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ABSTRACT BOOK

Fabrication and Characteristics of Light-Emitting Ag/Rubrene Core-Shell Hybrid Nanoparticles

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For Ag/rubrene core-shell hybrid nanoparticles (NPs). Ag NPs were prepared by the reduction reaction of AgNO₃ and sodium citrate in distilled water. Light-emitting rubrene materials were directly coated on Ag NPs through vapor transport method in nanoscale. The shapes of Ag NPs were triangular, rectangular and round shape. The diameters of Ag/rubrene core-shell NPs were about 50 ~ 100 nm. We investigated the surface morphology, structural, and optical characteristics of Ag NPs, Rubrene NPs and Ag/rubrene core-shell NPs by using SEM, HR-TEM, UV/Vis absorption and laser confocal microscope (LCM) photoluminescence (PL) and Raman spectra. The main LCM PL peak of the rubrene single NP was observed at 560 nm. From LCM PL spectra, we observed the distinct variation of light-emitting properties for the single rubrene NP and Ag/rubrene core-shell NP. The results can be analyzed through a surface plasmon resonance coupling.