

PAPERS AND PATENTS

1. A. Buhrdorf, H. Dobrinski, O. Lüdtke, J. Bennett, L. Matsiev, M. Uhrich, O. Kolosov, **Multiparametric Oil Condition Sensor Based on the Tuning Fork Technology for Automotive Applications**, to be published in Adv. Microsystems for Automotive Applications XVII, Jürgen Valldorf, ed, Springer, (2005).
2. Chang, Han Ting; Charmot, Dominique; Duncalf, David; Kolosov, Oleg; Nava-Salgado, Victor; Nguyen, Son Hoai; Petro, Miroslav; Rannard, Steven Paul. **Oral dentifrice compositions containing cationic polymers**. U.S. Pat. Appl. Publ. (2005), 4 pp. CODEN: USXXCO US 2005063920.
3. Kolosov, Oleg; Matsiev, Leonid. **High throughput rheological testing of materials**. U.S. Pat. Appl. Publ. (2004), 23 pp., which. US 2004123650.
4. Hajduk; D. A.; Carlson; E. D.; Freitag; J. C.; Kolosov; O. **Instrument for high throughput measurement of material physical properties of a plurality of samples**, United States Patent **6,679,130**, January 20, (2004)
5. Petro, Miroslav; Nguyen, Son Hoai; Liu, Mingjun; Kolosov, Oleg. **Combinatorial exploration of polymeric transport agents for targeted delivery of bioactives to human tissues**. Macromolecular Rapid Communications (2004), 25(1), 178-188.
6. Hajduk, Damian A.; Kolosov, Oleg. **High throughput permeability testing of materials libraries**. U.S. Pat. Appl. Publ. (2004), 19 pp. US 2004077091.
7. Charmot, Dominique; Gibbs, Christopher David; Kolosov, Oleg; Liu, Mingjun; Nguyen, Son Hoai; Petro, Miroslav; Rannard, Steven Paul. **Oral care compositions comprising a polymer obtained from cationic monomers and anionic or neutral monomers**. U.S. Pat. Appl. Publ. (2005), 6 pp. US 2005063921.
8. Chang, Han Ting; Charmot, Dominique; Duncalf, David; Kolosov, Oleg; Nava-Salgado, Victor; Nguyen, Son Hoai; Petro, Miroslav; Rannard, Steven Paul. **Oral dentifrice composition containing cationic polymers**. U.S. Pat. Appl. Publ. (2005), 4 pp. CODEN: USXXCO US 2005063919.
9. Charmot, Dominique; Gibbs, Christopher David; Kolosov, Oleg; Liu, Mingjun; Nguyen, Son Hoai; Petro, Miroslav; Rannard, Steven Paul. **Oral dentifrice compositions comprising cationic polymers**. U.S. Pat. Appl. Publ. (2005), 6 pp. US 2005063918.
10. Padowitz, David; Matsiev, Leonid; Kolosov, Oleg. **Mechanical resonator**. PCT Int. Appl. (2004), WO 2004086027.
11. Kolosov, Oleg V.; Gammer, Vladimir; Matsiev, Leonid; Spitovsky, Mikhailb. **Application specific integrated circuitry for controlling analysis of a fluid**. PCT Int. Appl. (2004), WO 2004086020.
12. Kuebler, Sigrid; Carlson, Eric; Crevier, Thomas; Kolosov, Oleg; Low, Eric. **Image analysis of heterogeneous mixtures**. PCT Int. Appl. (2004), 54 pp. WO 2004053468.
13. Hajduk; D. A.; Carlson; E. D.; Freitag; J. C.; Kolosov; O.; Engstrom; James R.; Safir; A.; Srinivasan; R.; Matsiev; L., **High throughput mechanical property and bulge testing of materials libraries**, US Patent **6,772,642**, August 10, (2004).
14. Matsiev, Leonid; Varni, John F.; Kolosov, Oleg; Uhrich, Mark D.; Feland, John. **Environmental control system fluid sensing system and method**. PCT Int. Appl. (2004), 61 pp. WO 2004036207.
15. Hajduk; D. A.; Carlson; E. D.; Freitag; J. C.; Kolosov; O.; Engstrom; James R.; Safir; A.; Srinivasan; R.; Matsiev; L., **High throughput mechanical property testing of materials libraries using capacitance**, US Patent **6,690,179** February 10, (2004).
16. Matsiev, Leonid; Bennett, James; Pinkas, Daniel M.; Spitkovsky, Mikhail; Kolosov, Oleg; Guan, Shenheng. **Machine fluid sensor and method**. PCT Int. Appl. (2004), WO 2004036191.
17. Hajduk; D. A.; Carlson; E. D.; Freitag; J. C.; Kolosov; O.; Engstrom; James R.; Safir; A.; Srinivasan; R.; Matsiev; L., **High throughput mechanical property testing of materials libraries using a piezoelectric**, US Patent **6,650,102**, February 10, (2004).
18. Carlson, Eric D.; Kolosov, Oleg. **High throughput testing of fluid samples using an electric field**. U.S. Pat. Appl. Publ. (2003), 20 pp. US 2003203500.
19. McWaid, Thomas Harding; Kolosov, Oleg; Klaerner, Gerrit; Petro, Miroslav; Nguyen, Son Hoai; Kuebler, Sigrid. **Method and apparatus for screening flowable separation media for electrophoresis and related applications**. U.S. Pat. Appl. Publ. (2003), 22 pp. US 2003196896.
20. Szoszkiewicz, R.; Huey, B. D.; Kolosov, O. V.; Briggs, G. A. D.; Gremaud, G.; Kulik, A. J. **Tribology and ultrasonic hysteresis at local scales**. Applied Surface Science (2003), 210(1-2), 54-60.

