

## GEORGI NADJAKOV INSTITUT OF SOLID STATE PHYSICS

### PAPERS PUBLISHED IN JOURNALS

- 1 H. Chamati and N. S. Tonchev, Quantum critical scaling and the Gross-Neveu model in 2+1 dimensions, EPL (Europhysics Letters) **95** (2011) 40005, 6 pages. ISSN 0295-5075
- 2 H. Chamati, Molecular dynamics study of the thermal properties of nickel, J. Mater. Sci. Tech. **19** (2011) pp. 42-51. ISSN 0861-9786
- 3 J. Shao; P. Ch. Ivanov; B. Urosevic; H.E. Stanley, B. Podobnik, Zipf rank approach and cross-country convergence of incomes, EPL (Europhysics Letters), **94** (2011), 48001. ISSN 1286-4854
- 4 Mihailova, B., Angel, R.J., Maier, B.J., Welsch, A.M., Zhao, J., Gospodinov, M., Bismayer, U., *The Structural State of Lead-Based Relaxor Ferroelectrics Under Pressure*, IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL Volume: 58 Issue: 9 (2011) Pages: 1905-1913.
- 5 Waesermann, N., Mihailova, B., Maier, B. J., Paulmann, C., Gospodinov, M., Marinova, V., Bismayer, U., *Local structural phenomena in pure and Ru-doped  $0.9\text{PbZn}(1/3)\text{Nb}(2/3)\text{O}(3)-0.1\text{PbTiO}(3)$  near the morphotropic phase boundary as revealed by Raman spectroscopy*, PHYSICAL REVIEW B Volume: 83 Issue: 21 (2011) Article Number: 214104.
- 6 Dul'kin, E., Mihailova, B., Gospodinov, M., Roth, M., *Electric field dependence of characteristic temperatures in  $\text{PbSc}(0.5)\text{Ta}(0.5)\text{O}(3)$  and  $\text{Pb}(0.78)\text{Ba}(0.22)\text{Sc}(0.5)\text{Ta}(0.5)\text{O}(3)$  relaxors studied via acoustic emission*, EPL Volume: 94 Issue: 5 (2011) Article Number: 57002.
- 7 Milenov, T. I., Rafailov, P. M., Tomov, V., Nikolova, Nikolova, R. P., Skumryev, V., Igartua, J. M., Madariaga, G., Lopez, Lopez, G. A., Iturbe-Zabalo, E., Gospodinov, M. M., *Growth and characterization of  $\text{Pb}(3)\text{Ni}(1.5)\text{Mn}(5.5)\text{O}(15)$  single crystal*, JOURNAL OF PHYSICS-CONDENSED MATTER Volume: 23 Issue: 15 (2011) Article Number: 156001.
- 8 Maier, B. J., Welsch, A. -M., Mihailova, B., Angel, R. J., Zhao, J., Paulmann, C., Engel, J. M., Marshall, W. G., Gospodinov, M., Petrova, D., Bismayer, U., *Effect of La doping on the ferroic order in Pb-based perovskite-type relaxor ferroelectrics*, PHYSICAL REVIEW B Volume: 83 Issue: 13 (2011) Article Number: 134106.
- 9 Wu, K. H., Chen, H-J, Chen, Y. T., Hsieh, C. C., Luo, C. W., Uen, T. M., Juang, J. Y., Lin, J-Y, Kobayashi, T., Gospodinov, M., *Marked enhancement of Neel temperature in strained  $\text{YMnO}(3)$  thin films probed by femtosecond spectroscopy*, EPL, vol.94, iss.2 (2011) 270-276.
- 10 V. Skumryev, V. Laukhin, I. Fina, X. Marti', F. Sa'nchez, M. Gospodinov, and J. Fontcuberta, *Magnetization Reversal by Electric-Field Decoupling of Magnetic and Ferroelectric Domain Walls in Multiferroic-Based Heterostructures*, PHYSICAL REVIEW LETTERS Volume: 106 Issue: 5 (2011) Article Number: 057206.
- 11 Maier, B. J., Angel, R. J., Mihailova, B., Marshall, W. G., Gospodinov, M., Bismayer, U., *High-pressure powder neutron diffraction study on lead scandium niobate*, JOURNAL OF PHYSICS-CONDENSED MATTER Volume: 23 Issue: 3 (2011) Article Number: 035902.
- 12 Welsch, A.M., Maier, B.J., Mihailova, B., Angel, R.J., Zhao, J., Paulmann, C., Engel, J.M., Gospodinov, M., Marinova, V., Bismayer, U., *Transformation processes in relaxor ferroelectric  $\text{PbSc}(0.5)\text{Ta}(0.5)\text{O}(3)$  heavily doped with Nb and Sn*, ZEITSCHRIFT FUR KRISTALLOGRAPHIE Volume: 226 Issue: 2 (2011) Pages: 126-137.
- 13 B.J.Maier, N.Waesermann, B.Mihailova, R.J.Angel, C.Ederer, C.Paulmann, M. Gospodinov, A.Friedrich, and U.Bismayer, *Structural state of relaxor ferroelectric*

- PbSc<sub>0.5</sub>Ta<sub>0.5</sub>O<sub>3</sub> and PbSc<sub>0.5</sub>Nb<sub>0.5</sub>O<sub>3</sub> at high pressures up to 30 GPa*, Phys. Rev. (B) **84** (2011) 174104.
- 14 S. Jandl, S. Mansouri, A.A. Mukhin, V. Yu. Ivanov, A. Balbashov, M. M. Gospodinov, V. Nekvasil and M. Orlita, *Study of crystal-field excitations and Raman active phonons in o-DyMnO<sub>3</sub>*, Journal of Magnetism and Magnetic Materials **323** (2011) 1104–1108.
