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Title:	Room-Temperature Columnar Liquid Crystals as Efficient Pure Deep-Blue Emitters in Organic Light-Emitting Diodes with an External Quantum Efficiency of 4.0%
Authors:	Bala, I. (/jspui/browse?type=author&value=Bala%2C+I.) Chowdhury, Arjun (/jspui/browse?type=author&value=Chowdhury%2C+Arjun) Pal, S.K. (/jspui/browse?type=author&value=Pal%2C+S.K.)
Keywords:	Discotic liquid crystals Columnar Deep-blue OLEDs AIEE
Issue Date:	2019
Publisher:	American Chemical Society
Citation:	ACS Applied Materials and Interfaces, 11(8), pp. 8291-8300.
Abstract:	A novel design of aggregation-induced emission (AIE) active columnar (Col) luminophores is reported, and they are demonstrated to act as highly efficient deep-blue emitters in organic light-emitting diodes (OLEDs). All derivatives exhibit Col liquid crystalline (LC) behavior at room temperature over a wide temperature range and desirable alignment properties, which is very important in using them as materials for organic electronic devices. These new AIE active luminophores were found to act as highly efficient emitters in OLEDs and unveiled a maximum external quantum efficiency of 4.0% for the first time in Col LCs with Commission International de l'Eclairage coordinates of (0.17, 0.07), which closely matches the National Television System Committee (NTSC) standard, corresponding to pure deep blue color. The detailed supramolecular assembly of the compounds has been characterized by modeling in the mesophase derived from small- and wide-angle X-ray scattering results.
Description:	Only IISERM authors are available in the record.
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