Stress dependence of transport properties in sr - doped lanthanum titanate thin films

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ABSTRACT

In this study, Sr-doped LaTiO3 (SrxLa1-xTiO3, SLTO, 0.16 < x < 0.86) thin films were grown on the LaTiO3(100), SrTiO3(100) and MgO(100) substrates by the off-axis rf magnetron co-sputtering system. In the experiment, we expect some La3+ ions were replaced by Sr2+ ions, and SrxLa1-xTiO3 thin films showed electrical conduction behavior. As the lattice match is different, SrxLa1-xTiO3 thin films are changed not only the stress between substrates and films, but also the electrical properties. The temperature dependence of resistivity and Hall effect were measured to study the transport properties, and we discussed the influence of lattice stress on SrxLa1-xTiO3 thin films.

Keywords : SrxLa1-xTiO3、lattice stress、Hall effect

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