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Molten salt synthesis of Bi2WO6:Eu

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Bismuth –containing oxide materials have been attraction much attention as phosphors for light emitting diodes and other devices. Among them these ones containing tungsten are rarely studied due to a low chemical activity of tungsten compounds and high velocity evaporation of WO3 under thermal treatment.
Currently, Bi2WO6 have been attracting significant attention as optical materials/phosphors due to the strong absorption of light by molecular WO4/WO6 anions in the vacuum ultraviolet (VUV) and ultraviolet (UV) spectral regions and further excitation energy transfer to the RE ions and intensive luminescence of the last ones.
Herein, a molten salt approach has been developed to obtain high quality single crystals Bi2WO6 doped with Eu3+ Single crystals have been grown from a high temperature solution containing Na2WO4 as an inert flux.
The crystals prepared has been characterized by means of powder X-Ray diffraction, scanning electron microscopy, energy-dispersive X-ray spectroscopy analysis, and infrared spectroscopy (IR).
The peculiarities of luminescence spectra of Bi2WO6 has been studied under UV excitation under room temperature.

Type of presence

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