

청색 인광 유기EL 소자를 위한 wide-gap 재료의 제작 및 특성

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Properties of Wide-Gap Material for Blue Phosphorescent Light Emitting Device

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Abstract : Organic light-emitting device (OLED) have become very attractive due to their potential application in flat panel displays. One important problem to be solved for practical application of full-color OLED is development of three primary color (Red, Green and Blue) emitting molecule with high luminous operation. Particularly, the development of organic materials for blue electroluminescence (EL) lags significantly behind that for the other two primary colors. For this reason, Flu-Si was synthesized and characterized by means of high-resolution mass spectro metry and elemental analyses. Flu-Si has the more wide optical band gap ($E_g = 3.86$) than reference material ($Cz-Si$, $E_g = 3.52$ eV).¹ We measured the photophysical and electrochemical properties of Flu-Si. The HOMO-LUMO levels were estimated by the oxidation potential and the onset of the UV-Vis absorption spectra. The EL properties were studied by the device fabricated as a blue light emitting material with Irpic.²

Key Words : OLEDs, Phosphorescence, Wide-gap materials

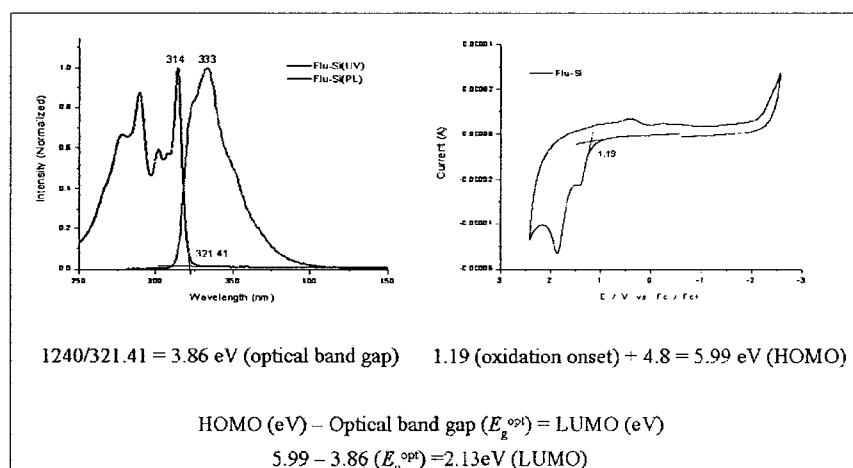


Figure 1. HOMO-LUMO levels of Flu-Si estimated by the oxidation potential and the onset of the UV-Vis absorption spectra.

참고 문헌

- [1] Ming-Han Tsai, Hao-Wu Lin, Hai-Ching Su, Tung-Huei Ke, Chung-chih Wu,* Fu-Chuan Fang, Yuan-Li Liao, Ken-Tsung Wong,* and Chih-I Wu Adv. Mater. Vol. 18, 1216, 2006.
- [2] R. J. Holmes, S. R. Forrest, Y.-J. Tung, R. C. Kwong, J. J. Brown, S. Garon, M. E. Thompson, Appl. Phys. Lett. Vol. 82, 2422, 2003.