

# **CENTRUL DE CERCETARE STIINTIFICA IN FIZICA APLICATA UNIVERSITATEA POLITEHNICA DIN BUCURESTI**

Anul infiintarii la nivel de institutie: 1994

Director centru de cercetare: Prof. CATA-DANIL GHEORGHE

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Domeniu fundamental: FIZICA

Domeniile de specialitate ale centrului (conform clasificarii CNCISIS)

1. FIZICA LASERILOR, FIZICA PLASMEI, FENOMENE NELINIARE
2. FIZICA NUCLEARA SI HADRONICA, ASTROFIZICA
3. FIZICA GENERALA SI APLICATA

C.V. Director centru de cercetare:

Domeniul de cercetare definitoriu:

Experienta stiintifica si manageriala:

FIZICA NUCLEARA SI HADRONICA, ASTROFIZICA

Nr. lucrari publicate 126 din care Nr. Lucrari ISI 76 Nr. Lucrari BDI 50

Calitatea de conducator de doctorat: Anul dobandirii calitatii: 2003

Nr. teze doctorale in stagi: 12

Nr. teze doctorale finalizate (cu titlu): 3

## **Lista membrilor permanenti ai CCSFA:**

1. Prof. BENA ELEONORA RODICA
2. Prof. BUZATU DANIELA
3. As. CARTOAJE CRISTINA
4. Prof. CATA-DANIL GHEORGHE
5. Conf. CRISTEA MIHAI
6. Prof. CRISTESCU CONSTANTIN
7. As. HARABOR ADRIAN
8. As. IVASCU IOANA
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13. As. PAUN IRINA-ALEXANDRA
14. Prof. PETRESCU EMIL
15. Prof. POPESCU VASILE
16. Prof. POPESCU ION
17. SI. PEDA LILIANA
18. Prof. PUSCAS NICULAE
19. SI. SCARLAT EUGEN
20. Conf. SMEU EMIL
21. SI. STAFE MIHAI
22. Conf. STAN CRISTINA
23. SI. VASILE GEORGIANA

## **Conducatori de doctorat membri ai CCSFA**

Prof consultant CONSTANTIN CRISTESCU, conducator de doctorat din 1997

Prof GHEORGHE CATA-DANIL, conducator de doctorat din 2003

Prof consultant ION M. POPESCU conducator de doctorat din 1976

Prof NICULAE N. PUSCAS conducator de doctorat din 2004

## **Lista tezelor de doctorat susținute sub conducerea profesorilor din CCSFA**

### **In 2006**

1. Doctorand: Maria Branescu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Fenomene cuantice macroscopice de inalta coerenta in domeniul spectral cvasi-optic (Contributii experimentale la realizarea filmelor supraconductoare YBCO si caracterizarea cuantica si mascoscopica a acestora)*
2. Doctorand: George Victor Ionescu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Contributii la caracterizarea metrologica a etaloanelor primare si secundare de umiditate a materialelor solide*
3. Doctorand Stefan Lucian Pusca, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Contributii la modelarea, simularea si analiza numerica a fenomenelor corespunzatoare generarii si propagarii undelor in medii materiale*
4. Doctorand: Mihai Stafe, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Cercetari asupra fenomenului de ablatie laser pulsata a metalelor utilizand modelarea teoretica fototermica si analiza experimentală optodinamica*
5. Doctorand: Constantin Negutu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Cercetari privind interactia radiatiei laser cu substanta: durificarea suprafetei materialelor, analiza si controlul in timp real a adancimii de patrundere a radiatiei in materialele metalice*
6. Doctorand: Sergiu Dinu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Cercetari asupra fenomenelor fizice care apar in interactia radiatiei laser cu straturi subtiri de dioxid de titan depuse pe sticla.*
7. Doctorand: Doina Nicoleta Nicolae, Conducator doctorat: Prof. Dr. Constantin Cristescu, Titlul tezei: *Tehnici LIDAR pentru caracterizarea aerosolilor din atmosfera joasă*

### **In 2007**

1. doctorand Andreea Purice, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Procesarea laser de filme subțiri multicomponente. Filme subțiri organice,*
2. doctorand: Cornelia-Tatiana Grofu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Studiul ancorării pe straturi subțiri de polimeri a cristalelor lichide dopate cu coloranți*
3. doctorand: Mona Mihailescu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Proiectarea și realizarea unor microcomponente optice difractive și utilizarea metodelor holografice digitale pentru reconstrucția obiectelor,* (domeniul general de doctorat - Științe exacte; domeniul de doctorat - Fizică);
4. doctorand: Elena Dugheanu, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Contribuții la evaluarea incertitudinii de măsurare a etaloanelor de referință de lungime naționale,* (domeniul general de doctorat - Științe exacte; domeniul de doctorat - Inginerie electronică și telecomunicații).

