

Electrical and optical studies of organic light emitting devices using Ag and SiO₂ / poly(p-phenylene vinylene)(PPV) nanocomposites

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Abstract : Polymer/nanoparticle hybrids have been increasingly studied because of their enhanced properties for organic light emitting devices (OLEDs).

In this study, we made poly(p-phenylene vinylene) (PPV) nanohybrid films by incorporation of Ag and SiO₂ nanoparticles into the PPV. A possible interaction between nanoparticles was investigated and especially we focused whether there is a change in the interaction between SiO₂ or Ag nanoparticles and matrix or not.

The current characteristics of PPV nanohybrid films were analyzed by I-V and EL measurements. The optical properties were also investigated by UV-Vis spectroscopy and photoluminescence measurements.

Key Words : OLEDs, PPV, nanoparticles, nanohybrid film