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Solvent free Green Synthesis of Pyrazole Derivatives by Hydrothermal method and Characterization of their Liquid Crystalline Properties

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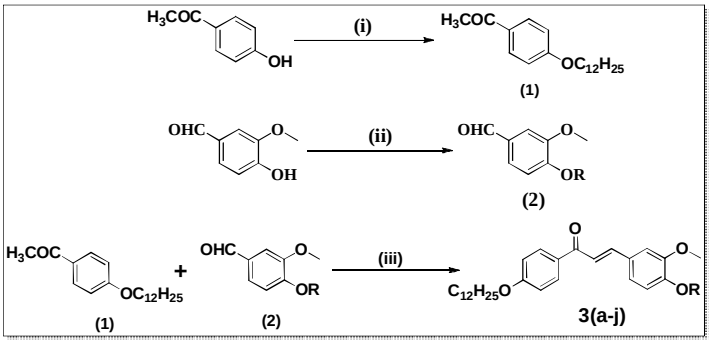
ABSTRACT

Hydrothermal synthesis of a homologous series of unsymmetrical 3,5-disubstituted-1H-pyrazole derivatives is described. The synthesized compounds were characterized on the basis of mass, IR and NMR spectroscopy. The liquid crystalline properties of the synthesized compounds were investigated by Polarizing Optical Microscope (POM) and Differential Scanning Calorimetry (DSC). It is observed that most of members of the pyrazole derivatives exhibited both Nematic (N) and Smectic phases (S); while others are non-mesogenic.

Graphical Abstract



Synthetic route to the chalcones

Keywords: Heterocylce; Chalcone; Mesophase; Hydrothermal method; Phase transfer catalysis.