### **In 2008**

1. doctorand Mădălina - Camelia Văduva, Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Contribuții privind difuzia gazelor în nanostructuri carbonice*

### **In 2009**

1. doctorand Camelia Talianu, Conducator doctorat: Prof. Dr. C.P. Cristescu, Titlul tezei: *Metode computaționale pentru optimizarea, procesarea și validarea semnalelor LIDAR, susținută în Catedra de Fizică I, în 24 martie 2008;*
2. doctorand Raluca Maria Mărginean Conducator doctorat: Prof. Dr. Ion M. Popescu, Titlul tezei: *Cercetări de structură nucleară în zona nucleelor de masă medie prin spectroscopie gamma, susținută în Catedra de Fizică I, în 15 septembrie 2008*

### **Premii naționale obținute:**

I.M. Popescu - Honorabilis Professoris, titlu decernat de Senatul Universității „Dunărea de Jos, din Galați, în 3 iunie 2005

### **Membri in colectivele de redactie ale unor reviste internationale recunoscute**

1. Gh. Cata-Danil – J.Phys.G, Phys. Rev. C
2. Niculae Pușcaș membru al Comitetului Științific Internațional al revistei "Journal of Optoelectronics and Advanced Materials", editată de Institutul Național de Optoelectronică și de Institutul Național de Fizica Materialelor și cotate ISI

### **Profesori invitati pentru prelegeri la universitati de prestigiu din strainatate**

1. Pușcaș Niculae Universitatea Orleans, Laboratorul GREMI, Présentation du Laboratoire d'Optoélectronique Intégrée. Modélisation et calcul de quelques paramètres des guides optiques d'onde Er<sup>3+</sup>:LiNbO<sub>3</sub>, 28.06.2007
2. V.P. Păun, Profesor Invitat, 27.06-11.07.2007, Ecole Nationale Supérieure d'Ingénieurs de Constructions Aéronautiques - ENSICA, Toulouse, Franta TEMA: "Analiza fractala a microfractografiilor SEM

## Rezultatelor științifice semnificative obținute în perioada 2005-2009

### Monografii, tratate, publicate în edituri naționale recunoscute

1. N. N. Pușcaș, Sisteme de comunicații optice, Editura Matrixrom, București, (2005), 329 pagini
2. Daniela Buzatu, Emil Petrescu, F.D. Buzatu, Optical and electrical methods applied to ternary protein solutions, editura Paideia, Bucuresti, ISBN (10) 973-8323-40-1, (13) 978-973-8323-40-7, aprilie 2006
3. Ileana Creanga, Analiza structurala si magnetica a unor compusi cu pamanturi rare, 153 pagini, Editura Matrix Rom, Bucuresti, 2007, ISBN 978-973-755-241-9
4. Niculae N. Pușcaș, Georgiana C. Vasile, *Senzori cu fibre și ghiduri optice de undă*, Editura PRINTECH, București, ISBN (13) 978-973-718-626-3, 203 pag., 2007.
5. Niculae N. Pușcaș, *Lasere*, ediția a II-a, revizuită și adăugită, colecția Academica, Editura TOP FORM, ISBN 978-973-7626-20-2, București, 2007.
6. M.Agop, P.D. Ioannou, P.E. Nica, V.-P. Paun, „*The Fractal and its Implications in the Material Science*”, ISBN: 978-960-92410-1-4, Athens University Press, Grecia, 2008 (214 pag.)

