Ferroelectricity and the Bulk Photovoltaic Effect at the Nanoscale

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Ferroelecric films at the nanoscale (1- 10nm) show very peculiar properties, including switching kinetics and coercive field scaling. These properties could be successfully explained by the Ginzburg-Landau phenomenology for the homogeneous (without domains) medium.

One of the most remarkable properties of the ferroelectrics at the nanoscale is high efficiency of the bulk photovoltaic effect.

The experimental results are obtained for polymeric and perovskite ferroelectric films at the nanoscale.

References:

1. Vladimir Fridkin and Stephen Ducharme. Ferroelectricity at the Nanoscale (Springer, Berlin-Heidelberg, 2014)
2. Boris Sturman and Vladimir Fridkin. The Photovoltaic and Photorefractive Effects in Noncentrosymmetric Materials (Gordon and Breach Science Publishers, Philadelphia, 1992)