  - 15 M. N. Iliev, V. G. Ivanov, N. D. Todorov, V. Marinova, M. V. Abrashev, R. Petrova, Y.-Q. Wang, and A. P. Litvinchuk, *Lattice dynamics of the  $\alpha$  and  $\beta$  phases of LiFe<sub>5</sub>O<sub>8</sub>*, PHYSICAL REVIEW B **83** (2011) 174111.
  - 16 L. Kovacs, K. Lengyel, M. Gospodinov, *Antiferromagnetic ordering in RMnO<sub>3</sub> rare-earth manganites observed by optical spectroscopy*, Mat. Res. Bull. **46** (2011) 2567 – 2569.
  - 17 T. Milenov, G. Avdeev, P. Rafailov, V. Tomov, S. Dobрева, L. Yankova, M. Veleva, D. Toncheva, *Growth, Characterization and Dielectric Properties of Bi<sub>2</sub>Mn<sub>4</sub>O<sub>10</sub> Single Crystals*, Comptes Rendus l'Acad. Bulg. Sci. **64**, **7** (2011) 931.
  - 18 T.I. Milenov, P.M. Rafailov, C. Thomsen, A. Egorysheva, R. Titorenkova, B. Kostova, V. Skorikov, *Raman and optical spectroscopy characteristics of Se-doped Bi<sub>12</sub>SiO<sub>20</sub> crystals*, Optical Materials **33** (2011) 1573- 1577.
  - 19 G. V. Avdeev, T. I. Milenov, A. V. Egorysheva, K. P. Petrov, V. M. Skorikov, R. Kh. Titorenkova and P. M. Rafailov, *Crystal Structure of Bi<sub>36</sub>MgP<sub>2</sub>O<sub>60- $\delta$</sub>* , Russ. J. of Inorg. Chem.:Vol. 56, No. 6, (2011) pp. 913–918.
  - 20 N. K. Vitanov, Z. I. Dimitrova, K. N. Vitanov, *On the class of nonlinear PDEs that can be treated by the modified method of simplest equation. Application to generalized Degasperis- Processi equation and b-equation*, Communications in Nonlinear Science and Numerical Simulation} **16** (2011) 3033 – 3044.
  - 21 *On Biomimetics*, edited by Lilyana Pramatarova, InTech Publications, August 2011
  - 22 L. Pramatarova, E. Radeva, E. Pecheva, T. Hikov, N. Krasteва, R. Dimitrova, D. Mitev, P. Montgomery. R. Sammons, G. Altankov, *The advantages of polymer composites with detonation nanodiamond particles for medical applications*, in: On Biomimetics, Lilyana Pramatarova (Ed.), InTech Publications, August 2011, Ch. 14, pp. 297-320.
  - 23 K. Hristova, E. Pecheva, L. Pramatarova, G. Altankov *Improved interaction of osteoblast-like cells with apatite-nanodiamond coatings depends on fibronectin*, Journal of Materials Science: Materials in Medicine **22**(8) (2011) 1891-1900, ИФ- 2.325.
  - 24 L. Pramatarova, T. Hikov, R. Dimitrova, N. Krasteва, E. Radeva, E. Pecheva, Ph. Kern, J. Werckmann, *Development and analysis of silver containing plasma polymer nanocomposites: scaffolds for tissue engineering*, Word Congress on Engineering and Technology (CET), 28 October - 02 November 2011, Shanghai, China 2011, Proceedings of Int. Conf. on Material Sciences and Technology(MST2011), vol. 04, pp. 620-624.
  - 25 V. Pamukchieva, A. Szekeres, D. Arsova, “Spectroscopic ellipsometry study of the effect of illumination and thermal annealing on the optical constants of thin Ge-As-S films”, Phys. Scr. **83** (2011) 025405. ISSN: 0031-8949 (Print), ISSN: 1402-4896 (Online).
  - 26 S. Alexandrova, I. A. Maslyanitsyn, V. Pamukchieva, V. B. Tsvetkov, V. D. Shigorin, “Second Harmonic Generation in Thin Ge<sub>35</sub>Sb<sub>5</sub>S<sub>60</sub> Films”, Phys.Wave Phenomena **19** (3) (2011) 1–4. ISSN: 1541-308X.
  - 27 D. Arsova and E. Vateva, “Dual action of light in photodarkened Ge-As-S films”, Phys. Status Solidi B **1-5** (2011). ISSN: 1521- 3951 .
  - 28 Z.G. Ivanova, J. Zavadil, K.S.R.K. Rao, “Compositional trends in low-temperature photoluminescence of heavily Er-doped GeS<sub>2</sub>-Ga<sub>2</sub>S<sub>3</sub> glasses, J. Non-Cryst. Solids **357** (2011) 2443-2447. ISSN: 0022-3093

- 29 A. Szekeres, Zs. Fogarassy, P. Petrik, E. Vlaiikova, A. Cziraki, G. Socol, C. Ristoscu, I.N. Mihailescu, "Structural characterization of AlN films synthesized by pulsed laser deposition", *Applied Surface Science* **257** (12) (2011) 5370-5374. ISSN: 0169-4332
- 30 R.Brüggemann, D. Nesheva, S. Meier, I. Bineva, "Temperature dependence of the photoluminescence from ensembles of amorphous silicon nanoparticles with various average sizes", *J. Nanosci. Nanotechnol.* **11**, (2011) 959-965. ISSN: 1533-4880 (Print); EISSN: 1533-4899 (Online)
- 31 A. Pejova, D. Nesheva, Z. Aneva, A. Petrova, "Photoconductivity and Relaxation Dynamics in Sonochemically Synthesized Assemblies of AgBiS<sub>2</sub> Quantum Dots", *Journal of Physical Chemistry B* **115**, Issue 1, (2011) 37-46. ISSN (printed): 1089-5647. ISSN (electronic): 1520-5207
- 32 D Nesheva, Z Aneva, M J Scepanovic, Z Levi, I. Iordanova and Z V Popovic, "Crystal structure and spectral photosensitivity of thermally evaporated Zn<sub>x</sub>Cd<sub>1-x</sub>Se thin films", *J. Phys. D: Appl. Phys.* **44**, (2011) 415305 (7pp). ISSN: 0022-2727 (Print), 1361-64-63 (Online)
- 33 A. Stefanova, D. Nesheva, K.Petkov, M. Radonova, G. Vassilev, V. Vassilev, "Electrical properties of GeSe<sub>2</sub>-Sb<sub>2</sub>Se<sub>3</sub>-PbTe thin films", *J. Optoelect. Adv. Mater.* **13** (2011)1 393-1396. ISSN: 1454-. 4164.
