No. 2A-1 $LiNbO_3$, Lithium niobate

(M = 147.846)

1a Ferroelectricity in $LiNbO_3$ was discovered by Matthias and Remeika in 1949. 49Mat
History of $LiNbO_3$: see 89Nas

b

phase	II	I	[a])67Nii
state	F	P	[b])66Abr1
crystal system	trigonal	trigonal	
space group	$R3c - C_{3v}^6$ [b])	$R\bar{3}c - D_{3d}^6$ [a])	
Θ_f [°C]	1210(10)		65Nas1

Review paper: see 89Bri
P_s || [001] of hexagonal unit cell. 66Abr2
T_{melt} = 1253 °C. 58Rei
Review paper: see 89Gra1
$\rho = 4.4640 \cdot 10^3\ kg\,m^{-3}$ at T = 4 °C. 66Abr2
Review paper: see 89Gra2
Color: light yellow, breach by heat treatment in oxygen atmosphere. 66Nas
Vickers hardness number: Fig. 2A-1-001.
Phase relation: Fig. 2A-1-002.
Congruent melt composition: Li_2O/Nb_2O_5 = 48.45/51.55, Θ_f = 1138(2) °C. 85OBr
About the stoichiometry: see 89Abr
Θ_f: Table 2A-1-001; Fig. 2A-1-003, Fig. 2A-1-004, Fig. 2A-1-005.
Cleavage plane: (012). 80Kam
Phase transition under high pressure: Fig. 2A-1-006, Fig. 2A-1-007; see also 85Got
Anomalies in optical and other physical properties at around 100 °C have been reported by many authors. The nature which gives these anomalies has not been explained, however, the experimental results indicate that the anomalies seem to be related to the nonstoichiometry of crystals.
See, for example 85Che, 86Eng, 87HuX, 87Gal
Glassy states and phases: see 83Mae, 83Tat, 79Nas
Preparation of ilmenite structure from $NaNbO_3$ by ion exchange reaction: see 85Kum
A summary of physical properties and crystal structure: see 85Wei
A monograph on $LiNbO_3$: see 90Pro
Epitaxial growth of $LiNbO_3$: see 89Pit

2a Phase diagram: Fig. 2A-1-008, Fig. 2A-1-009.
Crystal growth: Czochralski method. 65Bal, 65Fed, 66Nas
Czochralski growth (review paper): see 89Fra1
Stepanov's technique (review paper): see 89Pol
Growth of large crystals by Czochralski method: see 88Gra
Stoichiometric single crystal growth by double crucible Czochralski method using automatic powder supply system: see 92Kit
Growth of off-congruent single crystals by the double crucible method: see 93Fur

	Preparation of off-congruent crystals by vapor transport equilibrium (VTE) method: see	92Bor
	Preparation of thin films by sol-gel method: see	94Hur
	Single crystal fibers by micro-pulling down method: see	94Yoo1
	Periodically poled crystals by laser-heated pedestal growth: see	90Mag
	Effect of an electric field on the growth of single crystals: see	91Rei
	Cutting and polishing: see	89Fra2
	Poling: see	89Fra3
	Proton-exchange (review papers): see	89Won1, 89Won2, 89Hin1
3a	a_{hex} = 5.1483 Å, c_{hex} = 13.863 Å and a_{rh} = 5.4944 Å, α = 55°52' at 23 °C.	66Abr2
	a = 5.14739(8) Å, c = 13.85614(9) Å for the stoichiometric composition,	
	a = 5.15052(6) Å, c = 13.86496(3) Å for the congruent composition.	86Abr
	Change in c/a and V due to hydrostatic pressure: Fig. 2A-1-006, Fig. 2A-1-007.	
	Change in lattice constants with stoichiometry: Fig. 2A-1-010.	
	Lattice parameters (a review paper): see	89Gra3
	Lattice parameters of epitaxial films (a review paper): see	89Kan1
b	Z = 4 in hexagonal unit cell, Z = 2 in rhombohedral unit cell.	66Abr2
	Crystal structure: Tables 2A-1-002...2A-1-006; Figs. 2A-1-009...2A-1-012.	
	The structure of congruent composition is expressed by $[Li_{1-5x}Nb_{5x}]Nb_{1-4x}O_3$ with x = 0.0118(7), i.e. all the Li sites are occupied by Li^+ and Nb^{5+} ions leaving vacancies at Nb sites.	86Abr
	Crystal structure of proton-exchanged waveguides: see	94Fei
4	Thermal expansion coefficients: $\alpha_a^{(1)} = 0.154\cdot10^{-4}\,°C^{-1}$, $\alpha_a^{(2)} = 0.053\cdot10^{-7}\,°C^{-2}$; $\alpha_c^{(1)} = 0.075\cdot10^{-4}\,°C^{-1}$, $\alpha_c^{(2)} = -0.077\cdot10^{-7}\,°C^{-2}$, where $\Delta a/a = \alpha_a^{(1)}(T-T_0) + \alpha_a^{(2)}(T-T_0)^2$, $\Delta c/c = \alpha_c^{(1)}(T-T_0) + \alpha_c^{(2)}(T-T_0)^2$, with T_0 = 25 °C.	71Smi
	Fig. 2A-016, see also a review paper	89Tay
	Thermal expansion: Figs. 2A-1-013...2A-1-019.	
5a	Dielectric constant (T = RT): Table 2A-1-007.	
	Dielectric constant (ceramics): Fig. 2A-1-020, Fig. 2A-1-021.	
	Dielectric constant (stoichiometry dependence): Fig. 2A-1-022.	
	Dielectric constant (frequency dependence): Figs. 2A-1-023...2A-1-030.	
	Dielectric constant in optical region: see Fig. 2A-1-080 in 9a.	
	Dielectric constant (temperature dependence): Figs. 2A-1-031...2A-1-036.	
	Dielectric constant (a small amount of Fe-doping): Figs. 2A-1-037...2A-1-040.	
	Dielectric constant (thin films): Figs. 2A-1-041...2A-1-043.	
	Dielectric constant (pressure dependence): Fig. 2A-1-044, Fig. 2A-1-045.	
	Effect of X-ray irradiation on κ_a, κ_c, $\tan\delta_a$, $\tan\delta_c$: see	88Sin
	κ vs. T, $\tan\delta$ vs. T of eutectic composition of $LiNbO_3$ and $3Li_2O\cdot Nb_2O_5$: see	78Sin
	κ vs. T (amorphous thin film) at 1 kHz...1 MHz, $\kappa_{max} \approx 10^4$ at 350 °C in a heating process: see	81Mit
	Vitreous specimens prepared by roller quenching exhibit $\kappa > 10^5$ close to the crystallization temperatures: see	77Gla
	A review paper on dielectric constant: see	89Tom1
b	Nonlinear dielectric properties: Table 2A-1-008.	
c	Spontaneous polarization: P_s = 0.71 C m^{-2}.	68Wen
	Fig. 2A-1-047, Fig. 2A-1-048.	

	$LiNbO_3$:Fe: effect of the impurities on P_s in the low temperature region: see	91Ese
	Point defects and singularities of low temperature behavior of P (a review paper): see	91Nov
d	Pyroelectricity: $p_3 = -8.3 \cdot 10^{-5}$ C K^{-1} m^{-2} (primary effect: $-9.59 \cdot 10^{-5}$ C K^{-1} m^{-2}, secondary effect: $1.29 \cdot 10^{-5}$ C K^{-1} m^{-2}) at RT.	80Bha
	See also	75Bee
	Fig. 2A-1-049, Fig. 2A-1-050.	
	Data for calculating figure of merits: see	75Bee
	Pyroelectric coefficient (a review paper): see	89Wei1
	Point defects and singularities of low temperature behavior of p (a review paper): see	91Nov
6a	Heat capacity: $C_p = 89$ J K^{-1} mol^{-1} at 100 °C.	75Bee
	Fig. 2A-1-051.	
	See also a review paper	89Lin1
	Thermal conductivity: Fig. 2A-1-052.	
	See also a review paper	89Lin2
	Thermal diffusivity: Fig. 2A-1-053.	
	See also a review paper	89Lin3
7a	Piezoelectricity: see Table 2A-1-007 in 5a; Fig. 2A-1-054.	
	See also review papers	89Bal, 89Cho1
	Elastoelectric properties: see	82Chi
b	Electrostriction: Table 2A-1-010.	
	See also a review paper	89Cho2
c	Third order piezoelectric constant: $e_{222} = 21$ C m^{-2}, $e_{333} = -21$ C m^{-2}.	
	Table 2A-1-009, Table 2A-1-011.	
8a	Elastic compliance and stiffness: see Tables 2A-1-007 in 5a;	
	Fig. 2A-1-055, Fig. 2A-1-057.	
	Compliance (review paper): see	89Tom2
	Stiffness (review paper): see	89Tom3
	Acoustic properties: Table 2A-1-012; Fig. 2A-1-056, Fig. 2A-1-058.	
	Velocity of ultrasonic bulk waves (review paper): see	89Pea
	Attenuation of ultrasonic bulk waves (review paper): see	89Lew1
	Temperature dependence of the frequency of plate resonators: see	76Bur
	Effect of γ-irradiation: see	77Sor
	Hypersonic attenuation: Figs. 2A-1-059...2A-1-061; see also	71She, 71Lie, 72Maj, 76Gri
	Surface acoustic waves (SAWs): Table 2A-1-013; Figs. 2A-1-062...2A-1-065.	
	The 127.86° rotated Y-cut X propagation mode has a low bulk spurious response level as well as a high coupling coefficient.	76Shi
	Effect of film loading: see	75Par1
	Interaction with guided optical wave: see	76Lea
	Interaction with semiconductor: see	75Gun
	Velocity of SAWs (a review paper): see	89Hin2
	Attenuation of SAWs (a review paper): see	89Lew2
	SAW properties of common orientations (a review paper): see	89Mor
	Velocity of SAWs on proton-exchanged crystals (a review paper): see	89Hin3
	Velocity of SAWs on ion-implanted crystals: see	89Hin4, 73Lar, 75Har

	Velocity of SAWs on in-diffused crystals: see	89Hin5, 75Sch
	SAW properties of proton-exchanged crystals: see	86Bur
	Application of surface acoustic waves in acoustooptics: see	80Ali
b	Nonlinear elastic properties: Table 2A-1-014, Table 2A-1-015; Fig. 2A-1-066.	
	Third order elastic constants (a review paper): see	89Cho3
	Nonlinear coupling in surface wave: see	77Ali
9a	Refractive index: Tables 2A-1-016...2A-1-019; Figs. 2A-1-067...2A-1-076.	
	Refractive index of wavelength dependence: discussion (a review paper): see	89Kir1
	Refractive index of wavelength dependence: tables (a review paper): see	89Kir2
	Refractive index of epitaxial films (a review paper): see	89Kan2
	$n_o = 7.2$, $\tan\delta = 2.5\cdot10^{-3}$ for f = 126...132 GHz,	70Vol
	$n_o = 7.2(2)$ for λ = 2.3 mm.	70Vin
	Refractive index change in $LiNbO_3$:Ti waveguides: see	88Fri
	Birefringence: Table 2A-1-001; Figs. 2A-1-077...2A-1-079.	
	Δn = 1.57 at RT for λ = 2...3 mm.	70Iri
	Reflection: Figs. 2A-1-080...2A-1-084.	
	Transmission: Fig. 2A-1-085.	
	Absorption: Figs. 2A-1-086...2A-1-089, Fig. 2A-1-076.	
	IR spectra of hydroxyl ions (review paper): see	89Kov1
	Absorption spectra of bulk $LiNbO_3$ (review paper): see	89Kan3
	Infrared absorption band caused by OH^+ ions in a $LiNbO_3$:MgO:Cr crystal: see	88Kov
b	Electrooptic effect: Table 2A-1-020; see also Table 2A-1- 001 in 1b.	
	Fig. 2A-1-090.	
	$r_{13}^S = +7.7\cdot10^{-12}$ mV^{-1}, $r_{33}^S = +28.8\cdot10^{-12}$ mV^{-1},	
	$r_{51}^S = +18.2\cdot10^{-12}$ mV^{-1}, $r_{22}^S = +3.4\cdot10^{-12}$ mV^{-1} for λ = 633 nm.	80Kam
	$r_{33}^T = 44(6)\cdot10^{-12}$ mV^{-1} for λ = 0.7...2 mm.	83Bro
	$r_{22}^T = 10(2)\cdot10^{-12}$ mV^{-1} for λ = 2.3 mm.	70Vin
	Electrooptical behavior of proton-exchanged optical waveguides: see	88Rot
	Electrooptic coefficients (a review paper): see	89Kir3
c	Piezooptic effect: Table 2A-1-021.	
	$\Pi_{12} - \Pi_{11} = 1.02\cdot10^{-12}$ m^{2}N^{-1}, $\Pi_{33} - 1.12\ \Pi_{13} = 0.808\cdot10^{-12}$ m^{2}N^{-1},	
	$\Pi_{31} - 1.12\ \Pi_{11} = 0.687\cdot10^{-12}$ m^{2}N^{-1}.	66Spe
	Table 2A-1-022.	
d	Photoelastic coefficients (a review paper): see	89Wei2
	Faraday effect: Fig. 2A-1-091.	
	Optical activity in $LiNbO_3$: Fe induced by light illumination was discovered: see	88Kos
e	Nonlinear optical property:	
	$d_{22} / \left\|d_{36}^{KDP}\right\| = +6.5$, $d_{31} / \left\|d_{36}^{KDP}\right\| = d_{15} / \left\|d_{36}^{KDP}\right\| = -12.3$, $d_{33} / \left\|d_{36}^{KDP}\right\| = -86$ at RT for	69Bec,
	λ = 1.058 mm.	70Mil
	Figs. 2A-1-092...2A-1-094, see also Fig. 2A-1-002 in 1b.	
	Nonlinear millimeter wave susceptibility: $d_{33} = 5.87\cdot10^{-9}$ mV^{-1} for λ = 857 mm (f = 35 GHz).	83Ahn
10a	Raman scattering: Table 2A-1-023; Figs. 2A-1-095...2A-1-103.	
	The difference between $c(aa)b$ and $\bar{c}\,(aa)b$ geometries in Raman and Rayleigh scattering has been pointed out.	83Sem
	Raman spectra of undoped crystal (review paper): see	89Sco1

	Raman spectra of doped crystal (review paper): see	89Sco2
	New low frequency Raman modes from proton-exchanged crystals: see	95WuX
	Raman scattering of $LiNbO_3$:Ti channel waveguides: see	91HuL
	Raman study of hydrogen in crystals: see	87Jov
	Raman scattering of MgO-doped crystals: see	93Ram
	Raman scattering under high pressure: see	86Jay, 84Men
	Raman scattering: see also	87Vor, 87Yan
b	Brillouin scattering: Table 2A-1-024.	
	Brillouin scattering in pure and Fe, Cr doped crystals: see	87Jia
	Rayleigh scattering: effect of photorefraction in Fe-doped crystals, see	83Dmi
11	Conductivity: Figs. 2A-1-104...2A-1-109.	
	Conductivity (data review): see	89Kov2
	Thin film conductivity: Fig. 2A-1-110.	
	Additional information on the electrical transport process: see	76Ava1, 73Ant
	Electrical resistivity: Fig. 2A-1-111.	
	Bulk and surface resistivity: see	94Len
	Humidity dependence of surface resistance: see	92Mae
	Electron drift mobility: $\mu = (1.4...8.8)\cdot 10^{-13} m^2 V^{-1} s^{-1}$ along the *x* axis at RT for crystals with Li/Nb ratio of 0.92...0.98.	86Bun
	Photoconductivity: Figs. 2A-1-112...2A-1-114; see also	73Ion, 75Ohm, 85Wan, 86Ger
	Photoconductivity of $LiNbO_3$:MgO:Nd: see	90Fen1
	Photo-Hall mobility: $(\mu_H)_{ph} \cong 10^{-1}\ m^2\ V^{-1}\ s^{-1}$ for 0.05 wt% Fe-doped crystals.	81Lev
	Photovoltaic effect: Fig. 2A-1-115, Fig. 2A-1-116; see also	84Fri
	Photoconductivity and photovoltaic behavior of $LiNbO_3$ and $LiNbO_3$ waveguides at high optical intensities: see	92Gor
	Li^+ ionic conductivity: Fig. 2A-1-117.	
	Influence of H-D isotropic substitution on the protonic conductivity: see	92Kla
	Exoelectron emission: see	80Ros
	Photoluminescence: Fig. 2A-1-118.	
	Luminescence of $LiNbO_3$ (review paper): see	89Tow
	Luminescence from doped ions: see	75Par2, 66Bur, 69Gla
	X-ray induced luminescence: see	81Ari
	Electroluminescence: see	84Par
	Cathodoluminescence: see	84Llo
	Ion beam induced luminescence: see	87Hay
	Acoustoluminescence: see	85Ost
	Stimulated light emission from doped Nd^{3+} ions: see	69Joh
	Seebeck effect: Fig. 2A-1-119, Fig. 2A-1-120.	
	Light induced charge transport in MgO doped crystals: see	88Som
	Composition dependence of the absorption edge: see	86Liu
13a	NMR: Table 2A-1-025; Figs. 2A-1-121...2A-1-126.	
	See also	93Min
	NMR of ^8Li: see	93Min

