

Synthesis, spectral studies of 4-[[3-substitutedphenyl]imino]methyl]-3-hydroxyphenyl octadecanoate and effect of meta substituents on mesomorphic properties

Abstract:

A series of Schiff base esters was synthesized from the reaction between 4-formyl-3-hydroxyphenyl octadecanoate and 3-substituted-anilines. The molecular structures were elucidated using spectroscopic techniques such as FT-IR and NMR. A conformational study associated with the presence of intramolecular hydrogen bonding which entails the formation of the keto-enol tautomerism in the solid and solution states are reported. Phase-transition temperatures and the thermal parameters were obtained from differential scanning calorimetry (DSC). The texture observation was carried out with a polarizing optical microscope (POM) over heating and cooling cycles. The title compounds exhibited direct isotropization process. The substituents at the meta position of the aniline fragment of benzylideneaniline compounds suppressed the formation of mesophase.