- 34 A. Nesheva, E. Balabanova, Preparation of homogeneously dispersed CdSe nanoparticles in SiO<sub>x</sub> thin films and their size distribution", *Nanoscience & Nanotechnology*, vol.11, 51-53 (2011). ISSN 1313-8995.
- 35 Л. Юрукова, К. Коленцов, Е. Радева, П. Зъбов, Электрoлюминесцентные Индикаторные Элементы с Улучшенными Параметрами, *Известия высших учебных заведений – Физика*, **54**, 301-310 (2011). ISSN 0021-3411
- 36 Atanassova, P. Lytvyn, R.V. Konakova, V.F. Mitin, D. Spassov, "Conducting and topographic AFM analysis of Hf-doped and Al-doped Ta<sub>2</sub>O<sub>5</sub> films", *Thin Solid Films* **519**, 8182-9190 (2011).
- 37 N. Novkovski, E. Atanassova, "Charge trapping during constant current stress in Hf-doped Ta<sub>2</sub>O<sub>5</sub> films sputtered on nitrided Si", *Thin Solid Films* **519**, 2262-2267 (2011).
- 38 L. Stojanovska-Georgievska, N. Novkovski, E. Atanassova, "Charge trapping at Pt/high-k dielectric (Ta<sub>2</sub>O<sub>5</sub>) interface stacks", *Phys. B* **406**, 3348-3353 (2011).
- 39 A. Skeparovski, N. Novkovski, E. Atanassova, V. K. Lazarov, " Effect of Al gate on the dielectrical behaviour of Al-doped Ta<sub>2</sub>O<sub>5</sub> stacks", *J. Phys. D: Appl. Phys.*, **44**, 235103-235113 (2011).
- 40 I. Manič, E. Atanassova, N. Stojadinovič, D. Spassov, A. Paskaleva, "Hf-doped Ta<sub>2</sub>O<sub>5</sub> stacks under constant voltage stress", *Microel. Eng.* **88**, 305-313 (2011).
- 41 A. Paskaleva, M. Tapajna, E. Dobrovčka, K. Hušekova, E. Atanassova, K. Fröhlich, "Structural and dielectric properties of Ru-based gate/Hf-doped Ta<sub>2</sub>O<sub>5</sub> stacks", *Appl. Surf. Sci.* **257**, 7876-7880 (2011).
- 42 A. Paskaleva, M. Lemberger, E. Atanassova, A. J. Bauer, "Traps and trapping phenomena and their implications on electrical behavior of high-k capacitor stacks", *J. Vac. Sci. Technol. B* **29**(1), 076101-076111 (2011).
- 43 D. Spassov, E. Atanassova, A. Paskaleva "Lightly Al-doped Ta<sub>2</sub>O<sub>5</sub>: Electrical properties and mechanisms of conductivity", *Microelectron. Reliab.* **51**, 2102-2109 (2011).
- 44 A. Paskaleva, M. Lemberger, A.J. Bauer, L. Frey, "Implication of oxygen vacancies on current conduction mechanisms in TiN/Zr<sub>1-x</sub>Al<sub>x</sub>O<sub>2</sub>/TiN MIM structures", *J. Appl. Phys.* **109**, 076101 (2011)

- 45 N. Nedev, E. Manolov, D. Nesheva, K. Krezhov, R. Nedev, M. Curiel, B. Valdez, A. Mladenov, Z. Levi, Radiation dosimeter based on Metal-Oxide-Semiconductor structures containing silicon nanocrystals, *Key Engineering Materials*, 495,120-123 (2011)
- 46 Boyadzhiev, S., Georgieva, V., Rassoavska, M., Yordanova, I., Yordanov, R., “Comparison between RF and DC Magnetron Reactive Sputtered Molybdenum Oxide Thin Films for Gas Sensors”, *Optoelectronics and Advanced Materials, Rapid Communications*, vol.4, Issue10, Nov. 2010, pp.1485-1488.
- 47 Lazarov, Y., Dulmet, B., Raicheva, Z., Spassov, L., Georgieva, V., Gadjanova, V., Atanasov, M., Yordanov, Ts., “A Theoretical Analysis and Development of a Quartz Strip Mass-sensitive Resonator AT-cut”, *Optoelectronics and Advanced Materials, Rapid Communications*, 4 (11),pp. 1811 - 1814, 2010.
