

PAPERS PUBLISHED IN JOURNALS WITH IF

1. D.I. Pushkarov, Vacancy-Impurity Nanoclusters in Solid Solutions of ^3He - ^4He , Phys. Rev. B **70**, 172506 (2004).
2. D.I. Pushkarov, Quantum Diffusion, Central Eur. J. Phys. **2**, 420-455 (2004).
3. V. Ravi Chandra, D. Sen, N.B. Ivanov, and J. Richter, Antiferromagnetic sawtooth chain with spin-1/2 and spin-1 sites, - Phys. Rev. B **69**, 214406 (2004).
4. N.B. Ivanov and J. Richter, Phase diagram of a frustrated mixed-spin ladder with diagonal exchange bonds, Phys .Rev. B **69**, 214420 (2004).
5. H.D. Jennings, P.Ch. Ivanov, A.M. Martins, P.C. da Silva, G.M. Vishwanathan, Variance fluctuations in nonstationary time series: a comparative study of music genres, Physica A, **336**: 585, (2004).
6. L. Angelini, M. De Tommaso, M. Guido, K. Hu, P. Ch. Ivanov, D. Marinazzo, G. Nardulli, L. Nitti, M. Pellicoro, C. Pierro, S. Stramaglia,, Steady-state visual evoked potentials and phase synchronization in migraine, Physical Review Letters, 93 (3), p.038103(4), (2004).
7. P. Carpena, P. Bernaola-Galvan, and P.Ch. Ivanov., New class of level statistics in atomic chains with correlated disorder, Physical Review Letters, 93 (17), p.176804(4), (2004).
8. H. Chamati, M.S. Stoytcheva and G.A. Evangelakis, Immersed nano-sized Al dispersoids in an Al matrix; effects on the structural and mechanical properties by molecular dynamics simulations, J. Phys.: Condens. Matter **16**, 5031-5042 (2004).
9. H. Chamati and N.I. Papanicolaou, Second-moment interatomic potential for gold and its application to molecular-dynamics simulations, J. Phys.: Condens. Matter **16**, 8399-8407 (2004).
10. H. Chamati and D.M. Danchev, Critical Casimir forces for $O(n)$ systems with long-range interaction in the spherical limit, Phys. Rev. E **70**, 066106 (13) (2004).
11. K.T. Stoychev, M.T. Pramatarova and R.S. Kamburova, Resonant scattering of nonlinear Schrödinger solitons from potential wells, Phys. Rev. E **70**, 066622(5) (2004).
12. D. V. Shopova, D. I. Uzunov, Comment on: “First-order phase transitions of type-I superconducting films” Phys. Lett. A 322 (2004) 111, Phys. Lett. A 328 (2004) 232.
13. A. Andreev, S. Tsintsarska, I. Polyanski, M. Ivanovich, M. Georgiev, and A. Gochev, Polarons in axial transport in single-layer high-Tc superconductors. Central Eur. J. Phys. 2 (2) April 16 (2004).
14. O. Ivanov, Charging of solids by irradiation with electromagnetic field, Optics Communications **231**, 212-217 (2004).
15. Z. Dimitrova, N.Vitanov, Chaotic pairwise competition. Theor.Popul.Biology **66**, 1-12 (2004).
16. M. Kalitzova, E. Vlakhov, Y. Marinov, K. Gesheva, V. Ignatova, O. Lebedev, C. Muntele, R. Gijbels, Effect of high-frequency electromagnetic field of Te+-implanted (001) Si, Vacuum **76**, 325-328 (2004).
17. G. Zollo, M. Kalitzova, D. Manno, G. Vitali, Precipitation of superstructured nanocrystals in high-dose implanted Si: an XHRTEM study, Journal Physics D: Applied Physics **37**, 2730-2736 (2004).
