).

57. D.B. Limaye and I. Ghate; Rasayanam 1, 169 (1939).

58. R.D. Desai and C.K. Mavani, Proc. Indian Acad. Sci., 14A, 100 (1941); C.A. 36, 1599s (1942).

59. *S.D. Limaye and D.B. Limaye; Rasayanam, 1, 201 (1941).*
60. *C.R. Jacobson, K.R. Brower and E.D. Amstutz; J. Org. Chem., 18, 1117 (1958).*
61. *K.A. Thakar; J. Indian Chem. Soc. 41 (10) 687 (1964).*
62. *K.D. Kaufman, F.J. Gaiser, T.D. Leth and L.R. Worden; J. Org. Chem., 26, 2443 (1961).*
63. *T. Kappa and F.S.G. Soliman; J. Heterocyclic. Chem., 13, 377 (1976).*
64. *Nanking University. Yao Hsueh Pao, 14 (9), 525; C.A., 93, 7953s (1980).*
65. *L. Crombie, R.C.F. jones and C.J. Palmer; J. Chem. Soc., Perkin Trans,. 1 (2), 317 (1987).*
66. *P. Bose and J. Banerji; Indian J. Chem., Sect. B., 29 (B), 422 (1990).*
67. *S. Ahmed and R.D. Desai; Proc. Indian Acad. Sci., 5A, 277 (1937).*
68. *F. Della Valle (Fidia S.P.A.) Belg. 879, 821 (Cl. Co. 7D), 03 Mar 1980, Ital. Appl. 78/29, 466, 06 Nov. 1978; 8pp.; C.A., 93, 220591c (1980).*
69. *B. S. Verma, V. Abrol, N.K. Sanguan and O.P. Malik; Chem. Acta Turc., 17 (3), 433 (1989); C.A., 114, 42491p (1991).*
70. *D. Chakravarti and B. Ghosh; J. Indian Chem. Soc., 12, 622 (1935).*
71. *D. Chakravarti and B. Ghosh; J. Indian Chem. Soc., 12, 791 (1935).*
72. *D. Chakravarti and B.C. Banergee; J. Indian Chem. Soc., 13, 619 (1936).*

73. D. chakravarti and B.C. Banergee; J. Indian Chem. Soc., 14. 37 (1937).

74. S. Kumar and S.S. Joshi; Indian J. Appl. Chem., 26 (5-6), 149 (1963); C.A. 61, 1825h (1964).

75. J. R. Merchant and R.C. Shah; J. Org. Chem., 22, 884 (1957).

76. D. B. Limaye and D.D. Gangul; Rasayanam 1, 65 (1936); Chem. Rev., 36, 12 (1945).

77. N.M. Shah and R.C. Shah; J. Chem. Soc., 1424 (1938).

78. M. C. Chudgar and N.M. Shah; J. Univ. Bombay, 11, pt 3, 113 (1942).

79. H. P. Kansara and N.M. Shah; J. Univ. Bombay, 17 A, 53 (1948); C.A., 43, 6621g (1949).

80. R. D. Desai and C.K. Mavani; Proc. Indian Acad. Sci., 15A, 1, 11 (1942); Chem. Rev., 36, 12 (1945).

81. C. Bülow; Ber., 38, 474 (1905).

82. Z. Horii, J. Pharm. Soc. Japan, 59, 201 (1939); Chem. Rev., 36, 16 (1945).

83. D. Chakravarti; J. Indian Chem. Soc., 12, 536 (1935).

84. K.G. Naik, R.D. Desai and H.R. Desai; J. Indian Chem. Soc., 6, 801, (1929).

85. R.C. Shah; Current Sci. 3, 157 (1934); Chem. Rev., 36, 17 (1945).

86. S.M. Sethna, N.M. Shah and R.C. Shah; J. Chem. Soc., 228 (1938).

87. L. L. Woods and J. Sapp.; J. Org. Chem., 27, 3703 (1962).

88. I.C. Badhwar, W. Baker, B.K. Menon and K. Venkataraman; J. Chem. Soc., 1541 (1931).

89. M.C. Grephagnon, D. Molho and C. Mentzer; Compt. Rend., 246, 1701 (1958); C.A., 52, 17251c (1958).

90. L.H. Schlager (Gerot-pharmazeutika G.M.B.H.) Austrian AT 394, 556 (Cl. CO7D311/16), 11 May 1992, Appl. 90/970, 26 Apr. 1990, 4pp.

