

New Para-substituted Non-symmetric Isoflavones for their Fast Photo-switching Ability: Synthesis and their Liquid Crystal Characterization

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ABSTRACT

The first example of non-symmetric isoflavone-based fast photo-switchable liquid crystals with different functional groups at the *terminal* position were synthesized and characterized. Polarizing optical microscopy study revealed that the compounds showed least ordered nematic phase. Optical photo switching study exhibited very fast photoisomerization effect in solution. The *E-Z* and *Z-E* conversion occurred around 3–5 s and 40–700 s respectively. This is also the first example of *para*-substituted non-symmetric isoflavone liquid crystals exhibiting very fast photo switching property in solution. Argument based on non-symmetrical behaviour might be the reason for the observed behaviour.

KEYWORDS: Fast photoswitching; Isoflavones; Cis-trans isomerization; Photoisomerization; Non-symmetric

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