18. L. Pramatarova, E. Pecheva, M. F. Maitz, M. T. Pham, A. Kondyurin, Growth of hydroxyapatite layers on solid surfaces patterned by ion implantation, Annals of Transplantation 9 (1A) (2004) 40-42
19. L. Pramatarova, E. Pecheva, T. Petrov, N. Minkovski, A. Kondyurin, R. Pramatarova, Ion beam modified surfaces as substrates for hydroxyapatite growth induced by laser-liquid-solid interaction, Proceedings of SPIE, v. 5449 (2004) 41-45

20. L. Pramatarova, E. Pecheva, T. Petrov, N. Minkovski, A. Kondyurin, R. Pramatarova, Enhancement of hydroxyapatite formation by laser-liquid-solid interaction, Proceedings of SPIE, v. 5449 (2004) 46-50
21. L. Pramatarova, E. Pecheva, D. Dimova-Malinovska, R. Pramatarova, U. Bismayer, M. Kamenova, T. Petrov, N. Minkovski, Porous silicon as a substrate for hydroxyapatite growth, Vacuum 76 (2-3) (2004) 135-138
22. E. Pecheva, L. Pramatarova, M. F. Maitz, M. T. Pham, A. Kondyurin, Kinetics of hydroxyapatite deposition on solid substrates modified by sequential dual implantation of Ca and P ions. Part I. FTIR and Raman spectroscopy study, Applied Surface Science 235 (1-2) (2004) 176-181
23. E. Pecheva, L. Pramatarova, M. F. Maitz, M. T. Pham, A. Kondyurin, Kinetics of hydroxyapatite deposition on solid substrates modified by sequential dual implantation of Ca and P ions. Part II. Morphological, composition and structure study, Applied Surface Science 235 (1-2) (2004) 170-175
24. E. Pecheva, L. Pramatarova, M. F. Maitz, M. T. Pham, A. Kondyurin, Extracellular matrix used in an in-vitro model system for hydroxyapatite formation, Annals of Transplantation 9 (1A) (2004) 58-60
25. L. Pramatarova, E. Pecheva, M. F. Maitz, M. T. Pham, A. Kondyurin, Ion beam patterning of solid surfaces for hydroxyapatite deposition, Vacuum 76 (2-3) (2004) 335-338
26. L. Pramatarova, E. Pecheva, T. Petrov, A. Kondyurin, R. Pramatarova, N. Minkovski, Ion beam and laser processing for hydroxyapatite formation, Vacuum 76 (2-3) (2004) 339-342
27. E.S. Vlakhov, K.A. Nenkov, T.G. Donchev, E.S. Mateev, R.A. Chakalov, Ferromagnetic and charge ordering competition in strained thin films of La_{1-x}CaxMnO₃ system, Vacuum 76, Nr. 2-3, 249-252 (2004).
28. E.K.Nazarova, A.J.Zaleski, A.L.Zahariev, A.K.Stoyanova-Ivanova, K.N.Zalamova, "Effects of substituting calcium for yttrium on the superconducting properties of Y Ba₂Cu₃O_z bulk samples", Physica C 403 , 283-289 (2004).
29. N. Balchev, K. Nenkov, B. Kunev, J. Pirov, M. Baychev, A. Souleva, Synthesis and Magnetic Properties of L0.5Sr0.5Mn0.5M0.5O₃ (L = Y, Pr; M = Cu, Ru), Journal of Superconductivity 17, Nr. 3, 363-367 (2004).
30. N. Balchev, B. Kunev, J. Pirov, A. Souleva, K. Nenkov, Synthesis, magnetic and transport properties of highly doped with Cu or Ru manganites, Journal of Superconductivity, 17, Nr.4, 519-523 (2004).
31. V. Simeonov, S. Tsakovski, T. Lavric, P.Simeonova, H. Puxbaum, Multivariate Statistical Assessment of Air Quality: A Case Study, Microchimica Acta, 148, 3-4 , 293-298 (2004).
32. V. Simeonov, P.Simeonova, R. Tsitouridou, Chemometric Quality Assessment of Surface Waters: Two Case Studies, Chemistry and Engineering Ecology, 11, 6, 449-469 (2004).
33. P. Gierlowski, A. Szewczyk, A. V. Abal'oshev, E. S. Vlakhov, T. I. Donchev , B. Blagoev, La_{0.7}Sr_{0.3}MnO₃ Thin-Film Grain-Boundary Junctions on Bi-Crystal Substrate, ACTA PHYSICA POLONICA A, Vol.106, No5, 715 –719 (2004).
34. V.Gencheva, R.Djurgerova, V.Mihailov, A.Stoyanova-Ivanova and T. Dohnalik, "Multi-component material sputtering by hollow cathode discharge", Czechoslovak Jornal of Physics, Vol 54, Suppl. C, 903-907, (2004).
35. J. Cwik, T. Palewski, G.S. Burkhanov, O.D. Chistyakov, K. Nenkov, Some physical properties of ScNi₂, Physica Status Solidi (a) 201 Nr. 3, 445-449 (2004).

36. J. Cwik, T. Palewski, K. Nenkov, N.V. Tristan, J. Warchulska, G.S. Burkhanov, O.D. Chistyakov, Some physical properties of Y_xHo_{1-x}Ni₂ solid solutions, Journal of Alloys and Compounds 373 Nr. 1-2, 78-85 (2004).