21. Berezina, S.; Kolosov, O.; Slabeycius, J., **Investigation of local mechanical properties of Al-Cu-Li alloys by acoustic microscope**, *Komunikacie* (2003), 5(2), 26-28.
22. Tomoda, M.; Shiraishi, N.; Kolosov, O. V.; Wright, O. B. **Local probing of thermal properties at submicron depths with megahertz photothermal vibrations.** *Applied Physics Letters* (2003), 82(4), 622-624.
23. Tomoda, M.; Shiraishi, N.; Inagaki, K.; Kolosov, O. V.; Wright, O. B. **Subsurface mapping of thermal properties with optical heterodyne force microscopy.** *Review of Scientific Instruments* (2003), 74(1, Pt. 2), 373.
24. Hajduk, D. A.; Kolosov, O. **High throughput preparation and analysis of plastically shaped material samples,** U.S. Pat. Appl. Publ. (2003), US 20030141613 A1, Publication date (2003) July 31.
25. Matsiev, Petro, Kolosov, O. **Flow Detectors Having Mechanical Oscillators, And Use Thereof In Flow Characterization Systems,** USA 2003-0000291 1/2/(2003)
26. Geer, R. E.; Kolosov, O. V.; Briggs, G. A. D.; Shekhawat, G. S. **Nanometer-scale mechanical imaging of aluminum damascene interconnect structures in a low-dielectric-constant polymer.** *Journal of Applied Physics* (2002), 91(7), 4549-4555.
27. McGuigan, A. P.; Huey, B. D.; Briggs, G. A. D.; Kolosov, O. V.; Tsukahara, Y.; Yanaka, M. **Measurement of debonding in cracked nanocomposite films by ultrasonic force microscopy.** *Applied Physics Letters* (2002), 80(7), 1180-1182.
28. Kolosov, Oleg; Matsiev, Leonid; Petro, Miroslav. **Flow detectors having mechanical oscillators, and use thereof in flow characterization systems.** *PCT Int. Appl.* (2002), WO 0299414 A1 20021212.
29. Porfyraakis, K.; Kolosov, O. V.; Assender, H. E. **AFM and UFM surface characterization of rubber-toughened poly(methyl methacrylate) samples.** *Journal of Applied Polymer Science* (2001), 82(11), 2790-2798.
30. Cuberes, M. T.; Briggs, G. A. D.; Kolosov, O. **Nonlinear detection of ultrasonic vibration of AFM cantilevers in and out of contact with the sample.** *Nanotechnology* (2001), 12(1), 53-59.
31. Charmot, Dominique; Mansky, Paul; Kolosov, Oleg; Benoit, Didier; Klarnar, Gerrit; Jayaraman, Mani; Piotti, Marcelo; Chang, Han Ting; Nava-Salgado, Victor. **High throughput synthesis and screening in specialty polymers applications.** *Polymer Preprints (American Chemical Society, Division of Polymer Chemistry)* (2001), 42(2), 627-628.
32. Deng, C.-S.; Assender, H. E.; Dinelli, F.; Kolosov, O. V.; Briggs, G. A. D.; Miyamoto, T.; Tsukahara, Y. **Nucleation and growth of gas barrier aluminium oxide on surfaces of poly(ethylene terephthalate) and polypropylene: effects of the polymer surface properties.** *J. Polym. Sci., Part B: Polym. Phys.* (2000), 38(23), 3151-3162.
33. Dinelli, F.; Biswas, S. K.; Briggs, G. A. D.; Kolosov, O. V. **Measurements of stiff-material compliance on the nanoscale using ultrasonic force microscopy.** *Phys. Rev. B: Condens. Matter Mater. Phys.* (2000), 61(20), 13995-14006.
34. Cuberes, M. T.; Assender, H. E.; Briggs, G. A. D.; Kolosov, O. V. **Heterodyne force microscopy of PMMA/rubber nanocomposites: nanomapping of viscoelastic response at ultrasonic frequencies.** *J.Phys. D: Appl. Phys.* (2000), 33(19), 2347-2355.
35. Lefevre, O.; Kolosov, O. V.; Every, A. G.; Briggs, G. A. D.; Tsukahara, Y. **Elastic measurements of layered nanocomposite materials by Brillouin spectroscopy.** *Ultrasonics* (2000), 38(1-8), 459-465.
36. Inagaki, K.; Kolosov, O. V.; Briggs, G. A. D.; Wright, O. B., **Waveguide ultrasonic force microscopy at 60 MHz**, *Appl. Phys. Lett.* (2000), 76 (14), 1836-1838.
37. Dinelli, F.; Castell, M. R.; Ritchie, D. A.; Mason, N. J.; Briggs, G. A. D.; Kolosov, O. V. **Mapping surface elastic properties of stiff and compliant materials on the nanoscale using ultrasonic force microscopy.,** *Philos. Mag. A* (2000), 80 (10), 2299-2323.
38. Hurley, D.H.; Wright, O.B.; Matsuda, O.; Gusev, V.E.; Kolosov, O.V., **Laser picosecond acoustics in isotropic and anisotropic materials ;** *Ultrasonics*, vol.38, no.1-8 , Page: 470-4, 2000.
39. Grier, E. J.; Kolosov, O.; Petford-Long, A. K.; Ward, R. C. C.; Wells, M. R.; Hjorvarsson, B. , **Structural changes to epitaxial (0001) holmium layers during hydrogen loading ,** *J. Phys. D: Appl. Phys.* (2000), 33 (8) , 894-900.

