

Characterizations of PZT films prepared by sol-gel spin coating method

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Lead zirconate titanate (PZT) films have been widely used for micro applications because of their excellent ferroelectric and piezoelectric properties. In this study, surface morphology and electrical properties of lead zirconate titanate films have been investigated. The PZT films have been prepared by a sol-gel method and deposited on silicon wafers by spin coating under different annealing processes. Phase formation behavior of these films was investigated by an X-ray diffraction (XRD). The Atomic Force Microscopy (AFM) explains morphology, such as surface roughness, grain shape and grain size. Dielectric properties were studied using LCR meter measurement and discussed in this paper. PZT films show a perovskite phase at annealing temperature of 650 °C. For the films thickness were in the range of 500 – 900 nm. Average grain size increase with increasing the annealing temperatures. Dielectric constant show the highest value which was found at condition of 650 °C.

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