37. L. Shlyk, B. Schuepp, G. Krabbes, K. Nenkov, G. Fuchs, Microstructure and superconducting properties of melt-processed YBCO with periodic morphology, Physica C 406 Nr. 1-2, 107-114 (2004).
38. L. Shlyk, G. Krabbes, G. Fuchs, K. Nenkov, B. Schuepp, Flux pinning and magnetic relaxation in melt-processed YBa₂Cu₃O₇- doped with Li, Journal of Applied Physics 96 Nr. 6, 3371-3378 (2004).
39. A.Wälte, G. Fuchs, K.-H. Müller, K.Nenkov, V. Narozhnyi, S.-L. Drechsler, S. Shulga, L. Shultz, "Evidence for strong elektron-phonon coupling in MgCNi₃", Phys. Rev. B 70, 174503 (2004).
40. N.V. Tristan, K. Nenkov, K. Skokov, T. Palewski, Specific heat and magnetic susceptibility of intermetallic compounds R₃Ni, Physica B **344**, 1-4, 462-469 (2004).
41. E.Atanassova, G.Tyuliev, A.Paskaleva, D.Spassov, K.Kostov, XPS study of N₂ annealing effect on thermal T₂O₅ on Si, Appl. Surf. Sci. **225**, 86-99 (2004).
42. G.Aygun, E.Atanassova, A.Alacakir, L.Ozyuzer, R.Turan, Oxidation of Si surface by a pulsed Nd-YAG Laser, J. Phys. D: Appl. Phys. **37**, 1569-1575 (2004).
43. G.Aygun, E.Atanassova, R.Turan, Tz.Babeva, Reflectance spectra and refractive index of a Nd:YAG laser-oxidized Si surface, Mater. Chemistry and Phys. **89**, 316-320 (2004)
44. E.Atanassova, R.V.Konakova, V.F.Mitin, J.Koprinarova, O.S. Lytvyn, O.B. Okhrimenko, V.V. Schynkarenko, D. Virovska, Effect of microwave radiation on the properties of Ta₂O₅-Si microstructures, Microel. Reliab. **45**, 123-135 (2004).
45. N.Novkovski, E.Atanassova, Injection of holes from the silicon substrate in Ta₂O₅ films grown on silicon, Appl. Phys. Lett. **85**, 3142-3144 (2004).
46. M.Lemberger, A.Paskaleva, S.Zürcher, A.J.Bauer, L.Frey, H.Ryssel, Electrical Characterization and Reliability Aspects of Zirconium Silicate Films Obtained from Novel MOCVD Precursors, Microel. Engin. **72** (2004) 315-320.
47. A.Paskaleva, A.J.Bauer, M.Lemberger, S.Zürcher, Different current conduction mechanisms through thin high-k Hf_xTi_ySi_zO films due to the varying Hf to Ti ratio, J. Appl. Phys. **95** (10) (2004) 5583-5590.
48. L.Popova, R.Djulgerova, G.Beshkov, V.Mihailov, A.Szytula, Z.Gondek, Z.Petrovic, SnO₂ thin films for gas sensors,modified by HMDS after RTA, Sensors and Actuators B **100** (2004) 352.
49. R.Djulgerova, V.Mihailov, L.Popova, G.Beshkov, A.Szytula, Z.Gondek, Z.Petrovic, Depth profile analysis of surface modified SnO₂ gas sensors, performed in hollow cathode discharge, Spectrochem.Acta B **59** (2004) 905 .
50. L. Pereira, A. Marques, H. Águas, N. Nedev, S Georgiev, E. Fortunato, R. Martins, Performances of Hafnium Oxide Produced by Radio Frequency Sputtering for Gate Dielectric Application, Materials Science and Engineering: B, 109 (2004) p. 89.
51. S. Zhang, L. Raniero, E. Fortunato, L. Pereira, N. Martins, N. Nedev, H. Águas and R. Martins, Characterization of silicon carbide thin films prepared by VHF-PECVD technology, J. of Non-Crystalline Solids, 338-340 (2004) pp. 530-533.
52. S. Simeonov A. Szekeres, E. György, I.N. Mihailescu, A. Perrone, CN_x/Si thin heterostructures for miniaturized temperature sensors, J. Appl. Phys. **95**(9), 5111-15, (2004).
53. S.Kaschieva, S.N.Dmitriev, W.Skorupa, Reduction of the annealing temperature of radiation-induced defects in ion implanted MOS structures, Appl. Phys. A **78**, 607-610, (2004).

