Abstract Submitted
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Tunneling and fatigue properties of SRO/PZT/Pt structures[1] P. PRIETO, A. CORTES, E. DELGADO[2], J. REALPE, W. LOPERA, Department of Physics, Universidad del Valle, A.A. 25360 Cali, Colombia, THIN FILMS GROUP TEAM — Tunneling and fatigue measurements at different temperatures were carried out in capacitor structures based on $Pb(Zr_{0.52}Ti_{0.48})O_3$ (PZT) ferroelectric thin films with bottom electrodes of $SrRuO_3$ (SRO) and top electrodes of Platinum (Pt). SRO electrodes were deposited on (100) $SrTiO_3$ single crystal substrates using a high oxygen pressure on-axis dc-sputtering technique. PZT films were grown by rf magnetron sputtering in pure oxygen atmosphere. Surface roughness and morphology were studied by atomic force microscopy. Electrical characterization has been realized by P-E hysteresis loops and fatigue measurements. Current-voltage (I-V) characteristics showed a slight hysteretic behavior while the bias voltage dependence of the dynamic conductance measurements presented a parabolic characteristic indicating electron tunneling. I-V curves and conductance measurements also show an asymmetric shape that can be explained by the different work functions at the interfaces. A Brinkman fit of the normalized conductance curves as function of the temperature gives barrier thicknesses below 2 nm.

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[2]jrealpe@calima.univalle.edu.co

Pedro Prieto
Department of Physics, Universidad del Valle, A.A. 25360 Cali, Colombia

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