40. Dinelli, F.; Assender, H. E.; Kirov, K.; Kolosov, O. V. , **Surface morphology and crystallinity of biaxially stretched PET films on the nanoscale** , Polymer (2000), **41** (11) , 4285-4289.
41. Henry, B. M.; Dinelli, F.; Zhao, K. -Y.; Grovenor, C. R. M.; Kolosov, O. V.; Briggs, G. A. D.; Roberts, A. P.; Kumar, R. S.; Howson, R. P. , **A microstructural study of transparent metal oxide gas barrier films**, Thin Solid Films (1999), 355-356 500-505.
42. Dinelli, F.; Assender, H. E.; Takeda, N.; Briggs, G. A. D.; Kolosov, O. V., **Elastic mapping of heterogeneous nanostructures with ultrasonic force microscopy (UFM)** , Surf. Interface Anal. (1999), **27**(5-6) , 562-567.
43. O.V. Kolosov, M.R. Castell, C.D. Marsh, G.A.D. Briggs, T.I. Kamins, R.S. Williams, **Imaging the elastic nanostructure of Ge islands by ultrasonic force microscopy**, Physical Review Letters, **1998**, Vol. **81**, No.5, pp.1046-1049.
44. A. Briggs and O. Kolosov, **Anisotropic elastic characterization of surfaces from 2 MHz to 20 GHz**, Ultrasonics, 1998, Vol.**36**, No.1-5, pp.317-321.
45. O. Kolosov, **Ultrasonic Force Microscopy**, feature paper (invited), Materials World, December, **1998**, P.753-754.
46. Gracian, F.; Verardi, P.; Dinescu, M.; Dinelli, F.; Kolosov, O., **Early stages of growth and nanostructure of Pb(Zr,Ti)O₃ thin films observed by atomic force microscopy**, Thin Solid Films (1998), 336(1,2), 281-285.
47. F. Dinelli; S. Biswas; A. Briggs and O. Kolosov, **Ultrasound induced lubricity in microscopic contact**, Appl. Phys. Lett., **71** (9), 1177-1179 (1997).
48. O. Kolosov, **Ultrasonic scanned force microscopy**, feature paper (invited), Vision, the Newsletter of the Scanning Probe Microscopy Programme, EPSRC, spring issue, (1997), p.1,8 (cover).
49. Warren, P. D.; Lawrence, C. W.; Roberts, S. G.; Briggs, G. A. D.; Pecorari, C.; Kolosov, O. V.; Puentes-Heras, M. M. , **Evaluation of lapping and polishing damage in brittle materials by quantitative acoustic microscopy**, Br. Ceram. Proc. (1997), **57** (Advances in the Characterisation of Ceramics), 167-176.
50. A. S. Chekanov; T. S. Low; S. Alli; O. Kolosov; A. Briggs, **Microcracks of the Thin-Film Head Alumina - L Cracks and U Cracks**, IEEE Transactions On Magnetics, **32** (5), 3696-3698 (1996).
51. S. Chekanov; S. Alli; O. Kolosov, **Application of SPM for the Analysis of Microcracks of Thin-Film Head Alumina**, Nato Advanced Science Institutes Series, Series E, Applied Sciences, 330 663-668 (1996).
52. O. Kolosov, **Nanoscale Visualization And Control Of Ferroelectric Domains By Atomic-Force Microscopy - Reply**, Physical Review Letters, **1996**, Vol.**76**, No.22, p.4292.
53. A. Briggs and O. Kolosov, **Acoustic Microscopy for Imaging and Characterization**, (invited) MRS Bulletin, v. **21**, **1996**, p.30-35.
54. P.D. Warren, O.V. Kolosov, C. Pecorari, S.G. Roberts and G.A.D. Briggs, **Characterisation of surface damage via contact probes**, Nanotechnology, v.**7**, **1996**, p.288-294.
55. P.D. Warren, C. Pecorari, O.V. Kolosov, C S.G. Roberts and G.A.D. Briggs, **Characterisation of surface damage via surface acoustic waves**, Nanotechnology, v.**7**, **1996**, p.295-301.
56. O. Kolosov and A. Briggs, **Atomic Force Microscopy Apparatus and Method thereof**, UK patent application, no. 9617380.2, filing (priority) date 19 August **1996**.
57. O. Kolosov, A. Gruverman, J. Hatano, K. Takahashi, and H. Tokumoto, **Visualization and Control of Ferroelectric Domains at Nanoscale by Atomic Force Microscopy**, Physical Review Letters, **74** (1995) 4309-4312.
58. A. Gruverman, O. Kolosov, J. Hatano, K. Takahashi, and H. Tokumoto, **Domain structure and polarization reversal in ferroelectrics studied by atomic force microscopy**, J.Vac.Sci.Technolo. B **13**(1995) 1095-1099.
59. P. Zinin, W. Weise, O. Lobkis, O. Kolosov, S. Boseck, **Fourier Optics Analysis of Spherical Particles Image Formation in Reflection Acoustic Microscopy**, Optic, **98** (1994) 45-60.
60. Kolosov O.V., Suzuki M., Yamanaka K. **Microscale Evaluation of the Local Viscoelastic Properties of Polymer Gel for Artificial Muscles Using Acoustic Microscopy**, J. Appl. Phys., **74**(1993), pp.6407-12.
61. K. Yamanaka, O. Kolosov, H. Ogiso, **Ultrasonic Force Microscopy of Biopolymers at Frequencies Above 100 MHz**, in Nanostructures & Quantum Effects, Springer-Verlag (1994) pp. 345-348.

