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**Manganite-based magnetic tunnel junctions on grain
boundary of [100]-tilt type: magnetoresistance and transport
properties ***

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The aim of this work was to study transport and magnetoresistive properties of manganite based magnetic junctions on [100]-tilt bicrystal substrate. Thin film of $La_{0.7}Ca_{0.3}MnO_3$ ($T_{Curie}=250K$) were deposited by pulsed laser deposition technique on $NdGaO_3$ [100]-tilt bicrystal substrates with misalignment of [001] axis on $\pm 11^\circ$ or $\pm 14^\circ$ in plane perpendicular to bicrystal boundary. $R(T)$ of the bicrystal boundary resembles the dependences of the film but with much lower T_{Curie} . Voltage dependencies of differential conductance of the bicrystal boundary were measured at several temperatures and in magnetic fields up to 200 mT. $\sigma(V)$ has sharp dip at zero voltage but rapidly increases and saturates at voltages around 150 mV to the value that corresponds to the conductance of the film without grain boundary. Magnetoresistance of about 150% at zero voltage and in magnetic field perpendicular to the film was obtained at $T=4.2$ K (I.V. Borisenko *et al.* Phys. Sol. St. **51**, 309 (2009)).

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