

University of Groningen

Control of periodic ferroelastic domains in ferroelectric $\text{Pb}_{1-x}\text{Sr}_x\text{TiO}_3$ thin films for nano-scaled memory devices

Nesterov, Oleksiy

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2015

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Nesterov, O. (2015). *Control of periodic ferroelastic domains in ferroelectric $\text{Pb}_{1-x}\text{Sr}_x\text{TiO}_3$ thin films for nano-scaled memory devices*. [Thesis fully internal (DIV), University of Groningen]. [S.n.].

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

1. Some scientists prefer to think and plan in the morning and then act; others feel like doing in reverse order, thus they need to plan for the next morning. Both types are usually present in a scientific group. The most efficient collaboration and understanding between them occurs at lunch time.
2. It is possible to rotate a vector of spontaneous polarization in $\text{Pb}_x\text{Sr}_{1-x}\text{TiO}_3$ thin films by the external electric field applied in a direction different to that of the polarization (Chapter 5). This implies that, at least under electric field, the 4-fold symmetry axis is absent and, therefore, the films cannot be tetragonal.
3. It is known that scientists must objectively evaluate experimental data in order to interpret natural effects correctly. Thus thinking like “I want to see some expected results” is your worst enemy. That is why extra care should be taken when analyzing data of an experiment that is performed to test a theoretical prediction.
4. One of the best crystalline quality substrates available in the market for PbTiO_3 thin film growth is DyScO_3 , which happens to be also the most difficult substrate to work with (this thesis).
5. The large kinetic energy intrinsic to thin film growth by Pulsed Laser Deposition is known to provide access to novel materials often in metastable states. Thus, it is possible that at the end of the PhD the samples also get tired and do not keep their properties and structure anymore – that is why you have to be gentle and fast with your measurements.
6. Strain relaxation in PbTiO_3 thin films grown on SrRuO_3 -buffered (110)- DyScO_3 substrate, has a preferable axis (Chapter 3).