

Prof. Dr. Siegmur Kapphan

PUBLICATIONS

1. "Wechselwirkungseffekte von OH^- -Dipolen in Alkalihalogeniden" Diplomarbeit, Universität Stuttgart (1966)
2. "Electro-caloric Effects and Relaxation Behavior of Off-Center Ag^+ and Li^+ Ions in alkali Halides", (mit F. Lüty) Proc. of the Int. Color Center Conf., Rom (1968)
3. "Electro-Caloric Effects of Li^+ , OH^- and Ag^+ Dipoles in Alkali Halides" (mit F. Lüty), Solid State Communications 6, 907 (1968)
4. "A Study of Paraelectric Defects in Alkali Halide Crystals with optical and caloric Methods", Dissertation, University of Utah (1970)
5. "Study of Reorientation Kinetics in Alkali Halides with Optical Methods" (mit F. Lüty) Solid State Communications 8, 349 (1970)
6. "Study of the Relaxation Behavior of OH^- -Dipoles in eight Alkali Halides with Electro-optical and Electro-caloric Methods" (mit F. Lüty) Nr. 66, Proc. Intern. Color Center Conference, Reading (1971)
7. "Paraelastic and Paraelectric Behavior of OH^- in KI (mit F. Lüty, R.V. Jimenez) Nr. 67, Proc. Intern. Color Center Conference, Reading (1971)
8. "Static and Dynamic Paraelectric Behavior of $\langle 110 \rangle$ Off-Center Ag^+ Ions in RbCl and RbBr" (mit F. Lüty) Phys. Rev. B, 6, 1537 (1972)
9. "Study of the Paraelectric Behavior of OH^- Ions in Alkali Halides with Optical and Caloric Methods. I) Statics of the Dipole Alignment" (mit F. Lüty) J. Phys. Chem. Sol. 34, 969 (1973)
10. "Study of the Paraelectric Behavior of OH^- Ions in Alkali Halides with Optical and Caloric Methods. II) Dynamics of the Dipole Alignment" J. Phys. Chem. Sol. 35, 621 (1974)
11. "Field-induced Dichroism and $\langle 110 \rangle$ Orientation of OH^- -Centers in KI" Proc. Intern. Color Center Conference Sendai, 171 (1974)
12. "Phase-Matched Second Harmonic Generation in Urea" (mit D. Bäuerle, K. Betzler, H. Hesse u. P. Loose) Physica status solidi (a) 42, K 119 (1977)
13. "Hydrogen Impurity Modes in Monodomain SrTiO_3 Single Crystals" (mit J. Koppitz) Proc. Intern. Conference on Defects in Insulating Crystals, Gatlinburg, USA, 226 (1977)
14. "VUV- and NIR-Absorption of OH^- -Impurities in Alkali Fluorides" (mit J. Koppitz) Proc. Intern. Conf. on Defects in Insulating Crystals, Gatlinburg, USA, 228 (1977)
15. "Rayleigh Scattering near the Paraelectric-Ferroelectric Phase-Transition in BaTiO_3 " (mit P. Loose, K. Betzler u. D. Bäuerle), Proc. Int. Conf. on Lattice Dynamics, 681, Flammarion (1978)
16. "Doping of SrTiO_3 with Hydrogen and Deuterium" (mit H. Hesse) Phys. stat. sol. (a) 50, K243 (1978)
17. "O-D and O-H Stretching Vibrations in Monodomain SrTiO_3 " (mit J. Koppitz and G. Weber) Proceedings 4th EMF, Portoroz, Yugoslavia (1979), and Ferroelectrics, Vol. 25, 585 (1980)
18. "Temperature Dependence of the Reorientation Behavior of $\langle 110 \rangle$ Off-Center Ag^+ Defects in RbBr" (mit J. Koppitz) Proceeding 3rd Europhysics Topical Conf. on Lattice Defects in Ionic Crystals Canterbury, G.B. (1979) and Journal de Physique, Coll. C6, 7, 401 (1980)

19. "ITC under applied uniaxial stress - A New Method to study the elastic as well as the electric properties of classically freezing-in dipole Systems" (mit Maximo Siu Li, M. Aegerter and M. de Souza), Proceedings Int. Conference on defects in insulating crystals, Riga, USSR, 114 (1981)
20. "IR-Absorption Study of H and D Impurities in BaTiO₃ crystals" (mit G. Weber), Proceedings 5th Int. Meeting on Ferroelectricity, Penn. State University, Univ. Parlg., USA, P3G-4 (1981)
21. "Hydrogen as Origin of thermal Fixing in LiNbO₃:Fe" (mit H. Vormann, G. Weber und E. Krätzig), Solid State Communications, Vol. 40, 543 (1981)
22. "Ionic Thermal Currents under Uniaxial Stress" (mit M. Siu Li und M. de Souza), Phys. Stat. Sol. (b) 112, 685 (1982)
23. "UV-Absorption and Electro-Optical Alignment Behavior of Off-Center Ag⁺ in RbI", Phys. Stat. Sol. (b), 113, 147 (1982)
24. "Electrodichroism and paraelectric alignment of <110>-oriented OH⁻-centers in KI" (mit F. Lüty), Phys. Rev. B25, 7780 (1982)
25. "Phase-matched second harmonic generation in Potassium malate" (mit L. Schüler, H. Hesse und K. Betzler), Optics Communications, 43, 157 (1982)
26. "Infrared defect absorption of H- and D-Centers in BaTiO₃" (mit G. Weber), Ferroelectrics 37, 637 (1981)
27. "Optical second harmonic measurements on KTaO₃:Li" (mit M. Grabs und K. Betzler), Ferroelectrics Letters 2, 41 (1984)
28. "Paramagnetic resonance and near-infrared optical absorption of SrTiO₃:Ir⁴⁺" (mit O.F. Schirmer, A. Förster, H. Hesse und M. Wöhlecke), J. Phys. C, Sol. State Phys., 17, 1321 (1984)
29. "Raman and FIR Study of OH⁻ and OD-Centers in Monodomain SrTiO₃-Crystals" (mit V. Gericke, G. Weber, M. Wöhlecke), Proceedings Int. Conference on Defects in Ins. Cryst., Salt Lake City, USA, 117 (1984)
30. "Lumineszenz and Dielectric Measurements of Ag⁺-Off-Center Defects in Rubidiumhalides" (mit B. Adler, W. Lohrie, J. Koppitz), Proceedings Int. Conference on Defects in Ins. Cryst., Salt Lake City, USA, 5 (1984)
31. "Optical Measurements of the Temperature Dependent Reorientation Processes of Off-Center-Ag⁺ in RbI and RbBr" (mit L. Schüler), Proceedings Int. Conference on Defects in Ins. Cryst., Salt Lake City, USA, 412 (1984)
32. "Temperaturabhängigkeit des Dipolmomentes von Ag⁺-off-center Störstellen in Rubidiumhalogeniden" (mit W. Lohrie und J. Koppitz), Solid State Communications 60, 959 (1986)
33. "Spectroscopy of the O-H and O-D stretching vibrations in SrTiO₃ under applied electric field and uniaxial stress" (mit G. Weber und M. Wöhlecke), Phys. Rev. B34, 8406 (1986)
34. "Spatially Resolved Second Harmonic Generation and Interferometric Investigations of LiNbO₃ Crystals" (mit N. Schmidt und K. Betzler), Crystal Lattice Defects and Amorphous Materials, vol. 15, 103 (1987)
35. "Raman Study of Hydrogen in LiNbO₃" (mit A. Jovanovic und M. Wöhlecke), Crystal Lattice Defects and Amorphous Materials, vol. 15, 137 (1987)