- 48 Ivan D. Avramov, Stephen R. Gilbert and Rich Ruby, 1.5-GHz Voltage Controlled Oscillator With 3% Tuning Bandwidth Using a Two-Pole DSBAR Filter, *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 58, no. 5, May 2011, pp. 916-923
- 49 Lilia Arapan, Gergana Alexieva, Ivan D. Avramov, Ekaterina Radeva, Vesseline Strashilov, Ilija Katardjiev and Ventsislav Yantchev, Highly Mass-Sensitive Thin Film Plate Acoustic Resonators (FPAR) *Sensors* **2011**, *11*, 6942-6953; doi:10.3390/s110706942, ISSN 1424-8220, www.mdpi.com/1424-8220/11/7/6942/pdf,
- 50 L. Arapan, I.D. Avramov and V. Yantchev “Thin film plate acoustic resonators for integrated microwave power oscillator applications”, *ELECTRONICS LETTERS* 31st March 2011 Vol. 47 No. 7
- 51 Ivan D. Avramov, “Polymer Coated Rayleigh SAW and STW Resonators for Gas Sensor Applications”, in *Acoustic Waves – From Microdevices to Helioseismology*, Edited by Marco G. Beghi, Chapter 23, pp. 521-546, ISBN 978-953-307-572-3, October 2011, printed in Croatia, www.intechopen.com/books/show/title/acoustic-waves-from-microdevices-to-helioseismology
- 52 L. Arapan, I. Katardjiev, V. Yantchev, G. Alexieva, V. Strashilov, I. D. Avramov, E. Radeva “Polymer coated thin film plate acoustic resonators (FPAR) for gas sensing applications”, *Proc.2011 Joint Conference of the IEEE International Frequency Control Symposium and the European Frequency and Time Forum*, May 1-5, San Francisco, USA
- 53 Brankov J. R., Tonchev N. S., *Generalized inequalities for the Bogoliubov-Duhamel inner product with applications in the approximating Hamiltonian method*, *Condensed Matter Physics* 14 (1), 2011, art. No. 13003
- 54 E. S. Vlakhov, N. Kozlova, L. S. Lobanovskii, R. Wawryk, and K. A. Nenkov, *High magnetic field study of magnetic and transport properties of hole doped cobaltite NdBaCo<sub>2</sub>O<sub>5+δ</sub>*, *Phys. Rev. B* 84, 184440 (2011)
- 55 S Terzieva, M Vojenčiak, F Grilli, R Nast, J Šouc, W Goldacker, A Jung, A Kudymow and A Kling, „*Investigation of the effect of striated strands on the AC losses of 2G Roebel cables*”, *Supercond. Sci. Technol.* **24** 045001 doi:10.1088/0953-2048/24/4/045001, pp. 045001 - (2011)
- 56 M Vojenciak, F Grilli, S Terzieva, W Goldacker, M Kovacova and A Kling „*Effect of self-field on the current distribution in Roebel-assembled coated conductor cables*”, *Supercond. Sci. Technol.* **24** 095002 doi:10.1088/0953-2048/24/9/095002, pp. 095002 - (2011)
- 57 Emhofer, J., Hengstberger, F.; Eisterer, M.; Weber, H.W.; Terzieva, S.; Goldacker, W.; Badcock, R.A.; Long, N.J., „*Current and Field Distribution in Meandered Coated*

- Conductors for Roebel Cables*”, Journal of Applied Superconductivity, IEEE Transactions, Issue: **3**, doi: 10.1109/TASC.2010.2092394, pp. 3389 – 3392 (2011)
- 58 N.Balchev, V.Antonov and K.Nenkov, “*Pinning and transport properties of undoped and Sn-doped  $MoSr_2YCu_2O_{8-\delta}$* ”, Supercond. Sci. Technol., **24**, 095013 (2011)
- 59 A. Stoyanova-Ivanova, A. Staneva, B. Blagoev, A. Zaleski, V. Mikli, Y. Dimitriev, “*Microstructure and superconductivity of bulk BPSCCO/LPMO composite*”, Philosophical Magazine Letters, Vol.91, № 3, 2011, 190-199
- 60 L. Dimova, O. Petrov, M. Kadiyski, N. Lihareva, A. Stoyanova-Ivanova and V. Mikli, “*Preparation and Rietveld refinement of Ag-exchanged clinoptilolite*”, Clay Minerals, **V. 46**, Issue2, 2011, pp. 205-212.
- 61 A. Stoyanova-Ivanova, St. Georgieva, T. Nedeltcheva, L. Dimova, B. Shivachev, “*Variation of the unit cell parameters of the  $REBa_2Cu_3O_y$  ( $RE = Gd, Er$ ) ceramics in function of the oxygen content*”, Bulgarian Chemical Communications, **V.43**, № 2, 2011, pp.320-324
- 62 Stefan Tsakovski, Pavlina Simeonova, Vasil Simeonov. Sediment Pollution Assessment by Chemometric Methods, *Ecological Chemistry and Engineering S*, Vol. 18, no. 2, (2011), 141-170. IF: 2.13
- 63 Stefan Tsakovski, Pavlina Simeonova, Vasil Simeonov. Classification and Modeling of Different Fractions of Aerosol Monitoring Data, *Journal of Environmental Science and Health, Part A*, Vol. 46, (2011), 157-169. IF: 2.13
- 64 D. Petrov, B. Angelov, V. Lovchinov Magnetic susceptibility and surface properties of  $EuAlO_3$  nanocrystals, *Journal of Alloys and Compounds*, vol. 509 (2011), pp. 5038-5041; IF: 2.13
- 65 D. Petrov, B. Angelov, V. Lovchinov. Metamagnetic  $DyAlO_3$  nanoparticles with very low magnetic moment, *Journal of Sol-gel Science and Technology*, vol. 58 no.3 (2011), pp. 636-641 IF: 1.525
- 66 D. Petrov, Nanocrystalline  $GdAlO_3$ : XPS, EPR and magnetic susceptibility Studies, *Applied Physics A*, vol.104 (2011), 1237-1242. IF: 1.595
- 67 V.G. Ivanov, G.B. Hadjichristov, “Orientation of  $sp^2$  carbon nanoclusters in ion-implanted polymethylmethacrylate as revealed by polarized Raman spectroscopy”, *J. Raman Spectrosc.*, **42**(6) (2011) 1340-1343, [IF=3.526].
- 68 G.B. Hadjichristov, Y.G. Marinov, A.G. Petrov, "Gradient polymer-disposed liquid crystal single layer of large nematic droplets for modulation of laser light", *Appl. Opt.* **50**(16) (2011) 2326-2333, [IF=1.763].
- 69 Tz. Philipova, M. Hadjieva, K. Ivanova, I. Grabchev, N. Kirov, G.B. Hadjichristov, "Photo-sensitized donor-acceptor molecular systems with carbonyl-containing viologen", *J. Optoelectron. Adv. Mater.* **13**(6) (2011) 722-726, [IF=0.577].
