

HEAT CAPACITY OF (ER, IN)-DOPED BARIUM CERATE IN THE TEMPERATURE RANGE OF 200-700 K

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Alkaline earth oxide cerates, in particular doped barium cerates, are perspective materials for using as pigments, fuel cells electrolytes, etc.

In the paper the heat capacity of doped barium cerate which has the composition $BaCe_{0.7}Er_{0.2}In_{0.1}O_{2.85}$ is presented.

The compound $BaCe_{0.7}Er_{0.2}In_{0.1}O_{2.85}$ was prepared by solid state reaction. Identification was carried out by X-ray diffraction and fluorescence spectroscopy. The compound was an individual phase with orthorhombic structure (space group Pmcn).

The heat capacity was measured in the temperature range of 200-700 K with DSC 404 F1 calorimeter using a platinum crucible with corundum insert at a constant heating rate of 6 K/min in an argon flow (20 ml/min). A sapphire was used as calibration sample.

The results of experimental measurements of heat capacity have shown that there are no phase transitions in the temperature range of 200-700 K for employed compound. The specific heat at standard conditions was: $C_p = 114.9 \pm 1.5$ J/(K mol). Earlier [1] we measured heat capacity of (Ho, In) -doped barium cerate where phase transition of second order was observed at 550 K.

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1. Matskevich N.I., Wolf Th., Le Tacon M., Adelman P., Stankus S.V., Samoshkin D.A., Tkachev E.N. // J. Therm. Anal. Calorim. 2017. V.130. P. 1125.