

The effect of silver oxide dopand on PZT ceramics

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Abstract: In PZT thin film devices, with silver oxide electrodes, the diffusion of silver atoms into the PZT structure is very possible which may change the properties of the device. In the present work, this effect on $\text{PbZr}_{1-x}\text{Ti}_x\text{O}_3$ with $x = 0.47$ has been investigated. The samples were prepared by mixed oxide method. After calcination the mixed powders, Ag_2O with different weight percent were added. All the samples were calcinated and sintered under the same conditions. Electrical measurements revealed that the electrical conductivity of the samples, depending on the weight percent of Ag_2O , has increased. X-ray diffraction patterns showed that silver atoms have not produced new phases. Investigating the structure of the samples by SEM proved that adding silver oxide causes the growth of the grains.

Keywords: *PZT ceramic, Silver oxide.*