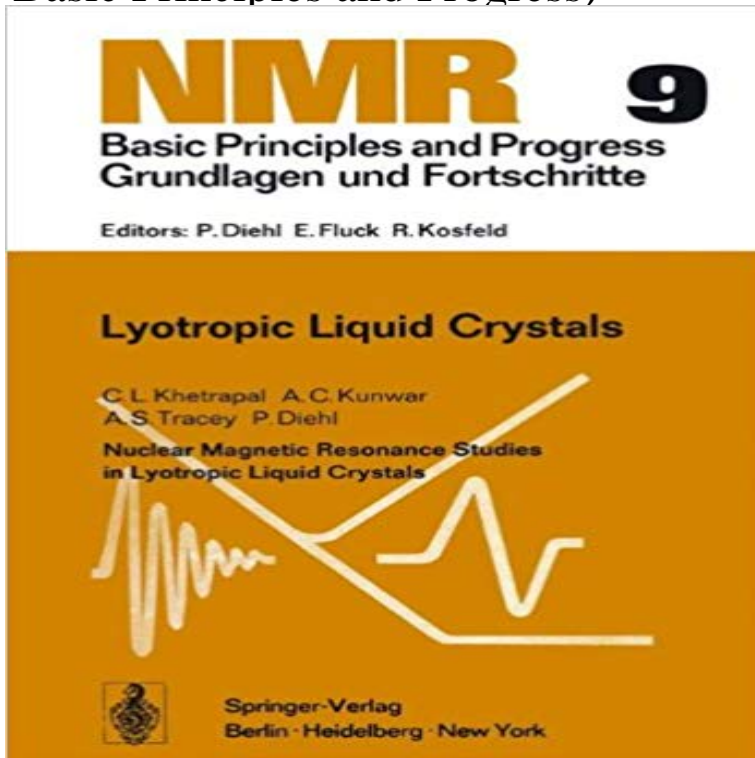


# Nuclear Magnetic Resonance Studies in Lyotropic Liquid Crystals (NMR Basic Principles and Progress)



1. Lyotropic Liquid Crystals The class of compounds known as thermotropic liquid crystals has been widely utilized in basic research and industry during recent years. The properties of these materials are such that on heating from the solid to the isotropic liquid state, phase transitions occur with the formation of one or more intermediate anisotropic liquids. The unique and sometimes startling properties of these liquid crystals are the properties of pure compounds. However, there exists a second class of substances known as lyotropic liquid crystals which obtain their anisotropic properties from the mixing of two or more components. One of the components is amphiphilic, containing a polar head group (generally ionic or zwitterionic) attached to one or more long-chain hydrocarbons; the second component is usually water. Lyotropic liquid crystals occur abundantly in nature, particularly in all living systems. As a consequence, a bright future seems assured for studies on such systems. Even now, many of the properties of these systems are poorly understood. It is the purpose of this review to consolidate the results obtained from nuclear magnetic resonance studies of such systems and to provide a coherent picture of the field. Probably the most familiar example of a lyotropic liquid crystal is soap in water. A common soap is sodium dodecylsulphate where an ionic group (sulphate) is attached to a hydrocarbon chain containing twelve carbons.

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(Eds.), NMR Basic Principles and Progress, Vol. 9, Springer **Cation in a Lyotropic System - ScienceDirect** Deuterium and Shift Calculation (Nmr-Basic Principles and Progress, Vol. 23) by P. Nuclear Magnetic Resonance Studies in Lyotropic Liquid Crystals. NMR. **Khetrpal, C. L. 1937- (Chunni Lal) [WorldCat Identities]** NMR Basic Principles and Progress, ed. 445 R64 G. Lindblom and G. Oraedd, NMR Studies of Translational Diffusion in Lyotropic Liquid Crystals and Lipis **Nuclear Magnetic Resonance Studies in Lyotropic Liquid Crystals: - Google Books Result** Nuclear Magnetic Resonance Study of Molecules in Anisotropic Systems. Part. 9.t Solution H N.m.r. spectra of myo-inositol have been measured in a lyotropic liquid crystal containing potassium laurate. various solutes in lyotropic liquid crystals has been studied. Usually .. Basic Principles and Progress, eds. P. 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References - MSRC A C** nuclear magnetic resonance study using spin labels. Horwitz, A.F., Horsley, W.J., Klein, M.P.: Magnetic resonance studies on membrane and model membrane systems: Proton magnetic Khetrpal, C.L., Kunwar, A.C., Tracey, A.S., Diehl, P.: Lyotropic Liquid Crystals. NMR Basic Principles and Progress (eds. Diehl **deuterium nuclear magnetic resonance studies of water molecules** Basic principles and the scope of the method of determination of molecular structure As early as in 1963, Saupe and Englert [1] observed that the H-nuclear magnetic resonance (NMR) spectrum of benzene in a liquid crystalline nematic only simple molecules of which the structure was already known were studied. **Studies of Molecular and Ionic Species Dissolved in the Nematic** NMR Basic Principles and Progress. Free Preview. 1975. Nuclear Magnetic Resonance Studies in Lyotropic Liquid Crystals. 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