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Title:	Photo-Responsive Behavior of Azobenzene Based Polar Hockey-Stick-Shaped Liquid Crystals
Authors:	Kaur, Supreet (/jspui/browse?type=author&value=Kaur%2C+Supreet) Begum, Nazma (/jspui/browse?type=author&value=Begum%2C+Nazma) Mohiuddin, Golam (/jspui/browse?type=author&value=Mohiuddin%2C+Golam) Pal, Santanu Kumar (/jspui/browse?type=author&value=Pal%2C+Santanu+Kumar)
Keywords:	Photo-Responsive Azobenzene Hockey-Stick-Shaped Liquid Crystals
Issue Date:	2021
Publisher:	Chemistry Europe
Citation:	ChemPhysChem, 22(13), 1361–1370.
Abstract:	A study on the photoswitching behavior of azobenzene-based polar hockey-stick-shaped liquid crystals (HSLCs) has been presented. Two new series of five phenyl rings based polar HSLCs have been designed and synthesized. Solution state photoisomerization of the synthesized materials was investigated thoroughly via UV-visible and <sup>1</sup> H NMR spectroscopic techniques, whereas solid-state photochromic behavior was elucidated via physical color change of the materials, solid-state UV-visible study, powder XRD, and FE-SEM techniques. The materials exhibited decent photochromic behavior for different potential applications. The thermal phase behavior of the superstructural assembly has been characterized via polarizing optical microscopy (POM), differential scanning calorimetry (DSC), and temperature-dependent small and wide-angle X-ray scattering (SAXS/WAXS) studies. Depending upon the length of the terminal alkyl chain, nematic (N) and partially bilayer smectic A (SmAd) phases were observed. DFT calculations revealed the favorable anti-parallel arrangement of the polar molecules that substantiate the formation of SmAd phase.
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URI:	<a href="https://doi.org/10.1002/cphc.202100215">https://doi.org/10.1002/cphc.202100215</a> ( <a href="https://doi.org/10.1002/cphc.202100215">https://doi.org/10.1002/cphc.202100215</a> ) <a href="http://hdl.handle.net/123456789/5071">http://hdl.handle.net/123456789/5071</a> ( <a href="http://hdl.handle.net/123456789/5071">http://hdl.handle.net/123456789/5071</a> )
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