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Research Article

Optical Properties of Potassium Doped Zinc (II) Bis (8-Hydroxyquinoline) Organic Nanophoshors

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Abstract

Highly luminescent zinc (ii) bis (8-hydroxyquinoline) organic nano phosphor were synthesized via simple precipitation method using Potassium nitrate K (NO3)26H2O as a dopant. The Potassium nitrate assisted zinc (ii)bis (8-hydroxyquinoline) [Znq2:K] nano organic phosphor were analyzed by powder X-ray diffraction (PXRD) to confirm the crystalline nature of the particles. Calculated particles size is found in nano range 50.13nm. The functional groups of the particles were confirmed by FTIR spectroscopy. The optical properties of the particles were studied by UV-vis spectral study. The synthesized Znq2: K nonorganic phosphor was confirmed by photoluminescence studies for OLED applications as emission and electron transport layers. For 1.5% of concentration K, Znq2: K exhibits excitation at is 430nm in violet region. The prominent PL emission peak is observed at 500 nm in blue-green region.

Keywords

Znq2: K, nano organic phosphor, XRD, photoluminescence, FTIR, UV-vis.

Declaration of Conflicting Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.