

The different Electron Transporting Materials Deposition by Closed-Spaced Sublimation

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Organic Light-Emitting Devices (OLEDs) have been extensively researched because of their many advantages, such as self-emission, fast response time, wide viewing angle. The OLEDs are usually fabricated by thermal vacuum evaporation or solution coating process. The OLEDs with high efficiency and long lifetime have been generally obtained by the thermal vacuum evaporation process. However, this process requires high vacuum condition, complicated fabrication procedures and low efficiency of utilization of organic materials. The solution coating methods have also been widely used for the fabrication of OLEDs because of their simplicity and large area compatibility. However, the solution coating method have a difficulty in preparing multiple layers of organic materials.

We deposited organic layer of OLEDs using closed-spaced sublimation (CSS) process. The method requires low vacuum condition, the consumption of organic materials can be reduced in fabricating OLEDs. We deposited tris(8-hydroxyquinoline) aluminum (Alq3), Bis(2-methyl-8-quinolinolate)-4-(phenylphenolato)aluminium (BAIq), 3-(4-biphenyl)-4-phenyl-5-tert-butylphenyl-1,2,4-triazole (TAZ) for electron transport layer(ETL) using CSS process. The maximum current efficiency of the CSS processed device is 3.26 cd/A.

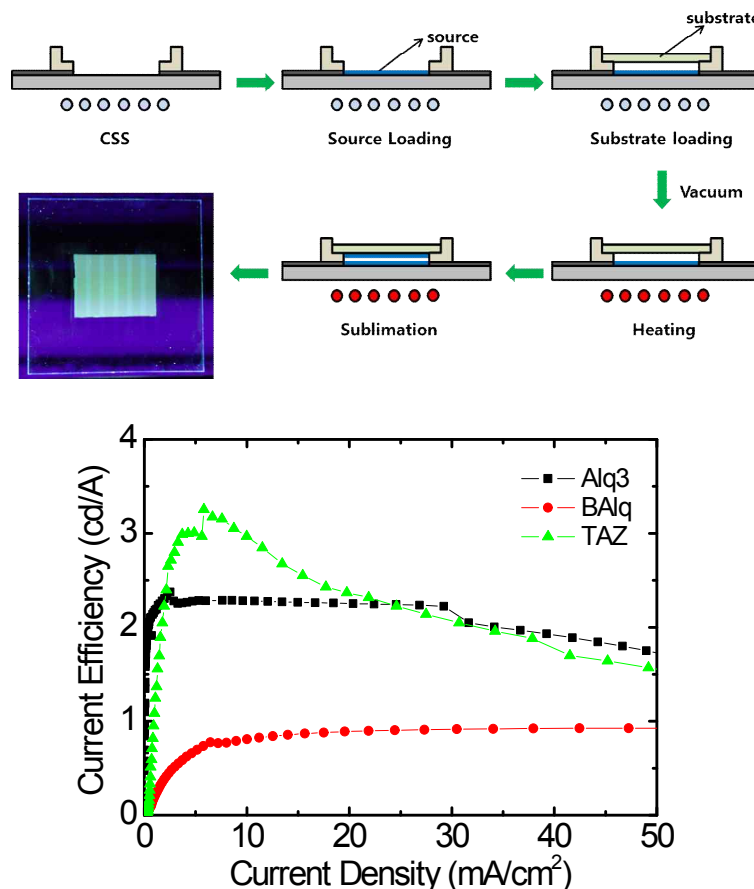


Fig. 1. Schematic views of the CSS process and Current efficiency of OLEDs using CSS process

References

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