High Performance Organic Light-Emitting Diodes with $LiCoO_2$ as an Electron Injection Layer

Yong Qiu*, Yudi Gao

Key Lab of Organic Optoelectronics & Molecular Engineering of Ministry of Education

Department of Chemistry, Tsinghua University, Beijing 100084, China

Beijing Visionox Technology Co., Ltd

Shangdi Information Road 11, Beijing 100085, China

Highly efficient organic light-emitting diodes (OLEDs) with $LiCoO_2$ electron-injection structure have been fabricated, and the thickness of the $LiCoO_2$ was optimized to achieve higher performance. At the luminance of 1000nit, the efficiency of the OLED with $LiCoO_2$ reached 11.6cd/A, which is higher than that of the OLED with conventional LiF electron-injection structure (10.2cd/A) at the same brightness. And the stability of the novel OLED is remarkably superior to the conventional one. The electron only device is designed for the further investigation of $LiCoO_2$ characteristics. It is inferred that the efficiency improvement is attributed to the high electron injection ability of the novel material.

* Email: qiuy@tsinghua.edu.cn