- 70 B. Katranchev, H. Naradikian, E. Keskinova and M. Petrov, ‘The role of the negative electroconductivity anisotropy at the electroconvection in nematic liquid crystals with short range smectic C order’, *J. Phys.: Conf. Ser.*, **253**, 012062, 2010, **ISSN**: 1742-6596.
- 71 M. Kuneva, K. Christova, S. Tonchev, “ $LiNbO_3$  proton-exchanged waveguide layers: phase composition and stress”, *EPL*, **95**, 2011, 67005 [Doi: 10.1209/0295-5075/95/67005, IF=2.893].
- 72 M. Kuneva, S.Tonchev, “Spectroscopy of optical waveguiding layers”, *Bulgarian Chemical Communications*, **43** (2), 2011, pp. 276-287 [IF=0.156].
- 73 N. Vermeulen, P. Wasylczyk, S. Tonchev, P. Muys, H. Ottevaere, O. Parriaux, H. Thienpont, “Low-loss wavelength tuning of a mid-infrared  $Cr^{2+}$ :ZnSe laser using a Littrow-mounted resonant diffraction grating”, *Laser Phys. Lett.* **8**, No. 8, pp. 606-6012 (2011) [IF=6.010].

- 74 A. Garrelie, J. P. Colombier, F. Pigeon, S. Tonchev, N. Faure, M. Bounhalli, S. Reynaud, O. Parriaux, "Evidence of surface plasmon resonance in ultrafast laser-induced ripples", *Optics Express*, Vol. **19**, No. 10, pp. 9035-9043, 9 May 2011 [IF=3.749].
- 75 David Pietroy, Olivier Parriaux, Thibaut Epalle, Svetlen Tonchev, "Contactless functional testing of grating-coupled evanescent wave (bio)chemical sensors", *Sensors and Actuators B: Chemical*, ISSN: 0925-4005 Vol. 159, Iss.:1, Pages 27-32 (2011) [IF=3.368].
- 76 Kampf, T.; Tonchev, S.; Gomard, G.; Seassal, C.; Parriaux, O., "Hydrogenated amorphous silicon microstructuring for 0th order polarization elements at 1.0 $\mu$ m - 1.1 $\mu$ m wavelength", *IEEE, Photonics Journal*, Volume: PP Issue:99, ISSN: 1943-0655 2011 [IF=2.344].
- 77 Y. Bourgin, I. Vartiainen, Y. Jourlin, M. Kuittinen, F. Celle, S. Tonchev, O. Parriaux, T. Niemi, "Three-grating monolithic phase-mask for the single-order writing of large-period gratings", *Journal of the European Optical Society – Rapid Publications* Vol. **6**, 11016s (2011), ISSN 1990-2573, [IF=1.044].
- 78 Philipp M uller, Yves Jourlin, Colette Veillas, Grerard Bernaud, Yannick Bourgin, Svetlen Tonchev, Olivier Dellea, "On-the-fly writing of a long grating phase mask, *Optical Engineering*, Vol. **50**, No. 3, pp. 038001-1-038001-9, March 2011, [IF=0.815].
- 79 M. Moussaoui, R. Saoudi, S. Tonchev, S. Palle, A. V. Tishchenko, "Modified refractive index of zinc sulfide nanoparticles doped glasses", *AAPP (Atti della Accademia Peloritana dei Pericolanti)*, ISSN 1825-1242, Vol. 89, Suppl. No.1, C1V89S1P066 (2011).
- 80 S. Rashev, D.C. Moule and R.H. Judge, "The Role of Rotational Relaxation in the Intersystem Crossing Between a Triplet and a Singlet Electronic State", *Int. J. Quant. Chem.* **111** (2), 279-287 (2011), [IF=1.317].
- 81 S.Rashev and D.C.Moule, "Vibrational Calculations in Formaldehyde: The CH Stretch System", *Cent.Eur.J.Chem.* **9**(4), 549-556 (2011) , [IF=0.915].
- 82 S. Tonchev, O. Parriaux, M. Wissmann, M. Guttmann, J. Mohr, J Krezel, M. Kujawinska, "Specific exposure and photochemistry on dissolvable 3D-PMMA microoptical masters with resist surface grating", *Proceedings of the 2<sup>nd</sup> EOS Conference on Manufacturing of Optical Components (EOSMOC 2011), II) Optics Manufacturing Processes*, ISBN 978-3-00-033713-0, paper 4389.
- 83 S. Tonchev, T. K ampfe, O. Parriaux, "Rehabilitation of wet etching for the low-cost manufacturing of highly selective subwavelength gratings of high efficiency", *Proceedings of the 2<sup>nd</sup> EOS Conference on Manufacturing of Optical Components (EOSMOC 2011), I) Theoretical and Practical Aspects of Manufacturing and Finishing Technologies*, ISBN 978-3-00-033713-0, paper 4390.
- 84 S. Tonchev, N. Lyndin, Y. Jourlin, F. Celle, O. Parriaux, M. Kuittinen, J. Laukkanen, "Holistic fabrication of stitchingless subwavelength cylindrical gratings by phase-mask coordinatetransform", *Proceedings of the 2<sup>nd</sup> EOS Conference on Manufacturing of Optical Components (EOSMOC 2011), I) Theoretical and Practical Aspects of Manufacturing and Finishing Technologies*, ISBN 978-3-00-033713-0, paper 4392.
- 85 Y. Jourlin, C. Veillas, S. Tonchev, J. Sauvage-Vincent, U. Zeitner, O. Parriaux, "Grating phase-mask lithography for subwavelength radial polarizer fabrication", *Proceedings of the 2<sup>nd</sup> EOS Conference on Manufacturing of Optical Components (EOSMOC 2011), III) Optical Manufacturing for Emerging Products and Processes*, ISBN 978-3-00-033713-0, paper 4394.
