

최초로 헤테로 원자를 포함하는 폴리(9,9-스파이로 바이플루오렌)
유도체의 합성과 그들의 광학적, 유기전계발광특성

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**First Examples of Poly(9,9-spiro bifuorene) Derivatives Containing Heterotoms :
Syntheses, Optical, and Electroluminescent Properties**

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Abstract : Conjugated polymers have attracted much scientific and technological research interest during the past few decades because of their potential use such as polymer light-emitting diodes (PLEDs).^{1,2} Particularly, lots of phenylene-based polymers such as polyfluorene and its derivatives have been synthesized because of their high photoluminescence quantum efficiencies and thermal stabilities. However, troublesome long wavelength emission in polymer film of polyfluorenes on heating during device formation or operation has been the crucial problem for practical applications. The source of the long wavelength emission was initially believed to be solely due to excimer emission as a result of polymer aggregation. It has also recently been correlated with emissions from ketonic defects in the fluorene units. Many efforts have been made to reduce the tendency to red-shifted emission. Here, we report for the first time the design and synthesis of novel 9,9-spiro bifluorene-based polymers containing heteroatoms such as N, S in its molecular skeleton. Especially, the 9,9-spiro bifluorene-based polymers containing N atom showed stable blue electroluminescence, which did not show spectral change upon thermal annealing.

Key Words : Heteroatom-containing Spiro bifuorene Derivatives, Blue PLED