91. J.D. Simpson and H. Stephen; J. Chem. Soc., 1382 (1956).

92. N. Haseb; Nippon Kagakuzasshi, 83, 96 (1962); C.A., 59, 3868c (1963).

93. N. Haseb; Nippon Kagakuzasshi, 83, 98 (1962); C.A., 59, 38686e (1963).

94. K.D. Kaufman and R.C. Kelly; J. Heterocyclic Chem., 2 (1), 91 (1965).

95. A.K. Das Gupta; K.R. Das and A. Das Gupta; Indian J. Chem., 10 (1), 32 (1972).

96. D.K. Chatterjee and K. Sen; J. Indian Chem. Soc., 46 (3), 275 (1969).

97. E. Knoevenagel; Ber., 31, 2585, 2596 (1898).

98. E. Knoevenagel; Ber., 37, 4461 (1904).

99. a) E.M. Kosower, J. Amer. Chem. Soc., 80, 3253 (1958).
b) E.M. Kosower, An introduction to physical organic chemistry, John Wiley, New York, 1968.

100. a) C. Reichardt, and K. Dimroth, Fortschr. Chem. Forsch., 11, 1 (1968).
b) C. Reichardt , Angew. Chem. Intern. Edn. 4, 29 (1965).

101. M.J. Kamlet, J.L. Aboud, and R.W. Taft, J. Amer. Chem. Soc., 99 6027 and 8325 (1977).

102. M.J. Kamlet, and R.W. Taft, J. Amer. Chem. Soc., 98, 377 (1976).

103. R.W. Taft, and M.J. Kamlet, J. Amer. Chem. Soc., 98, 2886 (1976).

104. G. W. Wheland, and Mann; J. Chem. Phys. 17, 264 (1949).

105. C.A. Parker and W.T. Rees. Analyst, London, 85, 587 (1960).

106. D.F. Eaton; EPA Newstetter; 23, 43 (1985).

107. E.J. Bowen and J. Sahu; J. Phys. Chem. 63, 4 (1959).

108. T. Novison, R. Hanson, M.K. Dimitt, L.N. Simon, R.K. Robins and D.E.O. Brien, J. Med. Chem. 17, 645 (1974).

109. R. Neumnn and T. Mertens, Drugs Today, 21, 133 (1985).

110. K. Singh, H. Hasan, R. Pratap, P.Y. Gura and D.S. Bhakumi, J. Ind. Chem. Soc., 66, 686 (1989).

111. F.J. Duarte; Kodak Laser Dyes. Eastman kodak Company. Rochester, New York (1987).

112. L. I. Loboda, I.V. Sokolva, E.A. Postol, A. Ya II'Chenko and R.E. Koval Chuk; Zh. Fiz. Khim; 58 (10), 2462 (1984); C.A. 102, 95161q (1985).

113. D. Chakrabarty, A. Chakrabarty, D. Seth, N. Sarkar; J. Phys. Chem. A Mol. Kinet. Environ. Gen. Theory, 109 (9), 1764 (2005).

114. M. Haidekker, T. Brady, D. Lichlyter, E. Theodorakis; J. Bioorg. Chem., 33 (6), 415 (2005).

115. P. Sen, D. Roy, S. Mondal, K. Sahu, S. Ghosh, K. Bhattacharyya; J. Phys Chem. A Mol Spectrosc. Kinet Environ Gen Theory, 109 (43), 9716 (2005).

116. a. Satpati, S. Senthilkumar, M. Kumbhakar, S. Nath, D. Maity, H. Pal; J. photochem Photobiol, 81 (2), 270 (2005).

117. U. Raikar, C. Renuka, Y. Nadaf, B.Mulimani, A. Karguppikar, M. Soudagar; J. Spectrochim Acta A Mol Biomol Spectrosc., 65 (3-4) 673 (2006).

118. Y. Chen, L. Li, A. Tong; Guang Pu Xue Yu Guang Pu Fen Xi, 17(2), 20 (1997).

119. G. Jones II, W.R. Jackson and A.M. Halpern; Chem. Phy. Lett., 72, 391 (1980).

120. K. Muthuramu and V. Ramamurthy; J. Photochem., 26, 57 (1984).

121. T. Gustavsson, L. Cassara, S. Marguet, G. Gurzadyan, P. Van der Meulen, S. Pommeret, J. Mialocq; J. Photochem. Photobid Sci., 2(3), 329 (2003).

122. V. Sharma, P. Saharo, N. Sharma, R. Rastogi, S. Ghoshal, D. Mohan; J. Spectrochim Acta A Mol Biomol Spectrosc., 59(6), 1161 (2003).

