Yttrium aluminum monoclinic (YAM) synthesized by high energy ball milling

ABSTRACT

The structural of the mixture of Y2O3-Al2O3 has been studied using X-ray diffraction and 27Al MAS NMR. The sample was synthesized by high energy ball milling process. The polycrystalline YAM powder was form together with impurity YAP and Y2O3 when heated at 1100oC as confirm by XRD and NMR. Increasing heating temperature up to 1400oC did not seem enough to completely transform Y2O3 and Ŭ-Al2O3 into YAM phase as the grain growth occur and increase the diffusion distance in solid state reaction.

Keyword: Y4Al2O9; High energy ball milling; XRD; 27Al MAS NMR