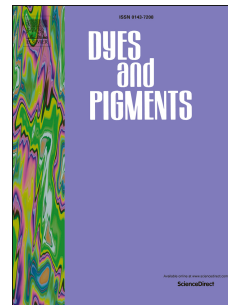


Accepted Manuscript

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PII: S0143-7208(18)30545-X

DOI: [10.1016/j.dyepig.2018.05.071](https://doi.org/10.1016/j.dyepig.2018.05.071)

Reference: DYPI 6800

To appear in: *Dyes and Pigments*

Received Date: 12 March 2018

Revised Date: 28 May 2018

Accepted Date: 29 May 2018

Please cite this article as: Zhang Y-X, Yi-Yuan , Wang Q, Hu Y, Khan A, Jiang Z-Q, Liao L-S, Highly efficient non-doped deep-blue organic light-emitting diodes by employing a highly rigid skeleton, *Dyes and Pigments* (2018), doi: 10.1016/j.dyepig.2018.05.071.

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Highly Efficient Non-doped Deep-blue Organic Light-Emitting Diodes by Employing a Highly Rigid Skeleton

Ye-Xin Zhang, Yi-Yuan, Qiang Wang, Yun Hu, Aziz Khan, Zuo-Quan Jiang,* Liang-Sheng Liao.*

Jiangsu Key Laboratory for Carbon-Based Functional Materials & Devices, Institute of Functional Nano & Soft Materials (FUNSOM), and Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, Suzhou, Jiangsu 215123, China

* Corresponding authors.

E-mail addresses: zqjiang@suda.edu.cn (Z.-Q. Jiang), lsiao@suda.edu.cn (L.-S. Liao).

¹ Tel.: +86-521-65880093; fax: +86-521-658808220

² Tel.: +86-521-65880945; fax: +86-521-658808220

Abstract

Two novel deep-blue emitters based on a highly rigid unit, IDC-PA and IDC-Py, were prepared by respectively introducing the 7,7-dimethyl-5-phenyl-5,7-dihydro indeno [2,1-*b*] carbazole (IDC) unit with anthracene and pyrene derivatives. The emitters exhibit high quantum efficiency, excellent thermal stability, narrow full width at half maximum and deep-blue emission. Moreover, the IDC-PA and IDC-Py-based devices demonstrated maximum EQEs of 4.41% and 6.08% and maintain 4.35% and 5.35% as applied in non-doped devices even at the brightness of 5000 cd m⁻² with CIE coordinates of (0.15, 0.10) and (0.15, 0.08), respectively.

Keywords

Fluorescent OLED; Non-doped; High Rigidity; Deep-blue.

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