Characterization of Stontium Titanate Powders Synthesized by the Oxalate Process

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Abstract

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Abstract

Synthesis of strontium titanate (SrTiO3), fine powders with high purity by the oxalate process has been performed using strontium chloride as starting materials and potassium titanium oxide oxalate as an precipitating agent. Effect of pH on the coprecipitated precursors was investigated at pH 3.0, 5.0, 7.0 and 9.0. The SrTiO3 was obtained by calcination the strontium oxalate complex at pH 3.0 at 700oC for 3 hours. The formation mechanism of SrTiO3 was clarified using thermogravimetric – differential thermal analyses (TG-DTA) and X-ray diffraction (XRD). The morphology of SrTiO3 powders was investigated using electron scanning microscopic (SEM) technique.

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