

**Effects of annealing temperatures on the electrical properties of
Metal-Ferroelectric-Insulator-Semiconductor(MFIS)structures with various insulators**

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Abstract : Temperature dependence of the ferroelectric properties of poly(vinylidene fluoride-trifluoroethylene) copolymer thin films are studied with various insulators such as SrTa_2O_6 and La_2O_3 . Thin films of poly(vinylidene fluoridetrifluoroethylene) 75/25 copolymer were prepared by chemical solution deposition on p-Si substrate. Capacitance-voltage ($C-V$) and current density ($J-V$) behavior of the Au/P(VDF-TrFE)/Insulator/p-Si structures were studied at (150-200 °C) and dielectric constant of the each insulators were measured to be about 15 at 850 °C for 10 minutes. Memory window width at 5 V bias the MFIS(metal-ferroelectric-insulator-semiconductor) structure with as deposited films was about 0.5 V at high temperature (200 °C). And the memory window width increased as voltage increased from 1 V to 5 V.

Key Words : Ferroelectric, SrTa_2O_6 , La_2O_3 , High-k, MFIS