

## **THE DECOMPOSITION OF $\text{BaCe}_{0.95}\text{Yb}_{0.05}\text{O}_{2.975}$ PREPARED BY DIFFERENT PREPARATION ROUTES**

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### **ABSTRACT**

The oxidation behaviour from different metal salts influenced the formation of oxide ceramics. Three different preparation routes namely, solid state reaction (SSR), sol-gel (SG) and modified Pechini (PM) were used to synthesize a compound of  $\text{BaCe}_{0.95}\text{Yb}_{0.05}\text{O}_{2.975}$ . The thermal decomposition behaviour of this compound was carried out using thermogravimetric analysis (TGA). The thermal decomposition for SG and PM occurred in three stages but only two stages for SSR as shown in thermogravimetric (TG) signal. The exothermic reaction process to form oxide compound was shown by the derivative thermogravimetric (DTG) signal. The calcined powders at  $T=1000^{\circ}\text{C}$ ,  $1100^{\circ}\text{C}$  and  $1300^{\circ}\text{C}$  by different routes were also analyzed by Fourier transform infrared spectrometry (FTIR) to identify the traces of carbonate species.

<http://journal.masshp.net/wp-content/uploads/Journal/2009/Jilid%202/M.R.M.%20Toop%2089-95.pdf>

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