36. A. Förster, H. Hesse, S. Kapphan, M. Wöhlecke, 'OH-Stretching Vibrations in Monodomain KNbO₃', Solid State Comm. 57, 373 (1986)
37. S. Kapphan, 'Behavior of protons in ternary oxides', Advances in Ceramics 23, 379 (1987)
38. A. Förster, S. Kapphan, M. Wöhlecke, 'Overtone Spectroscopy of the O-H and O-D Stretch Modes in LiNbO₃', phys. stat. sol. 143, 755 (1987)
39. F. Klose, M. Wöhlecke, S. Kapphan, 'UV-Excited Luminescence of LiNbO₃ and LiNbO₃:Mg', Ferroelectrics 92, 181 (1989)
40. A. Jovanovic, M. Wöhlecke, S. Kapphan, A. Maillard, G. Godefroy, 'Infrared Spectroscopy of Hydrogen Centers in undoped and Iron-doped BaTiO₃ Crystals', J. Phys. Chem. Solids 50, 623 (1989)
41. N. Schmidt, K. Betzler, M. Grabs, S. Kapphan, F. Klose, 'Spatially Resolved Second Harmonic Generation Investigations of Proton-Induced Refractive Index Changes in LiNbO₃', J. Appl. Phys. 65, 1253 (1989)
42. A. Gröne, M. Wöhlecke, S. Kapphan, R. Waser, 'High Resolution IR Spectroscopy of the OH Stretch Modes in SrTiO₃:Fe', Ferroelectrics (1990) 107, 97
43. P. Voigt, K. Betzler, N. Schmidt, S. Kapphan, 'Second Harmonic Generation Study of Field-Induced Changes in the Phase Transition of K_{1-x}Li_xTaO₃', Ferroelectrics (1990), 106, 149.
44. A. Jovanovic, M. Wöhlecke, S. Kapphan, B. Hellermann, 'Fourier IR and Raman' Spectroscopy of the OH-Stretch Modes in KTaO₃', Ferroelectrics (1990), 107, 85
45. S. Kapphan, A. Jovanovic, A. Breitskopf, X.Z. Wang, W. Ludorf, D. Bäuerle, 'Infrared absorption of O-H in thin films of hydrogenerated Bi₂Sr₂CaCu₂O₈', Z. Phys. B - Condensed Matter (1990), 79, 33 (1990)
46. L. Kovács, M. Wöhlecke, A. Jovanovic, K. Polgar, S. Kapphan, 'IR-abs.study of the O-H vibrational band in LiNbO₃ crystals', J. Phys. Chem. Sol. 52, 797 (1991)
47. N. Schmidt, K. Betzler, M. Grabs and S. Kapphan, 'Electric-Field assisted Proton Diffusion in LiNbO₃', Proceedings, ICDIM Conf., Parma (1988), p. **58 (2B-04)** 1985
48. M. Backens, O. Kanert, R. KÜchler und S. Kapphan, 'Uncommon Temperature Dependence of the Rotational Motion of OH-Centers in NaCl', Proceed. Europhys. Conf., Groningen 1990, und Rad. Eff. and Def. in Solids, 119-121, 657 (1991)
49. N. Schmidt, P. Voigt, B. Hellermann, K. Betzler, H. Hesse, S. Kapphan 'Variation der Phasenanpassungstemperatur für optische Frequenzverdopplung in KNbO₃:Ta', Rad. Effects and Defects in Solids (1991) Vol. 119-121, pp. 281-286

50. A. Jovanovic, M. Wöhlecke, S. Kapphan, 'Field-induced Splitting of the OH-Stretch Absorption Line in KTaO_3 and in $\text{KTaO}_3:\text{Li}$ ' Radiation Effects and Defects in Solids, Vol. **119-121**, pp. 785-790 (1991)
51. S. Klauer, M. Wöhlecke, S. Kapphan, 'Isotope Effect of Protonic Conductivity in LiNbO_3 ', Radiation Effects and Defects in Solids Vol. **119-121**, pp. 699-704 (1991)
52. N. Schmidt, P. Voigt, B. Hellermann, K. Betzler, H. Hesse, S. Kapphan 'Phase matching for second harmonic generation in $\text{KNbO}_3:\text{Ta}$ crystals with Nd: YAG- and Ga As- laser wavelength', J. Appl. Physics, Vol. **69** (6), 3426 (1991)
53. P. Voigt and S. Kapphan, 'Variations of Second Harmonic Intensity at the low Temperature Phase Transition in $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$ under Electric Field', Ferroelectrics, Vol. **124**, pp. 243-248 (1991)
54. A. Gröne and S. Kapphan, 'Spectroscopy of Higher Vibrational States and Librational Side Bands of OH in LiNbO_3 ', Ferroelectrics, Vol. **125**, pp. 307-312 (1992)
55. S. Klauer, M. Wöhlecke and S. Kapphan, 'Influence of H-D isotopic substitution on the protonic conductivity of LiNbO_3 ', Phys. Rev. B, Vol. **24**, 2788 (1992)
56. S. Kapphan and A. Breilkopf 'Fourier-IR and Second Harmonic Investigation of Proton Diffusion in LiNbO_3 ', Proceedings, 20th Spring Conf. on Ferroelectricity, Güntersberge, pp. 54-61 (1992)
57. P. Voigt, H. Hesse and S. Kapphan, 'Second Harmonic Generation Study of the Concentration Dependence of the Phase Transition in Li-Doped KTaO_3 ', Proceedings, 20th Spring Conf. on Ferroelectricity, Güntersberge p. 24-31 (1992)
58. S. Kapphan and A. Breilkopf, 'PE-Layers and Proton Diffusion Profiles in LiNbO_3 investigated with Fourier-IR and Second Harmonic Generation, Phys. stat. sol (a), **133**, 159 (1992)
59. A. Gröne and S. Kapphan, 'Temp. Dependence of Higher Vibrational States of OH/OD in Stoichiometric and Congruent LiNbO_3 ', Proceedings ICDIM, Nordkirchen, Germany (1992), World Scientific, Singapore, Vol. **2**, p. 1127 (1993)
60. P. Voigt and S. Kapphan, 'SHG by Polar-Configurations in pure and Li-doped KTaO_3 Proceed. ICDIM Nordkirchen, Germany (1992), World Scientific, Singapore, Vol. **2**, 691 (1993)

61. M. Backens, M. Fricke, R. K uchler, O. Kanert, S. Kapphan, V. Vikhnin, 'Uncommon Nuclear Spin Relaxation in NaCl:OH at low Temperatures' Proceed. XII. Int. Conf. on Defects in Ins. Mat., Nordkirchen, Germany 1992, World Scientific Singapore, **Vol. 2**, 798 (1993)
62. G. Steger, S. Kapphan, 'Solid state etalon tuning of a single mode IR-Fa (II)-centre laser' Meas-Sci. Technol., **4**, 1117-1121 (1993)
63. P. Voigt, S. Kapphan, 'Polar Configuration in Pure and Li-doped KTaO_3 Studied by SHG and its variation under electric Field' Ferroelectrics, **Vol. 157**, 239 (1994)
64. A. Gr one and S. Kapphan, 'Spectroscopic Investigations of Sharp OH/OD IR-Absorption Bands in Nearly Stoichiometry (VTE) LiNbO_3 ', Ferroelectrics, **Vol. 153**, 261 (1994)
65. P. Voigt and S. Kapphan, 'Experimental Study of Second Harmonic Generation by Dipolar Configurations in Pure and Li-Doped KTaO_3 and its Variation under Electric Field', J. Phys. Chem. Solids, **Vol. 55**, 853-869 (1994)
66. Xi-Qi Feng, Guan-QuinHu, Zhi-WenYin, Ying-Peng Huang, S. Kapphan, C. Fischer, Fu-Zheng Zhov, Yi Yang, Ding-YuanFan 'Growth, Laser and magneto-optic properties of Nd-doped $\text{Bi}_4\text{Ge}_3\text{O}_{12}$ crystals', Materials Science and Engineering, **B23**,. 83 (1994)
67. C. Fischer, C. auf der Horst, P. Voigt, S. Kapphan and J. Zhao, 'Luminescence and Optical Second Harmonic Generation by Dipolar Microregions in KTaO_3 ', Radiation Effects and Defects in Solids, **Vol. 136**, 85 (1995)
68. C. Fischer and S. Kapphan, Xi-Qi Feng and Ning Cheng, 'Sharp R-lines in Absorption and Emission of Cr^{3+} in stoichiometric (VTE) LiNbO_3 ', Radiation Effects and Defects in Solids, **Vol. 135**, 199 (1995)
69. P. Voigt, S. Kapphan, L. Oliveira and Maximo Siu Li, 'Second Harmonic Generation and Thermally Stimulated Depolarization Current Investigation of $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$ ', Radiation Effects and Defects in Solids, **Vol. 134**, 229 (1995)
70. A. Gr one and S. Kapphan, 'Vibration+Libration Absorption Bands of OH Centers in LiNbO_3 ', Radiation Effects and Defects in Solids, **Vol. 134**, 283 (1995)
71. G. Greten, S. Kapphan, R. Pankrath, 'Light-induced Nir-absorption in $\text{Sr}_{0.61}\text{Ba}_{0.39}\text{Nb}_2\text{O}_6:\text{Ce}$ at low Temperatures, Radiation Effects and Defects in Solids, **Vol. 135**, 195 (1995)
72. A. Gr one and S. Kapphan, 'Sharp, Temperature Dependent OH/OD IR-Absorption Bands in Nearly Stoichiometric (VTE) LiNbO_3 ', Journal of Physics and Chemistry of Solids, **Vol. 56**, No.5, 687-701 (1995)