- 86 Y. Bourgin, Y. Jourlin, S. Tonchev, I. Vartiainen, O. Parriaux, M. Kuittinen, A. Talneau, "Expanding the applicability domain of phase-mask lithography of gratings to the extreme", *Proceedings of the 2<sup>nd</sup> EOS Conference on Manufacturing of Optical*



- Components (EOSMOC 2011), I) Theoretical and Practical Aspects of Manufacturing and Finishing Technologies, ISBN 978-3-00-033713-0, paper 4391.
- 87 S. Tonchev, "Double-sided exposure for large blaze-angle saw-tooth grating manufacturing", Proceedings of the 2<sup>nd</sup> EOS Conference on Manufacturing of Optical Components (EOSMOC 2011), II) Optics Manufacturing Processes, ISBN 978-3-00-033713-0, paper 4386.
  - 88 Ecke W., Schroeder K., Andreev A., Willsch R., "Thermally stable optical fibre Bragg grating wavelength reference", Optics Commun., vol.**284**, iss.6, pp.1557-1560, (2011), [IF=1.552].
  - 89 Ecke W., Andreev A., Csaki A., Kirsch K., Schroeder K., Wieduwilt T., Willsch R., „Biosensor application of resonance coupling to thin film planar waveguides on side-polished optical fiber", Proceedings of SPIE, vol.7753, art.no. 77534T, (21<sup>st</sup> International Conference on Optical Fiber Sensors, 15-19 May 2011, Ottawa, Canada), (2011).
  - 90 Krassimira Antonova, Kostyantyn Slyusarenko, Oleksandr Buluy, Christophe Blanc, Stephane Joly, Yuriy Reznikov, and Maurizio Nobili, "Aging in glassy polymer liquid-crystal layers", Phys.Rev.E, **83**, 050701(R) (2011) [4 pages], (2010), ISSN: 1063-651X, [IF 2.352].
  - 91 I. Dozov, E. Paineau, P. Davidson, K. Antonova, C. Baravian, I. Bihannic, and L. J. Michot, "Electric-Field-Induced Perfect Anti-Nematic Order in Isotropic Aqueous Suspensions of a Natural Beidellite Clay, J.Phys.Chem. B, **115**, Iss.24, pp.7751-7765, (2011), DOI: 10.1021/jp201201x, (2010), ISSN: 1520-6106 [IF=3.603].
  - 92 Angelow, A., Dimitrova, T.L., Trifonov, D.A., Angelov, V., Hristov, H. "Quantum fluctuations of electrons in free-electron laser undulator working at nanowavelength", Journal of Nanophotonics **5** (1), art. no. 051823 (2011), [IF: 1.87].
  - 93 Angelow, A., "Two basic uncertainty relations in quantum mechanics", AIP Conference Proceedings, v.1340, pp. 183-188 (2011) CJR: 0.033.
  - 94 Angelow, A.K., Trifonov, D.A., "Dynamical invariants and Robertson-Schrödinger correlated states of electromagnetic field in nonstationary linear media", AIP Conference Proceedings, v.1340, pp. 221-233 (2011) CJR: 0.033.
  - 95 Erwin Bosman, Jeroen Missinne, Bram Van Hoe, Geert Van Steenberge, Sandeep Kalathimekkad, Jurgen Van Erps, Ivaylo Milenkov, Krassimir Panajotov, Tim Van Gijsegheem, Peter Dubruel, Hugo Thienpont, and Peter Van Daele, „Ultrathin Optoelectronic Device Packaging in Flexible Carriers", IEEE J. Selected topics in Quant. Electr., **17**, 617 (2011) [IF=2.518].
  - 96 Tomasz Czystanowski, Maciej Dems, Robert P. Sarzala, Wodzimierz Nakwaski, and Krassimir Panajotov, „Precise Lateral Mode Control in Photonic Crystal Vertical-Cavity Surface-Emitting Lasers", IEEE J. Quant. Electr., **47**, 1291, (2011) [IF=2.413].
  - 97 Rafal Kotynski, Tomasz J. Antosiewicz, Karol Król, and Krassimir Panajotov, „Two-dimensional point spread matrix of layered metal - dielectric imaging elements", J. Opt. Soc. Am. A, **28**, 111, (2011) [IF=1.87].
  - 98 Krassimir Panajotov and Hugo Thienpont, „Vertical-cavity surface-emitting laser with liquid crystal overlay", Opt. Express, **19**, 16749, (2011) [IF=3.880].
  - 99 Mateusz Zujewski, Hugo Thienpont, and Krassimir Panajotov, „Electrical Design of High-Speed Electro-Optically Modulated Coupled-Cavity", J. Lightwave Techn. **29**, 2992, (2011) [IF=2.736].
  - 100 M. Petrov, E. Keskinova, B. Katranchev, H. Naradikian, "Liquid Crystals Electroconvection in dimeric nematic liquid crystals with short-range smectic C order: dynamical characteristics", Liquid Crystals, Vol. **38**, 41–52, (2011), [IF=1.132].

- 101 P. Danesh, B. Pantchev, J. Wieszorek, B. Schmidt and D. Grambole, Effect of hydrogen on hardness of amorphous silicon, *Appl. Phys. A*, **102**, pp.131-135, (2011), ISSN 0947-8396, [IF=1.884].
- 102 T. Tsvetkova, S. Takahashi, P. Sellin, I. Gomez-Morilla, O. Angelov, D. Dimova-Malinovska and J. Zuk, “Optical Pattern Fabrication in Amorphous Silicon Carbide with High-Energy Focused Ion Beams”, *ACTA PHYSICA POLONICA A*, **120** (2011) No.1, [IF=0.325].
