SYNTHESIS, CHARACTERIZATION AND MESOPHASE BEHAVIOR OF NEW LIQUID CRYSTALLINE COMPOUNDS HAVING CHALCONE AS A CENTRAL LINKAGE.

J.B.Kanojiya and B.T.Thaker*
Department of Chemistry, Veer Narmad South Gujarat University,
Surat-395007, India

*Author for correspondence. E-mail: btthaker1@yahoo.co.in

Abstract:
Mesogens with a chalcone central linkage are rare. It is believed that the chalcone linkage is not conducive to mesomorphism. But when chalcone linkage is present with other central linkages like azomethine, ester or azo it becomes conducive to mesomorphism. In the present study two new homologous series viz. 1-(4'-butyloxybiphenyl-4-yl)-3-(4-alkoxyphenyl) prop-2-en-1-one (Series-I) and 1-(4'-butyloxybiphenyl-4-yl)-3-(4(4'-n-alkoxybenzyloxy) phenyl) prop-2-en-1-one (Series-II) were synthesized having the chalcone as a central linkage. Series-I having only chalcone central linkage through it exhibit mesomorphism due to the presence of alkoxy biphenyl group at one end which is a rich source to provide to increase linearity and rigidity of the molecule. Series-II which contains chalcone as well as ester as a central linkage and it also exhibit mesomorphism. The compounds of the both series have been characterized by standard methods. Their liquid crystalline properties have been investigated by optical polarizing microscopy and DSC studies.