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Domain Structures of Epitaxial Perovskite Ferroelectric Films: Part II. Applications

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**Abstract:** The use of domain stability maps for epitaxial perovskite ferroelectric films is illustrated with some examples. The equilibrium domain structure and domain fractions as a function of temperature are predicted for  $\text{PbTiO}_3(001)$  films grown epitaxially on three different substrates:  $\text{MgO}(001)$ ,  $\text{KTaO}_3(001)$ , and  $\text{SrTiO}_3(001)$ . Misfit dislocation formation at the growth temperature is found to have a profound effect on both the domain selection and relative domain populations. Theoretical predictions are compared with available experimental data.



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