- 103 A. G. Petrov, Y. G. Marinov, G.B. Hadjichristov, S. Sridevi, Uma S. Hiremath, C.V. Yelamaggad, and S. Krishna Prasad, New Photoactive Guest-Host Nematics Showing Photoflexoelectricity, *Mol.Cryst.Liq.Cryst.* 544 (2011) 3-13, Print ISSN: 1542-1406, Online ISSN: 1563-5287
- 104 A. G. Petrov, Y. G. Marinov, H. P. Hinov, L. Todorova, M. Dencheva-Zarkova, S. Sridevi, P. M. Rafailov, U. Dettlaff-Weglikowska, Observation of Flexoelectricity in a Mixture of Carbon Single Walled Nanotubes with a Nematic Liquid Crystal, *Mol.Cryst.Liq.Cryst.* 545 (2011) 58-66, Print ISSN: 1542-1406, Online ISSN: 1563-5287
- 105 Yordan Marinov, Georgi Hadjichristov, Alexander Petrov, Sridevi Chakravarthy, Uma Hiremath, Channabasaveshwar Yelamaggad, Subbarao Krishna Prasad, Thermo-Optical Study of Azo-Dye Doped Nematic Liquid Crystals as Flexoelectric Guest-Host Systems, *Comptes Rendus Acad bulg Sci* 64 (2011) 669-676, ISSN 1310-1331
- 106 S. Sridevi, Uma S. Hiremath, C.V. Yelamaggad, S. Krishna Prasad, Y.G. Marinov, G.B. Hadjichristov, A.G. Petrov, Behaviour of photosensitive soft materials: Thermo-optical, dielectric and elastic constant studies on azo-dye doped nematic liquid crystals, *Materials Chemistry and Physics* 130 (2011) 1329-1335, ISSN: 0254-0584
- 107 J. I. Pavlič, J. Genova, G. Popkirov, V. Kralj-Iglič, A. Iglič, M. D. Mitov, “Mechanoformation of neutral (SOPC) giant phospholipid vesicles in high ionic strength solution (PBS)”, *Chem. Phys. Lipids* 164 (2011) 727-731, ISSN: 0009-3084
- 108 V. Vitkova and C. Misbah, Dynamics of lipid vesicles – from thermal fluctuations to rheology, *Advances in Planar Lipid Bilayers and Liposomes vol.14* (Ed. Ales Iglic), Elsevier, Amsterdam (2011) 257-292, ISSN 1554-4516
- 109 D. Zhechev and V. Steflekova, “Spatially resolved profile and shift of the spectral line in a hollow cathode discharge”, *Spectroscopy Letters* 44 (1) (2011) pp. 47-51, ISSN 0038-7010
- 110 G. T. Genov, B. T. Torosov, and N. V. Vitanov, Optimized control of multistate quantum systems by composite pulse sequences, *Phys. Rev. A* 84, 2011, 063413, ISSN 1050-2947
- 111 B. T. Torosov and N. V. Vitanov, Evolution of superpositions of quantum states through a level crossing, *Phys. Rev. A* 84, 2011, 063411, ISSN 1050-2947
- 112 D. Sofikitis, G. Stern, L. Kime, E. Dimova, A. Fioretti, D. Comparat, and P. Pillet, Loading a dipole trap from an atomic reservoir, *Eur. Phys. J. D* 61, 2011, 437–442, ISSN 1434-6060
- 113 É. Biémont, K. Blagoev, L. Engström, H. Hartman, H. Lundberg, G. Malcheva, H. Nilsson, R. Blackwell Whitehead, P. Palmeri and P. Quinet, “Lifetime measurements and calculations in  $Y^+$  and  $Y^{2+}$  ions”, *Mon. Not. R. Astron. Soc.* 414, 2011, 3350-3359, ISSN: 1365-2966.
- 114 G. Malcheva, H. Nilsson, L. Engström, H. Lundberg, É. Biémont, P. Palmeri, P. Quinet and K. Blagoev, “Radiative parameters of Nb I excited states”, *Mon. Not. R. Astron. Soc.* 412, 2011, 1823-1827, ISSN: 1365-2966.
- 115 J.T. Mouchovski, K.A. Temelkov, N.K. Vuchkov, The growth of mixed alkaline-earth fluorides for laser host applications, *Progress in Crystal Growth and Characterization of Materials*, vol. 57, No. 1, 2011, pp. 1-41, ISSN 0960-8974



- 116 Temelkov, Krassimir; Slaveeva, Stefka; Vuchkov Nikolay; Analytical calculation of gas temperature and experimental determination of electron temperature in gas discharge in Ne-He mixtures, IEEE Transactions on Plasma Science, Volume: 39 Issue:3, March 2011, pages: 831 – 835, ISSN 0093-3813
- 117 I.P. Iliev, S.G. Gocheva-Ilieva, K.A. Temelkov, N.K. Vuchkov, N.V. Sabotinov, An improved radial temperature model of a high-powered He-SrBr<sub>2</sub> laser, Optics & Laser Technology, Volume 43, Issue 3, April 2011, Pages 642-647, ISSN 0030-3992, DOI: 10.1016/j.optlastec.2010.09.005
- 118 K. A. Temelkov, S. I. Slaveeva, L. Lyutov and N. K. Vuchkov, Influence of some gaseous additives on gas-discharge parameters and laser performance of a volume-scaled MIR He-SrBr<sub>2</sub> laser, Proc. of SPIE Vol. 7747, 2011, 77471M.
- 119 K. A. Temelkov, S. I. Slaveeva, N. K. Vuchkov, L. Lyutov, N. V. Sabotinov, “Determination of Gas and Electron Temperatures for a Powerful MIR He-SrBr<sub>2</sub> Laser Excited in Nanosecond Pulsed Longitudinal Discharge”, in Proc. of SPIE, vol. 7751, art. 77510P, 2011, (8 pages).
- 120 D Mihailova, J van Dijk, M Grozeva, G Degrez and J J A M van der Mullen, , Towards a reduced chemistry module of a He–Ar–Cu hollow cathode discharge, J. Phys. D: Appl. Phys, Vol. **44**, 2011, 194001 doi:10.1088/0022-3727/44/19/194001, ISSN 0022-3727.
