

## **Novel non-symmetric liquid crystal dimer containing bisazobenzene moieties : Synthesis and characterization**

### **Abstract**

A new series of calamitic liquid crystalline non-symmetric dimer containing bisazobenzene moiety and a rather short alkoxybiphenyl linked by flexible spacers (4-propyloxy-[4-biphenyloxyalkyl]-4'-(4-phenylazo)azobenzene has been designed, synthesized and characterized by spectroscopic methods. The transition temperatures and phase behaviors were studied by differential scanning calorimetry (DSC), polarizing optical microscopy (POM) and X-ray diffraction (XRD) analyses. All the synthesized compounds exhibited enantiotropic phase with dimers containing propyl, butyl and octyl flexible alkyl spacers showing SmA and those with pentyl and hexyl spacers exhibited SmA and SmC phases respectively and the stability of the smectic layer depends on the spacer length for the compounds studied. Copyright © Taylor & Francis Group, LLC.