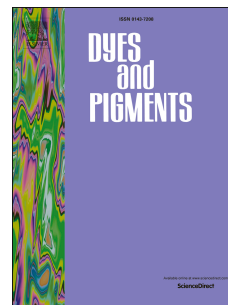


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Novel distorted donor-acceptor type deep blue fluorescent emitter for high efficiency in non-doped blue and cool white organic light-emitting diodes

Jeong Min Choi⁺, Dong Ryun Lee⁺ and Jun Yeob Lee *

School of Chemical Engineering, Sungkyunkwan University
2066, Seobu-ro, Jangan-gu, Suwon, Gyeonggi, 440-746, Korea
E-mail : leej17@skku.edu

+ Jeong Min Choi and Dong Ryun Lee contributed equally.

Distorted donor-acceptor type blue fluorescent emitter, 9-(4-(4,6-diphenyl-1,3,5-triazin-2-yl)phenyl)-1,8-dimethyl-9H-carbazole (DmCzTrz), was developed for use as a high efficiency and non-doped deep blue fluorescent emitter and a deep blue emitter in hybrid white organic light-emitting diodes. The novel distorted donor-acceptor based non-doped DmCzTrz blue fluorescent organic light-emitting diodes achieved high quantum efficiency of 6.8 % with a deep blue color coordinate of (0.15,0.10). The DmCzTrz blue emitter was doped with green and red triplet emitters to develop the hybrid white organic light-emitting diodes, and high quantum efficiency of 19.4% in cool white device and 20.8% in warm white device were demonstrated.

Keywords: efficiency·hybrid device·fluorescence·phosphorescence·color temperature

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