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Synthesis and Optical Characterization of Sodium Dodecyl Sulfate Assisted Zinc (II) Bis (8-Hydroxyquinoline) Rod - Like Structures

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Abstract : Highly luminescent zinc (ii) bis (8-hydroxyquinoline) nanorods were synthesized via simple precipitation method using sodium dodecyl sulfate (SDS) as a surfactant. The sodium dodecyl sulfate assisted zinc (ii) bis (8-hydroxyquinoline) [Znq2:SDS] nanorods were analyzed by powder X-ray diffraction (PXRD) to confirm the crystalline nature of the particles. Thermo gravimetric analysis (TG) and differential thermal analysis (DTA) were carried out to find the thermal stability of the Znq2:SDS nanorods. The morphology and presence of elements were studied by scanning electron microscopy (SEM) and energy dispersive X-ray analysis (EDAX). The functional groups of the particles were confirmed by FTIR spectroscopy. The optical properties of the particles were studied by UV-vis-NIR spectral study. The band gap of the particles was calculated. The synthesized Znq2:SDS nanorods were confirmed by photoluminescence studies for OLED applications as emission and electron transport layers.

Key words : Znq2: SDS, nanorods, Thermal stability, SEM, FTIR, UV-vis – NIR.

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