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Title:	Triphenylene-based discotic liquid crystals: recent advances
Authors:	Pal, S.K. (/jspui/browse?type=author&value=Pal%2C+S.K.) Setia, S. (/jspui/browse?type=author&value=Setia%2C+S.)
Keywords:	Triphenylene Mesophase Discotic Liquid crystals
Issue Date:	2013
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Citation:	Liquid Crystals, 40(12), pp.1769-1816.
Abstract:	Since the early work of Chandrasekhar and his co-workers on hexaesters of benzene published in 1977, discotic liquid crystals (DLCs), in particular, triphenylene-based DLC materials have been investigated intensively, especially over the last decade. The first successful commercialisation of triphenylene-based DLCs has been accomplished in Fuji 'Wide-View' optical compensation films. DLCs represent a broad well understood class of soft matter which possess the ability to self-organise into highly anisotropic and ordered structures such as columns that function not only as organic anisotropic semiconductors, but also contribute to the development of new smart materials in the field of organic electronics for many device applications such as photovoltaic devices, light-emitting diodes, field-effect transistors, memory elements, and sensors. Over the last 35 years, more than 1000 triphenylene derivatives have been synthesised and investigated starting from structure-properties to structure-device performance relationships. The very first review by Cammidge and Bushby followed by Kumar summarised the chemistry and physical properties of triphenylene-based discotics up to 2003. In this review, progress in the research of triphenylene DLC materials since 2004 is comprehensively outlined.
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