Mist Deposited Lead Zirconate Titanate Films

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Abstract: The liquid source misted chemical deposition (LSMCD) method was employed in the preparation of lead zirconate titanate, Pb(Zr(0.52)Ti(0.48))O(3) (PZT) thin films. The desired thickness of the films was adjusted by a number of successive deposition/heating cycles. Typically, a 500-nm-thick film was achieved by running four processing cycles. The PZT films showed good phase purity with a (111)-preferred crystallographic orientation. The capacitance voltage (C-V) and polarization electric field (P-E) hysteresis curves displayed normal ferroelectric behavior of LSMCD-derived films with asymmetric switching. The dielectric and ferroelectric properties were comparable with the properties of thin films prepared by other techniques.

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