

Structural transitions in mechanical activated tulium manganite $TmMnO_3$

© Olga M. Fedorova,^{*+} Larissa B. Vedmid, Vladislav M. Kozin, and Alexander M. Yankin

Laboratory of Statics and Kinetics of Processes. Institute of Metallurgy of the UB RAS.

Amundsen St., 101. Yekaterinburg, 620016. Russia. Phone: +7 (343) 232-90-72. E-mail: fom55@mail.ru

^{*}Supervising author; ⁺Corresponding author

Keywords: structural transitions, hexagonal tulium manganite, mechanical activation, X-ray analysis, thermogravimetry.

Abstract

Structural transitions in the hexagonal tulium manganite have been studied by methods of high temperature X-ray diffraction and thermal analysis. The following structural transition are found in macrocrystalline and mechanical activated samples: Jahn-Teller transition in a orthorhombic phase in the range of temperatures 900-970 °C, a transition in a hexagonal phase from structural modification of $P6_3cm$ into $P6_3/mms$ at 1092 °C. Mechanical activation reduces Jahn-Teller transition temperature but does not affect the hexagonal phase transition temperature.