

## Organic Light Emitting Devices for Display Applications

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Organic materials can be used as the active layers in electroluminescent diodes. The ease of fabricating large area devices together with the possibility of achieving full color make them an attractive class of materials for display applications. Since the first publication of efficient organic electroluminescence by Tang and Van Slyke in 1987 tremendous progress has been achieved. Meanwhile organic light emitting diodes with peak brightnesses of more than 106 cd/m<sup>2</sup> and luminous efficiencies better than 20 lm/W @ 100 cd/m<sup>2</sup> have been reported for both, polymeric and low molar weight compounds. Moreover, passively and actively driven organic EL displays with impressive device performance have been presented. In this talk an overview of recent progress in organic electroluminescence will be given. After a brief introduction into the physics of charge carrier injection, transport, and recombination processes in these devices, important development milestones leading to high-performance OLEDs will be presented. This includes the use of novel transport and emissive materials which allow the fabrication of thermally stable and efficient devices as well as organic/inorganic multilayer device structures. The recent progress in display applications of these materials will be discussed in detail.