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Optical waveguide properties of Alq3 (tris(8-hydroxyquinoline)aluminum (III)) nanorods assisted with surfactant

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The nanorods (NRs) of Alq3 (tris(8-hydroxyquinoline) aluminum (III)) with a length of 100 nm were synthesized using a surfactant of sodium dodecyl sulfate (SDS), and their nanoscale optical waveguide properties were investigated. The surface morphology and shape of Alq3 NRs were measured using SEM (scanning electron microscope) and the crystalline structure was investigated by XRD (X-ray diffraction) experiments, the optical absorption properties were analyzed using the results of UV/Vis spectra. In optical waveguiding experiments, photoluminescence (PL) spectra was measured along the Alq3 NRs using LCM (laser confocal microscope) with $\lambda_{\text{ex}} = 410$ nm. Based on output LCM PL spectra, optical waveguide properties of Alq3 nanorods were analyzed.