Synthesis and absorption spectral properties of bis-methine dyes exemplified by 2,5-arylidene-1-dicyanomethylene-cyclopentane

A range of methine dyes has been synthesized by condensation of highly electronegative active methylene compound dicyanomethylene cyclopentanone derived from cyclopentanone with the formyl group of substituted benzaldehydes. The electronic absorption spectroscopic properties of the dyes were investigated. In general, substituents on the aromatic aldehyde moiety have a significant effect on the visible absorption maxima of the dyes; increasing the solvent polarity also had a pronounced effect on the absorption maxima.