	NMR spectra of Mg nuclei in Mg-doped crystals: see	90Fen2
b	ESR: Tables 2A-1-026...2A-1-033; Figs. 2A-1-127...2A-1-129.	
	See also	86Jup, 86Kor, 86Mal
	ESR spectra of impurities and defects (a review paper): see	89Hal
	ESR of Nb_{Li}^{4+} and Ti_{Li}^{3+} :	94Rey
	ESR of X-ray irradiated crystals:	89Mik
	Surface acoustic wave, acoustic paramagnetic resonance of Fe^{2+}:	90Cho
	ESR studies of Fe^{3+} in Mg-doped crystals:	90Fen3
	ESR of Cr^{3+} in $LiNbO_3$:MgO:Cr^{3+}:	91Cor1, 91Cor2
	ESR of Mn^{2+}:	91Cor2
	ESR of Co^{2+}. $g_{\parallel} = 2.59$, $g_{\perp} = 5.04$, $A_{\parallel} \approx 0$, $\lvert A_{\perp}\rvert = 153 \cdot 10^{-2}$ m^{-1}.	87Don
	ESR of Cr^{3+}:	86Cho1
	ESR of Ti^{3+}:	86Jup
	ESR of Ni^{+}, Cu^{2+}:	86Kor
	ENDOR: Fig. 2A-1-130, Fig. 2A-1-131.	
	ENDOR of Mn^{2+} and Cr^{3+}: see	92Cor
c	Mössbauer effect: Figs. 2A-1-132...2A-1-136; see also	76Gon, 76Keu 89Tom4
	Mössbauer effect of ^{57}Co: see	90Leu
	Mössbauer study of proton-exchanged crystals: see	90Eng
	Magnetic field and temperature dependence of Mössbauer spectra in $LiNbO_3$:^{57}Fe(III): see	92Pfa
	Mössbauer study of amorphous $LiNbO_3$: see	87Eng, 89Eng, 92Den
	Mössbauer study of binary system $LiNbO_3$-Fe_2O_3: see	88Mou
14a	Small ionic displacements under electric fields applied along the *c* axis have been observed by a modulation X-ray diffraction technique.	82Fuj
	Structural defect study by means of X-ray topography: see	93Mor1
	Lang X-ray diffraction topography: see	90Zha
b	Inelastic scattering: Table 2A-1-034; Fig. 2A-1-137.	
c	EXAFS: Table 2A-1-035.	
	EXAFS of Co and Fe doped crystals: see	91Cat1
	EXAFS of Hf and Ta doped crystals: see	91Pri
	EXAFS of Ti and Ni doped crystals: see	91Zal
15a	Observation of domain structure	
	by optical microscope: see	89Che
	by etching method: see	65Nas2
	by X-ray topographic method: see	67Nii, 71Evl, 70Aza, 70Wal, 72Des, 73Sug, 74Kra
	by nonlinear optical visualization of 180°- domains: see	94Otk

Proton-exchanged $LiNbO_3$:MgO optical waveguides using adipic acid: see	93Pun
70 keV Eu^+ implantation: see	93Mor
Fabrication of channel waveguides using distilled water: see	92San
Amorphization of the surface layer by Hf^+ implantation: see	92Reb2
High-energy electron irradiation of stoichiometric crystals: see	89Hod
Proton-exchange by pyrophosphoric acid: see	89Got
Damage distributions induced by MeV F^+ tilted implantations: see	94Wan
Outdiffusion of protons and deuterons by electron irradiation: see	91Gon
Laser etching: see	88Bee
Emission of O^+ ion by low energy (1 keV) electron bombardment: see	88Kle
Transmutation-induced tritium in crystals by the irradiation with thermal neutrons: see	88Gon
Laser-induced surface reduction: see	88Eye
Lattice disorder and refractive index changes by helium implantation (a review paper): see	86Bar2
Hg^+ and Xe^+ implantations: see	94Wan
Reactive ion etching (a review paper): see	89Pit2
Ion beam milling and reactive ion-beam etching (a review paper): see	89Pit3
Chemical etching (a review paper): see	89Pit4
Surface layer: examination by laser pulse: see	77Zve
Etchant: mixed solution of hydrofluoric acid and nitric acid at its boiling point: see	65Nas2
Electron spectroscopic studies of surfaces: see	81Rit
Electron diffraction study of the superlattice of (0001) surface: see	86Rak
Chemomechanical polishing of wafers: see	94Bev
RHEED study of annealed surface: see	93Rak
Influence of annealing on state of surface layers: see	89Nik
Humidity dependence of surface resistance: see	92Mae
Optical damage: change of refractive indices occurs in the region illuminated by laser beams.	66Ash
Photochromic and photorefractive effects in doubly doped crystals: see	91Ava
Photorefractive effects: see	89Won3, 78Gla, 81Dat, 87Shv
Changes in photorefractive and photogalvanic characteristics under the light (a review paper): see	87Kan1
Surface photorefractive effect: see	86Bar
$LiNbO_3$:In high resistance to photorefraction: see	95Kon
Stabilization of holograms in $LiNbO_3$ (review paper): see	89Rin1
Holograms in $LiNbO_3$: basic material properties (review paper): see	89Rin4
Holograms in $LiNbO_3$: dynamic holography (review paper): see	89Rin3
Review and application to holographic information storage: see	75Von
Holographic aspects of optical damage (review paper): see	89Rin2
$LiNbO_3$ integrated optics (review paper): see	93Law
Optical waveguide: many fabrication techniques have been reported;	
by out-diffusion, see	73Kam
by in-diffusion, see	74Sch
by melt phase epitaxy, see	73Miy, 76Fuk
by liquid phase epitaxy, see	75Bal, 75Miy
by sputtering, see	74Tak
by ion implantation, see	75Tie
Waveguides and thin films:	
Optical modulator applications, see	82Alf

Integrated optics applications, see	86Alf
Nonlinear integrated optics applications, see	85Ste
Optical damage resistant thin-film waveguides grown by liquid-phase epitaxy: see	94Kon
Voltage-induced optical waveguide modulator: see	89Jae
Comparison of optical damage in different types of waveguides: see	89Gla
Proton-exchanged periodically segmented waveguides: see	94Thy
$LiNbO_3$:MgO:Nd waveguide laser and amplifier: see	90Lal1
Waveguide laser using $LiNbO_3$:MgO:Nd: see	90Lal2
Fabrication of proton-exchanged waveguides using stearic acid: see	90Mac
Proton-exchanged waveguides using octanoic acid: see	92Pun
Er^{3+} doped waveguide laser: see	91Bri
Proton-exchanged optical waveguides using toluic acid: see	92Loi
Channel waveguide integrated optics (a review paper): see	88Sym
Ti-diffused waveguide devices: see	88Alf
Optical waveguides produced by Ti-in-diffusion, ion exchange, ion implantation (a review paper): see	88Car
$LiNbO_3$:Ti:Er waveguide amplifiers: see	84Bri
Optical waveguide properties of $LiNbO_3$ thin films: see	93Shi
Integrated-optic devices for optical communication: see	87Vog
Second harmonic generation for the analysis of substrates and boules: see	87Lum
Optical properties of Ag^+ ion implanted crystals: see	94Sha
Anomalies in the temperature dependence of optical properties of metal-doped single crystals: see	91Sha
Optical and structural properties of MeV Er-implanted crystal: see	94Fle
Increase in optical damage resistance in Sc_2O_3-doped crystal: see	92Yum
Construction of a narrow-band interference filter with photorefractive effect: see	94Mul
Optical mixing coefficients in $LiNbO_3$ (a review paper): see	89Cho4
Optical detection of compositional inhomogeneities in Czochralski-grown crystals: see	94Suz
Three-dimensional visualization of 180° ferroelectric domains by electrooptic effects: see	89Otk
Defect: see	74Jar
Point defects: see	89Agu
Nonstoichiometry and the defect structure: see	94Kuz
Defect formation by γ-ray irradiation: see	89Kor
Defect chemistry of MgO-doped crystals: see	90Fen4
Characterization of dislocations in a single crystal grown by micro pulling down method: see	94Yoo1
Suggested vacancy structure models for congruent crystal: see	84Zot
OH-related defects in metal doped $LiNbO_3$:MgO: see	90Kov
Point defects and singularities of low temperature behavior of P_s and p: see	91Nov
Impurity diffusion: Table 2A-1-035.	
Stark effect in $LiNbO_3$ doped with rare earth elements (a review paper): see	89Skv
Yield stress of $LiNbO_3$ (a review paper): see	89Pet
Crystal quality characterization by γ-ray diffraction: see	86Aub
Ti site study in $LiNbO_3$:Ti by means of γ-γ perturbed angular correlated PIXE-channeling technique: see	94Hau
Lattice distortion study of 1MeV Cu ion implantation by Rutherford backscattering / channeling technique: see	92Shi
Lattice sites for transition and rare-earth impurities by ion-beam channeling methods: see	92Reb1
Analysis of diffusion of various elements: see	93Bir
He ion channeling on kV $^{19}F^+$ implanted crystals: see	94Tan
Diffusion of tritons, deuterons, and protons: see	89Gon
Electrical characterization of thin films by RF sputtering on silicon substrates: see	90Bau
Transmission electron microscope observation of plastically deformed crystal: see	91Pet

Physical structure of thin films: see	91Ros
Growth of MgO doped single crystal fibers by a drawing down method: see	91Ogu
Lattice site of iron in Fe^{3+}-doped crystal by PIXE/channeling technique: see	91Reb
Lattice site investigation for Mg in $LiNbO_3$ by combined RBS-PIXE-NRA channeling experiment: see	91Kli
Electron microscopic study of doped and proton-exchanged crystals: see	88Bur
Transmission electron microscope study of Ti-doped, congruent crystals: see	88Twi
Electron microscopic observation and electron diffraction study of proton-exchanged crystals: see	88Yan
$^{181}Hf \rightarrow {}^{181}Ta$ perturbed-angular correlation spectroscopy: Fig. 2A-1-137.	
PIXE, RBS and NRA yield profiles: Fig. 2A-1-138.	
Thermally stimulated charge emission and thermally stimulated light emission: Fig. 2A-1-139.	
Emission of electrons by illumination by light: see	88Roz
Plastic deformation of single crystals: see	87Fri
Efficiency of bulk acoustic wave convolvers (a review paper): see	89Cho5
Efficiency of transverse horizontal SAW convolvers usage (a review paper): see	89Cho6
Efficiency of transverse vertical SAW convolvers (a review paper): see	89Cho7
A review of signal processing using SAWs on $LiNbO_3$: see	89Lew3
Miniaturized chip resonator: see	86Fuj
Electric field sensor using $LiNbO_3$ optical modulator: see	91Taj

Table 2A-1-001. $LiNbO_3$ (undoped and Mg-, Ti-doped). Ferroelectric transition temperatures, birefringence and electrooptic constants [83Hol].

Crystal	Θ_f [°C]		$n_o - n_e$		r_{13} [$\cdot 10^{-12}$ mV^{-1}]		r_{33} [$\cdot 10^{-12}$ mV^{-1}]	
		λ [μm]	0.6328	1.32	0.6328	1.32	0.6328	1.32
undoped (congruent)	1130(2)		0.0837	0.0622	11.0(5)	10.3(10)	36.7(5)	34.1(10)
Mg-doped (10 mol%)	1160(2)		0.0861	0.0691	11.2(5)	9.7(10)	36.0(5)	34.0(10)
Ti-doped (3 mol%)	1130(2)		0.0804	0.0635	10.7(5)	9.3(10)	36.6(5)	33.6(10)

Table 2A-1-002. $LiNbO_3$. Fractional coordinates and temperature parameters of atoms in the unit cell [66Abr2]. *B* is defined by Eq. (e) in Introduction.

Atom	*x*	*y*	*z*	*B* [Å^2]
Nb	0	0	0	0.50(1)
O	0.0492(4)	0.3446(5)	0.0647(4)	0.43(2)
Li	0	0	0.2829(23)	0.94(32)

Table 2A-1-003. $LiNbO_3$. Fractional coordinates and temperature parameters of atoms in the unit cell [66Abr1]. *B* is defined by Eq. (e) in Introduction.

T	[°C]	24	250	500	750	1000	1200
B(Nb)	[Å^2]	–0.78(15)	–0.74(14)	–0.19(10)	–0.10(24)	0.39(24)	0.77(36)
z(Li)		0.2677(112)	0.2752(68)	0.2758(37)	0.2803(63)	0.2798(38)	*)
B(Li)	[Å^2]	1.12(248)	0.14(192)	–0.46(106)	–2.10(212)	–4.51(121)	*)
x(O)		0.0437(69)	0.0398(67)	0.0518(46)	0.0415(113)	0.0549(123)	0.0634(201)
y(O)		0.3309(82)	0.3238(89)	0.3318(65)	0.3073(188)	0.3253(198)	0.3375(315)
z(O)		0.0636(12)	0.0656(15)	0.0665(10)	0.0683(24)	0.0677(23)	0.0702(57)
B(O)	[Å^2]	–1.07(56)	–0.59(54)	0.04(34)	0.28(79)	0.09(88)	1.26(119)

*) Not determinable.

Table 2A-1-004. $LiNbO_3$. Interatomic distances and angles at 24 °C [66Abr2].

Distance	[Å]	Distance	[Å]	Angle	[°]	Angle	[°]
Nb–Nb	3.765(0)	O–O	2.719(4)	O–Nb–O	80.1(2)	O–Li–O	74.8(9)
Li–Li	3.765(0)		2.801(1)		88.7(1)		81.0(3)
Nb–O	1.889(3)		2.840(1)		90.3(1)		89.8(4)
	2.112(4)		2.879(4)		99.3(2)		108.7(9)
			3.042(2)	Average	89.6	Average	88.6
Nb–Li	3.010(31)		3.362(4)				
	3.054(7)						
	3.381(15)	Li–O	2.068(11)				
	3.922(31)		2.238(23)				

Table 2A-1-005. $LiNbO_3$. Refined parameters for the neutron powder diffraction for displacive model [94Boy]. *n*: occupancy. The temperature parameters β_{ij} are defined by Eq. (c) in Introduction. In addition to the usual weighted profile agreement indicator

$R_{wp} = \left[\sum w\left(y_{obs} - y_{calc}\right)^2 / \sum w y_{obs}^2 \right]^{1/2}$ and the corresponding goodness-of-fit

$GOF_{wp} = R_{wp}/R_{pexp} = [w\,(y_{obs} - y_{calc})^2/(m - p)]^{1/2}$ [*y* are the individual profile intensities, *w* their weights, *m* their number and *p* the total (=structural + instrumental) number of refinable parameters], the weighted *R* factor for the integrated intensities $R_{wI} = [R_{wp} = [\Sigma W(I_{obs} - I_{calc})^2/\Sigma W I^2_{obs}]^{1/2}$ is given. This allows comparison with a statistically expected R_{Iexp}: $GOF_{wI} = R_{wI}/R_{Iexp} = [\Sigma W(I_{obs} - I_{calc})^2/(M - P)]^{1/2}$, where *I* are the reflection intensities, *W* their weights, *M* the number of reflections and *P* the number of structural parameters only.

T [K]	300	1200	1350	1450	1480	1505
	R3c	R3c	R3c	$R\bar{3}c$	$R\bar{3}c$	$R\bar{3}c$
z(Li)	0.3021(9)	0.2885(17)	0.2850(10)	1/4	1/4	1/4
z(Nb)	0.0192(3)	0.0127(3)	0.0090(7)	0	0	0
x(O)	0.0478(4)	0.0573(6)	0.0564(11)	0.0591(4)	0.0602(6)	0.0598(18)
y(O)	0.3428(7)	0.3361(10)	0.3299(19)	1/3	1/3	1/3
n(Li)	1.02(4)	0.85(3)	0.87(4)	0.92(4)	0.91(6)	1.03(21)
n(Nb)	1.02(1)	1.00(1)	1.02(1)	1.01(1)	1.03(2)	1.00(6)
β_{11}(Li)	0.014(6)	0.040(5)	0.054(8)	0.043(7)	0.028(9)	0.053(33)
β_{33}(Li)	0.006(2)	0.014(3)	0.002(2)	0.039(3)	0.033(5)	0.053(21)
β_{11}(Nb)	0.003(2)	0.020(1)	0.021(1)	0.021(1)	0.021(2)	0.014(6)
β_{33}(Nb)	0.0003(–) [*]	0.0018(2)	0.0015(2)	0.0021(2)	0.0027(3)	0.0027(9)
β_{11}(O)	0.001(2)	0.030(2)	0.034(5)	0.029(1)	0.030(2)	0.028(6)
β_{22}(O)	0.002(1)	0.020(1)	0.021(1)	0.027(1)	0.023(2)	0.019(6)
β_{33}(O)	0.0006(1)	0.0027(1)	0.0036(2)	0.0035(1)	0.0032(2)	0.0027(6)
β_{12}(O)	–0.002(1)	0.012(2)	0.018(4)	0.013	0.012	0.009
β_{13}(O)	0.0005(5)	–0.0035(7)	–0.0051(8)	–0.0023(1)	–0.0023(2)	–0.0018(6)
β_{23}(O)	–0.0006(3)	–0.0034(2)	–0.0047(3)	–0.0046	–0.0047	–0.0035
a [Å]	5.1513(8)	5.2542(6)	5.2718(8)	5.2850(8)	5.2898(12)	5.2924(36)
c [Å]	13.8654(8)	13.8759(6)	13.8604(9)	13.8488(8)	13.8485(12)	13.8462(39)
R_{wp} [%]	9.62	6.81	9.37	8.60	12.98	13.17
GOF_{wp}	2.74	2.04	1.33	1.97	1.59	2.69
R_{wl} [%]	4.87	1.68	4.74	4.46	8.63	9.23
GOF_{wl}	6.40	2.34	2.98	4.17	4.25	7.49

[*]) At room temperature Nb was refined isotropically to avoid (non-significant) negative β_{33}.

Table 2A-1-006. $LiNbO_3$. Refined parameters for the neutron powder diffraction for disorder model [94Boy]. See also the caption of Table 2A-1-005.

