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Yu Jin Kang, Jun Yeob Lee



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A t-butyl modification approach of acceptor moiety for stable deep blue emission in thermally activated delayed fluorescent devices

Yu Jin Kang, Jun Yeob Lee*

School of Chemical Engineering, Sungkyunkwan University
2066, Seobu-ro, Jangan-gu, Suwon-si, Gyeonggi-do, 440-746, Korea

Fax: (+) 82-31-299-4716

E-mail: leej17@skku.edu

* To whom correspondence should be addressed

Abstract

A t-butyl modification method of an acceptor moiety was developed as a molecular design approach of blue emitters to shift the emission color to deep blue region and to stabilize the emission color according to doping concentration. A phenyl unit of triphenyltriazine acceptor moiety of blue thermally activated delayed fluorescent emitter was modified with either one or two t-butyl units to study the effect of the t-butyl unit on the electroluminescence emission of the blue thermally activated delayed fluorescent emitters. It was found that two t-butyl units introduced in the phenyl unit of the triphenyltriazine shifted the emission color to deep blue emission while keeping the deep blue color over wide doping concentration range.

Key words : deep blue, thermally activated delayed fluorescent emitter, color stability, t-butyl

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