AIMS AND OBJECTIVES

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Chiral nematics, ferroelectric smectic *C phases and chiral smectic A mesogens are of great interest due to their applications in recent times. Our school has done pioneer work in establishing the role of amide central linkage on mesomorphism It was thought of interest to reverse the amide linkage and to study its effect on the mesomorphic properties of such homologous series and the effect of chirality on a similar non chiral mesogenic series, with this in view it was planned to synthesize chiral and achiral mesogenic homologous series with reverse amide linkage compared to earlier studies and explore the possibility of obtaining chiral nematics (cholesterics), chiral smectic *C phases and classical smectic and nematic phases.

Main chain and side chain polymers are of great interest due to different applications as well as for the study to correlate mesogenic properties with chemical constitution. With this in view it was planned to synthesize chiral side chain polymers with a cholesteric moiety as pendant group. Exhibition of mesophases would be of interest. Effect of flexibility and molecular weight also will throw some light on the mesogenic behaviour of such compounds.

Fluorescent mesogenic polymers were reported by our school, which exhibited higher transition temperatures. It was thought proper to increase flexibility of fluorescent polymers having chalcone linkage and evaluate the effect of flexibility on mesomorphism.

Some model compounds will be synthesized which will help in understanding mesogenic behaviour of polymers having similar structural features.