85. S. Kapphan, G. Greten, R. Pankrath, 'Optical and Dielectric Investigations in SBN: Ce', *Mat. Science Forum*, **Vol. 239**, 321 (1997)
86. S. A. Basun, V. E. Bursian, H. Hesse, S. Kapphan, L. S. Sochava, V. S. Vikhnin, 'Polarization Sensitive Photo Recharging and Optical Alignment of the tetragonal Fe^{3+} Center in KtaO_3 ', *Mat. Science Forum*, **Vol. 239**, 345 (1997)
87. J. L. Fabris, M. Müller, A. C. Hernandez, M. Siu-Li, S. Kapphan 'Cu⁺ and OH-Pair Defects Interaction in NaF-Crystals', *Rad. Effects and Defects in Solids*, **Vol. 134**, 353 (1995)
88. M. F. Limonov, S. Kapphan, V. S. Vikhnin, L. V. Laisheva, H. Hesse, A. N. Krivospitskii and M. B. Smirnov, 'Effects of Vibronic Interactions in Polar Microdomain Formation in Incipient Ferroelectric KTaO_3 : Comparison Analysis of Raman Scattering and Second-Harmonic Generation', *Zeitschrift für Physikalische Chemie*, **Bd. 201**, 215 (1997)
89. K. Buse, S. Breer, K. Peithmann, S. Kapphan, M. Gao, and E. Krätzig, 'Origin of thermal fixing in photorefractive lithium niobate crystals', *Physical Review B*, **Vol. 56**, 1225 (1997)
90. V. S. Vikhnin, S. Kapphan, 'Perovskite-Type Ferroelectrics with 3d-Impurities as Possible Illumination Induced Relaxor Systems: Optical Alignment of Tetragonal Fe_K^{3+} Centres in Incipient Ferroelectric Potassium Tantalate', *Ferroelectrics*, **Vol. 199**, 83 (1997)
91. V. S. Vikhnin and A. S. Polkovnikov, H.-J. Reyher, B. Faust and S. Kapphan, 'Dipole Fe^{3+} -O₁ Center Reorientations in Incipient Ferroelectric KTaO_3 : Light-induced and Phonon-induced Effects', *Journal of the Korean Physical Society*, **Vol. 32**, 486 (1998)
92. V. A. Trepakov, V. S. Vikhnin, V. V. Lemanov and P. P. Syrnikov, F. Smutný, M. E. Savinov and L. Jastrabik, S. Kapphan, 'Dielectric Properties and Phase Transitions of $\text{SrTiO}_3 - \text{KTaO}_3$ System', *Journal of Korean Physical Society*, **Vol. 32**, 277 (1998)
93. V. S. Vikhnin, S. Kapphan, J. Seglins, 'The Possible Role of Vibronic Charge Transfer Exciton States in Drastic Shift with Temperature of the UV-absorption Edge in Ferroelectric Oxide Crystals', *Journal of the Korean Physical Society*, **Vol. 32**, 621 (1998)
94. V. Trepakov and A. Skvortsov, S. Kapphan and C. Fischer, L. Jastrabik and I. Gregora, 'Chromium Optical Spectra and Stark Effect in LiNbO_3 ', *Journal of the Korean Physical Society*, **Vol 32**, 1140 (1998)

95. S. Eden, C. auf der Horst and S. Kapphan, 'Luminescence and Second Harmonic Generation at Low Temperature in Reduced, Pure and Doped KTaO_3 ', Journal of Korean Physical Society, **Vol. 32**, 411 (1998)
96. V. Trepakov and V. Vikhnin, S. Eden, S. Kapphan and H. Hesse, J. Seglins, L. Jastrabík, 'Optical Spectra of $\text{BaTiO}_3\text{:Cr}$ ', Journal of Korean Physical Society, **Vol. 32**, 1113 (1998)
97. Ming Gao, S. Porcher, R. Pankrath and S. Kapphan, 'Light-induced VIS and NIR Absorption in SBN:Ce and SBN:Cr Crystals', Journal of Korean Physical Society, **Vol. 32**, 542 (1998)
98. V. S. Vikhnin and S. Kapphan, 'Vibronic charge-transfer excitons: possible nature of the unusual properties of virtual perovskitelike ferroelectrics', Physics of the Solid State, **Vol. 40**, 834 (1998)
99. V.S. Vikhnin, S. Kapphan, B.A. Melekh and E. B. Shadrin, 'Jahn-Teller Polarons and Peculiarities of their Absorption in LaMnO_3 and $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ Perovskite-Like Systems', Ferroelectrics (1998) in press.
100. S. Eden, S. Kapphan, and H. Hesse, V. Trepakov and V. Vikhnin, I. Gregora and L. Jastrabik, J. Seglins, 'Observations of the absorption, infra-red emission, and excitation spectra of Cr in BaTiO_3 ', Journal of Physics: Condensed Matter, **10**, 10775 – 10786 (1998)
101. P.G. Johannsen and V. Schäferjohann, S. Kapphan, 'Effect of pressure on OH and OD impurities in LiNbO_3 ', J. Phys.: Condens. Matter, **11**, 583 – 591 (1999)
102. H. Hünnefeld, U. Rütt, J.R. Schneider and S. Kapphan, 'The spontaneous strain in SrTiO_3 in the quantum paraelectric regime: the dependence on sample preparation', J. Phys.: Condens. Matter, **Vol. 10**, 6453 (1998)
103. D.V. Azamat, S.A. Basun, V.E. Bursian, A.G. Razdobarin, L.S. Sochava, H. Hesse, S. Kapphan, 'EPR of the non-Kramers ion Fe^{4+} in KTaO_3 ', Fizika Tverdogo Tela, 1999, „Physics of the Solid State“, **Vol. 41**, 1303
104. Xiqi Feng, Guanqin Hu, Ming Gao and S. Kapphan, 'OH Infrared Absorption Bands In PbWO_4 Crystals', Proceed. Int. Conf. on Inorganic Scintillators and their Application, (CAA, Shanghai Branch Press, Shanghai), 271 (1997)
105. S.A. Prosandeyev, V.S. Vikhnin, and S. Kapphan, 'Alignment of Microscopic Impurities in Incipient Ferroelectrics', phys. stat. sol. (a), **172**, 499 (1999)

