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## Study on lithium doped zinc oxide films for piezoelectric application

S.H. Jeong\*, B.N. Park, C.-K Jung, S.B.Lee, J.-H. Boo

Department of Chemistry and Institute of Basic Science Sungkunkwan University, Suwon 440-746, Korea

The piezoelectric films must be high resistivity and high orientation. Therefore, lithium doped ZnO (LZO) films were deposited by RF magnetron sputtering method using Li-doped ceramic target of various rate (0 10wt.% LiCl dopant). We investigated a dependency of deposition parameter such as dopant content in target and target to substrate distance (Dts) on structural, optical and electrical properties of the as-grown LZO films by XRD, XPS, UV, 4-point-probe, etc. The LZO films have a highly preferred c-axis orientation. As amount of the Li dopant in the target was increased, the crystallinity was decreased, though the electrical resistivity was increased. Moreover, with increasing Dts the crystallinity and electrical resistivity were increased. When LZO films were sputtered under the deposition condition of room temperature and RF power of 150W with a target containing less than 2wt.% content of LiCl at 70mm of Dts, it showed a strong c-axis orientation as well as high resistivity of above 106cm.

[참고문헌]

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