# Organic electroluminescent devices using quantum-size silver nanoparticles

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## Abstract

Nanocomposite layers consisting of poly(3,4,-ethylene dioxythiophene)/polystyrene sulfonic acid (PEDOT/PSS) and o-phenylenediamine encapsulated quantum-size silver nanoparticles were investigated as a hole injection layer in the organic light emitting devices (OLEDs) based on *N,N′*-diphenyl-*N,N′*-bis(3-methylphenyl)-1,1-biphenyl-4,4′-diamine) (TPD) as a hole transporting layer and tris(8-hydroxyquinolinato)aluminum (Alq3) as an electron transporting and emitting layer. It was found that the addition of the silver nanoparticles (3∼6 nm) improved the OLED performance depending on the nanoparticle concentrations compared to the devices consisting of only the PEDOT/PSS as a hole injection layer.