106. Ming Gao, S. Kapphan, S. Porcher and R. Pankrath, 'Experimental study of NIR absorption due to Nb⁴⁺ polarons in pure and Cr- or Ce-doped SBN crystals', *J. Phys.:Condens. Matter*, **11**, 4913-4924 (1999)
107. Ming Gao, S. Kapphan, and Xuefeng Yue, 'Spectroscopic Study of Light-Induced Charge Transfer Processes in Pure KNSBN, KNSBN:Ce and KNSBN:Cu Crystals', *phys. stat. sol. (b)*, **214**, 187 (1999)
108. M. Gao, R. Pankrath, S. Kapphan, V. Vikhnin, 'Light-induced charge transfer and kinetics of the NIR absorption of Nb⁴⁺ polarons in SBN crystals at low temperatures', *Appl. Phys.*, **B 68**, 849-858 (1999)
109. V.S. Vikhnin, V.A. Trepakov and S. Kapphan, 'Superparaelectric Phase Transition in KTaO₃:Li with a Small Amount of a „Second Admixture“ ', *Ferroelectrics Letters*, **Vol. 25**, 153-160 (1999)
110. M. Wierschem, C. Bäumer, A. Jovanović, M. Wöhlecke, S. Kapphan and L. Kovács, 'Fundamental and Overtone spectra of the OH and OD Stretch Mode in Congruent and Stoichiometric LiTaO₃', *phys. stat. sol (b)*, **215**, R7 (1999)
111. V.A. Trepakov, S. Kapphan, V.S. Vikhnin, M. Gao, M.E. Savinov, L. Jastrabik, C.B. Azzoni and D. Di Martino, 'Properties of Ta-doped SrTiO₃ Crystals', *Radiation Effects & Defects in Solids*, **Vol. 151**, 165-169 (1999)
112. S. Eden, S. Kapphan, H. Hesse, V. Trepakov, V. Vikhnin, L. Jastrabik and I. Gregora, 'Near Infra-red Luminescence of BaTiO₃:Cr', *Radiation Effects & Defects in Solids*, **Vol. 149**, 107-112 (1999)
113. A.G. Deineka, V.A. Trepakov, I. Tupicyn, L. Jastrabik, S. Kapphan and P.P. Syrnikov, 'Optical Spectra and Li-Impurity Effect in Energy Structure of KTaO₃ Quantum Paraelectric', *Radiation Effects & Defects in Solids*, **Vol. 149**, 113-117 (1999)
114. V. Vikhnin, M. Aulich, S. Eden and S. Kapphan, 'Possible Nature of the Red Luminescence in Incipient Ferroelectric KTaO₃', *Radiation Effects & Defects in Solids*, **Vol. 149**, 125-130 (1999)
115. V.S. Vikhnin, S. Kapphan and J. Seglins, 'Temperature Induced Red Shift of the UV Fundamental Absorption Edge in Ferroelectric Oxide Crystals: Effect of Charge Transfer Vibronic Excitons', *Radiation Effects & Defects in Solids*, **Vol. 150**, 109-114 (1999)
116. A. Skvortsov, V. Trepakov, S. Kapphan, V. Vorlicek and L. Jastrabik, 'Optical Spectra of VTE LiNbO₃:Cr', *Radiation Effects & Defects in Solids*, **Vol. 150**, 293-297 (1999)

117. Ming Gao, V. Vikhnin and S. Kapphan, 'Dynamics of Light-induced NIR-Absorption of Nb⁴⁺ Polarons in SBN : Cr Crystals at Low Temperature', *Radiation Effects & Defects in Solids*, **Vol. 151**, 51-55 (1999)
118. V.A. Trepakov, M.E. Savinov, V.S. Vikhnin, L. Jastrabik, S. Kapphan and P.P. Syrnikov, 'Dielectric Constant and Ordering Effects of Pure and Doped KTaO₃ Quantum Paraelectric; Cu-Codoping Enhancement Effect', *Radiation Effects & Defects in Solids*, **Vol. 151**, 97-102 (1999)
119. S.E. Kapphan, 'Spatially resolved second-harmonic generation in ABO₃-type ferroelectric crystals', *Journal of Luminescence*, **83-84**, 411-415 (1999)
120. V. S. Vikhnin and S. E. Kapphan, 'The models for polaron complexes in ferroelectric and ferroelastic systems', *Ferroelectrics*, **Vol. 233**, 77-91(1999)
121. Valentin S. Vikhnin, Huimin Liu, Weiyi Jia, S. E. Kapphan, 'Charge transfer vibronic excitons in ferroelectric oxides: experiment and theory', *Journal of Luminescence*, **83-84**, 91-96 (1999)
122. Valentin S. Vikhnin, Huimin Liu, Weiyi Jia, S.E. Kapphan, Roberts Eglitis, Denis Usvyat, 'Critical effects in optical response due to charge transfer vibronic excitons and their structure in perovskite-like systems' *Journal of Luminescence*, **83-84**, 109-113 (1999)
123. Ming Gao, S. E. Kapphan, R. Pankrath, and Jianlin Zhao, 'NIR Absorption of Nb⁴⁺ Polarons in reduced SBN Crystals', *Phys. stat. sol. (b)*, **217**, 999-1006, (2000)
124. G. M. Salley, S. A. Basun, G. F. Imbusch, A. A. Kaplyanskii, S. Kapphan, R. S. Meltzer, U. Happek, 'Chromium centers in LiNbO₃ revisited', *Journal of Luminescence*, **83-84**, 423-427 (1999)
125. V. Vikhnin, S. Eden, M. Aulich, S. Kapphan, ,The origin of the red luminescence in incipient ferroelectric KTaO₃' *Solid State Communications*, **Vol. 113**, 455 – 460 (2000)
126. V. S. Vikhnin, S.. Kapphan, B. A. Melekh and E. B. Shadrin, 'Jahn-Teller Polarons and Peculiarities of their Absorption in LaMnO₃ and La_{1-x}Sr_xMnO₃ Perovskite-like Systems, *Ferroelectrics*, **Vol. 235**, 211-220 (1999)
127. S. A. Prosandeev, V. S. Vikhnin, and S. Kapphan, 'Percolation with constraints in the highly polarizable oxide KTaO₃:Li', *Eur. Phys. J. B*, **15**, 469 – 474 (2000)
128. V. A. Trepakov, V. S. Vikhnin, S. Kapphan, L. Jastrabik, J. Licher, P. P. Syrnikov, 'Zero-phonon optical lines of impurity centers in ABO₃ perovskite-like ferroelectrics', *Journal of Luminescence*, **87-89**, 1126-1129 (2000)

