

Mesomorphism Comparison of Azo-Esters and Chalcone-Esters

Dr. H. N. Chauhan, Dr. D.M.Suthar and Dr.R. P. Chaudhri

Chemistry Department, K. K. Shah Jarodwala Maninagar Science College, Gujarat University, Ahmedabad, Gujarat, India

ABSTRACT:

One chalcone-ester homologous series of mesogens α -4-[4'-nalkoxy benzyloxy phenyl β -4''Nitro benzoyl ethylenes (A) and one azo-ester homologous series of mesogens p-(p'-n-alkoxybenzyloxy) phenyl azo-p''-methoxy benzene (B) being structurally similar are discussed. Both series (A) and (B) differ in respect of central bridges linking two phenyl rings and terminal groups linking with one phenyle ring. Mesomorphic properties start from 6th member of series (A) and (B). In series (A), 6th to 14th members show both smectogenic and nematogenic properties, and the 16th member show only nematogenic property. While in series (B), 1st to 10th members show nematogenic properties. Thermal stability of series (A) is relatively high as compared to series (B). Transition temperatures are observed through hot stage polarizing microscope by the miscibility method. Analytical data support the structure of molecules.

Keywords: Azo-ester; chalcone-ester; mesogen; mesophase; nematic; smectic