62. O. Kolosov, H. Ogiso, H. Tokumoto, K. Yamanaka, **Elastic Imaging with Nanoscale and Atomic Resolution by Ultrasonic Force Microscopy (UFM)**, in Nanostructures & Quantum Effects, Springer-Verlag (1994) pp.349-352.
63. Kolosov O. V., Yamanaka K., Watanabe K., **Ultrasonic oscillation detection method and sample observing method in atomic force microscope**, No. K-2712, priority **12.05.93**, F1909, (5-133878), Patent of Japan, publication No. 06323843 A.
64. Yamanaka K., Kolosov O. V., Ogiso H., Sato H., Koda T., **Apparatus and sample observation method in Atomic Force Microscopes**, No. K-2711, priority **13.05.93**, (5-135342), Patent of Japan, publication 6-323834 A, no. 2535759.
65. P. Zinin, O. Kolosov, O. Lobkis, K. Maslov, **Visualisation of spherical objects by the reflection acoustic microscope**, *Physical Acoustics*, **39** (1993) 343-346.
66. K. Yamanaka, H. Ogiso, and O. Kolosov, **Ultrasonic Force Microscopy for nanometer resolution subsurface imaging**, *Appl. Phys. Lett.* **64** No.2 pp.178-180, **1994**.
67. H. Sato, O. Kolosov, Y. Nagata, T. Koda, and K. Yamanaka, **Acoustic Imaging of Plate Thickness and Sound Velocity during Tensile Testing at Low T**, *Japanese J. Appl. Phys.* **33** (1994) 6373-6378.
68. K. Yamanaka, H. Ogiso, and O. Kolosov, **Analysis of subsurface imaging and effect of contact elasticity in the Ultrasonic Force Microscope**, *Japanese J. Appl. Phys.* **33** (1994) pp. 3197-3203.
69. Kolosov O. V., Yamanaka K., **Acoustic Knife Edge for Anisotropic and Dark Field Acoustic Imaging and Measurements**, *Japanese J. of Appl. Phys.*, **33** Pt.1 No.1a, pp.329-333 (1994).
70. Yamanaka K. , Kolosov O. , Nagata Y. , Koda T., Nishino H., and Tsukahara Y., **Analysis of excitation and coherent amplification of surface acoustic waves by the phase velocity scanning method**, *J. Appl. Phys.*, **74** No.11 (1993) pp.6511-6522.
71. Kolosov O. V. and Yamanaka K., **Nonlinear Detection of Ultrasonic Vibrations in an Atomic Force Microscope**, *Japanese J. Appl. Phys. Lett.*, **32** (1993) Part.2 (Letters), No.8A, pp.L1095-L1098.
72. Kolosov O. V., Levin V. M., Mayev R. G., Senjushkina T. A., **The Use of the Acoustic Microscopy for Biological Tissues Characterization**, in Selected Papers on Scanning Acoustic Microscopy, ed-s. B. Khuri-Yakub and C. Quate, SPIE Milestone Series, (1992) v.53, ISBN 0-8194-0981-2, p. 290-298.
73. Kolosov O.V., Lobkis O.I., Maslov K.I., Zinin P.V., **The Effect of Focal Plane Position on the Image of Spherical Object in the Acoustic Microscope**, *Acoustics Letters*, v.16, No.4, **1992**, pp.84-88.
74. O.V. Kolosov, M. Suzuki, K. Yamanaka, **Micromechanical Characterization of the Polymer Gel for Artificial Muscles**, (in Japanese), MEL NEWS (J. Mech. Engn. Lab.), No.10, MITI, Japan, **1992**, pp.4-5.
75. R.G. Mayev, O.V. Kolosov, O.I. Lobkis, **Investigation of the Confocal System of the Transmission Acoustic Microscope**, *Trans. of the Royal Microsc. Society, London, UK*, v.1, **1990**, pp.107-110.
76. Kolosov O. V., Matsyev L. F., Mayev R. G., Esskov Yu. B., Bondarenko Yu. K., Troitskiy V. A., **Method of Layer Materials and other Objects Investigation by Using the Acoustic Microscope**, USSR Patent 1587337, prior. 03.05.88, publ. USSR Pat. Bull., No.31, **1990**.
77. Kolosov O. V., Matsyev L. F., Maev R. G., Lagutenkova E. Yu., Senyushkina T. A., Pyshniy M. F., **Method of the Investigation of Inner Structure of the Objects in the Transmission Acoustic Microscope**, USSR Patent 1409915, prior. 03.05.88, published USSR Pat. Bull., No.26, **1988**.
78. Levin V. M., Maev R. G., Kolosov O. V., Bukhny M., **Theoretical Fundamentals of Quantitative Acoustic Microscopy**, *Acta Phys. Slovaca*, v.40, No. 3, **1990**, pp.171-184.
79. Enicolopyan N. S., Kolosov O. V., Lagutenkova E. Yu., Mayev R. G., Novikov D. D., **Scanning Acoustic Microscopy Study of the Heterogeneity of Polymer Mixtures**, *Soviet Physical Chemistry*, Plenum Publishing Corporation, v.292, No.2, **1987**, pp.213-216.
Enikolopyan, N. S.; Kolosov, O. V.; Lagutenkova, E. Yu.; Maev, R. G.; Novikov, D.D., **Study of the heterogeneity of polymer mixtures by scanning acoustic microscopy**, *Dokl. Akad. Nauk SSSR* (1987), 292(6), 1418-22 [Phys. Chem.].
80. Kolosov O. V., Levin V. M., Mayev R. G., Senyushkina T. A., **Acoustic Microscopy of Collagen Tissues** in book: "Biomechanics in medicine and Surgery", Kaunas, Lethuania, USSR (in Russian, abstr. in English), v.1, **1987**, pp.200-205.
81. Kolosov O. V., Levin V. M., Mayev R. G., Senjushkina T. A., **The Use of the Acoustic Microscopy for Biological Tissues Characterization**, *Ultras. in Medicine and Biology*, v.13, No.8, **1987**, pp.477-483.