129. V. Trepakov, V. Vikhnin, M. Savinov, P. Syrnikov, S. Kapphan, V. Lemanov, H. Hesse and L. Jastrabik, 'Dielectric permittivity and Fe- and Cu-doping effect in KTaO_3 and $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$ ', *Ferroelectrics*, **Vol. 235**, 59-75 (1999)
130. V. Trepakov, A. Skvortsov, S. Kapphan, L. Jastrabik and V. Vorlíček, 'Comparative Studies of Luminescence in Congruent and Stoichiometric VTE-Treated $\text{LiNbO}_3:\text{Cr}$ ', *Ferroelectrics*, **Vol. 239**, 297-304, 1167 - 1174 (2000)
131. V. A. Trepakov, M. E. Savinov, P. P. Syrnikov, S. Kapphan, A. Badalyan, V. Vikhnin and L. Jastrabik, 'Cu- and Fe-Doping in Properties of KTaO_3 and $\text{KTaO}_3:\text{Li}$ Crystals', *Ferroelectrics*, **Vol. 239**, 289-296, 1159 - 1166 (2000)
132. V. A. Trepakov, M. E. Savinov, S. Kapphan, V. S. Vikhnin, L. Jastrabik and L. A. Boatner, 'Dielectric Properties and Phase Transitions in $\text{K}_{1-x}\text{Li}_x\text{Ta}_{1-y}\text{Nb}_y\text{O}_3:\text{Cu}$ ', *Ferroelectrics*, **Vol. 239**, 305-312, 1175 - 1182 (2000)
133. I. I. Tupitsyn, A. Deineka, V. Trepakov, L. Jastrabik and S. Kapphan, 'Li-Doping Effect on the Energy Structure of KTaO_3 ', *Ferroelectrics*, **Vol. 237**, 9-16 (2000)
134. Ming Gao, S. Kapphan, R. Pankrath, Xiqi Feng, Yuanfen Tang, V. Vikhnin, 'Light-induced VIS-absorption and light-induced charge transfer in pure and doped SBN crystals', *J. of Phys. Chem. Sol.*, **61**, 1775-1787 (2000)
135. M. Gao, S. Kapphan, R. Pankrath, 'Photoluminescence and thermoluminescence in $\text{SBN}:\text{Cr}$ crystals', *J. of Phys. Chem. Sol.*, **61**, 1959-1971 (2000)
136. V. Vikhnin, S. Kapphan, H. Liu, W. Jia, V. Trepakov, L. Jastrabik, 'Polaron and Charge Transfer Vibronic Exciton Phenomena in Ferroelectrics', *Ferroelectrics*, **237**, 81-88 (2000)
137. M. Gao, S. Kapphan, R. Pankrath, J. Zhao, 'NIR Absorption of Nb^{4+} Polarons in reduced SBN crystals', *Ferroelectrics*, **239**, 251-256, 1121 - 1126 (2000)
138. S. A. Prosandeyev, V. A. Trepakov, M. E. Savinov, S. E. Kapphan, 'Coupling of Li^+ relaxators to the soft mode in $\text{KTaO}_3:\text{Li}$ ', *J. Phys.: Cond. Matter*, **13**, 719-725 (2001)
139. V. A. Trepakov, M. E. Savinov, E. Giulotto, P. Galinetto, P. Camagni, G. Samoggia, L. A. Boatner, S. E. Kapphan, 'Dipole ordering effects and reentrant dipolar glass state in $\text{KTaO}_3:\text{Li},\text{Nb}$ ', *Phys. Rev. B*, **Vol. 63**, 172203 (2001)
140. S. A. Basun, A. A. Kaplyanskii, A. B. Kutsenko, V. Dierolf, T. Tröster, S. E. Kapphan, and K. Polgar, 'Dominant Cr^{3+} Centers in LiNbO_3 under Hydrostatic Pressure' *Phys. of Sol. State*, **Vol. 43**, No. 6, 1043-1051 (2001)

141. S. A. Prosandeev, A. E. Maslennikov, V. S. Vikhnin and S. Kapphan, 'Nanoscale Clusters in Solid Solutions of Ferroelectrics in the Framework of a Six-Well Model', *Ferroelectr.*, **Vol. 32**, 279-285, 971 - 977 (2001)
142. S. A. Prosandeev, V. S. Vikhnin, S. Kapphan, 'Percolative Clusters in $\text{KTaO}_3\text{:Li}$ ', *Ferroelectr.*, **Vol. 32**, 355-360, 1047 - 1052 (2001)
143. V. S. Vikhnin, R. I. Eglitis, E. A. Kotomin, S. Kapphan, G. Borstel, 'New Polaronic-Type Excitons in Ferroelectric Oxides: INDO-Calculations and Experimental Manifestation', *Mat. Res. Soc. Symp. Proc.*, **Vol. 677**, AA 4.15.1 (2001)
144. I. I. Tupitsyn, A. Deineka, V. A. Trepakov, L. Jastrabik, S. E. Kapphan, 'Energy structure of KTaO_3 and $\text{KTaO}_3\text{:Li}$ ', *Phys. Rev. B*, **Vol. 64**, 195111-1 - 195111-6 (2001)
145. S. A. Prosandeev, V. A. Trepakov, M. E. Savinov, L. Jastrabik, S. E. Kapphan, 'Characteristics and the nature of the low-frequency dielectric response in moderately concentrated $\text{KTaO}_3\text{:Li}$ ', *J. Phys. Cond. Matter*, **13**, 9749 – 9760 (2001)
146. Zhao Jian-Lin, Wang Bin, Wu Jian-Jun, Yang De-Xing, S. Kapphan, R. Pankrath, 'Investigation of photorefractive Two-Wave Coupling in Cr-doped Strontium Barium Niobate Crystal', *Chin. Phys. Soc.*, **Vol. 10**, 739 – 742 (2001)
147. V. S. Vikhnin, R. I. Eglitis, S. E. Kapphan, E. A. Kotomin, G. Borstel, 'A new phase in ferroelectric oxides: The phase of charge transfer vibronic excitons', *Europhys. Lett.*, **56**, 702 – 708 (2001)
148. S. A. Basun, A. A. Kaplyanskii, A. B. Kutsenko, V. Dierolf, T. Troester, S. E. Kapphan, K. Polgar, 'Optical characterization of Cr^{3+} centers in LiNbO_3 ', *Appl. Phys. B*, **73**, 453 – 461 (2001)
149. Zhao Jianlin, Wu Jianjun, Wang Bin, Yang Dexing, S. Kapphan, R. Pankrath, 'Image Edge-Enhancement using photorefractive Two-Wave Coupling in Cr:SBNCrystal', *Acta Optica Sinica*, **Vol. 21**, No. 11, 1343 (2001)
150. V. S. Vikhnin, I. Kislova, A. B. Kutsenko, S. E. Kapphan, 'Charge transfer vibronic excitons and excitonic-type polaron states: photoluminescence in SBN', *Solid State Comm.*, **121**, 83 – 88 (2002)
151. Chr. auf der Horst, J. Licher, S. E. Kapphan, V. Vikhnin, S. Prosandeyev, 'SHG Properties of pure and doped incipient Ferroelectrics KTaO_3 and SrTiO_3 under applied electric fields', *Ferroelectrics*, **Vol. 264**, pp. 261-266 (2001)

152. M. Wierschem, T. Lindemann, R. Pankrath, S. E. Kapphan, 'NIR Absorption and light-induced charge transfer in photorefractive $\text{Ba}_{0.77}\text{Ca}_{0.23}\text{TiO}_3$ crystals doped with iron', *Ferroelectrics*, **Vol. 264**, pp. 315-324 (2001)
153. V. S. Vikhnin, S. E. Kapphan, 'Local Configuration instability as an origin of Relaxor-Type Properties of Ferroelectric solid solutions SBN, SCT and KLTN, *Ferroelectrics Letters*', **Vol. 28(5-6)**, pp. 123-133 (2001)
154. V. S. Vikhnin, R. I. Eglitis, S. E. Kapphan, G. Borstel, E. A. Kotomin, 'Polaronic-type excitons in ferroelectric oxides: Microscopic calculations and experimental manifestation', *Physical Review B*, **Vol. 65**, 104304 (2002)
155. S. A. Prosandeev, V. S. Vikhnin, S. E. Kapphan, 'Polar cluster formation due to point charge centres in $\text{KTaO}_3:\text{Li}$ ', *J. Phys. Condens. Matter* **14**, 4407-4414 (2002)
156. V. S. Vikhnin, R. I. Eglitis, S. E. Kapphan, 'Charge Transfer Vibronic Excitons in Incipient Ferroelectrics and Related Problems', *Ferroelectrics*, **Vol. 265**, pp. 177-187 (2002)
157. V. Trepakov, M. Savinov, S. E. Kapphan, L. Jastrabik, P. Camagni, L. A. Boatner, 'Li and Nb Codoping in dielectric properties and phase transitions of KTaO_3 : Reentrant dipolar glass and long-range dipole ordering, *Rad. Effects and Defects in Solids*', **Vol. 155**, pp. 367-371 (2001)
158. S. A. Prosandeev, V. A. Trepakov, M. E. Savinov, L. Jastrabik, S. E. Kapphan, 'Nature of low frequency dielectric permittivity behaviour in weakly and moderate concentrated $\text{KTaO}_3:\text{Li}$ ', *Integrated Ferroelectrics* **37** (1-4), 589-596 (2001)
159. S. A. Prosandeev, V. A. Trepakov, M. E. Savinov, L. Jastrabik, S. E. Kapphan, 'A generalized arrhenius law in dilute $\text{KTaO}_3:\text{Li}$ versus the Vogel-Fulcher approach', *Integrated Ferroelectrics* **37**, 597-604 (2001)
160. V. Trepakov, L. Jastrabik, S. Kapphan, E. Giulotto, A. Agranat, 'Phase transitions, related properties and possible applications of $(\text{K,Li})(\text{Ta,Nb})\text{O}_3$ crystals', *Optical Materials*, **19**, 13-21 (2002)
161. R. I. Eglitis, V. S. Vikhnin, E. A. Kotomin, S. E. Kapphan, G. Borstel, 'Theoretical Prediction and Experimental Confirmation of Charge Transfer Vibronic Excitons and Their phase in ABO_3 Perovskite Crystals', *Mat. Res. Soc. Symp. Proc.*, **Vol. 718** (2002)
162. V. S. Vikhnin, A. A. Kaplyanskii, A. B. Kutsenko, G. K. Liu, J. V. Beitz, S. E. Kapphan, '"Charge transfer-lattice" clusters induced by charged impurities', *Journal of Luminescence* **94-95**, 775-779 (2001)

