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Title:	Polar Switching and Cybotactic Nematic Ordering in 1,3,4-Thiadiazole-Based Short-Core Hockey Stick-Shaped Fluorescent Liquid Crystals
Authors:	Pal, S.K. (/jspui/browse?type=author&value=Pal%2C+S.K.)
Keywords:	Thermotropic properties Novel short-core Crystalline molecules
Issue Date:	2019
Publisher:	ACS Publications
Citation:	ACS Omega, 4(4),pp. 7711-7722.
Abstract:	We report here the synthesis and thermotropic properties of novel short-core hockey stick-shaped liquid crystalline molecules based on the 1,3,4-thiadiazole core. Polar switching behavior is observed in the cybotactic nematic and smectic mesophases for the bent-core thiadiazole derivatives. The presence of the lateral methoxy moiety in the outer phenyl ring of the four-ring molecules facilitates the formation of spontaneous ordering in the nematic phase observed via X-ray diffraction measurements. Anomalous temperature dependence of spontaneous polarization on cooling is explained by the possible antiferroelectric packing of the molecules that require higher electric field for switching. The compounds exhibited a strong absorption band at ~356 nm and a blue emission band at ~445 nm with a good quantum yield of $\phi_f \sim 0.39$. The mega Stokes shift is observed and depends on the nature of the solvent.
Description:	Only IISERM authors are available in the record.
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