T [K]	1200	1350	1450	1480	1505
	R3c	R3c	$R\bar{3}c$	$R\bar{3}c$	$R\bar{3}c$
z(Li)	0.2875(17)	0.2762(13)	0.2813(8)	0.2812(10)	0.2905(39)
z(Nb)	0.0128(4)	0.0093(7)	0	0	0
x(O)	0.0576(6)	0.0569(9)	0.0595(3)	0.0607(5)	0.0597(15)
y(O)	0.3369(11)	0.3297(15)	1/3	1/3	1/3
n(Li)/n(Li')	0.75(8)/0.10(8)	0.33(7)/0.57(8)	0.85(3)	0.85(5)	1.00(18)
n(Nb)	1.00(1)	0.99(1)	1.01(1)	1.04(2)	0.99(6)
β_{11}(Li)	0.040(5)	0.070(9)	0.047(6)	0.030(8)	0.059(33)
β_{33}(Li)	0.012(4)	0.002(1)	0.001(1)	0.002(2)	0.003(6)
β_{11}(Nb)	0.020(1)	0.018(1)	0.021(1)	0.020(2)	0.013(6)
β_{33}(Nb)	0.0018(2)	0.0019(2)	0.0017(2)	0.0023(3)	0.0026(9)
β_{11}(O)	0.028(2)	0.036(5)	0.028(1)	0.028(2)	0.029(6)
β_{22}(O)	0.0200(9)	0.022(1)	0.026(1)	0.022(2)	0.019(6)
β_{33}(O)	0.0027(1)	0.0034(2)	0.0034(1)	0.0029(2)	0.0024(6)
β_{12}(O)	0.011(2)	0.018(4)	0.013	0.011	0.010
β_{13}(O)	–0.0030(8)	–0.0020(10)	–0.0023(1)	–0.0024(2)	–0.0019(6)
β_{23}(O)	–0.0034(2)	–0.0047(3)	–0.0047	–0.0047	–0.0037
a [Å]	5.2542(6)	5.2719(8)	5.2849(8)	5.2897(12)	5.2923(36)
c [Å]	13.8759(6)	13.8601(8)	13.8481(8)	13.8476(12)	13.8451(36)
R_{wp} [%]	6.81	9.05	8.51	12.66	12.62
GOF_{wp}	2.04	1.29	1.95	1.55	2.58
R_{wl} [%]	1.68	4.20	4.25	7.74	8.61
GOF_{wl}	2.38	2.69	4.03	3.87	7.10

Table 2A-1-007. $LiNbO_3$. Elastic, piezoelectric, dielectric constants and their temperature coefficients. For definition of temperature coefficients, see original paper. κ at f = 500 Hz. [71Smi, 67War, 67Yam].

	Absolute quantities			Normalized temperature coeff.	
	[71Smi]	[67War]	[67Yam]	[71Smi]	[67Yam]
Elastic stiffnesses	$[\cdot 10^{11}\,Nm^{-2}]$	$[\cdot 10^{11}\,Nm^{-2}]$		$[\cdot 10^{-4}\,K^{-1}]$	$[\cdot 10^{-4}\,K^{-1}]$
c_{11}^{E}	2.030	2.03		–1.74	
c_{12}^{E}	0.573	0.53		–2.52	
c_{13}^{E}	0.752	0.75		–1.59	
c_{14}^{E}	0.085	0.09		–2.14	
c_{33}^{E}	2.424	2.45		–1.53	
c_{44}^{E}	0.595	0.60		–2.04	
c_{66}^{E}	0.728	0.75		–1.43	
Elastic compliances	$[\cdot 10^{-12}\,m^2N^{-1}]$	$[\cdot 10^{-12}\,m^2N^{-1}]$	$[\cdot 10^{-12}\,m^2N^{-1}]$		
s_{11}^{E}	5.831	5.78	5.64	1.66	1.5
s_{12}^{E}	–1.150	–1.01		0.28	
s_{13}^{E}	–1.452	–1.47		1.94	
s_{14}^{E}	–1.000	–1.02	–0.84	1.33	
s_{33}^{E}	5.026	5.02	4.94	1.60	1.5
s_{44}^{E}	17.10	17.0		2.05	
s_{66}^{E}	13.96	13.6		1.43	
Piezoelectric stress constants	$[Cm^{-2}]$	$[Cm^{-2}]$			
e_{15}	3.76	3.7		1.47	
e_{22}	2.43	2.5		0.79	
e_{31}	0.23	0.2		2.21	
e_{33}	1.33	1.3		8.87	
Piezoelectric strain constants	$[\cdot 10^{-11}\,CN^{-1}]$	$[\cdot 10^{-11}\,CN^{-1}]$	$[\cdot 10^{-11}\,CN^{-1}]$		
d_{15}	6.92	6.8	7.4	3.45	2.8
d_{22}	2.08	2.1	2.1	2.34	2.4
d_{31}	–0.085	–0.1	–0.087	19.1	11.0
d_{33}	0.60	0.6	1.6	11.3	2.9
Dielectric constants					
κ_{11}^{S}	44.3	44		3.23	
κ_{33}^{S}	27.9	29		6.27	
κ_{11}^{T}	85.2	84	84.6	3.82	
κ_{33}^{T}	28.7	30	28.6	6.71	

Table 2A-1-008. $LiNbO_3$. Third-order dielectric constants [in 10^{-19} C V^{-2}] [87Cho].

κ_{311}	−2.81(6)
κ_{222}	−2.40(9)
κ_{333}	−2.91(6)

Table 2A-1-009. $LiNbO_3$. Nonlinear piezoelectric constants [in C m^{-2}] [75Kor].

e_{115}	–58	e_{311}	4
e_{116}	–26	e_{312}	–6
e_{125}	12	e_{313}	15
e_{126}	–4	e_{314}	–23
e_{135}	53	e_{333}	–10
e_{136}	185	e_{344}	–3
e_{145}	17		

Table 2A-1-010. $LiNbO_3$. Electrostrictive constants [in 10^{-9} N V^{-2}] [87Cho]. $R_{\lambda\mu}$=R_{klij}. R_{klij} is defined by the equation $T_{ij} = -(1/2)R_{klij}E_kE_l$, where T_{ij} is a stress component and E_k is an electric field.

R_{11}	1.11(39)	R_{33}	–2.76(41)
R_{12}	2.19(56)	R_{14}	1.51(17)
R_{13}	2.32(67)	R_{41}	1.85(17)
R_{31}	0.19(61)	R_{44}	–1.83(11)

Table 2A-1-011. $LiNbO_3$. Third-order piezoelectric constants [in C m^{-2}] [87Cho].

e_{222}	15.0	e_{311}	14.7
e_{115}	17.1	e_{312}	13.0
e_{125}	19.9	e_{313}	–10.0
e_{126}	–15.9	e_{314}	11.0
e_{135}	19.6	e_{333}	–17.3
e_{136}	–0.9	e_{344}	–10.2
e_{145}	20.3		

Table 2A-1-012. $LiNbO_3$, $LiTaO_3$. Values of the sound velocity and attenuation of various modes measured by the acoustooptic method [84Bli]. L: longitudinal mode, S: shear mode. Q denotes the quasi-mode. $f \cong 1$GHz.

Propagation direction	Type of wave	$LiNbO_3$		$LiTaO_3$	
		v [km s^{-1}]	α [$\cdot 10^2$ m^{-1}]	v [km s^{-1}]	α [$\cdot 10^2$ m^{-1}]
[100]	L	6.589	0.115	5.580	0.139
	S_1	4.730	0.088	4.252	0.128
	S_2	4.071	0.113	3.351	0.187
[010]	QL	6.863	0.101	5.802	0.123
	S	3.944	0.123	3.545	0.168
[001]	L	7.345	0.055	6.179	0.068
	S	3.627	0.206	3.602	0.200
[011]	QL	7.375	0.065	6.210	0.092
	S	4.064	0.107	3.400	0.248
[101]	QL	7.313	0.067	6.012	0.065
	QS_1	4.054	0.096	–	–
[110]	QL	6.691	0.080	5.682	0.111
	QS_1	4.003	0.106	3.581	0.120

Table 2A-1-013. $LiNbO_3$. Summary of design data for microwave acoustic surface wave devices [73Sza]. prop: propagation, Vac attn: (surface wave) attenuation in vacuum, Sw: surface wave, bw: bandwidth. See also [72Sch].

Orientation	*Y* cut *Z* prop	16 ½° double rotated cut	41 ½° rotated cut *X* prop	*Z* cut *X* prop	*X* cut *Z* prop
Surface wave velocity v_∞ [m s^{-1}]	3488	3503	4000	3798	3483
Estimate of electromagnetic to acoustic coupling $\Delta v/v_\infty$	0.0241	0.0268	0.0277	0.0026	0.0252
Measured value of $\Delta v/v_\infty$ [a])	0.0214	0.0227	0.0273		
Power flow angle ϕ [°] (electromechanical)	0	0	0	0	–1.726
Temperature coefficient of delay $(1/\tau)\,\partial\tau/\partial T$ [$\cdot 10^{-6}$ K^{-1}]	94	96	72	77	93
Sw attn in air at 1 GHz [dB/μs]	1.07	1.15	1.05	0.93	–
Air loading at 1 GHz [dB/μs]	0.19	0.21	0.3	0.24	–
Vac attn at 1 GHz [dB/μs]	0.88	0.94	0.75	0.69	–
3 dB Air prop loss time delay at 1 GHz *A* [μs]	2.8	2.6	2.9	3.2	–
Slope of electromechanical power flow curve $\partial\phi/\partial\theta$ [b])	–1.083	–1.087	–0.445	+0.192	–0.610
Slope of electromechanical power flow curve $\partial\phi/\partial\mu$ [c])	–0.117	+0.151	0	0	0
3 dB Beam steering loss time delay *B* [μs]	7.4	7.0	18.9	46.0	15.8
3 dB Diffraction loss time delay at 1 GHz *C* [μs]	29.1	29.3	5.1	2.4	7.6
Material figure of merit $F_M = ABC\left(\frac{\Delta v}{v_\infty}\right)^2$	0.350	0.383	0.214	0.002	–
Time-bw product figure of merit $F_{TB} = \frac{4\cdot 10^3 ABC}{v_\infty}\left(\frac{\Delta v}{v_\infty}\right)^2$	0.402	0.437	0.214	0.003	–

[a]) [72Sch]. [b]) θ: direction of propagation. [c]) μ: direction of plate normal.

Table 2A-1-014. $LiNbO_3$. Third-order elastic constants [in 10^{11} N m^{-2}] at 20 °C [73Nak].

c^{E}_{111}	–5.12(194)	c^{E}_{134}	–0.01(26)
c^{E}_{112}	4.54(76)	c^{E}_{144}	–0.37(20)
c^{E}_{113}	7.28(172)	c^{E}_{155}	–5.99(26)
c^{E}_{114}	–4.10(44)	c^{E}_{222}	–4.78(187)
c^{E}_{123}	7.19(147)	c^{E}_{333}	–3.63(690)
c^{E}_{124}	0.55(13)	c^{E}_{344}	–5.40(29)
c^{E}_{133}	–0.34(173)	c^{E}_{444}	–0.41(92)

Table 2A-1-015. $LiNbO_3$. Third-order elastic constants [in 10^{11} N m^{-2}] [87Cho].

c_{111}	–21.2	c_{134}	1.5
c_{112}	–5.3	c_{144}	–3.0
c_{113}	–5.7	c_{155}	–6.7
c_{114}	2.0	c_{222}	–23.3
c_{123}	–2.5	c_{333}	–29.6
c_{124}	0.4	c_{344}	–6.8
c_{133}	– 7.8	c_{444}	–0.3

Table 2A-1-016. $LiNbO_3$. Refractive indices of congruent $LiNbO_3$ at 24.5 °C [74Nel]. See also [67Boy, 68Mid, 76Smi].

λ [μm]	n_o	n_e	λ [μm]	n_o	n_e
0.40463	2.4317	2.3260	0.95998	2.2393	2.1622
0.43584	2.3928	2.2932	1.0140	2.2351	2.1584
0.46782	2.3634	2.2683	1.09214	2.2304	2.1545
0.47999	2.3541	2.2605	1.15392	2.2271	2.1517
0.50858	2.3356	2.2448	1.15794	2.2269	2.1515
0.54607	2.3165	2.2285	1.28770	2.2211	2.1464
0.57696	2.3040	2.2178	1.43997	2.2151	2.1413
0.57897	2.3032	2.2171	1.63821	2.2083	2.1356
0.58756	2.3002	2.2147	1.91125	2.1994	2.1280
0.64385	2.2835	2.2002	2.18428	2.1912	2.1211
0.66782	2.2778	2.1953	2.39995	2.1840	2.1151
0.70652	2.2699	2.1886	2.61504	2.1765	2.1087
0.80926	2.2541	2.1749	2.73035	2.1724	2.1053
0.87168	2.2471	2.1688	2.89733	2.1657	2.0999
0.93564	2.2412	2.1639	3.05148	2.1594	2.0946

Table 2A-1-017. $LiNbO_3$:MgO. Principal refractive indices of the crystal doped with 5 mol% MgO [92She].

λ [μm]	n	20.0 °C	74.5 °C	116.0 °C	154.5 °C
0.53975	n_o	2.3120	2.3129	2.3137	2.3142
	n_e	2.2194	2.2230	2.2261	2.2292
0.6328	n_o	2.2792	2.2798	2.2804	2.2808
	n_e	2.1916	2.1950	2.1978	2.2003
1.0795	n_o	2.2251	2.2254	2.2256	2.2257
	n_e	2.1454	2.1481	2.1504	2.1527
1.3414	n_o	2.2126	2.2130	2.2132	2.2134
	n_e	2.1349	2.1376	2.1398	2.1420

Table 2A-1-018. $LiNbO_3$. Refractive indices at various wavelengths [90Jun]. Sample: almost stoichiometric (Li/Nb ≅ 1.00) crystal prepared by vapor transport equilibrium.

λ [nm]	n_e	n_o
1064	2.1440(5)	2.2339(5)
632.8	2.1890(4)	2.2878(5)
514.5	2.2270(4)	2.3334(4)
501.7	2.2329(4)	2.3405(4)
496.5	2.2352(5)	2.3437(4)
488.0	2.2398(4)	2.3495(4)
476.5	2.2465(4)	2.3573(5)
472.7	2.2489(5)	2.3604(5)
465.8	2.2530(4)	2.3658(4)
457.9	2.2584(4)	2.3719(4)
454.5	2.2608(4)	2.3751(5)
325.0	2.4670(5)	2.6360(20)

Table 2A-1-019. $LiNbO_3$. Refractive indices at RT with the addition of transition metals [79Sir].

Impurity ion	[at%]		n_o					
		λ [μm]	0.4047	0.4713	0.4800	0.5461	0.5852	0.5876
Pure	–		2.3925	2.3456	2.3431	2.3164	2.3040	2.3033
Sc	0.1		2.3935	2.3466	2.3436	2.3172	2.3100	2.3040
Ti	0.1		2.3928	2.3462	2.3432	2.3167	2.3043	2.3036
Cr	0.1		2.3926	–	–	2.3167	2.3042	2.3035
Mn	0.1		2.3944	–	–	2.3180	2.3056	2.3047
Fe	0.1		2.3930	2.3464	2.3434	2.3166	2.3044	2.3036
Co	0.1		2.3942	–	–	2.3176	2.3052	2.3046
Ni	0.1		2.3933	2.3466	2.3437	2.3170	2.3046	2.3038
Cu	0.5		–	–	–	2.3176	2.3051	2.3043
Zn	0.2		2.3929	–	–	2.3171	2.3046	2.3038
Impurity ion	[at%]		n_e					
		λ [μm]	0.4047	0.4713	0.4800	0.5461	0.5852	0.5876
Pure	–		2.2874	2.2484	2.2461	2.2237	2.2130	2.2124
Sc	0.1		2.2883	2.2495	2.2471	2.2249	2.2143	2.2137
Ti	0.1		2.2881	2.2491	2.2468	2.2241	2.2136	2.2129
Cr	0.1		2.2852	–	–	2.2217	2.2112	2.2105
Mn	0.1		2.2868	–	–	2.2232	2.2128	2.2119
Fe	0.1		2.2878	2.2487	2.2464	2.2234	2.2135	2.2128
Co	0.1		2.2899	–	–	2.2262	2.2154	2.2147
Ni	0.1		2.2879	2.2488	2.2468	2.2240	2.2136	2.2129
Cu	0.5		–	–	–	2.2247	2.2141	2.2134
Zn	0.2		–	–	–	2.2243	2.2137	2.2131

Table 2A-1-020. $LiNbO_3$. Electrooptic constants, [67Zoo]. See also [66Ber, 67Sma, 72Onu, 66Tur1, 66Tur2].

	r_{13}	r_{33}	r_{51}	r_{22}	r_c	λ	Ref.
	[$\cdot 10^{-12}$ mV^{-1}]					[μm]	
r^T	10	32.2		6.8		0.633	67Zoo
			32	3.2	17.4	0.633	66Ber
				6.7	18	0.633	67Sma
				5.7	17	1.15	
				3.1	16	3.39	
	10.9	34.0				0.633	72Onu
r^S	8.6	30.8	28	3.4		0.633	66Tur1
	6.5	28	23	3.1		3.39	66Tur2

Table 2A-1-021. $LiNbO_3$. Piezooptic constants $p^E_{\lambda\mu}$ [76Ava2]. See also [67Dix, 71Lem, 70OBr, 73Mar, 71Klu].

p_{11}	p_{33}	p_{44}	p_{66}	p_{12}	p_{13}	p_{14}	p_{31}	p_{41}	Ref.
0.036	0.066	–	–	0.072	0.135	–	0.178	0.155	67Dix
0.025	0.068	–	–	0.079	0.132	0.100	0.168	0.158	71Lem
0.034	0.060	0.300	–	0.072	0.139	0.066	0.178	0.154	70OBr
–	0.069	0.152	0.055	0.088	0.126	0.080	0.176	0.134	73Mar
0.021	0.078	0.019	–	0.096	0.149	0.055	0.138	–	71Klu
(0.045)									
–0.026	+0.071	+0.146	–0.053	+0.090	+0.133	–0.075	+0.179	–0.151	76Ava2

Table 2A-1-022. $LiNbO_3$. Piezooptical coefficients [91Myt]. For definitions of Π^0_{im}, Π^0_{km} and $\delta\Delta_k$, see original paper.