163. I. L. Kislova, M. Gao, S. E. Kapphan, R. Pankrath, A. B. Kutsenko, V. S. Vikhnin, 'Photo- and Thermoluminescence in congruent SBN Crystals doped with Ce and Cr', *Ferroelectrics*, **Vol. 273**, pp. 187-192 (2002)
164. A. E. Maslennikov, S. A. Prosandeev, V. S. Vikhnin, S. E. Kapphan, 'Nanodomain Theory of FE glasses (a six-well model)', *Integrated Ferroelectrics*, **Vol. 38**, pp. 153-160 (2001)
165. V. S. Vikhnin, S. Avanesyan, H. Liu, S. E. Kapphan, 'An origin of light induced centers in the visible range in ferroelectric oxides: possible role of the states of charge transfer vibronic excitons', *Journal of Physics and Chemistry of Solids*, **Vol. 63**, 1677-1683 (2002)
166. X. Feng, J.-l. Zhao, M. Gao, S. Kapphan, Y.-X. Zhang, 'Luminescence Properties of Pb²⁺-Based Aggregates in CsI Host Crystals', *Journal of Inorganic Materials*, **Vol. 15**, No. 3, 416-420 (2000)
167. Z. Bryknar, V. Trepakov, Z. Potucek, L. Jastrabik, S. Kapphan, 'Photoluminescence Spectroscopy of Chromium doped Cd₂Nb₂O₇', *Ferroelectrics*, **Vol. 272**, 363 – 368 (2002)
168. V. S. Vikhnin, R. Blinc, R. Pirc, S. E. Kapphan, I. L. Kislova, P. A. Markovin, 'A Model of Polar Clusters in Ferroelectric Relaxors of PMN-Type: Polaronic and Charge Transfer Effects', *Ferroelectrics*, **Vol. 268**, 257 – 262 (2002)
169. P. Galinetto, E. Giulotto, G. Samoggia, V. Trepakov, S. Kapphan and L. Boatner, 'Effect of Li-Dipoles in K_{1-x}Li_xTa_{1-y}Nb_yO₃: A Raman Study', *Ferroelectrics*, **Vol. 272**, 87 – 92 (2002)
170. V. Trepakov, P. Galinetto, E. Giulotto, G. Samoggia, M. Savinov, V. Vikhnin, S. Kapphan, L. Jastrabik and L. Boatner, 'Recent Developments in K_{1-x}Li_xTa_{1-y}Nb_yO₃ Investigations', *Ferroelectrics*, **Vol. 267**, 221 – 228 (2002)
171. R. I. Eglitis, E. A. Kotomin, V. A. Trepakov, S. E. Kapphan and G. Borstel, 'Quantum chemical modelling of electron polarons and 'green' luminescence in PbTiO₃ perovskite crystals', *J. Phys.: Condens. Matter*, **14**, L 647 – L 653 (2002)
172. D. Millers, L. Grigorjeva, V. Pankratov, V. A. Trepakov, S. E. Kapphan, 'Pulsed electron beam excited transient absorption in SrTiO₃', *NIM B*, **194**, 469 – 473 (2002)
173. D. Millers, V. Pankratov, L. Grigorjeva, S. Kapphan, V. Trepakov, 'Relaxation of electronic excitations in strontium Titanate', *Rad. Effects and Defects in Solids*, **Vol. 157**, pp. 589-593 (2002)

174. V. Trepakov, M. E. Savinov, P. Galinetto, G. Samoggia, S. A. Prosandeev, S. Kapphan, L. Jastrabik, 'Reentrant dipole glass-like ordering in weakly concentrated $\text{KTaO}_3:\text{Nb}$ ', *Rad. Effects and Defects in Solids*, **Vol. 158**, p 275 (2003)
175. V. Dierolf, A. A. Kaplyanskii, S. Kapphan, A. B. Kutsenko, 'The fine structure of spectral response of Cr^{3+} sites in LiNbO_3 ', *Rad. Effects and Defects in Solids*, **Vol. 154**, p 241 (2001)
176. I. L. Kislova, M. Gao, S. Kapphan, R. Pankrath, A. B. Kutsenko, V. S. Vikhnin, 'Congruent $\text{Sr}_{0.61}\text{Ba}_{0.39}\text{Nb}_2\text{O}_6$ doubly doped with Ce and Cr: Photo- and Thermoluminescence Investigations', *Rad. Effects and Defects in Solids*, **Vol. 157**, pp. 1015-1020 (2002)
177. S. Kapphan, B. Pedko, V. Trepakov, M. Savinov, R. Pankrath, I. Kislova, 'Variation of doping-dependent properties in photorefractive $\text{Sr}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$: Ce, Cr, Ce + Cr', *Rad. Effects and Defects in Solids*, **Vol. 157**, pp. 1033-1037 (2002)
178. V. S. Vikhnin, S. Kapphan, 'An origin of infinite range dipole-dipole correlations in soft matrices with off-center impurities: $\text{K}_{1-x}\text{Li}_x\text{Ta}_{1-y}\text{Nb}_y\text{O}_3$ and other systems', *Rad. Effects and Defects in Solids*, **Vol. 157**, pp. 849-851 (2002)
179. V. S. Vikhnin, S. Kapphan, 'New Type Charge Transfer States in ferroelectric oxides: Actual Problems, *Rad. Effects and Defects in Solids*', **Vol. 157**, pp. 853-856 (2002)
180. V. Trepakov, S. A. Prosandeev, M. E. Savinov, P. Galinetto, G. Samoggia, S. Kapphan, L. Jastrabik, L. Boatner, 'Long-Range Displacive to Short-Range Order-Disorder Crossover in Weakly Concentrated $\text{KTa}_y\text{Nb}_{1-y}\text{O}_3$ ', *Jpn. J. Appl. Phys.* **Vol. 41**, pp. 7176-7178 (2002)
181. R. Eglitis, E. Kotomin, G. Borstel, S. Kapphan, V. Vikhnin, 'Semi-empirical calculations of the electronic and atomic structure of polarons and excitons in ABO_3 perovskite crystals', *Comp. Materials Science* 27, p. 81-86 (2003)
182. S. A. Prosandeev, E. Cockayne, B. Burton, V. Trepakov, S. Kapphan, M. Savinov, L. Jastrabik, 'Properties of $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$ Solid Solutions; First-Principles Computations and Comparison with Experiments', *Jpn. J. Appl. Phys.* **Vol. 41**, pp. 7179-7180 (2002)
183. P. Galinetto, E. Giulotto, G. Samoggia, V. Trepakov, S. Kapphan, L. Jastrabik, L. Boatner, 'Study of Dipole Ordering in $\text{K}_{1-x}\text{Li}_x\text{Ta}_{1-y}\text{Nb}_y\text{O}_3$ by Raman Spectroscopy', *Jpn. J. Appl. Phys.* **Vol. 41**, pp. 7181-7183 (2002)
184. R. Eglitis, V. Trepakov, S. Kapphan, G. Borstel, 'Large-scale computer modelling of Li impurities in KTaO_3 and $\text{K}_{1-x}\text{Li}_x\text{Ta}_{1-y}\text{Nb}_y\text{O}_3$ perovskite solid solutions', *Crystal Engineering* **5**, p. 227-233 (2003)

