

Preparation and photoluminescence of ZnO:Zn phosphor by reduction reaction of ZnO powder

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As a wide band gap material, ZnO has an electronic structure which makes it a useful candidate for luminescent device. Pure ZnO emits a narrow luminescence band in the violet-blue spectral region. But, upon incorporation of various dopants, the emission region is varied from blue to orange spectral range.

In this study, ZnO:Zn phosphors were prepared by solid state sintering of ZnO powders at various temperature and time in reduction atmosphere. The effects of sintering temperature and time on the lattice parameters and photoluminescent characteristics of phosphors were investigated.