Influences of Central Units and Terminal Chains on the Banana-Shaped Liquid Crystals

ABSTRACT

Azo-functionalized materials are one of the appealing groups of the functionalized materials owing to their photoswitching behaviour and have been explored for various potential applications viz., optical data storage, sensor, display devices, nonlinear materials and molecular switches. Recently, azo-functionalized bent-core liquid crystals (BCLCs) have gained significant attention because they have dual properties of BCLCs and azobenzene, which enables to generate new multifaceted functional and smart materials. In this report, the recently synthesized azobenzene containing bent-core mesogens and its subclass, the so-called hockey stick and V-shaped molecules are summarized. The mesomorphic behaviour of reported BCLCs affected by the type of central core unit, the nature, number and position of the lateral substituents and the type and length of the terminal chain are discussed. The photoisomerization process of these photoresponsive BCLCs in solid, solution and mesophase, as well as the impact of light on the chemical and electrical properties of them, are discussed.