

Electrical Properties of Ferroelectric Polymer on Inorganic Dielectric Layer for FRAM

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Abstract : Among several available high- k dielectrics the lanthanum zirconium oxide (LaZrO_x) system is very attractive as a buffer insulating layer. Because both lanthanum and zirconium atoms, the constituents of the LaZrO_x thin film, have been considered to be thermally stable in contact with Si. The LaZrO_x films were deposited by a sol-gel method. After the deposition, The LaZrO_x films were crystallized at 750 °C for 30 minutes in O_2 ambient. PVDF-TrFE films were deposited on these LaZrO_x/Si structures using a sol-gel technique. The sol-gel solution was spin-coated on LaZrO_x/Si structures at 500 rpm for 5 sec and 2500 rpm for 15 sec. The deposited layer was dried at 165 °C for 30 min in air on a hot-plate. Then, we deposited Au electrode on PVDF-TrFE films using thermal evaporation.

Key Words : LaZrO_x , Ferroelectric, FRAM