54. P. Danesh, B. Pantchev, K. Antonova, E. Liarokapis, B. Schmidt, D. Grambole and J. Baran : Hydrogen bonding and structural order in hydrogenated amorphous silicon prepared with hydrogen diluted silane, *J. Phys. D: Applied Physics* **37**, 249-253, (2004).
55. B. Pantchev, P. Danesh, E. Liarokapis, B. Schmidt, J. Schmidt and D. Grambole: Effect of post-hydrogenation on the structural properties of amorphous silicon network, *Jpn. J. Appl. Phys.* **43**, 454-457 (2004).
56. S. Simeonov, I. Yourukov, E. Kafedjiiska, A. Szekeres, Inter-trap tunneling in thin SiO₂ films, *Phys. status solidi (a)* **201**(13), 2966-2979 (2004).
57. F. Hamelmann, A. Brechling, A. Aschentrup, U. Heinzmann, P. Jutzi J. Sandrock, U. Siemeling, T. Ivanova, A. Szekeres, K. Gesheva, Thin molybdenum oxide films produced by molybdenum pentacarbonyl 1-methylbutylisonitrile with plasma assisted chemical vapor deposition, *Thin Solid Films*, **44**(6), 167-171 (2004).
58. P. Danesh, B. Pantchev, B. Schmidt, and D. Grambole: Hydrogen solubility limit in hydrogenated amorphous silicon, *Semicond. Sci. Technol.* **19**, 1422-1425 (2004).
59. A.Gushterov, S. Simeonov, Trap-assisted tunneling in ion-implanted nSi/SiO₂ struktures, *Vacuum* **76**(2-3), 315-318 (2004).
60. F. Hamelmann, A. Aschentrup, A. Brechling, U. Heinzmann, A. Gushterov, A. Szekeres, S. Simeonov, Plasma assisted deposition of thin silicon oxide films in a remote ECVD reactor and characterization of films produced under different conditions, *Vacuum* **75** (4), 307-312 (2004).
61. S. Alexandrova, A. Szekeres, E. Halova, I. Lisovskyy, V. Litovchenko, D. Mazunov, Oxide And Interface Charges In thin SiO₂ Films Thermally Grown On RF Plasma Hydrogenated Silicon, *Vacuum* **75** (4), 301-305 (2004).
62. S. Simeonov, A. Gushterov, A. Szekeres and E. Kafedjiiska, Defects Induced By Hydrogen Implantation In n-Si/SiO₂ Structures, *Vacuum* **76**(2-3), 303-306 (2004).
63. F. Hamelmann, A. Aschentrup, A. Brechling, U. Heinzmann, M.Abrashev, A. Szekeres, K. Gesheva, Plasma assisted deposition of thin carbon films from methane and the influence of the plasma parameters and additional gases, *Vacuum* **76**, 139-142 (2004).
64. S.Kaschieva, Zh. Todorova and S.N.Dmitrev, Radiation defects induced in n- and p-type MOS structures by 20 MeV electrons, *Vacuum* **76**, 307-400 (2004).
65. S.Kaschieva, Zh. Todorova Radiation defects in n- and p-Si caused by ion implantation and gamma irradiation of MOS structures, *Vacuum* **76**, 311-314 (2004).
66. V. Pamukchieva, A. Szekeres, K. Todorova, Photo-Induced Changes Of The Optical Constants Of Chalcodenide Ge₁₉Sb₁Te₈₀ Films”, *7th Conf. on Optics Proc. SPIE-ROMOPTO 2003*, 5518, 608, (2004).
67. R. Kotsilkova, D. Nesheva, I. Nedkov, E. Krusteva, S. Stavrev, A study on the rheological, electrical and microwave properties of polymers with nanosized carbon particles, *Journal of Applied Polymer Science* **92**, 2220-2227 (2004).
68. C. Raptis, D. Nesheva, Y.C. Boulmetis, Z. Levi, Z. Aneva, Exciton related resonance raman scattering from CdSe quantum dots in an amorphous GeS₂ thin film matrix, *J. Phys.: Condens. Matter* **16**, 8221-8232 (2004).
69. Z.G. Ivanova, E. Cernoskova, Study on the crystallization kinetics and glass transition of Ge_xSb_{40-x}Se₆₀ glasses by differential thermal analysis, *Thermochim. Acta*, 411, 177-180 (2004).
70. B.T. Маслюк, Е. Скордева, П.П. Пуга, Д. Арсова, В. Памукчиева, Концентрационная зависимость радиационно-стимулированных изменений оптических свойств пленок Ge_xAs_{40-x}S₆₀, *Физика твердого тела*, 46, 1393-1397 (2004).
