Properties of polymer liquid crystals: choosing molecular structures and blending

Witold Brostow*
Center for Materials Characterization and Department of Chemistry, University of North Texas, Denton, TX 76203-5371, USA and Department of Materials Engineering, Drexel University, Philadelphia, PA 19104, USA
(Received 26 June 1989; revised 9 August 1989; accepted 9 September 1989)

Class ω, conic molecules

Classes α–ψ could be planar, or nearly two-dimensional. Networks are typically three-dimensional, but a planar class σ molecule is possible, at least in principle. By contrast, molecules in Class ω must be three-dimensional. Their existence was predicted by Lin[84] in 1982 but confirmed experimentally several years later[85,86]. Names pyramidic or bowlic were proposed, but I eventually decided to adopt the name conic. Lin predicts[87] that these materials should have interesting electric properties.

84 Lin Lei, *Wuli* 1982, **11**, 171; Lin Lei, *Molec. Cryst. Liq. Cryst.* 1983, **91**, 77
85 Zimmerman, H. Poupko, R., Luz, Z. and Billard, J. Z. *Naturforsch. A* 1985, **40**, 149
86 Malthete, J. and Collet, A. *Nouv. J. Chimie* 1985, **9**, 151
87 Lin Lei, *Molec. Cryst. Liq. Cryst.* 1987, **146**, 41

121130- Google scholar, Bowlics, 204 results

J. Am. Chem. SOC. 1993, 115, 1159-1160

Rigid Bowlic Liquid Crystals Based on Tungsten-Oxo CaliM41arenes: Host-Guest Effects and Head-to-Tail Organization

Bing Xu and Timothy M. Swager**'
Department of Chemistry
University of Pennsylvania
Philadelphia, Pennsylvania 19104-6323
Received September 15, 1992

(3) For previous studies of bowlic liquid crystals, see: (a) Malthete, J.; Collet, A. J. Am. Chem. Soc. 1987, 109, 7544. (b) Malthete, J.; Collet, A. Nouo. J. Chim. 1985, 9, 151. (c) Levelut, A,-M.; Malthete, J.; Collet, A. J . Phys. (Paris) 1986, 47, 351. (d) Poupko, R.; Luz, Z.; Spielberg, N.; Zimmermann, H. J . Am. Chem. Soc. 1989, 1 1 1 , 6094. (e) Zimmerman, H.; Poupko, R.; Luz, Z.; Billard, J. Z . Naturforsch., A : Phys., Phys. Chem., Kosmophys. 1985, 40A, 149. (0 Zimmerman, H.; Poupko, R.; Luz, Z.; Billard, J. Z . Naturforsch., A: Phys., Phys. Chem., Kosmophys. 1986, 41A, 1137. (g) Lei, L. Mol. Crysf. Liq. Cryst. 1987, 146, 41 and references therein. (h) Kranig, W.; Spiess, H. W.; Zimmermann, H. Liq. Crysf. 1990, 7, 123. (i) Cometti, G.; Dalcanale, E.; Du vosel, A.; Levelut, A. M. J. Chem. Soc., Chem. Commun. 1990, 163. 6) Wang, L.; Sun, Z.; Pei, X.; Zhu, Y. Chem. Phys. 1990, 142, 335.