### Conferințe invitate/lucrări de sinteza prezentate la manifestări științifice naționale recunoscute (autori, titlu, conferința)

1. E. Smeu, H. Gnewuch, D.A. Jackson, A. Podoleanu, „Optical sensors for structural monitoring, using fibre Bragg gratings”, The14-th National Conference on Physics, Bucharest 2005, Romanian, 1-st Symposium on Technical Physics and Physical Engineering (TPPE-2005), 13-17 Sept. 2005, Bucharest
2. ICSAM (International Conference on Structural Analysis of Advanced Materials) Invited Lecture ( 09:30-10, September 4, 2007): V.-P. Păun, A. Hadar, „ *Box Counting Algorithm. Fractal Analysis Of Zircaloy-4 Fracture Surface*”, ICSAM 2007, September 2-6, 2007, Patras, Greece
3. Key-Note Lecture (15- 15:30, September 6, 2007) V.-P. Păun, M.A. Păun, A. Hadar, „*Polymer Transport Through A Nanopore*”, ICSAM 2007, September 2-6, 2007, Patras, Greece
4. N.V.Zamfir, S. Anghel, Gh.Căta-Danil, „*Correlations of Energy Ratios for Collective Nuclear Bands*“, Capture Gamma Ray Spectroscopy 13, 27-29 august 2008, Koln, Germania
5. N.V.Zamfir, S. Anghel, Gh.Căta-Danil, „*Structure features revealed from the two neutron separation energies*“, Nuclear Physics and Astrophysics, 25-30 june 2008, Cappadochia, Turkey.
6. D.Bucurescu, N.V.Zamfir, Gh.Căta-Danil, M.Ivașcu and N.Mărginean, „*Universality of Mallman correlations for nuclear band structures*” Nuclear Physics and Astrophysics, 25-30 june 2008, Cappadochia, Turkey.
7. M. Mihailescu, A.Preda, A. Sobetkii, E.Scarlat, L.Preda, „Quasi-periodic structure analysis by digital holography”, prezentată la Conferința Internațională ATOM'08, Constanța 27-30 august, 2008
8. S.S. Ciobanu, C. Negutu, M. Stafe, V. Pais, V. Stancalie, N.N. Puscas, *Spectroscopic studies and kinetic calculations of laser induced aluminu Plasma Physicsm plasma in air*, 35 th EUROPEAN PHYSICAL SOCIETY, Conference on Plasma Physics, Hersonissos, Crete, Greece, 9-13 June
9. G. C. Vasile, N. N. Puscas, *Measurement and evaluation of losses and group effective refractive index of Er<sup>3+</sup>-doped Ti:LiNbO<sub>3</sub> optical waveguides*, Book of Abstracts Int. Conf. CONDENSED MATTER PHYSICS CONFERENCE OF BALKAN COUNTRIES, CMPC BC2008, 26 – 28 May 2008, Mugla University / Mugla – TURKEY, 2008
10. V.-P. Paun, M.A. Paun, “On the polymers translocation through nanometer pores in the electric field”, Conference Information: 4th International Conference on Times of Polymers TOP and Composites, SEP 21-24, 2008 Ischia, ITALY
11. V.-P. Paun, “Linear polymers transport through nanometer pores under constant force”, 9th WSEAS International Conference on Mathematics and Computeres in Biology and Chemistry, JUN 24-26, 2008 Bucharest, ROMANIA
12. V.-P. Paun, C. Udriste, C. Patrascoiu, “On the Erosion Process Prediction of the Ductile Materials”, Proceedings of the 10th WSEAS International Conference on Mathematical Methods, Computational Techniques and Intelligent Systems (MAMECTIS '08) Corfu, Greece, October 26-28,
13. V.-P. Paun, “*Fractal Surface Analysis of the Zircaloy-4 SEM Micrographs by Time Series Method*”, XI-th Symposium on Surface Physics, June 30-July 4, 2008, Prague, Czech Republic
14. S.S. Ciobanu, C. Negutu, M. Stafe, V. Pais, V. Stancalie, N.N. Puscas, ‘Spectroscopic studies and kinetic calculations of laser induced aluminu plasma in air’, 35<sup>th</sup> Conference on Plasma Physics organized by European Physical Society, Hersonissos- Crete, Greece (June 9-13, 2008)
15. M. Mihailescu, E. Scarlat A. Preda, ‘Structured beam and wavelet analysis in digital holography’ Proc. EOS Topical Meeting on Advanced Imaging Techniques Jena, Germany, 10-12 June
16. I. R. Ivascu, R. Gumenyuk, S. Kivisto and Oleg G. Okhotnikov, ‘Characterization of Fiber Bragg Gratings Written in Photosensitive Photonic Crystal Fibers’, Physics Days 2009, Helsinki, March 2009
17. Alexandros Selimis, Giannis Bounos, Irina Paun, Gabriella Kecskeméti, Savas Georgiou, ‘The influence of the molecular weight on the nanosecond laser ablation of polymers, COLA 2009 The 10th International conference on laser ablation, Singapore, November 2009

