

Ferroelectric-paraelectric phase transition in triglycine sulphate via piezoresponse force microscopy.

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Streszczenie

Triglycine sulphate (TGS) is a widely studied ferroelectric material due to its high pyroelectric coefficients and pure 2nd order phase transition of the order-disorder type. In this work, we report local piezoelectric properties and domain evolution in TGS via piezoresponse force microscopy (PFM) where the ferroelectric-paraelectric phase transition and its domain structure are visualized in a single image while slowly heating the crystal during scanning. Thus, the y-coordinate of the scan represents the temperature and serves as a temperature "lens" to zoom in peculiarities of the domain evolution and paraelectric-ferroelectric phase boundary. Strong shift of the Curie point and broad peak of the second harmonic PFM signal are rationalized in terms of the stabilization of ferroelectric phase at the surface and large contribution of the dielectric constant to the local electromechanical measurements

Słowa kluczowe

TGS, piezoresponse force microscopy, surface phase transition, domain structure

Adres publiczny

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