Structural And Luminescent Properties Of $CaAl_2O_4:Ce^{3+}$ Nanomaterials

Anunda K. Peter

B136/11946/2015

Abstract

A luminescent material can be defined as a material that emits light when exposed to radiations such as ultraviolet light. These materials find a wide range of application especially in engineering field. The most common applicable places of these materials are in the manufacture of computers monitor and the manufacturing of television screens which are used today all over the world. Other applications are in the manufacture of luminous paints, manufacture of cathode ray tube and manufacture of materials used to indicate emergency exit in case of any problem like fire outbreak. They are considered as transducers since they emit light that has been converted from one form to another form.The specific amount of dopant to be added to a given phosphor should be investigated in order to obtain a material that has a given characteristic. Addition of substances that ionize to give radioactive ions should not be considered due to its adverse effects to environment which would finally affect the living organisms within that geographical area. Long afterglow materials are desired and more research is done currently to establish how they can be made from the available resources and in a simplified form without any much strain or complications. Depending on the amount of the dopant added to a specific phosphor, it can be possible to have a phosphor of the desired features. The development of phosphors has been improved from its early form to a more improved way that can be used in various fields. The major target in the current research is to find out at what concentration of dopant we can obtain a phosphor with maximum and stable supply of light.