STRUCTRAL CHARACTERIZATIONS AND OPTICAL PROPERTIES OF EU2+ DOPED SR6B5PO20 PHOSPHOR POWDERS PREPARED VIA CO-PRECIPITATION METHOD.

Le Tien Ha, Nguyen Duc Trung Kien, Pham Thanh Huy

TÓM TẮT:

The Eu2+-doped Sr6B5PO20 phosphor powders have been synthesized via co-precipitation method and subsequent reduction of the dopants in N2/H2 gas for tri-color compact fluorescent lamps application in industry. The average particle size of the phosphor powder was in the range of 100 nm to 1 mm. It has been found out that typical phases of Sr6P5BO20, Sr2P2O7, Sr3P2O8, and Sr3Eu(PO4)3 co-existed in the as-prepared powders. The annealing temperature has been varying in the range of 600 to 1100 °C to control the color emission of the powder. The luminescence emission peaks are in the range of 400 to 500 nm. These emission peaks are attributed to the 5d-4f transitions of Eu2+ ion. The as-prepared phosphor powders would be promissing components for producting white light fluorescent lamps.