

ABSTRACT:

A series of new calamitic liquid crystals, 6-methoxy-2-(4-alkanoyloxybenzylidenamino)benzothiazoles, comprising a benzothiazole core, terminal methoxy group and a Schiff base linkage were synthesised and characterised. This series comprises 12 members wherein members differ by the length of the alkanoyloxy chain ($C_{n-1}H_{2n-1}COO-$, where $n=2-8, 10, 12, 14, 16, 18$). Their mesomorphic properties were studied by using differential scanning calorimetry, optical polarising microscopy and powder X-ray diffraction techniques. The short chain derivatives ($n=2$ and 3) were non-mesogenic compounds, while an enantiotropic nematic phase was present throughout the remaining members of the series. The smectic C phase emerged from the decanoyloxy derivative onwards.