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Dendrimers are hyperbranched molecules with well-defined nanometer-scale dimensions. Important technological applications of dendrimers, in both biomedicine and materials science, have been recently proposed. Liquid crystal dendrimers are fascinating materials that combine the characteristics of dendrimers with the anisotropic physical behavior and molecular self-organization typical of liquid crystals. This unique association of physical and chemical properties, together with the possibility of multiselective functionalization provided by dendrimers, offers new perspectives for applications. Nuclear magnetic resonance (NMR) is a powerful experimental technique applied in materials science and is an important tool for studying molecular organization and dynamics.

This book introduces the properties of dendrimers, with special insight into liquid crystal dendrimers, and a detailed description of NMR theory and experimental techniques used in the investigation of these materials. It also discusses results of recent NMR research on liquid crystal dendrimers, with an emphasis on molecular order and dynamics studies. Advanced undergraduate and graduate students of physics, chemistry, and materials science and researchers in the fields of dendrimers, liquid crystals, and NMR will find the book extremely useful.



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