71. Y. C. Boulmetis, A. Perakis, C. Raptis, D. Arsova, E. Vateva, D. Nesheva, E. Skordeva, Compositional and temperature dependence of the low-frequency Raman scatering in Ge-As-S glasses, *J. Non-Cryst. Sol.*, 347, 187-196 (2004).

72. T. Tsvetkova, S. Balabanov, E. Skordeva, S. Kitova, J. Sielanko, D. Maszka, J. Zuk, Surface morphology effects of post-implantation annealing in thin amorphous films of the As-Se system, *Vacuum* **72**, 143-147 (2004).
73. K. Velitchkova, K. Krezhov, S. Balabanov, DC surface transport properties of selenium-implanted polymethylmethacrylate, *Vacuum* **76**, 319-323 (2004).
74. G. Dobrikov, K. Kolentsov, D. Zhechev, L. Yourukova, M. Rassovska, H. Yossifov, N. Parvanova, Photoluminescent effects in conjugated polymer layers, *Vacuum* **76**, 227-230 (2004).
75. L. Yourukova, K. Kolentsov, E. Radeva, Effect of a second protective layer in AC EL display structures on their characteristics, *Vacuum* **76**, 199-202 (2004).
76. V. Georgieva, P. Stevchev, P. Vitanov, L. Spassov, Quartz resonator with TiO_2 for NH_3 detection, *Vacuum* **76**, 203-206 (2004).
77. I. D. Avramov, The RF-Powered Surface Wave Sensor Oscillator - a Successful Alternative to Passive Wireless Sensing, *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, Vol. (UFFC-51), No. 9 (2004), pp. 1148-1156.
78. T. I. Milenov, P. M. Rafailov, M. M. Gospodinov and P.A.Botev, *X-ray Diffraction Topography Observations of the Core in $Bi_{12}SiO_{20}$ Crystals Doped with Mn*, Materials Science and Engineering **B106** (2004) pp. 148 - 154.
79. A.P.Litvinchuk, M.N. Iliev, V.N. Popov and M.M. Gospodinov, *Raman and infrared-phonons in hexagonal $HoMnO_3$ single crystals: magnetiv ordering effects*, *J. Phys.: Condens. Matter* **16** (2004) pp. 809 - 819.
80. B. Lorenz, A. P.Litvinchuk, M.M. Gospodinov and C.W. Chu, *A Field-Induced Re-Entrant Novel Phase and A Ferroelectric-Magnetic Order Coupling in $HoMnO_3$* , *Phys. Rev. Lett.* **92**, № 8 (2004) pp.087204-1 – 087204-4.
81. T. I. Milenov, M.N. Veleva, D.P. Doshkova, M.M. Gospodinov, A. Egorisheva, A.S. Kargin and V.M. Skorikov, *AC- Conductivity in $Bi_{12}SiO_{20}$ crystals doped with Os, Re, Rh u Ru*, *Inorganic Materials*, **41**, № 2 (2005) pp. 197 - 200.
82. V. Vitkova, J. Genova, and I. Bivas, Permeability and hidden area of lipid bilayers, *Eur. Biophys. J.* **33**, N 8, pp 706-714 (2004).
83. V. Vitkova, M. Mader, and T. Podgorski, Deformation of vesicles flowing through a capillary, *Europhys. Lett.* **68** (3), pp. 398-404 (2004).
84. A. Maslyanitsyn, V.D. Shigorin, L. Todorova, Y. Marinov, A. G. Petrov, Characterization of micron and submicron scale lateral structure of optically nonlinear organic films, *Mol. Cryst. Liq. Cryst.* **408**, 71–81, (2004).
85. S. Ponti, G. Barbero, A. Strigazzi, Y. Marinov, A.G. Petrov, Surface energy dissipation in homeotropic nematic layers: the role of flexoelectricity and surfactant desorption, *Mol.Cryst.Liq.Cryst.* **420**, 55-72, (2004).
86. K.Beev, S.Sainov, T.Angelov, A.G.Petrov, Investigation of Bragg gratings recorded in polymer-dispersed liquid crystals, *J.Optoelc.Adv.Mat.* **6**, 799-803, (2004).
87. K. Panajotov, M. Arizalaeta, M. Camarena, H. Thienpont, H. J. Unold, J.-M. Ostermann, and R. Michalzik, Polarization switching induced by phase change in extremely short external cavity VCSELs, *Appl. Phys. Lett.* **84**, 2763 (2004).
88. K. Panajotov, M. Sciamanna, A. Tabaka, P. Megret, M. Blondel, G. Giacomelli, F. Marin, H. Thienpont, and I. Veretennicoff, Residence time distribution and coherence resonance of optical feedback induced polarization mode hopping in vertical-cavity surface-emitting lasers, *Phys. Rev. A* **69**, 011801 (4) (2004).