82. Pirusian L. A., Kolosov O. V., Mayev R. G., Levin V. M., Senyushkina T. A., **Acoustic Microscopy of Organic and Biological Materials**, Sov. Phys. Dokl., ©Amer. Inst. of Phys., v.30, No2, **1985**, pp.150-2.

THESES.

83. O.V. Kolosov, **Physical principles of characterisation of local acoustic properties of materials by transmission acoustic microscopy**, Ph.D. thesis, Moscow PhysTech (Moscow Institute of Physics & Technology), copy in the State Library of Russian Federation, Moscow, Russia, 1989 .
84. O.V. Kolosov, **Transmission Acoustic Microscope for studies of biological tissues**, M.Sc. thesis, Moscow PhysTech (Moscow Institute of Physics & Technology), 1982.

CONFERENCE PROCEEDINGS.

85. Huey, Bryan D.; Langford, Richard M.; Andrew, G.; Briggs, D.; Kolosov, Oleg V. **Characterization of the nanometer-scale mechanical compliance of semiconductors by ultrasonic force microscopy.** Institute of Physics Conference Series (2001), 169(Microscopy of Semiconducting Materials 2001), 531-534.
86. Shekhawat, G. S.; Kolosov, O. V.; Briggs, G. A. D.; Shaffer, E. O.; Martin, S.; Geer, R. E. **Nanoscale elastic imaging of aluminum/low-k dielectric interconnect structures.** Materials Research Society Symposium Proceedings (2001), 612(Materials, Technology and Reliability for Advanced Interconnects and Low-k Dielectrics), D1.7/1-D1.7/7.
87. Shekhawat, G. S.; Kolosov, O. V.; Briggs, G. A. D.; Shaffer, E. O.; Martin, S.; Geer, R. E., **Nanoscale elastic imaging of aluminum/low-k dielectric interconnect structures**, Mater. Res. Soc. Symp. Proc. (2001), 612(Materials, Technology and Reliability for Advanced Interconnects and Low-k Dielectrics).
88. Shekhawat, G. S.; Briggs, G. A. D.; Kolosov, O. V.; Geer, R. E, **Nanoscale elastic imaging and mechanical modulus measurements of aluminum/low-k dielectric interconnect structures**, AIP Conf. Proc. (2001), 550(Characterization and Metrology for ULSI Technology), 449-452.
89. Kumano, N.; Inagaki, K.; Kolosov, O. V.; Wright, O. B. , **Optical heterodyne force microscopy** , Proc. - IEEE Ultrason. Symp. (1998), (Vol. 2), 1269-1272.
90. Inagaki, K.; Kolosov, O. V.; Briggs, G. A. D.; Muto, S.; Horisaki, Y.; Wright, O. B. , **Ultrasonic force microscopy in waveguide mode up to 100 MHz**, Faculty of Engineering, Hokkaido University, Japan. Proc. - IEEE Ultrason. Symp. (1998), (Vol. 2), 1255-1259.
91. M.M. Puentes, J Bradshaw, M. Robertson, G.A.D. Briggs, N. Loxley and O. Kolosov, **Characterisation of near-surface mechanical properties and polishing damage by Surface Acoustic Waves**, Nondestructive Characterisation of Mater. VIII, R. E. Green, Plenum Press, 1998, **817-823**.
92. O. Kolosov, A. Briggs, K. Yamanaka, W. Arnold, **Nanoscale Imaging Of Mechanical-Properties By Ultrasonic Force Microscopy (UFM)**, Acoustical Imaging, 1996, **Vol.22**, p.665-668, Ed: P. Tortoli, L. Masotti, Plenum Press, New York..
93. A. Briggs, O. Kolosov, M. Heras, **Materials Characterisation By Surface Acoustic-Waves From 200-MHz To 20-GHz**, Acoustical Imaging, 1996, **Vol.22**, p.657-664, Ed: P. Tortoli, L. Masotti, Plenum Press, New York.
94. Gruverman, A.; Kolosov, O.; Hatano, J.; Takahashi, K.; Tokumoto, H., **Nanoscale control of ferroelectric domain structure by AFM**, Mater. Res. Soc. Symp. Proc. (1995), **357** (Structure and Properties of Interfaces in Ceramics), 363-8.
95. H. Ogiso, S. Nakano, O. Kolosov, K. Yamanaka, T. Koda, **Study on the Modification of HOPG Atomic Structure MeV by Ion Implantation**, Proceedings of the Ninth Symposium on Surface Layer Modification by Ion Implantation SMI², ISSN 0917-1460, Nov. 22, 1993, Tokyo, Japan, pp.57-58.
96. Kolosov O. V., Ogiso H., Yamanaka K., **Ultrasonic Force Microscopy - a New Technique for a Nondestructive Investigation on Nanometer Scale Viscoelastic Properties**, Proceedings of the 3rd Japan International SAMPE Symposium (Nondestructive Evaluation), Tokyo, Japan, Dec. 9-10 (1993) pp.2196-2201.
97. Sato H., Kolosov O. V., Nagata Y., Koda T., and Yamanaka K., **Acoustic imaging of plate thickness and sound velocity of a plate during tensile testing in low temperature**, Ultrasonic Electronics Symposium Proceedings, USE 93, Tokyo, JAPAN, Dec. 7-9 (1993), pp.59-60.