123. Y. Wu, O. Li, A. Tong; J. Guang Pu Xue Yue Yu Guang Pu Fen Xi, 19(6), 781 (1999).

124. R.H. Goodwin and F. Kavanagh; Arch. Biochem. Biophys., 27, 152 (1950).

125. R.H. Goodwin and F. Kavanagh; Arch. Biochem. Biophys., 36, 442 (1952).

126. O.S. Wolfbeis and K. Schaffner; Photochem. Photobiol., 32 (2), 143 (1980); C.A., 94, 14667a (1981).

127. P.J. Creaven, D.V. Parke and R.T. Williams; Biochem. J., 96, 390 (1965).

128. D.W. Fink and W.R. Koehler; Anal. Chem., 42, 990 (1970).

129. M. Nakashima, J.A. Sousa and R.C. Clapp; Phy. Sci. 235, 53, (1972).

130. G. J. Yakatan, R. J. Juneau and R.G. Shulman; Anal. Chem., 44 (6), 1044 (1972).

131. T. Moriya; Denshi Gijutsu Sogo Kenkyu Hokoku, 45, 129, (1981); C.A., 96, 198927f (1982).

132. T. Moriya; Bull. Chem. Soc. Jpn., 56, 6 (1983).

133. T. Moriya; Bull. Chem. Soc. Jpn., 61, 1873(1983).

134. *P. E. Zinsli, J. Photochem., 3, 55, (1974).*
135. *S.G. Shulman and L.S. Rosenbery; J. Phy. Chem., 83, 447 (1979).*
136. *R.K. Baur and A. Kowalczyk; Z. Naturforsch., A, 35, 946 (1980).*
137. *A. L. El-Ansary, E.M. Ebeid and M.M. Omar; Spectrochim. Acta, 43 (A), 5, 709 (1987).*
138. *Z. Mo, Y. Liu, H. Chen., W. Sun, H.Li; J. Guang Pu Xue Yu Guang Pu Fen Xi, 26 (11), 2080 (2006).*
139. *M.R. Groves, S.C. Haydon and O.M. Williams; Opt. Commun., 9, 42 (1973).*
140. *A. Dienes, C.V.Shank and R.L. Kohn; IEEE J.Quant. Electr. QE-9. 833 (1973).*
141. *E.V. Shchposnki; USP. Siz. Nauk., 77, 321; 80, 225 (1962).*
142. *R. Giri; Spectrochim. Acta, 48 A (6), 843 (1992).*
143. *D.W. Peters and C.W. Mathews; Appl. Opt. 19 (24), 4131 (1980); C.A., 94, 74301m (1981).*
144. *M. Kumbhakar, T. Mukherjee, H. Pal; J. Photochem Photobiol., 81 (3), 588, (2005).*
145. *M. Kumbhakar, T. Goel, S.Nath, T. Mukherjee, H. Pal; J. Phys Chem. B, 110 (51), 25646 (2006).*
146. *D. Roy, S. Mondal, K. Sahu, S. Ghosh, P. Sen, K. Bhattacharyya; J. Phys Chem A Mol Spectrosc Kinet Environ Gen Theory, 109 (33), 7359 (2005).*
147. *Th. Forster, and E. König; Z. Elektrochem., 61, 344 (1957).*
148. *K. K.Rohatgi ladn A.K. Mukhopadhyay; Photochem. Photobiol., 14, 551 (1971).*
149. *J.E. Selwyn and J.I. Steinfeld; J. Phy. Chem., 76, 762 (1972).*
150. *L.V. Levshin and V.K. Gorshkov; Opt. Spectrosc., 10, 401 (1961).*

151. K.K. Rohatgi and G.S. Singhal; J. Phy. Chem., 70, 1695 (1966).

152. C.A. Parker; Photoluminescence of Solutins. Elsevier, Amsterdam P. 344 (1968).

153. The Forster; Angew. Chemie, 81, 364; Internat. Edn. 8, 333 (1969).

154. J.B. Birks; Photophysics of Aromatic Molecules. Wiley – Interscience, London, P. 301 (1970).

155. T.N. Anisimova, B. M. Bolotin, V.A. Kizel, V.A. Madii and V.A. Sklyaruk; Zh. Prikl. Spektrosk, 43, 198, (1985); C.A. 104. 12500s (1986).

156. B.B. Snavely and F.P. Schaefer; Phys. Lett., 28 (A), 728 (1969).

157. J. B. Marling, D.W. Gregg and L. Wood; Appl. Phys. Lett., 17, 527 (1970).

158. A. N. Fletcher, D.E. Bliss and J.N. Kauffman; Opt. Commun., 47, 57 (1983).

159. V. Sharma, D. Mohan, P. Sahare; J. Spectrochim Acta A Mol Biomol. Spectrosc. 66(1), 111 (2007).

160. R. Giri; Spectrochim. Acta A Mol Biomol Spectrosco., 60(4), 757, (2004).

161. M. Rusalov, S. Druzhinin, B. Uzhinov; J. Fluoresc, 14 (2), 193 (2004).

162. O.G. Peterson and B.B. Snavely; Appl. Phys. Lett., 12, 268 (1968).

163. J. Mugnier, J. Pouget, J. Bourson and B. Valeur; J. Lumin, 33, 273 (1985).

164. J. Bourson, J. Mugnier and B. Valeur; Chem. Phys. Lett., 92, 430 (1982).