

Abstract Submitted
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Color change in organic light-emitting diodes using the magnetic field effect TEK BASEL, DALI SUN, BHOJ GAUTAM, Department of Physics and Astronomy, University of Utah, Salt Lake City, UT 84112, EITAN EHRENFREUND, Physics Department, Technion-Israel Institute of Technology, Haifa, Israel, Z. VALY VARDENY, Department of Physics and Astronomy, University of Utah, Salt Lake City, UT 84112 — The magnetic field effect has been widely used to generate magneto-electroluminescence (MEL) in organic light-emitting diodes (OLEDs). We have used the MEL effect to change the emission color from OLED in which the active layer is composed of a host polymer with fluorescence (FL) emission and a guest, heavy atom-based molecule with phosphorescence (PH) emission. The color change has been studied as a function of the guest/host weight ratio, and the optimal ratio was determined. The underlying mechanism of the magnetic-field induced color change is the difference that exists between the MEL intensity of the FL emission band respect to that of the PH emission band. The MEL difference between the two types of emission bands will be thoroughly discussed within models used to explain the MEL in organic devices. Research sponsored by National Science Foundation-Material Science & Engineering Center (NSF-MRSEC), University of Utah.

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