98. K. Yamanaka, H. Ogiso, and O. Kolosov, **Subsurface imaging by atomic force microscope with ultrasonic vibration of samples (in Japanese)**, Ultrasonic Electronics Symposium Proceedings, USE 93, Tokyo, JAPAN, Dec. 7-9 (1993), pp.27-28.
99. Sato H., Kolosov O. V., Nagata Y., Koda T., and Yamanaka K., **Simultaneous measurement of thickness and sound velocity of a plate during tensile testing in low temperature acoustic microscopy**, Proceedings of 3rd Japan International SAMPE Symposium (Nondestructive Evaluation), Tokyo, Japan, Dec. 9-10, (1993), pp.2202-2206.
100. O.V. Kolosov, K. Yamanaka, O. I. Lobkis and P. V. Zinin, **Evaluation of a Point-spread-function of Focusing Systems Using Spherical Reflector**, Proc. of Ultrasonics International'93, Vienna, Austria, 1993 pp.547-550.
101. A. Gruverman, O. Kolosov, J. Hatano, K. Takahashi, and H. Tokumoto, **Nanoscale control of ferroelectric domain structure by AFM**, in MRSoc. Symp.Proc. **357** (1995) pp.363-368.
102. Yamanaka K., Kolosov O.V., Ogiso H., Sato H., Koda T., **Atomic Force Microscope Using Lateral Vibration of Sample (in Japanese)**, Proc. of Acoustic Soc. of Japan 93'Symp., Tokyo, Japan, March 01 (1993) pp.889-890.
103. Kolosov O. and Yamanaka K. , **Adjustable Acoustic Knife Edge for Anisotropic and Dark Field Acoustic Imaging (invited)**, Proc. of 6th Symposium of Ultrasonic Micro Spectroscopy, UMS'6, Hitachi Mashinery Co., Tsuchiura, March 23, 1993, Japan, 23.03.93, pp. 39-40.
104. Suzuki M., Kolosov O., Yamanaka K., **Study of mechanical and ultrasonic properties of polymer gel structure formed by freezing method**, Proc. of Symp. on Achievements in Polymer Research, JITA (Japan Industrial Techn.Ass.), Feb. 2, 1993, Tokyo, Japan (in Japanese), No. 226, 5.02.93, pp. 47-52.
105. Kolosov O. V. , Suzuki M., Yamanaka K., **Investigation of Mechanical Microstructure of the Polymer Gel for the Artificial Muscles Using Acoustic Microscopy**, Proc. of 6th Conf. of Polymer Gel (Polym. Soc. Japan), Tokyo, Japan, Jan. 1993, 345-346.
106. Kolosov O. V. and Yamanaka K., **Adjustable Acoustic Knife Edge for Anisotropic and Dark Field Imaging**, Proc. Symp. on Ultrasonic Electronics '92, Sendai, Japan, 1992, pp.141-142.
107. Yamanaka K., Nakano Sh., Ogiso H., Kolosov O. V., Koda T., **Characterization of Micro-mechanical Component Using Acoustic Microscopy and New Design Concepts Based on Controlled Elasticity Distribution**, 3d Int. Symp. on Micro Machine and Human Sci., Nagoya, Japan, 1992, pp.59-67.