185. V. Trepakov, I. Kudyk, S. Kapphan, M. Savinov, A. Pashkin, L. Jastrabik, A. Tkach, P. Vilarinho, A. Kholkin, 'Critical phonons and R- zero-phonon emission line of Cr^{3+} in Mg-doped SrTiO_3 ', *Journal of Luminescence* 102, 536-542 (2003)
186. L. Jastrabik, S. Kapphan, V. Trepakov, I. Kudyk, R. Pankrath, 'Luminescence of $\text{Ba}_{0.77}\text{Ca}_{0.23}\text{TiO}_3:\text{Cr}$ ', *Journal of Luminescence* 102-103, 657-662 (2003)
187. V. Vikhnin, S. Kapphan, I. Kislova, P. Markovin, 'Polaronic States in ferroelectric Relaxor PMN, *Rad. Effects and Defects in Solids*', **Vol. 158**, pp. 387-390 (2003)
188. V. Vikhnin, S. Kapphan, 'Polaron-related polar Clusters in ferroelectric Relaxors and novel Relaxor Systems', *Rad. Effects and Defects in Solids*', **Vol. 158**, pp. 383-386 (2003)
189. S. Kapphan, I. Kislova, M. Wierschem, T. Lindemann, M. Gao, R. Pankrath, V. Vikhnin, A. Kutsenko, 'Light-induced polaronic absorption at low temperature in pure and (Fe, Ce, Cr) doped $\text{Sr}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$ or $\text{Ba}_{1-y}\text{Ca}_y\text{TiO}_3$ crystals and photo-dissociation of VIS Centers into small polarons', *Rad. Effects and Defects in Solids*', **Vol. 158**, pp. 357-362 (2003)
190. R. Eglitis, V. Trepakov, S. Kapphan, G. Borstel, 'Quantum chemical modelling of 'green' luminescence in self activated perovskite-type oxides', *Solid State Communications* **126**, p. 301-304 (2003)
191. S. Prosandeev, V. Trepakov, S. Kapphan, M. Savinov, 'Dielectric Response in Microscopically Heterogeneous Dielectrics: Example of $\text{KTaO}_3:\text{Nb}$ ', *Fundamental Physics of Ferroelectrics 2002*, AIP Proceed. 626, p. 169-177 (2002)
192. V. Trepakov, M. Savinov, I. Kudyk, A. Pashkin, S. Kapphan, P. Vilarinho, A. Tkach, A. Kholkin, L. Jastrabik, 'Dielectric Permittivity and Cr^{3+} Impurity Luminescence of $\text{Sr}_{0.99}\text{Mg}_{0.01}\text{TiO}_3$ and $\text{SrTi}_{0.99}\text{Mg}_{0.01}\text{O}_3$ ', *Ferroelectrics* **294**, 229-238 (2003)
193. M. Savinov, V. Trepakov, S. Kamba, S. Kapphan, J. Petzelt, R. Pankrath, I. Kislova, A. Kutsenko, L. Jastrabik, 'Dielectric and Infrared Response of $\text{Ba}_{0.77}\text{Ca}_{0.23}\text{TiO}_3$ ', *Ferroelectrics* **295**, 31-38 (2003)
194. V. Vikhnin, S. Kapphan, I. Kislova, et. al., 'Manifestation of polaronic states in ferroelectric relaxor PMN', *Ferroelectrics* **295**, 625-632 (2003)
195. M. Wierschem, S. Kapphan, R. Eglitis, 'IR absorption of trapped and free Jahn-Teller polarons in 3D-crystals and films of LaMnO_3 and $\text{La}_{2/3}\text{Sr}_{1/3}\text{MnO}_3$ ', *Ferroelectrics* **299**, 11-20 (2004)

196. V. Vikhnin, S. Kapphan, R. Eglitis, 'Localized polaronic exciton and active impurity problems in incipient and relaxor ferroelectrics', *Ferroelectrics* **299**, 11-20 (2004)
197. V. Trepakov, S. Prosandeev, M. Savinov, et. al., 'Low-temperature phase transformations in weakly doped quantum paraelectrics: novel features and quantum reentrant dipolar glass state in $\text{KTaO}_{0.982}\text{Nb}_{0.0180}$ ', *Journal of Physics and Chemistry of Solids* **65** (7), 1317-1327 (2004)
198. V. Trepakov, M. Savinov, S. Prosandeev, P. Syrnikov, A. Pashkin, J. Petzelt, S. Kapphan, L. Jastrabik, 'Dielectric Permittivity Study of KTaO_3 Weakly Doped by ^6Li Isotope', *Ferroelectrics* **302**, 203-206 (2004)
199. A. G. Badalyan, V. A. Trepakov, C. B. Azzoni, P. Galinetto, M. C. Mozzati, L. Jastrabik, J. Rosa, S. Kapphan, M. Hrabovsky, 'Divalent Impurity Ions in Potassium Tantalate Studied by ERP', *Ferroelectrics* **302**, 199-202 (2004)
200. V. Zelezný, A. Pashkin, J. Petzelt, M. Savinov, V. Trepakov, S. Kapphan, 'Soft-Mode Study in Li-Doped KTaO_3 ', *Ferroelectrics* **302**, 195-197 (2004)
201. R. Demirbilek, A. B. Kutsenko, R. Pankrath, S. E. Kapphan, 'Investigation of Far Infrared Transitions of Ce^{3+} in Congruent SBN Crystals', *Ferroelectrics* **303**, 177-180 (2004)
202. A. Gubaev, R. Demirbilek, R. Pankrath, S. E. Kapphan, I. Kislova, B. Pedko, V. A. Trepakov, 'Doping-Dependent Properties in Photorefractive Congruent $\text{Sr}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6:\text{Ce}$, Cr Crystals', *Ferroelectrics* **303**, 185-188 (2004)
203. P. Galinetto, M. Perotti, G. Samoggia, V. A. Trepakov, S. E. Kapphan, R. Pankrath, L. Jastrabik, 'Raman Study of $\text{Ba}_{0.7}\text{Ca}_{0.23}\text{TiO}_3$ Single Crystals', *Ferroelectrics* **303**, 199-201 (2004)
204. V. A. Trepakov, S. E. Kapphan, J. G. Bednorz, I. Gregora, L. Jastrabik, 'Dielectric-Related R-Zero-Phonon Emission Line Shift of Cr^{3+} in $\text{SrTiO}_3:\text{Ca}$ ', *Ferroelectrics* **304**, 83-86 (2004)
205. L. Grigorjeva, D. Millers, V. A. Trepakov, S. E. Kapphan, 'Luminescence in SrTiO_3 and LiNbO_3 Crystals Under High Density Pulsed Electron Excitation', *Ferroelectrics* **304**, 117-123 (2004)
206. S. E. Kapphan, A. I. Gubaev, I. Kislova, A. B. Kutsenko, R. Pankrath, V. S. Vikhnin, 'Photo Dissociation of Blue-Light-Induced VIS-Centers in $\text{SBN}:\text{Ce}$, Cr and in $\text{BCT}:\text{Fe}$ into Small Polarons at Low Temperature', *Ferroelectrics* **303**, 107-112 (2004)
207. R. Demirbilek, A. I. Gubaev, A. B. Kutsenko, S. E. Kapphan, I. P. Raevski, S. A. Prosandeev, B. Burton, L. Jastrabik, 'Optical Spectra, Properties and First

Principles Computation of Ba(Fe,Nb)O₃ and Pb(Fe, Nb)O₃', *Ferroelectrics* 302, 279-283 (2004)