Experimental Π_{im} conditions			contribution into $\delta\Delta_k$ [%]		calculated Π^*_{km}	Π^*_{km} derived from Π^0_{km}			Other data for Π^0_{km}	
			Π_{im}	s_{km}		Π^0_{km}	Elasticity contribut.	Π^*_{km}	[66Spe]	[79Vas]
m = 1	i = 1	Π_{11} = –0.45	227	–127	$\Pi^*_{21} = \Pi_{31}n_3^3 -$	+10.2	+0.20	+10.4	–	16.8
k = 2	i = 3	Π_{31} = +0.49	65	35	$\Pi_{11}n_1^3$ = +10.6					
m = 1	i = 1	Π_{11} = –0.48	238	–138	$\Pi^*_{31} = \Pi_{11}n_1^3 -$	–6.9	0	–6.9	12.2	15.1
k = 3	i = 2	Π_{21} = +0.11	28	72	$\Pi_{21}n_2^3$ = –7.0					
m = 2	i = 2	Π_{22} = –0.46	227	–127	$\Pi^*_{12} = \Pi_{22}n_2^3 -$	–10.5	–0.20	–10.7	7.33	7.36
k = 1	i = 3	Π_{32} = +0.45	63	37	$\Pi_{32}n_3^3$ = –10.3					
m = 2	i = 1	Π_{12} = +0.11	28	72	$\Pi^*_{32} = \Pi_{12}n_1^3 -$	+6.7	0	+6.7	8.25	8.94
k = 3	i = 2	Π_{22} = –0.49	238	–138	$\Pi_{22}n_2^3$ = +7.0					
m = 3	i = 2	Π_{23} = +2.0	88	12	$\Pi^*_{13} = \Pi_{23}n_2^3 -$	+6.2	–0.22	+6.0	5.16	17.4
k = 1	i = 3	Π_{33} = +1.7	85	15	$\Pi_{33}n_3^3$ = +5.7					
m = 3	i = 1	Π_{13} = +0.9	87	13	$\Pi^*_{23} = \Pi_{33}n_3^3 -$	–5.3	+0.22	–5.1	8.62	15.9
k = 2	i = 3	Π_{33} = +1.5	83	17	$\Pi_{13}n_1^3$ = –5.9					
m = 4	i = 1	Π_{14} = +0.7	m = 1	i = 4		m = 4	i = 4			
k = $\bar{4}$			k = $\bar{4}$	Π_{41} = –1.9		k = $\bar{4}$	Π_{44} = +0.23			

Table 2A-1-023. $LiNbO_3$. Assignment of optical phonon modes [72Cla]. Frequencies are given in cm^{-1}. The result of [72Cla] is from Raman scattering and the accuracy is ±2 cm^{-1}. The results of [67Kam] and [66Sch] are from Raman, while the results of [67Bar] is from Raman and infrared experiments. Main differences between [72Cla] and others are indicated by arrows at the right-hand side of the table. Modes indicated by an asterisk are assumed to be of second order.

[72Cla]		[67Kam]		[67Bar]			[66Sch]		
	Raman		Raman		Raman	IR		Raman	
		E(T)	92						←
		E(L)	117:95						←
E(T)	155	E(T)	152	E(T)	152	152	E(T)	152	
E(L)	198	E(L)	198	E(L)		198			
E(T)	238	E(T)	238	E(T)	238	236	E(T)	239	
E(L)	243	E(L)	243	E(L)		238			
A_1(T)	255	A_1(T)	253	A_1(T)	252	248	A_1(T)	255	
E(T)	265	E(T)	262	E(T)	264	265	E(T)	266	
A_1(L)	275	A_1(L)	273	A_1(L)		273			
A_1(T)	276	A_1(T)	275	A_1(T)	276	274	A_1(T)	277	
E(L)	295	E(L)	298	E(L)	299	296			
E(T)	325	E(T)	322	A_1(L)		306	E(T)	321	←
A_1(L)	333	A_1(L)	331	E(T)	321	322			←
A_1(T)	334	A_1(T)	334	A_1(T)	333	307			
E(L)	371	E(L)	345	E(L)	333	342			
E(T)	371	E(T)	368	E(T)	367	363	E(T)	369	
E(L)	428	E(L)	428	E(L)		418			
E(T)	431	A_1(L)	428	A_1(L)		423	E(T)	430	←
A_1(L)	436	E(T)	436	E(T)	434	431			←
E(L)	454	E(L)	448	E(L)		450			
E(T)	582	E(T)	582	E(T)	579	586	E(T)	580	
A_1(T)	633	E(L)	621	A_1(T)	634	628	A_1(T)	632	←
E(L)	668	E(T)	630	*E(L)		660			←
E(T)	668	A_1(T)	637	*E(T)		670			
E(L)	739			*A_1(L)		686			←
E(T)	743			*A_1(T)		692			←
A_1(L)	876	A_1(L)	874	A_1(L)	873	869			
E(L)	880	E(L)	881	E(L)	880	878	E(L)	883	

Table 2A-1-024. $LiNbO_3$. Brillouin scattering [71Kha]. Geometry [for example *z*(*xz*)*y*] from left to right: propagation direction of the incident light, polarization of the incident light, polarization of the scattered light and propagation direction of the scattered light. Direction: phonon propagation direction, $\Delta\nu$: phonon frequency, *: intense lines, υ_{exp}: experimental phonon velocity, υ_{calc}: calculated phonon velocity, P: phonon polarization, ql: quasi-longitudinal, qt: quasi-transverse, t: transverse.

Geometry	Direction	$\Delta\nu/c$ [$\cdot 10^2$ m^{-1}]	υ_{exp} [$\cdot 10^3$ m s^{-1}]	υ_{cale} [$\cdot 10^3$ m s^{-1}]	*P*
y(*xy*)*x*	$k_x = \sqrt{2}/2$	0.92	5.67	5.65	ql
y(*zz*)*x*	$k_y = -\sqrt{2}/2$	0.94	5.79	5.65	ql
y(*xz*)*x*	$k_z = 0$ $k_x = 0$	0.56*	3.45	3.40	qt
z(*xz*)*y*	$k_y = \sqrt{2}/2$	0.63*	3.88	3.75	t
z(*xx*)*y*	$k_z = -\sqrt{2}/2$	1.02*	6.29	5.94	ql
$\bar{z}(xx)y$	$k_x = 0$	1.00	6.16	6.31	ql
$\bar{z}(xz)y$	$k_y = \sqrt{2}/2$	0.56*	3.45	3.32	t
$\bar{z}(yx)y$	$k_z = \sqrt{2}/2$	0.56	3.45	3.32	t
z(*yx*)*x*	$k_x = \sqrt{2}/2$	0.58*	3.57	3.59	qt
z(*yy*)*x*, *z*(*xz*)*x*	$k_y = 0$	1.07*	6.59	6.17	ql
z(*xy*)*x*	$k_z = -\sqrt{2}/2$	1.06	6.53	6.17	ql
		0.56	3.45	3.37	qt
		0.56	3.45	3.37	qt

Table 2A-1-025. $LiNbO_3$. ^{93}Nb NMR [70Sch]. ν_i: transition frequencies. ν_1: ± 3/2 ↔ ± 1/2, ν_2: ± 5/2 ↔ ± 3/2, ν_3: ±7/2 ↔ ±5/2, ν_4: ± 9/2 ↔ ± 7/2.

T	77 K	24...25 °C	167 °C
ν_1 [MHz]	0.988	0.924	–
ν_2 [MHz]	1.958	1.842	1.725
ν_3 [MHz]	2.942	2.763	2.589
ν_4 [MHz]	3.950	3.685	–
e^2qQ/h [MHz]	23.516	22.10	20.70
η	<3%	<3%	<1%

Table 2A-1-026. $LiNbO_3$. ESR data [70Rex, 72Her, 68Dan]. See also [72McD, 68Bur, 67Evl].

Paramagnetic center		Cr^{3+}		Fe^{3+}	Mn^{2+}	Mn^{2+}
Site		Nb^{5+}	Li^{1+}	Nb^{5+} or Li^{1+}	Nb^{5+} or Li^{1+}	
S		3/2		5/2	5/2	5/2
ν	[GHz]	9		9.4 and 35.4	9.4 and 35.4	X-band and K-band
T	[K]	77		300	300	RT
g-factors		1.969	1.97	2.0024	2.0002	$g_{\|\|} = g_{\perp} = 1.990$
FS	$[\cdot 10^{-2}\,m^{-1}]$	$D = 4110$	$D = 2100$ (200)	$2D = 3319$	$2D = 1449$	$b_{20} = 726$
				$a–F = 128$	$a–F = 8$	$b_{40} = -2$
HFS	$[\cdot 10^{-2}\,m^{-1}]$				79	$A_{\|\|} = -78.2$
						$A_{\perp} = -76.7$
Ref.		70Rex		72Her	68Dan	68Dan

Table 2A-1-027. $LiNbO_3:Gd^{3+}$. g values and crystal field parameters [73Dis]. Crystal field parameters are given in units of m^{-1}.

Parameter	$LiNbO_3:Gd^{3+}$ Pattern I	$LiNbO_3:Gd^{3+}$ Pattern II
$g_{\parallel} = g_z$	1.9916(5)	1.9916(5)
$g_{\perp} = g_x = g_y$	1.9916(10)	1.9916(10)
b_{20}	+1185(13)	+1260(20)
b_{40}	+ 8(3)	+ 8(4)
b_{60}	+ 1(1)	+ 1(2)
$\|b_{43}\|$	33(17)	33(17)
b_{22}	0(5)	+ 40(10)

Table 2A-1-028. $LiNbO_3$. Spin Hamiltonian parameters for Cu^{2+} ESR [84Pet]. $g'_{\|}$, $g'_{\perp}$: averaged *g*-tensor components parallel and perpendicular to the polar axis, respectively.

Principal values of *g*-tensor	Principal values of *A*-tensor [$\cdot 10^{-2}$ m^{-1}]
g_z = 2.403(5)	A_z = 82(2)
g_y = 2.121(7)	A_y = 29(3)
g_x = 2.095(5)	A_x = 40(2)
$g'_{\|}$ = 2.22(2)	
$g'_{\perp}$ = 2.17(2)	

Table 2A-1-029. $LiNbO_3$:Cr^{3+}. Spin Hamiltonian parameters and the proposed assignment of Cr^{3+} sites [93Yeo].

Spectra	g	D [$\cdot 10^2$ m^{-1}]	Site	Methods	Ref.
	1.97	0.45	Nb	EPR	67Evl
			Nb	Optical spectra	69Gla, 73Cla
	$g_{\parallel}$ = 1.969	0.45		Optical spectra, EPR	69Bur
	$g_{\perp}$ = 3.870				
Main signal	1.969	0.411	Nb	EPR	70Rex
Weak signal	1.97	0.21	Li		
			Li and Nb	Flourescence spectra	90Jia
			Nb	Optical spectra	82Kim
	1.969	0.396	Li	EPR	83Mal
	1.969	0.396	Li or Nb	EPR	85Mal, 85Gra
			Li, Nb, SV	EPR	86Mal
	1.97	0.393		EPR	87Gra, 89Cho, 91Yeo
	1.97	–0.392		EPR and ENDOR	87Gra
	1.972	0.395	Li	EPR and NMR	86Cho, 89Cho, 91Yeo
			Li and Nb	EPR and ENDOR	89Gli
	1.96	0.39		EPR	91Siu
Cr^{3+} (main)	1.968	0.393		EPR	93Par1
Cr^{3+} (weak)	1.968	0.443			
Cr_I^{3+} (main)	1.957	|0.393|	Li	EPR	93Yeo
Cr_{II}^{3+} (weak)	1.96	|0.1|	Nb		

Table 2A-1-030. $LiNbO_3$. ESR parameters for Nb^{4+} [92Mul]. θ_g, θ_A: tilt angles of principal axes of *g*- and *A*-tensors from the *c*-axis.

g'_x	≈ 1.709	A_x	≈ 584	MHz
g'_y	≈ 1.795	A_y	≈ 677	MHz
g'_z	≈ 1.883	A_z	≈ 258	MHz
θ_g	≈ –11°	θ_A	≈ –15°	

Table 2A-1-031. $LiNbO_3$:Fe^{3+}. Spin-Hamiltonian parameters and the proposed site assignments for Fe^{3+} [94Yeo1].

g	FS [$\cdot 10^{-2}$ m^{-1}]	Site	Method	Ref.
1.99	b_2^0 = 1671(28), b_4^0 = –48(11), b_4^3 = 560(280)	mostly Nb^{5+} [b])	EPR*	79Tow
$g_\parallel$ = 2.0024(5)	b_2^0 = 1660(3), b_4^0 = –43(2), b_4^3 = –1537(235)	Li^+ or Nb^{5+}	EPR*	72Her
1.995(5)	b_2^0 = 1530, $\|b_4^0\|$ = 714		EPR	72Meh2
1.993	b_2^0 = 1650, b_4^0 = –118.8, b_4^3 = 1360.8	Li^+, Nb^{5+}, V	EPR*	85Cho
1.993	b_2^0 = 1660(30), b_4^0 = –47(3)		EPR	86Mal
1.993	b_2^0 = 1650, $\|b_4^0\|$ = 168, b_4^3 = 1360.8	Nb^{5+}	EPR	89Cho8
1.995(3)	b_2^0 = 1815 (3.5 K)	Li	EPR, ENDOR	92Sot
2.001(5)	b_2^0 = 1659, b_4^0 = –900	Li^+, Nb^{5+}, V	EPR*	93Par2
2.001(5)	b_2^0 = 1524, b_4^0 = 0			
2.001(5)	b_2^0 = 1740, b_4^0 = –900			
$g_\parallel$ = 2.019	b_2^0 = 1768(20), b_4^0 = –49(5)	Li^+	EPR	93Mal [a])
$g_\perp$ = 1.983	b_4^3 = 650(50), b_4^{-3} = –380(50)			
$g_\parallel$ = 1.984(3)	b_2^0 = 1640(5), b_4^0 = –54.0(6), b_4^3 = –90(12)	Nb^{5+}	EPR*; SPM calculation	94Yeo1
$g_\perp$ = 1.992(3)	b_4^{-3} = 2022(36)			

[a]) Fe1 centre observed in EPR spectra at 25 K after reduction of a stoichiometric $LiNbO_3$ sample grown from melts containing 6 wt% K_2O.
[b]) rest Li^+

Table 2A-1-032. $LiNbO_3$:Mn^{2+}. Spin-Hamiltonian parameters and proposed site assignment for Mn^{2+} [94Yeo2].

g	FS [$\cdot 10^{-2}$ m^{-1}]	Site	Method	Ref.
1.995(5)	b_2^0 = 726(6), b_4^0 = –2(2), b_4^3 = 0	Li^+	EPR*	68Dan
g = 1.998(2)	b_2^0 = 711(8), b_4^0 = –8(6)	Nb^{5+}	EPR	69Pet
1.998	b_2^0 = 732, b_4^0 = –1.08, $\|b_4^3\|$ = 960		EPR	72Rex
$g_\parallel$ = 2.0002(5)	b_2^0 = 725, b_4^0 = –2.5(15)	Li^+ or Nb^{5+}	EPR*	72Her
1.998	b_2^0 = 783, b_4^0 = –1.20, $\|b_4^3\|$ = 1020	Nb^{5+}	EPR	83Mal
1.998	b_2^0 = 735, b_4^0 = –1.14, b_4^3 = 960	Li^+	EPR*	85Mal, 89Gli
1.998(1)	b_2^0 = 730(5), b_4^0 = –2.49	Li^+	EPR*	68Tak
2.006	b_2^0 = 731, b_4^0 = –2.0, b_4^3 = 941	Nb^{5+}	EPR*, NMR	89Cho8, 91Yeo
$g_\parallel$ = 1.997(3)	b_2^0 = 724.5(9), b_4^0 = –0.72(1), b_4^3 = –9.4(2)	Nb^{5+}	EPR*; SPM	94Yeo2
$g_\perp$ = 2.009(1)	b_4^{-3} = 684.0(1)		calculation	

Table 2A-1-033. $LiNbO_3$. Phonon frequencies at Brillouin zone center and zone boundary [78Cho]. Frequencies are in THz.

Neutron measurements				Optical measurements [67Bar]	
$\boldsymbol{q} = (0,0, 3\pi/c)$		$\boldsymbol{q} = 0$		$\boldsymbol{q} \cong 0$	
Frequency	Symmetry	Frequency	Symmetry	Frequency	Symmetry
4.0(8)	Λ_3	4.55(10)	Γ_3	4.50	E(T)
		7.3 [a])	Γ_3	7.14	E(T)
				7.95	E(T)
		10.0(1)	Γ_3	9.63	E(T)
				10.0	E(L)
		6.70(15)	Γ_2		
5.70(15)	$(\Lambda_1+\Lambda_2)$			7.56	A_1(T)
		7.85(15)	Γ_1	8.19	A_1(L)
8.10(10)	$(\Lambda_1+\Lambda_2)$			8.23	A_1(T)
		9.42(25)	Γ_2		
		13.65(15)	Γ_2	10.0	A_1(T)
13.88(25)	$(\Lambda_1+\Lambda_2)$				
		13.90(25) [b])	Γ_1	12.69	A_1(L)

[a]) Extrapolated from about halfway between zone center and zone boundary.
[b]) Less reliable data than others.

Table 2A-1-034. $LiNbO_3$ (doped). Summary of EXAFS spectra [92Zal]. *N*: coordination number; *R*: neighbor distance; σ: Debye-Waller disorder parameter; δ: shift from the center of the oxygen octahedron, Γ: constant related to the mean free path of the photoelectron.

