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Soft mode dispersion and 'waterfall' phenomenon in relaxors revisited

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Abstra

Results ferroelectrics by Gvas dens. Matter 19, 0162 omaly–an apparen rved earlier in lo sent article, we re r with the outcome set-up as Gvasaliy tal artefact. We also a et al., by explorin rse optic branch f closely.

Keywords:

relaxor ferroelectrics waterfall phenomenon phonon dispersions inelastic neutron scattering

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Notes

Notes

1. In th vectors
expresse , c = 4.04 Å,
i.e. c*

2. Fi

3. Apar gnometric
function

4. This in the GHz
region, c is article.

5. We have combined the data from the (200) and (300) BZs as D_q should be independent of the BZ choice.

6. In principle, PMN is known to grow also, for example in pyrochlore structure, but in this case both the lattice parameters and the TO mode frequency are completely different.

7. It was argued in 9 that the TO mode cannot couple noticeably to the TA branch because the independent mode intensities do not change with temperature. However, this not a valid argument since the measurements shown in figure of Ref. 9 were done in (20q) zone, where both TA and TO modes have similar structure factors so that eventual eigenvector change has no chance to produce such drastic intensity changes as those observed in the quoted 9 case of $SrTiO_3$.

Source: Physical Review Letters

Soft Mode Dynamics above and below the Burns Temperature in the RelaxorPb(Mg1/3Nb2/3)O3

Source: Physical Review Letters

Direct evidence of soft mode behavior near the Burns temperature in thePbMg1/3Nb2/3O3relaxor ferroelectric

Source: Unknown Repository

Phonons and fractons in the vibration spectrum of the relaxor ferroelectric PbMg1/3Nb2/3O3

Source: Physica B Condensed Matter

Dirty displacive ferroelectrics

Source: Unknown Repository

Diffuse scattering in $Pb(Zm_{1/3}Nb_{2/3})O_3$with 8 $PbTiO_3$by quasi-elastic neutron scattering

Source: Journal of Physics Condensed Matter

Strong Influence of the Diffuse Component on the Lattice Dynamics in $Pb(Mg_{1/3}Nb_{2/3})O_3$

Source: Journal of the Physical Society of Japan

Neutron Scattering with a Triple-Axis Spectrometer

Source: Unknown Repository

Quasi-elastic scattering, random fields and phonon-coupling effects in $PbMg_{1/3}Nb_{2/3}O_3$

Source: Journal of Physics Condensed Matter

Infrared and Raman spectroscopy of [Pb(Zn1/3Nb2/3)O3]0.92–[PbTiO3]0.08 and [Pb(M

Sourc

Polar

Sourc

Inelas

temp

Sourc

Dyna O3

S

C

Sourc

Soft r b 3]

Sourc

Rama l

comp

Sourc

Aniso

Source: Physical Review Letters

Phase diagram of the relaxor ferroelectric(1−x)Pb(Zn1/3Nb2/3)O3−xPbTiO3
Source: Unknown Repository
Hyper-Raman-active soft mode inPb(Mg1/3Nb2/3)0.73Ti0.27O3
Source: Physical Review B
Lattice Dynamics of Disordered Perovskite $Pb(Zn_{1/3}Nb_{2/3})O_3$
Source: Journal of the Physical Society of Japan
Phonons in PbMg 1/3 Nb 2/3 O 3 Measured by Inelastic Neutron Scattering
Source: Ferroelectrics
Disorder and relaxation mode in the lattice dynamics of thePbMg1/3Nb2/3O3relaxor ferroelectric
Source: Physical Review B
Anomalous transverse acoustic phonon broadening in the relaxor ferroelectricPb(Mg1/3Nb2/3)0.8Ti0.2O3
Source: Unknown Repository
Soft-mode spectroscopy: Experimental studies of structural phase transitions
Source: Reviews of Modern Physics
Nonferroelectric aging in the relaxorPbMg1/3Nb2/3O3
Source: Physical Review B