89. G. Van der Sande, K. Panajotov, M. Peeters, I. Veretennicoff, J. Danckaert, and T. Erneux, Nonlinear waveguiding for self-pulsing in VCSELs, *Opt. Lett.* **29**, 53-55 (2004)
90. T.K. Tenev, G D. Zartov, R.A. Peyeva, H. Thienpont, I. Veretennicoff, and K.P. Panajotov, Electrical and polarization controlled bistability and oscillations in photo-

- refractive birefringent Fabry-Perot resonators, *Opt. Commun.* **231**, 417–429 (2004).
91. V. Badilita, J.-F. Carlin, M. Illegems, M. Brunner, G. Verschaffelt, K. Panajotov, Control of Polarization Switching in Vertical Coupled-Cavities Surface Emitting Lasers, *IEEE Photonics Technology Letters* **16**, 365-367 (2004).
 92. M. Sondermann, T. Ackemann, S. Balle, J. Mulet, K. Panajotov, Experimental and theoretical investigations on elliptically polarized dynamical transition states in the polarization switching of vertical-cavity surface-emitting lasers, *Opt. Commun.* **235**, 421-434 (2004).
 93. Tabaka, K. Panajotov, I. Veretennicoff, M. Sciamanna, Bifurcation study of regular pulse packages in laser diodes subject to optical feedback, *Phys. Rev. E* **70**, 036211-036217 (2004).
 94. K. Panajotov, G. Van der Sande, H. Thienpont and I. Veretennicoff, Self – pulsation in VCSELs as a result of the interplay between carrier-induced antiguiding and build-in index guiding, *Journ. Opt. Soc Am. B* **21**, 1192-1198 (2004).
 95. S. Ryvkin, K. Panajotov, E. A. Avrutin, I. Veretennicoff, H. Thienpont, Optical-injection-induced polarization switching in polarization-bistable VCSELs, *Journ. Appl. Phys.* **96**, 6002-6007 (2004).
 96. N. E. Stankova, S. H. Tonchev, E. Gyorgy, G. Socol, I. Mihailescu, Pulsed laser deposition of LiNbO₃ thin films from Li-rich targets, *JOAM*, 6(4), 1345-1349 (2004).
 97. N. E. Stankova, S. H. Tonchev, E. Gyorgy, G. Socol, I. N. Mihailescu, LiNbO₃ thin films grown on MgO (100) substrates by pulsed laser deposition, *Proc. SPIE Vol. 5581*, 498-502 (2004).
 98. V.M.N. Passaro, C. Ciminelli, M.N. Armenise, I. Savova, B. Jordanov, P. Kircheva, I.T. Savatinova, B. Pantchev, Optical and Structural Characterization of Z-cut LiNbO₃ Optical Waveguides Formed in a Mixed Proton Source, *J. Lightwave Technol.* **22** (3) (2004) 820-826.
 99. D. Angelov, B. Beylot, A. Spassky (2004) Origin of the heterogeneous distribution of the yield of guanyl radical in UV laser photolysed DNA. *Biophys. J.*, in press.
 100. T. Douki, J.-L. Ravanat, D. Angelov, J. R. Wagner, J. Cadet (2004) Effects of duplex stability on charge transfer efficiency within DNA. *Top. Curr. Chem.* **236**, 1-25.
 101. D. Angelov, F. Lenouvel, F. Hans, C. V. Müller, P. Bouvet, J. Bednar, E. Moudrianakis, J. Cadet, S. Dimitrov (2004) The histone octamer is « invisible » when NF-κB binds to the nucleosome. *J. Biol. Chem.* **279**, 42374-42382.
 102. D. Angelov, A. Verdel, W. An, V. Bondarenko, F. Hans, C.-M. Doyen, V. Studitsky, A. Hamiche, R. G. Roeder, P. Bouvet, S. Dimitrov (2004) SWI/SNF remodelling and p300 dependent transcription of histone variant H2A Bbd nucleosomal array. *EMBO J.* **23**, 3815-3824.
 103. J. P. Marcerou, M. P. Petrov, H. M. Naradikian, H. T. Nguyen, Dendrite like texture growth in the nematic liquid crystal phase of 4-n-heptyl and 4-n-octyl-oxibenzoic acids aligned by a polyimide coating, *Liquid Crystals* **31**, No.3, pp.311-316 (2004).