Ion	Pair	*N*	*R* [Å]	σ^2 [Å^2]	Γ [Å^{-2}]	δ [Å]
Ni^{2+}	Ni–O	6	2.01	0.08	1.8	0
	Ni–Nb	6	3.1	0.09	1.8	
Fe^{3+}	Fe–O	3	2.041	0.086	1.0	–0.5
	Fe–O	3	2.298	0.105	1.0	
	Fe–Nb	4	3.199	0.06	1.0	
	Fe–Nb	3	3.398	0.049	1.0	
Ti^{4+}	Ti–O	6	1.97	0.08	1.9	0
	Ti–Nb	7	3.18	0.06	1.9	
Hf^{4+}	Hf–O	6	2.065	0.094	2.2	0
	Hf–Nb	1	2.57	0.089	2.2	
	Hf–Nb	6	3.30	0.085	2.2	
Ta^{5+}	Ta–O	3	1.93	0.08	4.75	+0.25
	Ta–O	3	1.99	0.08	4.75	
	Ta–Nb	6	3.68	0.09	4.75	
Er^{3+}	Er–O	6	2.00	0.067	2.8	0
	Er–Nb	4	3.05	0.105	2.8	
	Er–Nb	3	3.60	0.022	2.8	
Nd^{3+}	Nd–O	6	2.03	0.077	2.0	0
	Nd–Nb	6	3.65	0.082	2.0	

Table 2A-1-035. $LiNbO_3$. Diffusion coefficients of impurities [82Gon]. $D_\parallel$, $D_\perp$ are the coefficients for diffusion parallel and perpendicular to the *c* axis, respectively. *E*: activation energy parallel to the *c*-axis.

Ion	*T* [K]	$D_\parallel$ [m^2s^{-1}]	$D_\perp$ [m^2s^{-1}]	*E* [eV]
D	873	$4.5\cdot10^{-12}$	$5\cdot10^{-12}$	1.4
O	1273	$1.0\cdot10^{-16}$		1.2
Li	1373	$1.5\cdot10^{-13}$	$4.2\cdot10^{-13}$	
Mg	1273		$4.5\cdot10^{-16}$	1.4
Ti	1273		$4.6\cdot10^{-17}$	2.2
Ti, V, Ni	1233	$3...23\cdot10^{-17}$	$1.4\cdot10^{-17}$	

References

49Mat Matthias, B.T., Remeika, J.P.: Phys. Rev. **76** (1949) 1886.
58Rei Reisman, A., Holtzberg, F.: J. Am. Chem. Soc. **80** (1958) 6503.
65Bal Ballman, A.A.: J. Am. Ceram. Soc. **48** (1965) 112.
65Fed Fedulov, S.A., Shapiro, Z.I., Ladyzhinskii, P.B.: Kristallografiya **10** (1965) 268; Sov. Phys. Crystallogr. (English Transl.) **10** (1965) 218.
65Gio Giordmaine, J.A., Miller, R.C.: Phys. Rev. Lett. **14** (1965) 973.
65Nas1 Nassau, K., Levinstein, H.J.: Appl. Phys. Lett. **7** (1965) 69.
65Nas2 Nassau, K., Levinstein, H.J., Loiacono, G.M.: Appl. Phys. Lett. **6** (1965) 228.
66Abr1 Abrahams, S.C., Levinstein, H.J., Reddy, J.M.: J. Phys. Chem. Solids **27** (1966) 1019.
66Abr2 Abrahams, S.C., Reddy, J.M., Bernstein, J.L.: J. Phys. Chem. Solids **27** (1966) 997.
66Ash Ashkin, A., Boyd, G.D., Dziedzic, J.M., Smith, R.G., Ballman, A.A., Levinstein, J.J., Nassau, K.: Appl. Phys. Lett. **9** (1966) 72.
66Axe Axe, J.D., O'Kane, D.F.: Appl. Phys. Lett. **9** (1966) 58.
66Ber Bernal, E., Chen, G.D., Lee, T.C.: Phys. Lett. **21** (1966) 259.
66Bur Burns, G., O'kane, D.F., Title, R.S.: Phys. Lett. **23** (1966) 56.
66Gra Grace, M.I., Kedzie, R.W., Kestigian, M., Smith, A.B.: Appl. Phys. Lett. **9** (1966) 155.
66Nas Nassau, K., Levinstein, H.J., Loiacono, G.M.: J. Phys. Chem. Solids **27** (1966) 983.
66Sav Savage, A.: J. Appl. Phys. **37** (1966) 3071.
66Sch Schaufele, R.F., Weber, M.J.: Phys. Rev. **152** (1966) 705.
66Spe Spencer, E.G., Lenzo, P.V., Nassau, K.: IEEE J. Quantum Electron. QE-**2** (1966) 69.
66Tur1 Turner, E.H.: Appl. Phys. Lett. **8** (1966) 303.
66Tur2 Turner, E.H.: Paper Th. A13 in Opt. Soc. Am., San Francisco, 1966.
66War Warner, J., Robertson, D.S., Hulme, K.F.: Phys. Lett. **20** (1966) 163.
66Wen Wen, C.P., Mayo, R.F.: Appl. Phys. Lett. **9** (1966) 135.
67Bar Barker Jr., A.S., Loudon, R.: Phys. Rev. **158** (1967) 433.
67Boy Boyd, G.D., Bond, W.L., Carter, H.L.: J. Appl. Phys. **38** (1967) 1941.
67Dix Dixon, R.W.: J. Appl. Phys. **38** (1967) 5149.
67Evl Evlanova, N.F., Kornienko, L.S., Rashkovich, L.N., Rybaltovskii, A.O.: Zh. Eksp. Teor. Fiz. **53** (1967) 1920; Sov. Phys. JETP (English Transl.) **26** (1968) 1090.
67Kam Kaminow, I.P., Johnston Jr., W.D.: Phys. Rev. **160** (1967) 519; erratum: **178** (1969) 1528.
67Nii Niizeki, N., Yamada, T., Toyoda, H.: Jpn. J. Appl. Phys. **6** (1967) 318.
67Ohm Ohmachi, Y., Sawamoto, K., Toyoda, H.: Jpn. J. Appl. Phys. **6** (1967) 1467.
67Sma Smakula, P.H., Claspy, P.C.: Trans. Metall. Soc. AIME **239** (1967) 412.
67War Warner, A.W., Onoe, M., Coquin, G.A.: J. Acoust. Soc. Am. **42** (1967) 1223.
67Yam Yamada, T., Niizeki, N., Toyoda, H.: Jpn. J. Appl. Phys. **6** (1967) 151.
67Zoo Zook, J.D., Chen, D., Otto, G.N.: Appl. Phys. Lett. **11** (1967) 159.
68Ber Bergman, G., Solide State Commun. **6** (1968) 77.
68Bur Burns, G., O'Kane, D.F., Title, R.S.: Phys. Rev. **167** (1968) 314.
68Cam Campbell, J.J., Jones, W.R.: IEEE Trans. Sonics Ultrasonics SU-**15** (1968) 209.
68Dan Danner, J.C., Ranon, U., Stamires, D.N.: Chem. Phys. Lett. **2** (1968) 605.
68Iwa Iwasaki, H., Yamada, T., Niizeki, N., Toyoda, H.: Rev. Elect. Commun. Lab. **16** (1968) 385.
68Joh Johnston Jr., W.D., Kaminow, I.P.: Phys. Rev. **168** (1968) 1045; erratum: **178** (1969) 1528.
68Ler Lerner, P., Legras, C., Dumas, J.P.: J. Cryst. Growth **3-4** (1968) 231.
68Mid Midwinter, J.E.: J. Appl. Phys. **39** (1968) 3033.
68Pet Petrov, M.P.: Fiz. Tverd. Tela **10** (1968) 3254; Sov. Phys. Solid State (English Transl.) **10** (1969) 2574.
68Tak Takeda, T., Watanabe, A., Sugihara, K.: Phys. Lett. **27A** (1968) 114.
68Wem Wemple, S.H., DiDomenico Jr., M., Camlibel, I.: Appl. Phys. Lett. **12** (1968) 209.

69Bec Bechmann, R., Hearmon, R.F.S., Kurtz, S.K.: Landolt-Börnstein, New Series, Group III, Vol. 2: Elastic, Piezoelectric, Piezooptic, Electrooptic Constants, and Nonlinear Dielectric Susceptibilities of Crystals, Hellwege, K.-H., Hellwege, A.M. (eds.), Berlin, Heidelberg, New York: Springer, 1969.
69Bur Burns, G., O'Kane, D.F., Title, R.S.: Phys. Rev. **167** (1969) 314.
69Far Farah, O.G., Wagner, P.E., Cummins, H.Z.: J. Appl. Phys. **40** (1969) 2365.
69Gla Glass, A.M.: J. Chem. Phys. **50** (1969) 1501.
69Joh Johnson, L.F., Ballman, A.A.: J. Appl. Phys. **40** (1969) 297.
69Jor Jorgensen, P.J., Bartlett, R.W.: J. Phys. Chem. Solids **30** (1969) 2639.
69Rex Rexford, D.G., Kim, Y.M., Story, H.S.: Bull. Am. Phys. Soc. **14** (1969) 48.
70Aza Azarbayejani, G.H.: J. Cryst. Growth **7** (1970) 327.
70Hal Halstead, T.K.: J. Chem. Phys. **53** (1970) 3427.
70Iri Irisova, N.A., Kozlov, G.V.: Kristallografiya **15** (1970) 1078; Sov. Phys. Crystallogr. (English Transl.) **15** (1971) 941.
70Mil Miller, R.C., Nordland, W.A.: Phys. Rev. B **2** (1970) 4896.
70OBr O'Brien, R.J., Rosasco, G.J., Weber, A.: J. Opt. Soc. Am. A **60** (1970) 716.
70Rex Rexford, D.G., Kim, Y.M., Story, H.S.: J. Chem. Phys. **52** (1970) 860.
70Sch Schempp, E., Peterson, G.E., Carruthers, J.R.: J. Chem. Phys. **53** (1970) 306.
70Val Valitova, N.R., Goncharov, K.V.: Fiz. Tverd. Tela **12** (1970) 3089; Sov. Phys. Solid State (English Transl.) **12** (1971) 2499.
70Vin Vinogradov, E.A., Prisova, N.A., Kozlov, G.V.: Fiz. Tverd. Tela **12** (1970) 781; Sov. Phys. Solid State (English Transl.) **12** (1970) 605.
70Wal Wallace, C.A.: J. Appl. Crystallogr. **3** (1970) 546.
71Car Carruthers, J.R., Peterson, G.E., Grasso, M., Bridenbaugh, P.M.: J. Appl. Phys. **42** (1971) 1846.
71Glu Glushkova, T.M., Kiselev, D.F., Firsova, M.M.: Fiz. Tverd. Tela **13** (1971) 2753; Sov. Phys. Solid State (English Transl.) **13** (1972) 2299.
71Kha Khashkhozhev, Z.M., Lemanov, V.V., Pisarev, R.V.: Izv. Akad. Nauk SSSR, Ser. Fiz. **35** (1971) 987; Bull. Acad. Sci. USSR, Phys. Ser. (English Transl.) **35** (1971) 911.
71Klu Kludzin, V.V.: Fiz. Tverd. Tela **13** (1971) 651; Sov. Phys. Solid State (English Transl.) **13** (1971) 540.
71Lem Lemanov, V.V., Shakin, O.V., Smolenskii, G.A.: Fiz. Tverd. Tela **13** (1971) 533; Sov. Phys. Solid State (English Transl.) **13** (1971) 426.
71Lie Liekens, W., Michiels, L., De Boch, A.: J. Phys. C **4** (1971) 1124.
71Rex Rexford, D.G., Kim, Y.M.: Phys. Lett. A **35** (1971) 215.
71She Sherman, A.B., Lemanov, V.V.: Fiz. Tverd. Tela **13** (1971) 1690; Sov. Phys. Solid State (English Transl.) **13** (1971) 1413.
71Smi Smith, R.T., Welsh, F.S.: J. Appl. Phys. **42** (1971) 2219.
72Cla Claus, R., Borstel, G., Wiesendager, E., Steffan, L.: Phys. Rev. B **6** (1972) 4878.
72Des Deshmukh, K.G., Singh, K.: J. Phys. D **5** (1972) 1680.
72Her Herrington, J.B., Dischler, B., Schneider, J.: Solid State Commun. **10** (1972) 509.
72Maj Majer, J.: Fyz. Cas. **22** (1972) 137.
72McD McDonald, P.F., Tam, C.P., Mok, Y.W.: J. Chem. Phys. **56** (1972) 1007.
72Meh1 Mehran, F., Scott, B.A.: Bull. Am. Phys. Soc., Ser. (2) **17** (1972) 263 .
72Meh2 Mehran, F., Scott, B.A.: Solid State Commun. **11** (1972) 15.
72Onu Onuki, K., Uchida, N., Saku, T.: J. Opt. Soc. Am. **62** (1972) 1030.
72Rex Rexford, D.G. , Kim, Y.M.: J. Chem. Phys. **57** (1972) 3094.
72Rok Rokni, M., Wall, L.S., Amzallag, E., Chang, T.S.: Solid State Commun. **10** (1972) 103.
72Sch Schulz, M.B., Matsinger, J.H.: Appl. Phys. Lett. **20** (1972) 367.
72Sco Scott, B.A., Burns, G.: J. Am. Ceram. Soc. **55** (1972) 225.
72Tow Towner, H.H., Kim, Y.M., Story, H.S.: J. Chem. Phys. **56** (1972) 3676.

73Ant Antonov, V.A., Arsenev, P.A., Baranov, B.A., Mayer, A.A., Farshtendiker, V.L.: Phys. Status Solidi (a) **17** (1973) K61.

73Cla Clark, M.G., Di Salvo, F.J., Glass, A.M., Peterson, G.E.: J. Chem. Phys. **59** (1973) 6209.

73Dis Dischler, B., Herrington, J.R., Räuber, A., Schneider, J., Urban, W.: Solid State Commun. **12** (1973) 737.

73Ion Ionov, P.V.: Fiz. Tverd. Tela **15** (1973) 2827; Sov. Phys. Solid State (English Transl.) **15** (1974) 1888.

73Kam Kaminow, I.P., Carruthers, J.R.: Appl. Phys. Lett. **22** (1973) 326.

73Lar Larson, T.R., Weisenberger, W.H., Lucke, W.H.: Appl. Phys. Lett. **22** (1973) 617.

73Mar Marculescu, L., Hauret, G.: C. R. Acad. Sci. (Paris), Ser. B **276** (1973) 555.

73Miy Miyazawa, S.: Appl. Phys. Lett. **23** (1973) 198.

73Nak Nakagawa, Y., Yamanouchi, K., Shibayama, K.: J. Appl. Phys. **44** (1973) 3969.

73Pop Poplavko, Yu.M., Meriakri, V.V., Aleshechkin, V.N., Tsykalov, V.G., Ushatkin, E.F., Knyazev, A.S.: Fiz. Tverd. Tela **15** (1973) 1473; Sov. Phys. Solid State (English Transl.) **15** (1973) 991.

73Sug Sugii, K., Iwasaki, H., Miyazawa, S., Niizeki, N.: J. Cryst. Growth **18** (1973) 159.

73Sza Szabo, T.L., Slobodnik Jr., A.J.: IEEE Trans. Sonics Ultrasonics SU-**20** (1973) 240.

74Cho Chow, K., McKnight, H.G., Rothrock, L.R.: Mater. Res. Bull. **9** (1974) 1067.

74Jar Jarzebski, Z.M.: Mater. Res. Bull. **9** (1974) 233.

74Kas Kase, S., Ohi, K.: Ferroelectrics **8** (1974) 419.

74Lis Lissalde, F.C., Peuzin, J.C.: J. Appl. Crystallogr. **7** (1974) 572 .

74Nel Nelson, D.F., Mikulyak, R.M.: J. Appl. Phys. **45** (1974) 3688.

74Red Redfield, D., Burke, W.J.: J. Appl. Phys. **45** (1974) 4566.

74Sch Schmidt, R.V., Kaminow, I.P.: Appl. Phys. Lett. **25** (1974) 458.

74Sva Svaasand, L.O., Eriksrud, M., Nakken, G., Grande, A.P.: J. Cryst. Growth **22** (1974) 230.

74Tak Takada, S., Ohnishi, M., Hayakawa, H., Mikoshiba, N.: Appl. Phys. Lett. **24** (1974) 490.

75Bal Ballman, A.A., Brown, H., Tien, P.K., Riva-Sanseverino, S.: J. Cryst. Growth **29** (1975) 289.

75Bee Beerman, H.P.: Infrared Phys. **15** (1975) 225.

75Cho Choh, S.H., Kim, E.K., Park, S.S., Kim, J.N.: Chinese J. Phys. **46** (1975) 3914.

75Gun Gunshor, R.L.: Solid State Electron. **18** (1975) 1089.

75Har Hartemann, P.: Appl. Phys. Lett. **27** (1975) 263.

75Keu Keune, W., Date, S.K., Dezsi, I., Gonser, U.: J. Appl. Phys. **46** (1975) 3914.

75Kor Korobov, A.I., Lyamov, V.E.: Fiz. Tverd. Tela **17** (1975) 1448; Sov. Phys. Solid State (English Transl.) **17** (1975) 932.

75Miy Miyazawa, S., Fushimi, S., Kondo, S.: Appl Phys. Lett. **26** (1975) 8.

75Ohm Ohmori, Y., Yasojima, Y., Inuishi, Y.: Jpn. J. Appl. Phys. **14** (1975) 1291.

75Par1 Parker, T.E., Schulz, M.B.: Appl. Phys. Lett. **26** (1975) 75.

75Par2 Parsons, R., Cornish, W.D., Young, L.: Appl. Phys. Lett. **27** (1975) 654.

75Sch Schmidt, R.V.: Appl. Phys. Lett. **27** (1975) 8.

75Tie Tien, P.K., Ballman, A.A.: J. Vacuum Sci. Technol. **12** (1975) 892.

75Vis Vishnevskii, V.N., Marchuk, E.P., Mikhailishin, Ya.I., Pidzyrailo, N.S.: Fiz. Tverd. Tela **17** (1975) 1780; Sov. Phys. Solid State (English Transl.) **17** (1975) 1155.

75Von Von der Linde, D., Glass, A.M.: Appl. Phys. **8** (1975) 85.

75Wea Weakliem, H.A., Burke, W.J., Radfield, D., Korsun, V.: RCA Rev. **36** (1975) 149.

76Alp Alphonse, G.A., Phillips, W.: RCA Rev. **37** (1976) 184.

76Ava1 Avakyan, E.M., Belabaev, K.G., Sarkisov, V.Kh.: Kristallografiya **21** (1976) 1214; Sov. Phys. Crystallogr. **21** (1976) 703.

