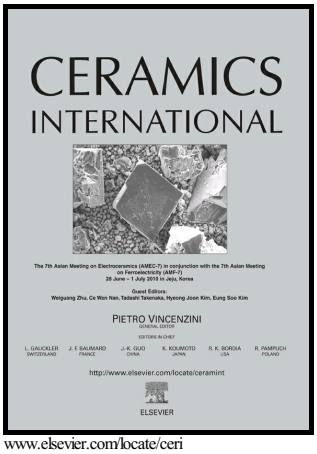

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Abstract

Synthesis of mono-crystalline Ga_2O_3 Nanorods was done by sol-gel transformation of gallium(III) isopropoxide ($Ga(OPr^i)_3$). XRD studies were done to determine the planes and crystal structure of synthesized nanorods that showed the synthesis of β-Ga_2O_3 **(a)**. TEM studies of synthesized Ga_2O_3 confirmed the synthesis of monocrystalline β-Ga_2O_3 nanorods. To study the effect of precursor chemistry and to determine role of precursor structures on the crystal structure, phase and morphology of the Ga_2O_3, a new modified precursor complex was synthesized. The reaction of $Ga(OPr^i)_3$ with N-phenylsalicylaldimine, $[C_6H_4(OH)CH=N(C_6H_5)]$ in 1:1 molar ratio yielded $[\{(H_5C_6)N=CH-C_6H_4O\}Ga(OPr^i)_2]$. The newly synthesized complex was characterized by elemental analyses, molecular weight measurement, FT-IR and NMR (^1H and ^{13}C) spectral studies. Spectral studies of the modified complex suggest the presence of bi-dentate mode of attachment of Schiff's base in the solution state. Sol-gel transformations of

[1] Equal Contribution