108. Maev R. G., Kolosov O. V., Levin V. M., Lobkis O. I., **Transmission Acoustic Microscopy Investigation**, in book: Acoustical Imaging, edited by H. Ermert and H.-P. Harjes, Plenum Press, N.Y., v.19, 1992, pp.679-683.
109. Ataev K. O., Kolosov O. V., Levin V. M., Mayev R. G., **The Investigations of the Local Piezoelectric Properties by Acoustic Microscopy**, Proc. of IEEE Symp. on Ferroel. and Freq. Control, 1988, Chicago, USA, v.2, 1988, pp.775-777.
110. Kolosov O. V., Matsiev L. F., **Measuring of Microstructure Parameters of Composite Polymer Materials Using Transmission Acoustic Microscope**, (in Russian), Dep. Nation. Inst. of Sci. and Techn. Inf. USSR, (VINITI), Moscow, USSR, v.B-88, No.5955, 1988, pp.1-9.
111. Kolosov O. V., Levin V. M., Mayev R. G., Senjushkina T. A., **Investigation of Viscoelastic Properties of Biopolymers Using Transmission Acoustic Microscope**, Proc. of V-th Int. Symp. on New Methods in Biol. and Med., Moscow, USSR, 1987, pp.141-146.
112. Senyushkina T. A., Kolosov O. V., Levin V. M., Mayev R. G., Pirusian L. A., **Acoustic Microscopy of Biological Tissues**, Proc. Int. Symp. on Microscope Photometry and Acoustic Microscopy in Science, Moscow, USSR, 1985, pp.137-146.
113. Kolosov O. V., Levin V. M., Mayev R. G., **The "Edge" Effect During Acoustic Imaging by Transmission Type Acoustic Microscope**, Proc. Int. Symp. on Microscope Photometry and Acoustic Microscopy in Science, Moscow, USSR, 1985, pp.66-72.
114. Kolosov O. V., **Transmission Raster Acoustic Microscope with Quantitative Characterization Facilities**, Proc. Int. Symp. on Microscope Photometry and Acoustic Microscopy in Science, Moscow, USSR, 1985, pp.26-31.
115. Enicolopyan N. S., Kolosov O. V., Lagutenkova E. Yu., Mayev R. G., Novikov D. D., **The Quantitative Transmission Raster Acoustic Microscopy of Polymer Composition**, Proc. Int. Symp. on Microscope Photometry and Acoustic Microscopy in Science, Moscow, USSR, 1985, pp.106-110.

116. Andreeva L. A., Gerchicov A. N., Kolosov O. V., Mayev R. G., Senjushkina T. A., Fridman F. E., **The Study of Sclera Anisotropy by Acoustic Microscopy**, Proc. Int. Symp. on Microscope Photometry And Acoustic Microscopy in Science, Moscow, USSR, 1985, pp.149-152.
117. Kolosov O. V., Levin V. M., Mayev R. G., Marakuyeva I. V., **Tissue Characterization by Acoustic Microscopy**, Proc. of "ULTRASOUND'82", Oxford, England, Pergamon Press, 1982, pp.164-165.