 104. Antonova K., Katranchev B., Petrov M., Marcerou J.P., Baran J., Ratajczak H, FT-Far IR spectroscopy and microtextural polarization analysis of complexes: nematics with hydrogen bonded in dimers molecules and hydroxypyridine, *J. Mol. Structure* **694**, p.105–113 (2004).
 105. S. Rashev and D.C. Moule: Empirical Determination of the Harmonic Force Constants in Benzene. 3. The Harmonic Frequencies, *J. Phys. Chem. A* **108** (7), 1259-1267 (2004).
 106. S. Rashev: Determination of an improved set of harmonic force constants for benzene, *Int. J. Quantum Chem.* **99** (6), 894-902 (2004).
 107. N.Kirov, G.B.Hadjichristov and M.P.Fontana: Vibrational Spectroscopy of Solid

Polymorphic Modifications formed by Thermotropic Liquid Crystals, J.Molec.Structure 706 (2004) 65-73

108. S. Rashev: Large Scale Quantum Mechanical Calculations on the Benzene Vibrational System, Recent Research Developments in Physical Chemistry, Transworld Research Network, 37/661 (2), p.279-308 (2004).
109. G. Diankov, Huai-Yi Chen, Shiu Chao and Sien Chi, Optimization of Second Harmonic Generation in Nonlinear Film Structure, Optics Commun. **236**, 203-208 (2004).
110. D. Zhechev, N. Parvanova and V. Grigorieva, $Ar^+ \rightarrow Cd$ sputtering-atomizing and coherent-galvanic effects in hollow cathode discharge, Vacuum **76** (2004) 401- 403
111. K. B. Blagoev, G. Malcheva, V. Penchev E. Biémont H. L. Xu, A.Persson and S. Svanberg, Radiative Lifetimes of Zn I, II Excited States, Physica Scripta **69**, 433(2004).
112. K. Blagoev, E. Dimova and G. Petrov, Quenching of $^4He(2^1S, 2^1P)$ and $^3He(2^1S, 2^1P)$ states by collisions with Ne(1S_0) atoms, J. Quan.Spectr. Rad. Tran. **87**, 69 (2004).
113. E. Dimova, G. M. Petrov and K. B. Blagoev, Quenching of 4He and 3He excited states by collisions with N_2 , VACUUM **76**, 405 (2004).
114. H. L. Xu, A. Persson, S. Svanberg, K. Blagoev, G. Malcheva, V. Penchev, E. Biemont, J. Campos, M. Ortiz, R. Maio, Radiative Lifetimes and Transition Probabilities in Cd I and Cd II, Phys. Rev. A **70**, 042508 (2004).
115. V. Gencheva, V. Mihailov, R. Djulgerova, Multi-component material sputtering by hollow cathode discharge, Czechoslovac Journal of Physics, Vol.**54**, 903-907 (2004).
116. H. Xu, A. Persson, S. Svanberg, K. Blagoev, G. Malcheva, V.Pentchev, E.Biémont Proc. at ILLA'2003 Conference, SPIE, v. 5449, p.359 "Radiative lifetimes of Cd I and Cd II excited states"
117. E. Dimova, G. M. Petrov and K. B. Blagoev, ILLA 2003, Smolian,Bulgaria, Proc. SPIE v. 5449, p. 350 "Processes of quenching of $^4, ^3He$ ($2^1S, 2^1P$) states in He+ N_2 mixture"
118. M. Ortiz, R. Mayo, K. Blagoev, G. Malcheva, ILLA'2003 Conference, Proc. SPIE v. 5449, 367 "Transition probabilities of some AgII and Cu II lines"
119. Nikola V.Sabotinov, Development of deep ultraviolet metal vapour lasers, *Invited paper*, Eighth International Conference on Laser and Laser Information Technologies, edited by Vladislav Ya. Panchenko, Nikola V. Sabotinov, Proceedings of SPIE Vol.5449, pp.79-84, SPIE Bellingham, WA, (2004)
120. Nikola V.Sabotinov, Development of new high power copper bromide lasers, Eighth International Conference on Laser and Laser Information Technologies, edited by Vladislav Ya. Panchenko, Nikola V. Sabotinov, Proceedings of SPIE Vol.5449, pp.103-110, SPIE Bellingham, WA, (2004)
121. N.K. Vuchkov, K.A. Temelkov, P.V. Zahariev, N.V. Sabotinov, A new laser tube construction for the UV Cu+ Ne-CuBr laser, Eighth International Conference on Laser and Laser Information Technologies, edited by Vladislav Ya. Panchenko, Nikola V. Sabotinov, Proceedings of SPIE Vol.5449, pp.173-176, SPIE Bellingham, WA, (2004)
122. N. K. Vuchkov, P. V. Zahariev, K. A. Temelkov, N. V. Sabotinov, Output parameters and a spectral study of UV Cu+ Ne-CuBr laser, Optics and Laser Tech., vol.36, pp.19-25, (2004).
