

# Phase Transitions and Pre-transitional Effects in *N*-(*p*-*n*-Pentylbenzylidene)-*p*-*n*-pentylaniline (5.5) and its Oxygen Derivatives – A Dilatometric Study

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The density of *N*-(*p*-*n*-pentylbenzylidene)-*p*-*n*-pentylaniline (5.5) and its two oxygen derivatives, viz. *N*-(*p*-*n*-pentylbenzylidene)-*p*-*n*-pentyloxyaniline (5.O5) and *N*-(*p*-*n*-pentyloxybenzylidene)-*p*-*n*-pentyloxyaniline (5O.O5), is reported for the isotropic (I), nematic (N), smectic-G (S<sub>G</sub>) and crystalline (K) phases. Dilatometric results reveal the first order nature of the I-N, N-S<sub>G</sub> and N-K transitions. A rare occurrence of the N-K transition is found for the compound 5O.O5 at a considerably higher temperature. From the observed density data pre-transitional effects are estimated for the isotropic to the first mesomorphic phase. The results are discussed in the light of data reported on other Schiff base benzylidene anilines.

*Key words:* Pre-transitional Effect; Dilatometry; Schiff Base.