208. S. E. Kapphan, A. I. Gubaev, V. S. Vikhnin, 'UV light-induced absorption in pure KTaO₃ at low temperature', *phys. stat. sol. (c)* **2**, 128-131 (2005)
209. R. Demirbilek, S. E. Kapphan, A. B. Kutsenko, R. Pankrath, 'Investigation of two-center holographic recording in SBN:Ce:Cr and SBN:Mn:Fe', *phys. stat. sol. (c)* **2**, 653-656 (2005)
210. V. S. Vikhnin, A. I. Gubaev, S. E. Kapphan, 'Oxygen-related intrinsic defects and charge transfer vibronic excitons localized on a such type defects: optical manifestation of long term and metastable states in pure KTaO₃ crystals', *phys. stat. sol. (c)* **1**, 2844-2847 (2004)
211. V. S. Vikhnin, S. E. Kapphan, R. M. Pirc, A. S. Sigov, 'Ferroelectric phase transition induced by charge transfer vibronic excitons in ferroelectric oxides', *phys. stat. sol. (c)* **1**, 2820-2823 (2004)
212. A. B. Kutsenko, J. Heber, S. E. Kapphan, R. Demirbilek, R. I. Zakharchenya, 'Energy migration and energy transfer processes in RE³⁺ doped nanocrystalline yttrium oxide', *phys. stat. sol. (c)* **2**, 685-688 (2005)
213. A. I. Gubaev, S. E. Kapphan, I. Kislova, A. B. Kutsenko, R. Pankrath, V. S. Vikhnin, 'Kinetics of light-induced polaron- and VIS-centers in SBN:Ce single crystals at low temperature', *phys. stat. sol. (c)* **2**, 167-170 (2005)
214. D. Millers, L. Grigorjeva, V. A. Trepakov, S. E. Kapphan, L. A. Boatner, 'X-ray and pulsed electron beam excited luminescence and optical absorption in KTaO₃ crystals', *phys. stat. sol. (c)* **2**, 200-203 (2005)
215. P. Galinetto, F. Rossella, E. Giulotto, G. Samoggia, V. A. Trapakov, L. Jastrabik, P. Syrnkov, S. E. Kapphan, 'Photoinduced charge transport in KTaO₃:Be', *phys. stat. sol. (c)* **2**, 184-187 (2005)
216. V. A. Trepakov, M. E. Savinov, S. A. Prosandeev, S. E. Kapphan, L. Jastrabik, L. A. Boatner, 'Low temperature structural transformations of dilute KTa_{1-x}Nb_xO₃: x = 0.018, quantum superparaelectric or reentrant glass scenario?', *phys. stat. sol. (c)* **2**, 145-148 (2005)
217. G. Badalyan, V. A. Trepakov, C. B. Azzoni, P. Galinetto, M. C. Mozzati, L. Jastrabik, J. Rosa, S. E. Kapphan, M. Hrabovsky, 'Divalent impurity ion defects in potassium tantalate: EPR investigations', *phys. stat. sol. (c)* **2**, 141-144 (2005)
218. V. S. Vikhnin, S. E. Kapphan, R. I. Eglitis, R. M. Pirc, 'Charge transfer vibronic excitons', *phys. stat. sol. (c)* **2**, 120-123 (2005)

219. E. Buixaderas, M. Savinov, M. Kempa, S. Veljko, S. Kamba, J. Petzelt, R. Pankrath, S. E. Kapphan, 'Infrared and dielectric spectroscopy of the relaxor ferroelectric $\text{Sr}_{0.61}\text{Ba}_{0.39}\text{Nb}_2\text{O}_6$ ', *J. Phys.: Condens. Matter* **17**, 653-666 (2005)
220. S. A. Prosandeev, I. P. Raevski, A. S. Emelyanov, Eugene V. Colla, J.-L. Dellis M. El Marssi, S. E. Kapphan, and L. Jastrabik, 'Nontrivial dependence of dielectric stiffness on bias field in relaxors and dipole glasses' *Journal of Applied Physics*, **98**, 014103 (2005)
221. A. I. Gubaev, S. E. Kapphan, L. Jastrabik, V. A. Trepakov, and P. P. Syrnikov, 'Photochromism and polaronic photocharge localization in diluted $\text{KTa}_{1-x}\text{Nb}_x\text{O}_3$ ', *Journal of Applied Physics*, **100**, 023106 (2006)
222. P. G. Baranov, A. G. Badalyan, D. V. Azamat, V. A. Trepakov, A. P. Bundakova, E. A. Ruzanova, V. S. Vikhnin, H. Hesse, and S. E. Kapphan, 'EPR investigation of iron-related centers in ^{57}Fe -doped KTaO_3 ', *Physical Review B* **74**, 054111 (2006)
223. V. S. Vikhnin, A. B. Kutsenko, S. E. Kapphan, 'Hydrostatic pressure induced splitting of recombination luminescence band in KTaO_3 : Manifestation of charge transfer vibronic exciton phase', *Solid State Communications*, **140**, No. 9, 439 – 442 (2006)
224. G. K. Liu, V. S. Vikhnin, S. E. Kapphan, 'Anharmonic metastable charge transfer vibronic exciton in potassium tantalate', *Chemical Physics Letters*, **V. 420**, 4 – 6, pp. 401 – 404 (2006)
225. G. K. Liu, V. S. Vikhnin, S. E. Kapphan, 'Light-induced metastable states in ferroelectric oxides', *Optical Materials*, **Vol. 29**, (11), 1.394 – 1.399 (2007)
226. V. S. Vikhnin, H. R. Asatryan, R. I. Zakharchenya, A. B. Kutsenko, S. E. Kapphan, 'Magnetic resonance in $\text{Pb}_x\text{Nb}_y\text{O}_z$ -ceramics as a systems containing chemical fluctuation regions', *Физика твердого тела*, том 47, вып. 8 (2005) *Physics of the Solid State*, **47**, (8), 1.535 – 1.539 (2005)
227. A. A. Kaplyanskii, S. Kapphan, A. B. Kutsenko, K. Polgar, and A. P. Skvortsov, 'Multiplicity of Europium Centers in Doped Stoichiometric Crystals of Lithium Niobate', *Technical Physics Letters*, **Vol. 33**, No. 4, pp. 337 – 339 (2007)
228. D. V. Azamat, C. B. Azzoni, A. G. Badalyan, P. G. Baranova, P. Galinetto, M. C. Mozzati, V. A. Trepakov, L. Jastrabik, J. Rosa, S. Kapphan, 'EPR investigations of copper centers in KTaO_3 single crystals', *Ferroelectrics*, **254** (1 – 4): 77 – 82 (2001)
229. J. L. Zhao, Q. T. Xu, W. M. Zhou, D. S. Yang, S. Kapphan, R. Pankrath, 'Photorefractive edge-enhancement joint transform correlator', *Optics Communications*, **212** (4 – 6): 287 – 292, (2002)

230. V. S. Vikhnin, R. I. Zakharchenya, Z. R. Asatryan, A. B. Kutsenko, S. E. Kapphan, H. Eickmeier, 'Charge transfer vibronic excitons, bi-polarons, and iron group impurities in ferroelectric oxides: $\text{Pb}_x\text{Nb}_y\text{O}_z$ -ceramics', *Ferroelectrics*, **307**, 67 – 76 (2004)
231. V. S. Vikhnin, R. I. Zakharchenya, H. R. Asatryan, A. B. Kutsenko, S. E. Kapphan, 'Polarons and charge-transfer vibronic excitons in ferroelectric oxides: EPR and photoluminescence studies of $\text{Pb}_x\text{Nb}_y\text{O}_z$ -ceramics', *Applied Magnetic Resonance*, **28 (1 – 2)**: 137 – 145 (2005)
232. V. A. Trepakov, A. I. Gubaev, S. E. Kapphan, P. Galinetto, F. Rossella, L. A. Boatner, P. P. Syrnikov, L. Jastrabik, 'UV light-induced IR absorption and photoconductivity in $\text{KTa}_{1-x}\text{Nb}_x\text{O}_3$ ', *Ferroelectrics*, **334**, 389 – 399 (2006)
233. L. S. Sochava, S. A. Basun, V. E. Bursian, V. S. Vikhnin, A. G. Razdobarin, D. R. Evans, S. E. Kapphan, 'Low-symmetry paramagnetic center in a $\text{KTaO}_3\text{:Ni}$ crystal', *Physics of the Solid State*, **49 (3)**, 460 – 462 (2007)