76Ava2 Avakyants, L.P., Kiselev, D.F., Shchitov, N.N.: Fiz. Tverd. Tela **18** (1976) 1547; Sov. Phys. Solid State (English Transl.) **18** (1976) 899.

76Bur Burgess, J.W., Hales, M.C.: Proc. Inst. Electr. Eng. **123** (1976) 499.

76Dor Dorozhkin, L.M., Kizel', V.A., Shigorin, V.D., Shipulo, G.N.: Zh. Eksp. Teor. Fiz. Pis'ma Red. **24** (1976) 363; JETP Lett. (English Transl.) **24** (1976) 329.

76Fuk Fukuda, T., Hirano, H.: Appl. Phys. Lett. **28** (1976) 575.
76Gla Glass, A.M., Lines, M.E.: Phys. Rev. B **13** (1976) 180.
76Gon Gonser, U., Sakai, H., Keune, W.: J. Electrochem. Soc. **123** (1976) 1915.
76Gri Grigor'ev, M.A., Zaitsev, B.D., Pylaeva, G.I., Shevchik, V.N.: Fiz. Tverd. Tela **18** (1976) 2307; Sov. Phys. Solid State (English Transl.) **18** (1976) 1345.
76Keu Keune, W., Date, S.K., Gonser, U., Bunzel, H.: Ferroelectrics **13** (1976) 443.
76Lea Lean, E.G.H., White, J.M., Wilkinson, C.D.W.: Proc. IEEE **64** (1976) 779.
76Shi Shibayama, K., Yamanouchi, K., Sato, H., Meguro, T.: Proc. IEEE **64** (1976) 595.
76Slo Slobodnik Jr., A.J.: Proc. IEEE **64** (1976) 581.
76Smi Smith, D.S., Riccius, H.D., Edwin, R.P.: Opt. Commun. **17** (1976) 332.
77Ali Alippi, A., Palma, A., Palmieri, L., Socino, G.: J. Appl. Phys. **48** (1977) 2182.
77Bar Barkan, I.B., Entin, M.V., Marennikov, S.I.: Phys. Status Solidi (a) **44** (1977) K91.
77Gla Glass, A.M., Lines, M.E., Nassau, K., Shiever, J.W.: Appl. Phys. Lett. **31** (1977) 249.
77Gra Graham, R.A.: J. Appl. Phys. **48** (1977) 2153.
77Kur Kurz, H.: Philips Tech. Rev. **37** (1977) 109.
77Sor Soroka, V.V., Khromova, N.N.: Fiz. Tverd. Tela **19** (1977) 638; Sov. Phys. Solid State (English Transl.) **19** (1977) 371.
77Zve Zverev, G.M., Kolyadin, S.A., Levchuk, E.A., Skvortsov, L.A.: Kvantovaya Elektron. **4** (1977) 1882; Sov. J. Quantum Electron. (English Transl.) **7** (1977) 1071.
78Cho Chowdhury, M.R., Peckham, G.E., Saunderson, D.H.: J. Phys. C **11** (1978) 1671.
78Des Destefanis, G.L., Townsend, P.D., Gailliard, J.P.: Appl. Phys. Lett. **32** (1978) 293.
78Gla Glass, A.M.: Opt. Eng. **17** (1978) 470.
78Kau Kaul, S.N., Singh, K.: Solid State Commun. **26** (1978) 365.
78Kra Krätzig, E.: Ferroelectrics **21** (1978) 635.
78Sin Singh, K., Kaul, S.N.: Mater. Res. Bull. **13** (1978) 989.
79Nas Nassau, K., Wang, C.A., Grasso, M.: J. Am. Ceram. Soc. **62** (1979) 503.
79Sir Sirota, N.N., Yarunichev, V.P., Bodnar', I.T.: Zh. Prikl. Spektrosk. **31** (1979) 514; J. Appl. Spectrosc. (English Transl.) **31** (1979) 1165.
79Vas Vasilina, L.S., Vibliy, I.F., Vlokh, O.G., Romanyuk, N.A., Kostetskiy, A.M.: Dielektriki i Poluprovodniki, Kiev, 1979, p. 3.
80Ali Alippi, A., Palma, A., Palmieri, L., Socino, G., Verona, E.: Opt. Acta **27** (1980) 1061.
80Bha Bhalla, A.S., Newnham, R.E.: Phys. Status Solidi (a) **58** (1980) K19.
80Kam Kaminow, I.P., Turner, E.H., Barns, R.L., Bernstein, J.L.: J. Appl. Phys. **51** (1980) 4379.
80Kra Krätzig, E., Orlowski, R.: Ferroelectrics **27** (1980) 241.
80Kro Krol, D.M., Blasse, G., Powell, R.C.: J. Chem. Phys. **73** (1980) 163.
80Ros Rosenman, G.I., Boikova, E.I.: Phys. Status Solidi (a) **58** (1980) 379.
81Ari Arizmendi, L., Cabrera, J.M., Agulló-López, F.: Solid State Commun. **40** (1981) 583.
81Baj Bajak, I.L., McNab, A., Richter, J., Wilkinson, C.D.W.: J. Acoust. Soc. Am. **69** (1981) 689.
81Dat Date, S.K.: Bull. Mater. Sci. **3** (1981) 359.
81Gue Guenais, B., Baudet, M., Minier, M., Le Cun, M.: Mater. Res. Bull. **16** (1981) 643.
81Kar Karge, H., Götz, G., Jahn, U., Schmidt, S.: Nucl. Instrum. Methods **182-183** (1981) 777.
81Lev Levanyuk, A.P., Pogosyan, A.R., Uyukin, E.M.: Dokl. Akad. Nauk SSSR **256** (1981) 60; Sov. Phys. Dokl. (English Transl.) **26** (1981) 43.
81Mit Mitsuyu, T., Wasa, K.: Jpn. J. Appl. Phys. **20** (1981) L48.
81Rit Ritz, V.H., Bermudez, V.M.: Phys. Rev. B **24** (1981) 5559.
81Vie Vieira, S.: Appl. Phys. Lett. **38** (1981) 472.
82Alf Alferness, R.C.: IEEE Trans. Microwave Theory Tech. MTT-**30** (1982) 1121; errata: MTT-**31** (1983) 315.
82Chi Chizhikov, S.I., Sorokin, N.G., Petrakov, V.S.: Ferroelectrics **41** (1982) 9.
82Fes Festl, H.G., Hertel, P., Krätzig, E., von Baltz, R.: Phys. Status Solidi (b) **113** (1982) 157.
82Fuj Fujimoto, I.: Acta Crystallogr., Sect. A **38** (1982) 337.
82Gon Gonzalez, R., Chen, Y., Tsang, K.L., Summers, G.P.: Appl. Phys. Lett. **41** (1982) 739.

82Jac1 Jackel, J.L., Rice, C.E., Veselka, J.J.: Appl. Phys. Lett. **41** (1982) 607.
82Jac2 Jackel, J.L.: J. Opt. Commun. **3** (1982) 82.
82Kim Kim, J.N., Park, H.L.: J. Korean Phys. Soc. **15** (1982) 122.
83Ahn Ahn, B.H., Clark III, W.W., Schurtz II, R.R., Bates, C.D.: J. Appl. Phys. **54** (1983) 1251.
83Bro Brody, P.S., Sattler, J.P., Simonis, G.J.: Ferroelectrics **50** (1983) 319.
83Dmi Dmitrik, G.N., Korotkov, P.A., Obukhovskii, V.V.: Opt. Spektrosk. **55** (1983) 399; Opt. Spectrosc. (English Transl.) **55** (1983) 233.
83Got Götz, G., Karge, H.: Nucl. Instrum. Methods Phys. Res. **209-210** (1983) 1079.
83Hol Holmes, R.J., Kim, Y.S., Brandle, C.D., Smyth, D.M.: Ferroelectrics **51** (1983) 41.
83Mae Maeda, M., Kubo, T., Sato, H., Ikeda, T.: Jpn. J. Appl. Phys. **22**, Suppl. 22-2 (1983) 25.
83Mal Malovichiko, G.I., Karmazin, A.A., Bykov, I.P., Laguta, V.V., Yarunichev, V.P.: Fiz. Tverd. Tela **25** (1983) 3543; Sov. Phys. Solid State (English Transl.) **25** (1983) 2038.
83Mam Mamedov, A.M.: Izv. Akad. Nauk SSSR, Ser. Fiz. **47** (1983) 660; Bull. Acad. Sci. USSR, Phys. Ser. (English Transl.) **47** (1983) 34.
83Sem Semenov, A.E., Cherkasov, E.V.: Fiz. Tverd. Tela **25** (1983) 1143; Sov. Phys. Solid State (English Transl.) **25** (1983) 656.
83Tat Tatsumisago, M., Hamada, A., Minami, T., Tanaka, M.: J. Am. Ceram. Soc. **66** (1983) 117.
83Yao Yao, X., McKinstry, H., Cross, L.E.: J. Am. Ceram. Soc. **66** (1983) 637.
84Bli Blistanov, A.A., Petrakov, V.S., Sorokin, N.G., Chizhikov, S.I.: Fiz. Tverd. Tela **26** (1984) 1565; Sov. Phys. Solid State (English Transl.) **26** (1984) 953.
84Fes Fesenko, E.G., Chernyshkov, V.A., Reznichenko, L.A., Baranov, V.V., Dantsiger, A.Ya., Prokopalo, O.I.: Zh. Tekh. Fiz. **54** (1984) 412; Sov. Phys. Tech. Phys. (English Transl.) **29** (1984) 247.
84Fra Franke, H.: Phys. Status Solidi (a) **83** (1984) K73.
84Fri Fridkin, V.M.: Ferroelectrics **53** (1984) 169.
84Kit Kitabatake, M., Mitsuyu, T., Wasa, K.: J. Appl. Phys. **56** (1984) 1780.
84Kor Korradi, G., Polgar, K., Vikhnin, V.S., Dovchenko, L.G., Zaritskii, I.M.: Fiz. Tverd. Tela **26** (1984) 252; Sov. Phys. Solid State (English Transl.) **26** (1984) 149.
84Llo Llopis, J., Ballesteros, C., González, R., Chen, Y.: J. Appl. Phys. **56** (1984) 460.
84Men Mendes-Filho, J., Lemos, V., Cerdeira, F.: J. Raman Spectrosc. **15** (1984) 367.
84Par Paracchini, C., Rosa, J.: Solid State Commun. **51** (1984) 239.
84Pet Petrosyan, A.K., Khachatryan, R.M., Sharoyan, E.G.: Phys. Status Solidi (b) **122** (1984) 725.
85Bet Betts, R.A., Pitt, C.W.: Electron. Lett. **21** (1985) 960.
85Bur Burns, G., Dacol, F.H., De Yoreo, J.J., Pohl, R.O., Bryan, D.A.: Jpn. J. Appl. Phys. **24**, Suppl. 24-2 (1985) 977.
85Che Chen, J-p., Wang, L-m.: Jpn. J. Appl. Phys. **24**, Suppl. 24-2 (1985) 248.
85Cho Choh, S.H., Kim, E.K., Park, S.S., Kim, J.N.: Chin. J. Phys. **23** (1985) 193.
85daJ da Jornada, J.A.H., Block, S., Mauer, F.A., Piermarini, G.J.: J. Appl. Phys. **57** (1985) 842.
85Gal Gallagher, P.K., O'Bryan Jr., H.M.: J. Am. Ceram. Soc. **68** (1985) 147.
85Got Goto, T., Syono, Y.: J. Appl. Phys. **58** (1985) 2548.
85Gra Grachev, V.G., Malovichko, G.I.: Fiz. Tverd. Tela **27** (1985) 686; Sov. Phys. Solid State (English Transl.) **27** (1985) 424.
85Kum Kumada, N., Ozawa, N., Muto, F., Kinomura, N.: J. Solid State Chem. **57** (1985) 267.
85Mal Malovichko, G.I., Glinchuk, M.D., Karmazin, A.A., Bykov, I.P., Yarunichev, V.P.: Fiz. Tverd. Tela **27** (1985) 167; Sov. Phys. Solid State (English Transl.) **27** (1985) 97.
85OBr O'Bryan, H.M., Gallagher, P.K., Brandle, C.D.: J. Am. Ceram. Soc. **68** (1985) 493.
85Oka Okamoto, Y., Wang, P-c., Scott, J.F.: Phys. Rev. B **32** (1985) 6787; erratum: **33** (1986) 4330.
85Ost Ostrovskii, I.V., Lysykh, V.A.: Zh. Tekh. Fiz. **55** (1985) 1460; Sov. Phys. Tech Phys. (English Transl.) **30** (1985) 843.
85Pri Prieto, C., Arizmendi, L., Gonzalo, J.A.: Jpn. J. Appl. Phys. **24**, Suppl. 24-2 (1985) 1025.
85Ste Stegeman, G.I., Seaton, C.T.: J. Appl. Phys. **58** (1985) R57.
85Wan Wang, H.F., Shi, G.T., Wu, Z.K.: Phys. Status Solidi (a) **89** (1985) K211.

85Wei Weis, R.S., Gaylord, T.K.: Appl. Phys. **A37** (1985) 191.
86Abr Abrahams, S.C., Marsh, P.: Acta Crystallogr., Sect. B **42** (1986) 61.
86Alf Alferness, R.C.: Science **234** (1986) 825.
86Aub Aubert, J.J., Couchaud, M., Calvat, C.: J. Cryst. Growth **79** (1986) 530.
86Bar1 Barkan, I.B., Ishchenko, V.N., Kochubei, S.A., Lunenok, D.I., Razhev, A.M.: Kvantovaya Elektron. **13** (1986) 849; Sov. J. Quantum Electron. (English Transl.) **16** (1986) 553.
86Bar2 Barfoot, K.M., Al-Chalabi, S.A.M., Webb, R.P., Weiss, B.L.: Radiat. Eff. **98** (1986) 249.
86Bli Blistanov, A.A., Geras'kin, V.V., Stepanova, A.V.: Fiz. Tverd. Tela **28** (1986) 300; Sov. Phys. Solid State (English Transl.) **28** (1986) 166.
86Bun Bune, A.V., Pashkov, V.A.: Fiz. Tverd. Tela **28** (1986) 3024; Sov. Phys. Solid State (English Transl.) **28** (1986) 1701.
86Bur Burnett, P.J., Briggs, G.A.D., Al-Shukri, S.M., Duffy, J.F., De La Rue, R.M.: J. Appl. Phys. **60** (1986) 2517.
86Cer Cerva, H., Pongratz, P., Skalicky, P.: Philos. Mag. A **54** (1986) 185.
86Cho Choh, H.K., Choh, S.H., Choi, D.: J. Korean Phys. Soc. **19** (1986) 217.
86Dou Douglass, D.C., Peterson, G.E.: J. Am. Ceram. Soc. **69** (1986) 48.
86Eng Engelmann, H., Kramer, N., Hsia, Y-f., Liu, R-c., Gonser, U.: Ferroelectrics **69** (1986) 217.
86Fen Feng, X.Q., Liu, J.C., Xue, L.Y., Wang, Z.C.: Proc. IEEE Int. Symp. Appl. Ferroelectr., 6 th, Bethlehem, PA, 1986, p. 29.
86Fuj Fujiwara, Y., Inui, J., Ono, M.: Fujitsu Sci. Tech. J. **22** (1986) 30.
86Gaf Gafurov, V.G., Kucherov, V.I.: Fiz. Tverd. Tela **28** (1986) 2264; Sov. Phys. Solid State (English Transl.) **28** (1986) 1271.
86Ger Gerson, R., Kirchhoff, J.F., Halliburton, L.E., Bryan, D.A.: J. Appl. Phys. **60** (1986) 3556.
86Hay Haycock, P.W., Townsend, P.D.: Appl. Phys. Lett. **48** (1986) 698.
86Jay Jayaraman, A., Ballman, A.A.: J. Appl. Phys. **60** (1986) 1208.
86Jha Jhans, H., Honig, J.M., Rao, C.N.R.: J. Phys. C **19** (1986) 3649.
86Jup Juppe, S., Schirmer, O.F.: Phys. Lett. A **117** (1986) 150.
86Kor Korradi, G., Polgar, K., Bugai, A.A., Zaritskii, I.M., Rakitina, L.G., Grachev, V.G., Deryugina, N.I.: Fiz. Tverd. Tela **28** (1986) 739; Sov. Phys. Solid State (English Transl.) **28** (1986) 412.
86Liu Liu, S.M., Zhang, G.Y., Cuo, J.B.: Acta Phys. Sin. **35** (1986) 1357.
86Luh Luh, Y.S., Feigelson, R.S., Fejer, M.M., Byer, R.L.: J. Cryst. Growth **78** (1986) 135.
86Mal Malovichko, G.I., Grachev, V.G., Lukin, S.N.: Fiz. Tverd. Tela **28** (1986) 991; Sov. Phys. Solid State (English Transl.) **28** (1986) 553.
86Rak Rakova, E.V., Bocharova, N.G., Belugina, N.V., Semiletov, S.A.: Izv. Akad. Nauk SSSR, Ser. Fiz. **50** (1986) 501; Bull. Acad. Sci. USSR, Phys. Ser. (English Transl.) **50** (1986) 81.
86Red Red'kin, B.S., Satunkin, G.A., Kurlov, V.N., Tatarchenko, V.A.: Rost Krist. **15** (1986) 210; Growth Cryst. (English Transl.) **15** (1988) 223.
86Rez Reznichenko, L.A., Turik, A.V., Khasabova, G.I., Chernyshkov, V.A., Piralova, A.T.: Zh. Tekh. Fiz. **56** (1986) 1407; Sov. Phys. Tech. Phys. (English Transl.) **31** (1986) 832.
86Ric Rice, C.E., Holmes, R.J.: J. Appl. Phys. **60** (1986) 3836.
86Sta Stallard, W.A., Beaumont, A.R., Booth, R.C.: J. Lightwave Technol. **LT-4** (1986) 852.
87Baz Bazhenov, S.A., Grigor'ev, M.A., Petrov, V.V.: Akust. Zh. **33** (1987) 767; Sov. Phys. Acoust. (English Transl.) **33** (1987) 445
87Car Carnera, A.: Electro-optic and Photorefractive Materials. Proceedings of the International School on Material Science and Technology, Erice, Sicily, July 6-17, 1986. Günter, P. (ed.), Springer Proceedings in Physics, Vol. 18, Berlin: Springer-Verlag, 1987, p. 179.
87Cho Cho, Y., Yamanouchi, K.: J. Appl. Phys. **61** (1987) 875.
87Don Donnerberg, H.J., Schirmer, O.F.: Solid State Commun. **63** (1987) 29.
87Eng Engelmann, H., Gatzweiler, W., Gonser, U., Dézsi, I., Balogh, Á.G.: J. Non-Cryst. Solids **89** (1987) 326.
87Fri Fries, E., Péter, A.: Rev. Phys. Appl. **22** (1987) 1353.

