

Calamitic bisazobenzene liquid crystal series: synthesis and mesomorphic properties of 1-methoxyalkoxy-4'-(4-phenylazo)azobenzene

Abstract

A new series of calamitic liquid crystal materials with bisazobenzene moieties as a core has been synthesised and characterised by spectroscopic methods. The mesomorphic properties were investigated by differential scanning calorimetry, optical polarising microscopy and X-ray diffraction. The presence of nematic and smectic A mesophases was confirmed by the textures and X-ray diffraction studies. All the compounds are found to show enantiotropic mesophase behaviour. The compounds show a significant photoisomerisation under appropriate light irradiation.