World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:9, No:02, 2015

Preparation of Nano-Sized Samarium-Doped Yttrium Aluminum Garnet

Authors : M. Tabatabaee, N. Binavayan, M. R. Nateghi

Abstract : In this research nano-size of yttrium aluminum garnet (YAG) containing lanthanide metals was synthesized by the sol-gel method in presente citric acid as a complexing agent. Samarium (III) was used to synthesis of YAG:M3+. The prepared powders were characterized by powder X-ray diffraction (PXRD). The size distribution and morphology of the samples were analyzed by scanning electron microscopy (SEM). XRD results show that Sm, La, and ce doped YAG crystallizes in the cubic system and additional peaks compared to pure YAG can be assigned to the presence of Sm in the synthesize YAG. The SEM images show possess spherical nano-sized particle with average 50 nm in diameter.

Keywords : citric acid, nano particle, samarium, yttrium aluminum garnet
Conference Title : ICC 2015 : International Conference on Chemistry
Conference Location : Istanbul, Türkiye
Conference Dates : February 16-17, 2015