The Effect of Molecular Shapes of The New Thermotropic Compounds

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Two series of new thermotropic compounds with two terminal mesogenic units attached to both ends of a central flexible spacer were prepared. The changes in the phase transition temperatures can be ascribed to the modification of the atomic configuration. Due to this molecular configuration characteristic, the compounds I show only enantiotropic $S_{\mathbb{C}}$ phase of short range order at low temperature. On the while compounds II show only $S_{\mathbb{A}}$ phase.

The structures of the thermotropic compounds are given in the below:

$$C_{12}H_{25}O \longrightarrow CH=N \longrightarrow OC_{12}H_{25}$$

$$S_{12}\text{- ortho, -mda, -para}$$

$$C_{0}H_{19}O \longrightarrow N=HC \longrightarrow OC_{0}H_{19}$$