87Gal Gallagher, P.K., O'Bryan, H.M., Gyorgy, E.M., Krause, J.T.: Ferroelectrics **75** (1987) 71.
87Gra Grachev, V.G., Malovichko, G.I., Troitskii, V.V.: Fiz. Tverd. Tela **29** (1987) 607; Sov. Phys. Solid State (English Transl.) **29** (1987) 349.
87Hay Haycock, P.W., Townsend, P.D.: J. Phys. C **20** (1987) 319.
87Hin Hinkov, V.: J. Appl. Phys. **62** (1987) 3573.
87Hof Hofmann, K.: Diplomarbeit, Technische Universität München, 1987.
87Hol Holmes, R.J., Minford, W.J.: Ferroelectrics **75** (1987) 63.
87HuX Hu, X.H., Wang, H.F.: Ferroelectrics **75** (1987) 109.
87Jia Jiang, Z.M., Liu, Y.L., Zhang, P.X.: Acta Phys. Sin. **36** (1987) 951; Chin. Phys. **8** (1988) 620.
87Jov Jovanovic, A., Kapphan, S., Wöhlecke, M.: Cryst. Lattice Defects Amorphous Mater. **15** (1987) 137.
87Kan1 Kanaev, I.F., Malinovsky, V.K., Pugachev, A.M.: Ferroelectrics **75** (1987) 209.
87Kan2 Kanata, T., Kobayashi, Y., Kubota, K.: J. Appl. Phys. **62** (1987) 2989.
87Lun Lunt, S.R., Peterson, G.E.: Ferroelectrics **75** (1987) 87.
87Mal Malovichko, G.I., Grachev, V.G., Bykov, I.P., Andreev, V.D., Kolomiets, V.P., Nachal'naya, T.A.: Fiz. Tverd. Tela **29** (1987) 427; Sov. Phys. Solid State (English Transl.) **29** (1987) 244.
87Pen Pendergrass, L.L.: J. Appl. Phys. **62** (1987) 231; erratum: **63** (1988) 591.
87Red Red'kin, B.S., Kurlov, V.N., Tatarchenko, V.A.: J. Cryst. Growth **82** (1987) 106.
87Sai Saito, Y., Suganomata, S.: Jpn. J. Appl. Phys. **26** (1987) 1941.
87Sam Samara, G.A.: Ferroelectrics **73** (1987) 145.
87Shv Shvarts, K., Ozols, A., Augustov, P., Reinfelde, M.: Ferroelectrics **75** (1987) 231.
87Tom Tomeno, I., Matsumura, S.: J. Phys. Soc. Jpn. **56** (1987) 163.
87Vog Voges, E., Neyer, A.: J. Lightwave Technol. **5** (1987) 1229.
87Vol Volk, T.R., Shramchenko, S.A., Ivanov, M.A., Meilman, M.L., Rubinina, N.M., Shuvalov, L.A.: Ferroelectrics **73** (1987) 367.
87Vor Voron'ko, Yu.K., Kudryavtsev, A.B., Osiko, V.V., Sobol', A.A., Sorokin, E.V.: Fiz. Tverd. Tela **29** (1987) 1348; Sov. Phys. Solid State (English Transl.) **29** (1987) 771.
87Yam Yamada, K., Takemura, H., Inoue, Y., Omi, T., Matsumura, S.: Jpn. J. Appl. Phys. **26**, Suppl. 26-2 (1987) 219.
87Yan Yang, X.C., Lan, G.X., Li, B., Wang, H.F.: Phys. Status Solidi (b) **141** (1987) 287.
88Alf Alferness, R.C.: Guided-Wave Optoelectronics, Tamir, T. (ed.), Springer Series in Electronics and Photonics, Vol. 26, Berlin: Springer-Verlag, 1988, p. 145.
88Bee Beeson, K.W., Houlding, V.H., Beach, R., Osgood Jr., R.M.: J. Appl. Phys. **64** (1988) 835.
88Bur Bursill, L.A., Peng, J.L.: Ferroelectrics **77** (1988) 81.
88Eng Engelmann, H., Gatzweiler, W., Dezsi, I., Gonser, U.: Phys. Status Solidi (a) **105** (1988) 219.
88Eye Eyett, M., Bäuerle, D.: Ferroelectr. Lett. **8** (1988) 93.
88Fri Fries, S., Hertel, P., Menzler, H.P.: Phys. Status Solidi (a) **108** (1988) 449.
88Gal Gallagher, P.K., O'Bryan, H.M., Brandle, C.D.: Thermochim. Acta **133** (1988) 1.
88Gon González, R., Chen, Y., Abraham, M.M.: Phys. Rev. B **37** (1988) 6433.
88Gra Grabmaier, B.C., Willibald-Riha, E., Born, E.: Siemens Forsch.-Entwicklungsber. **17** (1988) 159.
88Kha Khachaturyan, O.A., Gabrielyan, A.I., Kolesnik, S.P.: Fiz. Tverd. Tela **30** (1988); Sov. Phys. Solid State (English Transl.) **30** (1988) 514.
88Kle Klekamp, A., Donnerberg, H., Heiland, W., Snowdon, K.J.: Surf. Sci. **200** (1988) L465.
88Kos Kostritskii, S.M.: Ferroelectrics **83** (1988) 75.
88Kov Kovács, L., Földvári, I., Cravero, I., Polgár, K., Capelletti, R.: Phys. Lett. A **133** (1988) 433.
88Mou Mouahid, F., Engelmann, H., Dézsi, I., Gonser, U., Molnar, B.: Phase Transitions **13** (1988) 73.
88Rot Rottschalk, M., Rasch, A., Karthe, W.: J. Opt. Commun. **9** (1988) 19.
88Roz Rozenman, G.I.: Fiz. Tverd. Tela **30** (1988) 2323; Sov. Phys. Solid State (English Transl.) **30** (1988) 1340.
88Sin Singh, K.: Solid State Ionics **31** (1988) 139.

88Som Sommerfeldt, R., Holtmann, L., Krätzig, E., Grabmaier, B.C.: Phys. Status Solidi (a) **106** (1988) 89.
88Sym Syms, R.R.A.: Opt. Quantum Electron. **20** (1988) 189.
88Twi Twigg, M.E., Eaglesham, D.J., Maher, D.M., Nakahara, S., Holmes, R.J.: J. Appl. Phys. **63** (1988) 5295.
88Yan Yan, Y., Feng, D., Peng, J.L., Bursill, L.A.: Ferroelectrics **77** (1988) 91.
89Abr Abrahams, S.C.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 3.
89Agu Agullo-Lopez, F.: Optical Materials: Processing and Science, Poker, D.B., Ortiz, C. (eds.), Materials Research Society Symposium Proceedings, Vol. 152; Pittsburgh: Materials Research Society, 1989, p. 73.
89Ash Ashley, P.R., Chang, W.S.C., Buchal, C.J., Thomas, D.K.: J. Lightwave Technol. **7** (1989) 855.
89Bal Ballato, A.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 115.
89Bri Brice, J.C.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 26.
89Che Chen, N.D., Gu, X.R., Zhai, H.F., Wan, Y.X., Du, D.A.: Ferroelectrics **97** (1989) 211.
89Cho1 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 119.
89Cho2 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 121.
89Cho3 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 38.
89Cho4 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 303.
89Cho5 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 281.
89Cho6 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 274.
89Cho7 Cho, Y., Yamanouchi, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 277.
89Cho8 Choh, S.H., Kim, H.T., Choh, H.K., Han, C.S., Choi, D., Kim, J.N.: Bull. Magn. Resonance **11** (1989) 371.
89Eng Engelmann, H., Kraemer, N., Gonser, U.: Ferroelectrics **100** (1989) 127.
89Fra1 Fraser, M.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 207.
89Fra2 Fraser, M.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 224.
89Fra3 Fraser, M.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 220.
89Gla Glavas, E., Cabrera, J.M., Townsend, P.D.: J. Phys. D **22** (1989) 611.
89Gli Glinchuk, M.D., Malovichko, G.I., Bykov, I.P., Grachov, V.G.: Ferroelectrics **92** (1989) 83.
89Gon Gonzalez, R., Ballesteros, C., Chen, Y., Abraham, M.M.: Phys. Rev. B **39** (1989) 11085.
89Got Goto, N., Yip, G.L.: Appl. Opt. **28** (1989) 60.
89Gra1 Grabmaier, B.C.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 28.
89Gra2 Grabmaier, B.C.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 24.
89Gra3 Grabmaier, B.C.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 18.
89Hal Halliburton, L.E.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 179.

89Hin1 Hinkov, V.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 250.
89Hin2 Hinkov, V.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 94.
89Hin3 Hinkov, V.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 101.
89Hin4 Hinkov, V.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 100.
89Hin5 Hinkov, V.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 98.
89Hir Hirano, S., Kato, K.: Processing Science of Advanced Ceramics, Symposium, April 1989, San Diego, CA, Aksay, I.A., McVay, G.L., Ulrich, D.R. (eds.), Materials Research Society Symposium Proceedings, Vol. 155, Pittsburgh: Materials Research Society, 1989, p. 181.
89Hod Hodgson, E.R., Agullo-Lopez, F.: J. Phys. Condens. Matter **1** (1989) 10015.
89Jae Jaeger, N.A.F., Young, L.: IEEE J. Quantum Electron. **25** (1989) 720.
89Kan1 Kanata, T., Kubota, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 22.
89Kan2 Kanata, T., Kubota, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 143.
89Kan3 Kanata, T., Kubota, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 185.
89Kir1 Kirkby, C.J.G.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 131.
89Kir2 Kirkby, C.J.G.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 139.
89Kir3 Kirkby, C.J.G.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 156.
89Kor Korradi, G., Polgar, K., Zaritskii, I.M., Ratkina, L.G., Deryugina, N.I.: Fiz. Tverd. Tela **31** (1989) 115; Sov. Phys. Solid State (English Transl.) **31** (1989) 1540.
89Kov1 Kovacs, L., Foldvari, I.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 189.
89Kov2 Kovacs, L., Polgar, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 109.
89Lew1 Lewis, M.F., West, C.L.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 198), p. 82.
89Lew2 Lewis, M.F., West, C.L.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 104.
89Lew3 Lewis, M.F., West, C.L.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 269.
89LiJ Li, J., Dransfeld, K.: Ferroelectrics **93** (1989) 259.
89Lin1 Lin, T.H., Lee, S.H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 52.
89Lin2 Lin, T. H., Lee, S. H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 49.
89Lin3 Lin, T. H., Lee, S. H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 56.
89LiQ Li, Q., Feng, D.: Ferroelectrics **97** (1989) 217.
89Mik Miki, T., Hantehzadeh, M.R., Halliburton, L.E.: J. Phys. Chem. Solids **50** (1989) 1003.
89Mor Morgan, D.P.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 84.
89Nas Nassau, K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. V.

89Nik Nikulova, G.A., Blistanov, A.A., Voronov, V.V., Makarevskaya, E.V.: Kristallografiya **34** (1989) 1227; Sov. Phys. Crystallogr. (English Transl.) **34** (1989) 740.
89Otk Otko, A.I., Nosenko, A.E., Sol'skii, I.M., Burak, Ya.V.: Fiz. Tverd. Tela **31** (1989) 42; Sov. Phys. Solid State (English Transl.) **31** (1989) 1861.
89Pea Peach, R.C.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 63.
89Pet Peter, A., Fries, E.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 40.
89Pit1 Pitt, C.W.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 216.
89Pit2 Pitt, C.W.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 234.
89Pit3 Pitt, C.W.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 230.
89Pit4 Pitt, C.W.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 227.
89Pol Polozkov, N.M., Ivleva, L.I.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 214.
89Ree Reed, G.T., Weiss, B.L.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 257.
89Rin1 Ringhofer, K.H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 337.
89Rin2 Ringhofer, K.H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 328.
89Rin3 Ringhofer, K.H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 316.
89Rin4 Ringhofer, K.H.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 307.
89Ros Rossner, W., Grabmaier, B.C., Wersing, W.: Ferroelectrics **93** (1989) 57.
89Sco1 Scott, J.F.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 174.
89Sco2 Scott, J.F.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 177.
89Skv Skvortsov, A.P.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 200.
89Tay Taylor, D.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 44.
89Tom1 Tomeno, I., Matsumura, S.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 152.
89Tom2 Tomeno, I., Matsumura, S.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 31.
89Tom3 Tomeno, I., Matsumura, S.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 32.
89Tom4 Tomov, T., Engelmann, H., Dezsi, I., Gonser, U.: Solid State Commun. **69** (1989) 41.
89Tow Townsend, P.D.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 171.
89Wei1 Weis, R.S.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 127.
89Wei2 Weis, R.S.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 34.
89Won1 Wong, K.K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 243.

89Won2 Wong, K.K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 239.
89Won3 Wong, K.K.: Properties of Lithium Niobate. EMIS Datareviews Series No. 5, INSPEC, The Institution of Electrical Engineers, London, 1989, p. 147.
90Bau Baumann, R.C., Rost, T.A., Rabson, T.A.: Ferroelectric Thin Films, Symposium, April 1990, San Francisco, CA, Myers, E.R., Kingon, A.I. (eds.), Materials Research Society Symposium Proceedings, Vol. 200, Pittsburgh: Materials Research Society, 1990, p. 31.
90Cho Cho, Y., Horie, H., Yamanouchi, K.: Jpn. J. Appl. Phys. **29**, Suppl. 29-1 (1990) 19.
90Cor Corradi, G., Söthe, H., Spaeth, J.M., Polgár, K.: J. Phys. Condens. Matter **2** (1990) 6603.
90Eic Eichorst, D.J., Payne, D.A., Wragg, A.N.A.: Ceramic Transactions, Vol. 11. Ceramic Thin and Thick Films, Hiremath, B.V. (ed.), Westerville: The American Ceramic Society, Inc., 1990, p. 375.
90Eng Engelmann, H., Andler, G., Dezsi, I.: Hyperfine Interact. **53** (1990) 321.
90Fen1 Feng, X.Q., Tang, L.A., Xu, L.Y., Jiang, X.K.: Phys. Status Solidi (a) **119** (1990) 561.
90Fen2 Feng, X.Q., Wang, D.S., Zhang, J.Z.: Phys. Status Solidi (b) **157** (1990) K127.
90Fen3 Feng, H.X., Wen, J.K., Wang, H.F., Han, S.Y., Xu, Y.X.: J. Phys. Chem. Solids **51** (1990) 397; erratum: **51** (1990) 1143.
90Fen4 Feng, X.Q., Zhang, Q.R., Ying, J.F., Liu, J.C., Yin, Z.W.: Sci. China, Ser. A **33** (1990) 108.
90Hag Hagberg, D.S., Payne, D.A.: Ferroelectric Thin Films, Symposium, April 1990, San Francisco, CA, Myers, E.R., Kingon, A.I. (eds.), Materials Research Society Symposium Proceedings, Vol. 200, Pittsburgh: Materials Research Society, 1990, p. 19.
90Jia Jia, W.Y., Liu, H.M., Knutson, R., Yen, W.M.: Phys. Rev. B **41** (1990) 10906.
90Jun Jundt, D.H., Fejer, M.M., Byer, R.L.: IEEE J. Quantum Electron. **26** (1990) 135.
90Kov Kovacs, L., Szaller, Zs., Cravero, I., Foldvari, I., Zaldo, C.: J. Phys. Chem. Solids **51** (1990) 417.
90Lal1 Lallier, E., Pocholle, J.P., Papuchon, M., de Micheli, M., Li, M.J., He, Q., Ostrowsky, D.B., Grezes-Besset, C., Pelletier, E.: Opt. Lett. **15** (1990) 682.
90Lal2 Lallier, E., Pocholle, J.P., Papuchon, M., de Micheli, M., Li, M.J., He, Q., Ostrowsky, D.B., Grezes-Besset, C., Pelletier, E.: Electron. Lett. **26** (1990) 927.
90Leu Leupold, O., Billenstein, M., Giesse, E., Gruber, W., Molnár, B., Nagy, D.L., Ritter, G., Röhlich, U.: Hyperfine Interact. **56** (1990) 1539.
90Mac Maciak, T.: Opt. Appl. **20** (1990) 209.
90Mag Magel, G.A., Fejer, M.M., Byer, R.L.: Appl. Phys. Lett. **56** (1990) 108.
90Pro Prokhorov, A.M., Kuz'minov, Yu.S.: Physics and Chemistry of Crystalline Lithium Niobate, Hilger, Bristol, 1990.
90WuR Wu, R.C.R., Vest, R.W.: Ceramic Transactions, Vol. 11. Ceramic Thin and Thick Films, Hiremath, B.V. (ed.), Westerville: The American Ceramic Society, Inc., 1990, p. 319.
90Zha Zhang, W.K., Shi, B.C., Zhao, G.R., Sun, X.M.: Ferroelectrics **101** (1990) 19.
91Bar Barbusa, P.C., de Paiva, J.A.C., Mendes Filho, J., Hernandes, A.C., Andreeta, J.P., Sombra, A.S.B.: Phys. Status Solidi (a) **125** (1991) 723.
91Bri Brinkmann, R., Sohler, W., Suche, H.: Electron. Lett. **27** (1991) 415.
91Cat1 Catlow, C.R.A., Chadwick, A.V., Cole, M., Tomlinson, S.M.: Radiat. Eff. Defects Solids **119-121** (1991) 565.
91Cat2 Catchen, G.L., Spaar, D.M.: Phys. Rev. B **44** (1991) 12137.
91Cor1 Corradi, G., Söthe, H., Spaeth, J.M., Polgár, K.: J. Phys. Condens. Matter **3** (1991) 1901.
91Cor2 Corradi, G., Söthe, H., Spaeth, J.M., Polgár, K.: Radiat. Eff. Defects Solids **119-121** (1991) 583.
91Ese Esengaliev, A.B., Novikov, V.N., Novik, V.K., Gavrilova, N.D.: Fiz. Nizk. Temp. **17** (1991) 523; Sov. J. Low Temp. Phys. (English Transl.) **17** (1991) 276.
91Fuj1 Fujimura, M., Suhara, T., Nishihara, H.: Electron. Lett. **27** (1991) 1207.
91Fuj2 Fujimura, N., Ito, T., Kakinoki, M.: J. Cryst. Growth **115** (1991) 821.
91Gon Gonzalez, R., Hodgson, E.R., Ballesteros, C., Chen, Y.: Phys. Rev. Lett. **67** (1991) 2057.

