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Title:	Luminescent columnar discotics as highly efficient emitters in pure deep-blue OLEDs with an external quantum efficiency of 4.7%
Authors:	De, Joydip (/jspui/browse?type=author&value=De%2C+Joydip) Sarkar, Ishan (/jspui/browse?type=author&value=Sarkar%2C+Ishan) Sarkar, Ishan (/jspui/browse?type=author&value=Sarkar%2C+Ishan)
Keywords:	deep-blue discotics
Issue Date:	2021
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Abstract:	Development of materials that serve as efficient blue emitters in solution-processable OLEDs is challenging. In this study, we report three derivatives of C ₃ -symmetric 1,3,5-tris(thien-2-yl)benzene-based highly luminescent room temperature columnar discotic liquid crystals (DLCs) suitable as solid-state emitters in OLED devices. When employed in solution-processed OLEDs, one of the derivatives having the highest photoluminescence quantum yield exhibited a maximum EQE of 4.7% and CIE chromaticity of (0.16, 0.05) corresponding to the ultra deep-blue emission. The finding is sufficiently significant in the field of DLC-based deep blue emitters.
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