- 121 M. T. Primatarowa, R. S. Kamburova, Dark solitons in ferromagnetic chains with first- and second-neighbor interactions, [arXiv:1111.5477v1](https://arxiv.org/abs/1111.5477v1) [nlin.PS] (2011), 7 pages
- 122 Н. Измирова, П. Узунов, И. Томова, М. Баева, *Оксидативен и ендоплазматичен ретикулярен стрес – холестерол и хомоцистеин*, Фармацевтичен монитор год. XII, брой 4 (2011) стр. 18-22.
- 123 Baeva M., N. Izmirova, A.I. Beskovnyi, *Characterization of zeolites from “Beli Plast” – Ist Rodopes by X-ray structural analysis*, Scripta Scientifica Medica, vol. 43, 3 (2011) p. 200.
- 124 N. K. Vitanov, K. Sakai, Z. I. Dimitrova, *On the low-dimensional dynamics and long-range correlations connected to photoplethysmographic signals*, Series on Biomechanics **25**, No. 3-4 (2010) 33 – 44.
- 125 N. Chamel, R.L. Pavlov, L. M. Mihailov, Ch. J. Velchev, Zh. K. Stoyanov, Y. D. Mutafchieva, M.D. Ivanovich, *Effects of strong magnetic fields on the equation of state of cold non-accreting neutron-star crusts*, Nuclear Theory 30, 2011, 240-246, Eds. A. Georgieva, N. Minkov, Heron Press, Sofia.
- 126 N. Chamel, R. L. Pavlov, L. M. Mihailov, Ch. J. Velchev, Zh. K. Stoyanov, Y. D. Mutafchieva, M. D. Ivanovic, *Effects of strong magnetic fields on the equation of state of cold non-accreting neutron-star crusts*, XXX Anniversary International Workshop on Nuclear Theory, 26 June - 2 July 2011, Rila Mountains, Bulgaria.
- 127 A. G. Petrov, N. S. Tonchev, O. I. Yordanov, *Physics in the middle of the Balkans*, Europhysics News, 42 (6), 2011, pp.23-24
- 128 E. Nazarova, K. Nenkov, K. Buchkov, A. Zahariev, *Scaling behavior of current- voltage characteristics of  $Y_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$  polycrystalline samples*, The Open Superconductors Journal, 3 (2011) pp1-6; ISSN: 1876-5378; DOI:10.2174/1876537801103010001
- 129 E. Nazarova, K. Nenkov, A. Zaleski, K. Buchkov, A. Zahariev, *Investigations of the overdoped state in polycrystalline  $R_{1-x}Ca_xBa_2Cu_3O_{7-\delta}$  samples (R=Y, Gd, Er)*, Chapter of book “Superconductivity: Theory, Materials and Applications”, Nova Publishers, USA, 2011, ISBN 978-1-61324-843-0
- 130 Л.Цонев, Д.Колев, Я.Динчев, „Долмените в Сакар планина”, доклад в пълен текст (15 стр) в Материалите от Конференцията „Човекът и Вселената”, организирана от Съюза на учените в България, клон Смолян, 6-8.10.2011, Смолян.
- 131 Л.Цонев, Д.Колев, Я.Динчев „Долмените в Сакар”, сп.Обекти, брой 10 (2011).

- 132 С. Тодоров, Л. Тодорова, Изследване на качеството на водни системи с метода на енергетичните спектри, Сб. Доклади на IV Международен симпозиум “Екологични подходи при производство на безопасни храни”, Пловдив (2011) 269 – 274
- 133 М. Замфиров, Н. Вучков, Нека бъде монохроматична, кохерентна и насочена светлина (50 години от създаването на лазера), Светът на физиката 1, 2011, стр. 32-40, ISSN 0861–4210.
- 134 М. Замфиров, Н. Вучков, Нека бъде монохроматична, кохерентна и насочена светлина (50 години от създаването на лазера) Втора част (продължение от кн. 1/2011 г.), Светът на физиката 2, 2011, стр. 160-178, , ISSN 0861–4210.
- 135 Г. Камишева, Паметна книга на Съюза на физиците в България 2007 - 2011, *Отчетен доклад на Управителния съвет на Съюза на физиците в България*, VII Конгрес, София, 2011 (СФБ, София, 2011) с. 45-46
- 136 Г. Камишева, Корените на теоретичната физика в България, *От Ръдърфорд до колайдера*, Сборник с резюмета, Национален семинар, Ямбол, 2011, (НАОП, Ямбол, 2011) с. 13 – 14
- 137 Ивана Илиевска, 100 години от откриването на свръхпроводимостта, Списание на БАН, 5 (2011) стр. 30.
- 138 О. Ivanov, М. Kuneva, “Quality control methods based on electromagnetic field-matter interactions”, In *Application and Experience of Quality Control*, (ed. О. Ivanov), published by INTECH, Vienna, 2011, ISBN 978-953-307-236-4, pp. 510-536.
- 139 Д. Христов, Е. Добрева, Ц. Бузова, М. Кънева, Х. Дарева, Р. Радков, Х. Вълчев, А. Ляпчева, М. Апостолова, В. Тенева, С. Златева, М. Козарова, Е. Бранкова, В. Тодоров, А. Цветанова, Д. Гулева, Г. Михайлова, В. Спасов, Н. Бъчварова, А. Николова, Ц. Чолова, Н. Кочев, Н. Бъчваров, Б. Пейчев, С. Аршинкова, А. Стойнев, Н. Сретенова, Р. Горгоров, С. Кирилова, А. Милтенова, „Физиката в България, т. II: Библиография 1889-1960. Наука. Образование. Просвета”, Изд. „Фараго”, София, 2011, 221 стр., 4 ил. [ISBN: 978-954-2961-04-8].