91Gra Grabmaier, B.C., Wersing, W., Koestler, W.: J. Cryst. Growth **110** (1991) 339.
91HuL Hu, L.J., Chang, Y.H., Hu, M.L., Chang, M.W., Tse, W.S.: J. Raman Spectrosc. **22** (1991) 333.
91Kov Kovacs, L., Wohlecke, M., Jovanovic, A., Polgar, K., Kapphan, S.: J. Phys. Chem. Solids **52** (1991) 797.
91Myt Mytsyk, B.G., Pryris, Ya.V., Andrushchak, A.S.: Cryst. Res. Technol. **26** (1991) 931.
91Nas1 Nashimoto, K., Cima, M.J., Rhine, W.E.: Evolution of Thin-Film and Surface Microstructure. Sympoium, November-December 1990, Boston, MA, Thompon, C.V., Tsao, J.Y., Srolovitz, D.J. (eds.), Materials Research Society Symposium Proceedings, Vol. 202, Pittsburgh: Materials Research Society, 1991, p. 439.
91Nas2 Nashimoto, K., Cima, M.J.: Mater. Lett. **10** (1991) 348.
91Nov Novikov, V.N., Novik, V.K., Esengaliev, A.B., Gavrilova, N.D.: Ferroelectrics **118** (1991) 59.
91Ogu Oguri, H., Yamamura, H., Orito, T.: J. Cryst. Growth **110** (1991) 669.
91Pet Péter, Á., Fries, E., Riviere, J.P.: Phys. Status Solid (a) **128** (1991) 45.
91Pri Prieto, C., Zaldo, C., Fessler, P., Dexpert, H., Sanz-Garcia, J.A., Dieguez, E.: Phys. Rev. B **43** (1991) 2594.
91Reb Rebouta, L., da Silva, M.F., Soares, J.C., Hage-Ali, M., Stoquert, J.P., Siffert, P., Sanz-García, J.A., Diéguez, E., Agulló-López, F.: Europhys. Lett. **14** (1991) 557.
91Rei Reiche, P., Bohm, J., Hermoneit, B., Rudolph, P., Schalge, R., Schultze, D.: J. Cryst. Growth **108** (1991) 759.
91Ros Rost, T.A., Rabson, T.A., Stone, B.A., Callahan, D.L., Baumann, R.C.: IEEE Trans. Ultrason. Ferroelectr. Freq. Control **38** (1991) 640.
91Siu Siu, G.G., Zhao, M.G.: Phys. Rev. B **43** (1991) 13575.
91Taj Tajima, K., Kuwabara, N., Amemiya, F.: IEICE Trans. Commun. **E74** (1991) 1941.
91Yam Yamamoto, K., Mizuuchi, K., Takeshige, K., Sasai, Y., Taniuchi, T.: J. Appl. Phys. **70** (1991) 1947.
91Yeo Yeom, T.H., Choh, S.H.: Proceedings of the Fourth Asia Pacific Physics Conference, August 1990, Seoul, Vol. 1, Ahn, S.H., Choh, S.H., Cheon, I.-T., Lee, C. (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd., 1991, p. 460.
91Zal Zaldo, C., Prieto, C., Dexpert, H., Fessler, P.: J. Phys. Condens. Matter **3** (1991) 4135.
92Bak1 Bak, W., Kus, C., Ptak, W.S., Smiga, W.: Ferroelectrics **126** (1992) 179.
92Bak2 Bak, W., Krzywanek, K., Kus, C., Ptak, W.S.: Ferroelectrics **133** (1992) 241.
92Ben Benaissa, K., Ashrit, P.V., Bader, G., Girouard, F.E., Truong, V.V.: Thin Solid Films **214** (1992) 219.
92Bor Bordui, P.F., Norwood, R.G., Jundt, D.H., Fejer, M.M.: J. Appl. Phys. **71** (1992) 875.
92Cor Corradi, G., Söthe, H., Spaeth, J.-M., Polgár, K.: Ferroelectrics **125** (1992) 295.
92Den Dengler, H., Leupold, O., Nagy, D.L., Ritter, G., Aubertin, F., Limbach, C.T., Gonser, U.: Hyperfine Interact. **69** (1992) 667.
92Dep de Paiva, J.A.C., Barbosa, P.C., Mendes Filho, J., Moreira, J.E., Germono, F.A., Hernandes, A.C., Andreeta, J.P., Sombra, A.S.B.: Opt. Mater. **1** (1992) 59.
92Gor Göring, R., Zhan, Y.-L., Steinberg, S.: Appl. Phys. A **55** (1992) 97.
92Hsu Hsu, W.-Y., Gupta, M.C.: Appl. Phys. Lett. **60** (1992) 1.
92Kit Kitamura, K., Yamamoto, J.K., Iyi, N., Kimura, S., Hayashi, T.: Cryst. Growth **116** (1992) 327.
92Kla Klauer, S., Wöhlecke, M., Kapphan, S.: Phys. Rev. B **45** (1992) 2786.
92Kli Kling, A., Kollewe, D., Grabmaier, B.C.: Nucl. Instrum. Methods Phys. Res. **B64** (1992) 232.
92Kol Kollewe, D., Kling, A., Grabmaier, B.C., Bremer, T., Heiland, W., Zimmermann, W.: Phys. Lett. A **169** (1992) 177.
92Loi Loi, K.K., Pun, E.Y.B., Chung, P.S.: Electron. Lett. **28** (1992) 546.
92Mae Maeda, M., Suzuki, I., Sakiyama, K.: Jpn. J. Appl. Phys. **31** (1992) 3229.
92Mak Makio, S., Nitanda, F., Ito, K., Sato, M.: Appl. Phys. Lett. **61** (1992) 3077.
92Mul Müller, H., Schirmer, O.F.: Ferroelectrics **125** (1992) 319.

92Nas Nashimoto, K., Cima, M.J., Rhine, W.E.: Ceramic Transactions, Vol. 25. Ferroelectric Films, Proceedings of the Symposium, Cincinnati, OH, April-May 1991, Bhalla, A.S., Nair, K.M. (eds.), Westerville: The American Ceramic Society, Inc., 1992, p. 371.
92Pfa Pfannes, H.-D., Magalhäes-Paniago, R., Putzka, A.: Hyperfine Interact. **70** (1992) 1133.
92Pun Pun, E.Y.B., Chung, P.S., Chan, C.K.: Jpn. J. Appl. Phys. **31** (1992) 1591.
92Reb1 Rebouta, L., Soares, J.C., da Silva, M.F., Sanz-García, J.A., Dieguez, E., Agulló-López, F.: J. Mater. Res. **7** (1992) 130.
92Reb2 Rebouta, L., da Silva, M.F., Soares, J.C., Sanz-García, J.A., Dieguez, E., Agulló-López, F.: Nucl. Instrum. Methods Phys. Res. **B65** (1992) 256.
92Sav Savatinova, I., Tonchev, S., Popov, E., Liarokapis, E., Raptis, C.: J. Phys. D **25** (1992) 106.
92Sch Schlarb, U., Betzler, K.: Ferroelectrics **126** (1992) 39.
92She Shen, H.Y., Xu, H., Zeng, Z.D., Lin, W.X., Wu, R.F., Xu, G.F.: Appl. Opt. **31** (1992) 6695.
92Shi Shi, B.R., Wang, K.M., Wang, Z.L., Liu, X.D., Xu, T.B., Zhu, P.R.: J. Appl. Phys. **72** (1992) 899.
92Son Son, Y.S., Lee, H.J., Jheem, Y.K., Shin, S.Y., Kim, B.G.: IEEE Photonics Technol. Lett. **4** (1992) 457.
92Sot Söthe, H., Spaeth, J.M.: J. Phys. Condens. Matter **4** (1992) 9901.
92Tom Tomita, A., Fukuda, Y., Takeuchi, N.: Phys. Status Solidi (a) **134** (1992) 279.
92Vla Vladimirtsev, Y.V., Golenishchev-Kutuzov, V.A., Khasanova, I.A., Golenishchev-Kutuzov, A.V., Shakurova, E.A.: Ferroelectrics **126** (1992) 63.
92Vol Volk, T.R., Rubinina, N.M.: Ferroelectr. Lett. **14** (1992) 37.
92XuG Xu, G.F., Gong, M.L., Guo, Y.J., Chen, J.R., Li, B., Zhai, G., Han, K.: Chin. Phys. **12** (1992) 357.
92Yam Yamamoto, J.K., Kitamura, K., Iyi, N., Kimura, S., Furukawa, Y., Sato, M.: Appl. Phys. Lett. **61** (1992) 2156.
92Zal Zaldo, C., Prieto, C.: Ferroelectrics **134** (1992) 47.
93Bir Birnie III, D.P.: J. Mater. Sci. **28** (1993) 302.
93Fri Fridkin, V., Dalba, G., Fornasini, P., Soldo, Y., Rocca, F., Burattini, E.: Ferroelectr. Lett. **16** (1993) 1.
93Fuj Fujiwara, T., Srivastava, R., Cao, X.F., Ramaswamy, R.V.: Opt. Lett. **18** (1993) 346.
93Fur Furukawa, Y., Sato, M., Kitamura, K., Nitanda, F.: J. Cryst. Growth **128** (1993) 909.
93Jos Joshi, V., Roy, D., Mecartney, M.L.: Appl. Phys. Lett. **63** (1993) 1331.
93Law Lawrence, M.: Rep. Prog. Phys. **56** (1993) 363.
93LiH Li, H.P., Wang, X., Xu, G.F.: Cryst. Res. Technol. **28** (1993) 36.
93Mal Malovichko, G.I., Grachev, V.G., Schirmer, O.F., Faust, B.: J. Phys. Condens. Matter **5** (1993) 3971.
93Min Minamisono, T., Ohtsubo, T., Nakayama, Y., Fukuda, S., Izumikawa, T., Tanigaki, M., Matsui, M., Takeda, S., Nakamura, N., Fukuda, M., Matsuta, K., Nojiri, Y.: Hyperfine Interact. **78** (1993) 159.
93Mor1 Morozov, A.N., Voronova, M.I., Vyrelkin, V.P., Makarevskaya, E.V., Kugaenko, O.M., Blistanov, A.A.: Kristallografiya **38** (1993) 219; Crystallogr. Rep. **38** (1993) 545.
93Mor2 Moretti, P., Canut, B., Ramos, S.M.M., Brenier, R., Thevenard, P., Poker, D., Dacunha, J.B.M., Amaral, L., Vasquez, A.: J. Mater. Res. **8** (1993) 2679.
93Nak Nakamura, K., Hosoya, M., Tourlog, A.: J. Appl. Phys. **73** (1993) 1390.
93Oga Ogawa, H., Ohta, H., Waseda, Y.: J. Cryst. Growth **133** (1993) 255.
93Par1 Park, I.W., Choh, S.H., Song, K.J., Kim, J.N.: J. Korean Phys. Soc. **26** (1993) 172.
93Par2 Park, I.W., Choh, S.H., Song, K.J., Yeom, T.H., Rudowicz, C.: J. Korean Phys. Soc. **26** (1993) 168.
93Pun Pun, E.Y.B., Loi, K.K., Mak, C.F., Chung, P.S.: J. Appl. Phys. **73** (1993) 3114.
93Rak Rakova, E.V.: Surface Sci. **287** (1993) 400.
93Ram Ramabadran, U.B., Jackson, H.E., Boyd, J.T.: J. Appl. Phys. **74** (1993) 1492.
93Sch1 Schlarb, U., Betzler, K.: J. Appl. Phys. **73** (1993) 3472.

93Sch2 Schlarb, U., Klauer, S., Wesselmann, M., Betzler, K., Wohlecke, M.: Appl. Phys. A **56** (1993) 311.
93Shi Shimizu, M., Furushima, Y., Nishida, T., Shiosaki, T.: Jpn. J. Appl. Phys. **32** (1993) 4111.
93Yeo Yeom, T.H., Chang, Y.M., Rudowicz, C., Choh, S.H.: Solid State Commun. **87** (1993) 245.
94Bar Bartholomäus, T., Buse, K., Deuper, C., Krätzig, E.: Phys. Status Solidi (a) **142** (1994) K55.
94Bau Baumann, I.: J. Cryst. Growth **144** (1994) 193.
94Bev Beveridge, M., Mcghee, L., Mcmeekin, S.G., Robertson, M.I., Ross, A., Winfield, J.M.: J. Mater. Chem. **4** (1994) 119.
94Blu Blumel, J., Born, E., Metzger, T.: J. Phys. Chem. Solids **55** (1994) 589.
94Boy Boysen, H., Altorfer, F.: Acta Crystallogr., Sect. B **50** (1994) 405.
94Bri Brinkmann, R., Baumann, I., Dinand, M., Sohler, W., Suche, H.: IEEE J. Quantum Electron. **30** (1994) 2356.
94Dha Dhanaraj, G., Bhat, H.L., Narayanan, P.S.: Ferroelectrics **157** (1994) 7.
94Fei Fei, Y., Wong, H.K.: J. Appl. Phys. **76** (1994) 871.
94Gho Ghosh, G.: Opt. Lett. **19** (1994) 1391.
94Hau Hauer, B., Vianden, R., Dasilva, M.F., Rebouta, L., Soares, J.C., Dieguez, E., Agullolopez, F.: J. Phys. Condens. Matter **6** (1994) 267.
94Hur Hur, N.H., Park, Y.K., Won, D.H., No, K.S.: J. Mater. Res. **9** (1994) 980.
94Koj Kojima, S.: Ferroelectrics **152** (1994) 301.
94Kon Kondo, Y., Kouyama, T., Ohno, K., Tsuji, M., Nakamura, M., Fujii, Y.: Jpn. J. Appl. Phys. **33** (1994) L338.
94Kuz Kuzminov, Y.S., Osiko, V.V.: Kristallografiya **39** (1994) 530; Crystallogr. Rep. **39** (1994) 471.
94Len Leng, S.Y., Yu, Y.S.: Phys. Status Solidi (a) **143** (1994) 431.
94Lor Lorenzo, A., Bausá , L.E., Voda, M., García Solé, J.: J. Phys. (Paris), Collq. IV, **4** C-4 (1994) 381.
94Mul Muller, R., Santos, M.T., Arizmendi, L., Cabrera, J.M.: J. Phys. D **27** (1994) 241.
94Otk Otko, A.I., Nosenko, A.E., Moiseenko, V.N.: Kristallografiya **39** (1994) 501; Crystallogr. Rep. **39** (1994) 444.
94Rey Reyher, H.J., Schulz, R., Thiemann, O.: Phys. Rev. B **50** (1994) 3609.
94Sch Schlarb, U., Betzler, K.: Phys. Rev. B **50** (1994) 751.
94Sid Sidorov, N.V., Serebryakov, Y.A.: Vibration. Spectrosc. **6** (1994) 215.
94Suz Suzuki, T.: Mater. Lett. **19** (1994) 127.
94Tan Tan, C.Y., Xia, Y.Y., Liu, X.D., Liu, J.T., Ma, S.J., Li, J.H.: Nuclear Instrum. Methods Phys. Res. **B84** (1994) 491.
94Thy Thyagarajan, K., Chien, C.W., Ramaswamy, R.V., Kim, H.S., Cheng, H.C.: Opt. Lett. **19** (1994) 880.
94Wan Wang, Z.L., Shi, B.R., Wang, K.M., Xu, T.B., Zhu, P.R.: Nuclear Instrum. Methods Phys. Res. **B90** (1994) 369.
94Yeo1 Yeom, T.H., Chang, Y.M., Choh, S.H., Rudowicz, C.: Phys. Status Solidi (b) **185** (1994) 409.
94Yeo2 Yeom, T.H., Choh, S.H., Chang, Y.M., Rudowicz, C.: Phys. Status Solidi (b) **185** (1994) 417.
94Yoo1 Yoon, D.H., Fukuda, T.: J. Cryst. Growth **144** (1994) 201.
94Yoo2 Yoon, J.G., Kim, S.Y., Kwun, S.I.: Ferroelectrics **152** (1994) 207.
94Zhu Zhu, Y.Y., Zhu, S.N., Hong, J.F., Ming, N.B.: Appl. Phys. Lett. **65** (1994) 558.
94Zot Zotov, N., Boysen, H., Frey, F., Metzger, T., Born, E.: J. Phys. Chem. Solids **55** (1994) 145.
95WuX Wu, X.L., Zhang, M.S., Yan, F., Feng, D.: Solid State Commun. **93** (1995) 131.
95Zhu Zhu, Y.Y., Zhu, S.N., Zhang, Z.Y., Shu, H., Hong, J.F., Ge, C.Z., Ming, N.B.: Appl. Phys. Lett. **66** (1995) 408.