Lattice Parameters of the PZT 90/10 Ceramic doped with La

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The PZT ceramics have been attracting with considerable attention in a number of different context. One of them are their ferroelectrical properties.

Sample of $Pb_{0.94}La_{0.06}Zr_{0.9}Ti_{0.1}O_3$ was prepared by sol-gel process and sintered at 1200^oC for 2 hours.

Investigation lattice parameters of the specimen were studied using X-ray diffraction (XRD). X-ray traces were recorded using a Phillips diffractometer between 20^o-110^o (CuKα radiation) with scan step of 0.02^o and scan time 14s/step.

In agreement with phase diagram for PLZT system [1] our sample should have a tetragonal structure. To confirm that assumption we prepared two simple simulated scans for tetragonal and rhombohedral structure. On the basis of the results and other data [2] we agreed with that assumption and made preliminary analysis of lattice parameters in profile matching mode. As a results of our investigation we obtained a following parameters: a=b=4,1051±0,0007Å, c=4,1194±0,0005Å.

[1] Hertling G.H., Land C.E., *J. Am. Ceram. Soc.*, 1971, **54**, 1. [2] Knudsen Jasper, Woodward D.I., Reaney I.M., *J. Mater. Res*, 2003, **18**, No.2.

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