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Electrical behaviour of MEH-PPV based diode and transistor

Abstract

The potential of organic semiconductor based devices for light generation is demonstrated by the commercialisation of display technologies using organic light emitting diode (OLED). In OLED, organic materials plays an important role of emitting light once the current is passed through. However OLED have drawbacks whereby it suffers from photon loss and exciton quenching. Organic light emitting transistor (OLET) emerged as a new technology to compensate the efficiency and brightness loss encountered in OLED. The structure has combinational capability to switch the electronic signal such as the field effect transistor (FET) as well as to generate light. Different colours of light could be generated by using different types of organic material. The light emission could also be tuned and scanned in OLET. The studies carried out in this paper focuses on investigation of fabricated MEH-PPV based OLED and also OLET via current voltage characteristics. These studies will continue with a view to develop an optimised MEH-PPV based OLET.

Keywords

MEH-PPV; OLED; OLET; Organic polymer