Red EL Azomethine dyes derived from diaminomaleonitrile

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An appreciable amount of research has been carried out in the field of organic electroluminescence (EL) based optoelectronic devices during the last decade. The distinctive characteristics of organic light-emitting diodes(LEDs) are that they utilize organic fluorescent or phosphorescent dyes as an emitter. Therefore, they can produce various emission colours in accordance with a wide selection of organic fluorescent dyes. Since the proposal by Tang and VanSlyke on the use of the multilayer structures for high-performance EL devices, there has been significant progress in the development of design concepts of multilayer structures as well as in molecular design of fluorescent dyes and charge transport dyes . There are two methods for tuning the color emitted from organic EL devices: an appropriate selection of the emitting materials with bright luminescence of desired colors or doping dyes into the host dye. The former method is the most feasible for producing blue-light -emitting EL devices , and the latter is useful for the fabrication of the bright red-light-emitting organic EL devices . In this paper, our objective is to design and synthesize a novel bisazomethine fluorescent dyes that can be used as an red emitter in organic EL device.