Functional Oxide Thin Films for Applications in Optical, Electronic and Health

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Transition metal oxides often having a perovskite structure form a wide and technologically important class of compounds. In these systems, ferroelectric, ferromagnetic, ferroelastic, or even orbital and charge orderings can develop and eventually coexist. These orderings can be tuned by external electric, magnetic, or stress field, and the cross-couplings between them enable important multifunctional properties, such as piezoelectricity, or magneto-elasticity. Here, we will present how oxide thins films can be grown not only on single-crystal substrates, but also on different types of substrates including nanosheets, and glass templates. Examples will given to show their utilization for medical, optical or electronic applications.