

Heterogeneous ferroelectric solid solutions : phases and domain states

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Abstrak

The book deals with perovskite-type ferroelectric solid solutions for modern materials science and applications, solving problems of complicated heterophase/domain structures near the morphotropic phase boundary and applications to various systems with morphotropic phases. In this book domain state–interface diagrams are presented for the interpretation of heterophase states in perovskite-type ferroelectric solid solutions. It allows to describe the stress relief in the presence of polydomain phases, the behavior of unit-cell parameters of coexisting phases and the effect of external electric fields. The novelty of the book consists in (i) the first systematization of data about heterophase states and their evolution in ferroelectric solid solutions (ii) the general interpretation of heterophase and domain structures at changing temperature, composition or electric field (iii) the complete analysis of interconnection domain structures, unit-cell parameters changes, heterophase structures and stress relief.