123. Ivailo I. Balchev, Nikolai I. Minkovski, Krassimir D. Dimitrov and Nikola V. Sabotinov, High-precision machining with copper bromide laser, Eighth International Conference on Laser and Laser Information Technologies, edited by Vladislav Ya. Panchenko, Nikola V. Sabotinov, Proceedings of SPIE Vol.5449, pp.5-9, SPIE Bellingham, WA, (2004)
124. I.P.Iliev, S.G. Gocheva, N.V.Sabotinov, On the stability of radio-frequency discharge, Eighth International Conference on Laser and Laser Information Technologies, edited

- by Vladislav Ya. Panchenko, Nikola V. Sabotinov, Proceedings of SPIE Vol.5449, pp.131-135, SPIE Bellingham, WA, (2004)
125. N.V.Vitanov and B.Girard, Adiabatic excitation of rotational ladder by chirped laser pulses, Phys. Rev. A 69, 033409(13) (2004)
 126. Z. Kis, A.Karpati, B.W.Shore, and N.V.Vitanov, Stimulated Raman adiabatic passage between degenerate levels, Phys. Rev. A 70, 053405(20) (2004)
 127. P.A. Ivanov, N.V.Vitanov, and K.Bergmann, Effect of dephasing on stimulated Raman adiabatic passage, Phys. Rev. A 70, 063409(8) (2004)
 128. K. Takaichi, H. Yagi, J. Lu, J. Bisson, T.Petrov, A. Shirakawa and K. Ueda, T. Yanagitani and A. Kaminskii, "Yb³⁺-doped ceramic lasers", OSA TOPS Vol. 94, Advanced Solid-State Photonics, 217 – 221, (2004)
 129. R.K. Debnath, A.G. Fitzgerald, K. Christova, A. Manov, X-ray photoelectron spectroscopy of Ge_xSb_{40-x}S₆₀ films. Compt. rend. Acad. bulg. Sci. **57**, 13-18 (2004).
 130. V.Vitkova, J.Genova, M.D.Mitov, and I. Bivas, Mechanical properties of lipid mono- and bilayers in the presence of small carbohydrates in the aqueous phase, Compt. rend. Acad. bulg. Sci. **57** (6) 55-60 (2004).
 131. V.Vitkova, J.Genova, O. Finogenova, Y. Ermakov, M.D. Mitov, and I. Bivas, Surface Charge Effect on the Lipid Bilayer Elasticity, Compt. rend. Acad. bulg. Sci. **57**(11) (2004).

BOOKS OR CHAPTERS OF BOOKS

1. E. Korutcheva and R. Cuerno, editors "Advances in Condensed Matter and Statistical Physics" (Nova Science Publishers, New York, 2004).
2. J.E.Prieto, E.Korutcheva and I.Markov, Formation and self-assembly of coherent quantum dots: some thermodynamic aspects, Chapter in "Progress in Quantum Dot Research", Nova Science, 2004.
3. P.Ch. Ivanov, Random Walks in Physiologic Dynamics, in "Advances in Condensed Matter and Statistical Physics", eds. E. Korutcheva and R. Cuerno (Nova Science Publishers, New York, 2004) pp. 155-175.
4. D. Dominguez and E. Korutcheva, Statistical mechanics of the Blume-Emery-Griffiths neural network model, in "Advances in Condensed Matter and Statistical Physics", eds. E. Korutcheva and R. Cuerno (Nova Science Publishers, New York, 2004) pp. 349-365.
5. N.B. Ivanov and D. Sen, Spin wave analysis of Heisenberg magnets in restricted geometries, Lect. Notes Phys. **645**, pp. 195-226 (2004) in: Quantum Magnetism, ed. by U. Schollwoeck et al. (Springer-Verlag, Berlin Heidelberg, 2004)
6. D. Nesheva, Nanoparticle Layers in Multilayers, in Encyclopedia of Nanoscience and Nanotechnology, Edited by H.S. Nalwa, American Scientific Publishers, 2004, volume 7, pp.105-123.
7. R. Djulgerova, V. Mihailov, V. Gencheva, L. Popova, B. Panchev, Z. Petrovic, Depth Profile Analysis of New Materials in Hollow Cathode Discharge, in "The Physics of Ionized Gases", Eds. L.Hadjievski, T. Grozdanov, N.Babic, Publ. Amer. Inst. Phys., Melville, New York (2004) 373-384.