CONFERENCE ABSTRACTS ~ 85 +

INVITED TALKS

118. Oleg Kolosov, **Sensors in the High Throughput Materials Discovery**, *Gordon Research Conference - Combinatorial & High Throughput Materials Science*, Rancho Santa Barbara, Buellton, CA, USA, January 25-30, 2004
119. Oleg Kolosov, **High speed materials properties sensing. Synergy between combinatorial discovery and process control**, *Polyolefins 2004*, Houston, TX, USA, February, 2004.
120. Oleg Kolosov, **Miniaturization and Small Scale Properties Sensors in the High Throughput Materials Discovery**, *Knowledge Foundation, COMBI - 6th Annual Combinatorial Approaches for New Materials Discovery*, Arlington, VA, USA, May, 2004.
121. Oleg Kolosov, Bryan Huey, and Oliver Wright, **Heterodyne Force Microscopies - Viewing materials physical properties on ns time and nm length scale**, *Acoustic Imaging 27*, Saarbrucken, Germany, March, 2003
122. Oleg Kolosov, **Tools for New Material Discovery**, *CPAC Summer Institute*, University of Washington, Seattle, USA, July 2002.
123. O. V. Kolosov, **Combinatorial discovery of new materials**, *Department of Materials: Colloquia*, University of Oxford, Oxford, UK, 22 June, 2000.
124. Oleg V. Kolosov, **High Throughput Polymer Characterization - Combinatorial Discovery vs. Rapid Process Control**, *CPAC Summer Institute*, U Washington, Seattle, USA, July 2001
125. O. V. Kolosov and G. A. D. Briggs, **Ultrasonic Force Microscopies – merging ultrasound and SPM to explore nanometre scale mechanics on the nanosecond time scale**, *Scanning Tunneling Microscopy, STM '99*, Seoul, Korea, July 1999.
126. O. V. Kolosov, **Ultrasonic force microscopy – tapping into materials properties with nanometre scale spatial and nanosecond time resolution**, *Chevron Lecture Series*, Department of Chemical Engineering, University of Washington, Seattle, USA, March, 29, 1999.
127. O. V. Kolosov, F. Dinelli, H. Yanaka, Y. Tsukahara and G.A.D. Briggs, **Ultrasonic nano-NDT by Ultrasonic Force Microscopy, Observing inclusions, interfaces and delaminations in composite materials with the near-atomic resolution**, *Ultrasonic International '99* and World Congress on Ultrasonics, 1999, Copengagen, Denmark.
128. OFS Lefeuve O.V. Kolosov, GAD Briggs, and Y Tsukahara, **Elastic measurements of layered nanocomposite materials by Brillouin spectroscopy**, *Ultrasonic International '99* and World Congress on Ultrasonics, 1999, Copenhagen, Denmark .
129. O. B. Wright and O. V. Kolosov, **Nanoscale ultrasonic and photoacoustic probing of elastic and thermal properties with atomic force microscopy at MHz frequencies** , *Ultrasonic International '99* and World Congress on Ultrasonics, 1999, Copengagen, Denmark.
130. O. Kolosov and A. Briggs, **Acoustic Near-Field Microscopy**, *W E - Heraeus Ferienkurs, School on Non-conventional High Resolution Imaging*, September 1998, Univ. of Leipzig, Germany.
131. O. Kolosov and A. Briggs, **From Ultrasonic Force to Heterodyne Force Microscopy. Advances of non-linear ultrasonics in the Scanned Force Microscopy**, *Ultrasonics International'97*, Delft, Holland, 1-4 July, 1997.
132. A. Briggs and O. Kolosov, **Anisotropic Elastic Characterisation of surfaces from 2 MHz to 10 GHz**, *Ultrasonics International'97*, Delft, Holland, 1-4 July, 1997.
133. O. Kolosov, **Ultrasonic Force Microscopy for Materials Studies. Challenging Diffraction Limits of Resolution**, *Butsuri Gakkai – Japanese Society of Applied Physics*, April 21, 1998, University of Hokkaido, Japan.

134. O. Kolosov, **Towards measurement of mechanical properties with nanoscale resolution**, *Colloquia of Materials Department*, April 17, 1998, Sendai University, Japan.
135. O. Kolosov, **Ultrasonic Atomic Force Microscopy**, *Colloquia of the Department of Applied Physics, University of Hokkaido*, Sapporo, December, 1996.
136. O. Kolosov, **Nanoscale writing and erasing of ferroelectric domains using Atomic Force Microscopy**, at the *workshop on Near Field Microscopy and Future Trends*, Montpellier, 1995.
137. O. Kolosov, **Nanoscale imaging of dynamic mechanical properties by ultrasonic force microscopy**, *Acoustic Imaging 22*, Florence, Italy, 1995.
138. O. Kolosov and K. Yamanaka, **Adjustable Acoustic Knife Edge for Anisotropic and Dark Field Acoustic Imaging**, *6th Symp. on U/s Micro Spectroscopy*, Tsuchiura, Japan, March 23, 1993, Japan.