# White colour emission from $BaHfO_3$:Eu phosphor.

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Rok wydania

2010

Czasopismo

Radiation Measurements

Numer woluminu

45

Strony

621-623

DOI

10.1016/j.radmeas.2009.12.010

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Eu-doped barium hafnate powders, $BaHfO_3$:Eu, prepared with ceramic method have quite peculiar spectroscopic properties, which can be significantly altered changing the dopant concentration as well as preparation atmosphere. When synthesis is performed in a reducing atmosphere, a fraction of Eu gets reduced and produces a broad-band emission peaking around 480 nm. Due to a partial overlapping of the excitation spectra of $Eu^{3+}$ and $Eu^{2+}$ luminescence, the emission colour can vary between bluish green, when only $Eu^{2+}$ is excited, red when solely $Eu^{3+}$ is stimulated and white upon simultaneous excitation of both $Eu^{3+}$ and $Eu^{2+}$ activator ions around 290 nm. Upon X-ray excitation only $Eu^{3+}$ luminescence is produced. Radioluminescence of undoped $BaHfO_3$ consists of a broad-band peaking around 410 nm, which disappears when Eu enters the host. Materials prepared in a reducing atmosphere do not show any phase separation even for higher Eu concentrations.

Słowa kluczowe

Barium hafnate, Radioluminescence, White emission

Adres publiczny

https://doi.org/10.1016/j.radmeas.2009.12.010