### Articole relevante publicate in reviste cotate ISI

1. V.A. Popescu, „Determination of propagation constants in a  $Ti:LiNbO_3$  optical waveguide by using finite element and variational methods”, Optics and Communications, vol. 250, no. 4-6, p. 274-279, (2005)
- 2 V.A. Popescu, N. Pușcaș, „Determination of propagation constants in a bent  $Ti:LiNbO_3$  optical waveguide by using finite element method”, Optics and Communications, vol. 254, p. 197-202, (2005)
- 3 V.A. Popescu, "Improving the accuracy of WKB and Langer eigenvalues by higher - order variational method", Physics Letters A, Available Online 21 September (2005)
4. A. Gnewuch, E. Smeu, D.A. Jackson, A. Podoleanu, "Long range extensometer for civil structure monitoring using fibre Bragg gratings", Meas. Sci. Technol., **16**, 2005-2010, (2005)
5. Mereu B, Alexe M, Diestelhorst M. C.P. Cristescu, „Chaos supported stochastic resonance in a metal-ferroelectric-semiconductor heterostructure”, Phys. Rev. E **71**, 047201-5, (2005)
6. D. Bucurescu, D. Podolyak, C. Rusu, Gangelis Y. Zhang, Gh. Cata-Danil, M. Ivascu, N. Margieanu, N. Medina, „High-spin states in the nuclei  $^{91}Y$  and  $^{95}Nb$ ”, Physical Review **C71**, 034315 (2005)
7. J. Sauvage, F. Ibrahim, J. Genvey, A. Gizon, R. Beraud, Gh. Cata-Danil, F.le Blanc, J. Oms, “Low-spin states of doubly odd  $^{184}Au$ ”, European Journal of Physics, **A25**, 5-21(2005)
8. S. Georgescu, O. Toma, Ilie Ivanov, “Upconversion from the  $^4I_{13/2}$  and  $^4I_{11/2}$  in  $Er:YA$ ”, Journ. of Luminiscence, **114**, pp.43-52, (2005)
9. Gh. Cata-Danil - Phys. Rev. **C71**,034315 (2006)
10. Gh. Cata-Danil - Eur.Phys. J **A27**,301(2006)
11. Gh. Cata-Danil - Nucl. Instr. Meth **A566**(2006)448
12. Stan C, Cristescu CP, Severcan F, Dorohoi D Effect of Gramicidin S on the Dipalmitoylphosphatidylglycerol Thermotropic Phase Transition in DPPG/GS Systems: A Mathematical Approach Molecular Crystal and Liquid Crystals **457**: 27-41 OCT 2006
13. V. A. Popescu, Improving the accuracy of WKB and Langer eigenvalues by higher- order variational method, Physics Letters A **349** (2006) 220-223
14. V. A. Popescu and N. N. Puscas, Determination of propagation constants in a buried ion-exchanged glass optical waveguide by using finite element method, Journal of Optoelectronics and Advanced Materials **8** (2006) 1258-1261.
15. V. A. Popescu, Determination of propagation constants in a multiple quantum well optical waveguide, Optics Communications, In Press, Available online 9 October 2006
16. Mihai Stafe, Constantin Neaguțu, Ion M. Popescu, Theoretical determination of the ablation rate of metals in multiple-nanosecond laser pulses irradiation regime, Applied Surface Science, **253**(15), 6353-6358, (2007)
17. D.Buzatu, F.D.Buzatu, L.Paduano, R.Sartorio, „Diffusion coefficients in the ternary system water-chloroform-acetic acid at 25°C. Part 1”, Journal of Solutions Chemistry, Vol. 36 Nr. 11-12, 2007 ISSN: 0095-9782
18. A. Nenciu, "Dynamics of Bloch electrons in time dependent electric fields: bounds for inter-band transitions" J. Phys. A: Math. Theor. **40** (2007) 1-9
19. E.I. Scarlat, Cristina Stan, C.P. Cristescu, “Chaotic features in Romanian transition economy as reflected onto the currency exchange rate”, Chaos, Solitons and Fractals, **33** (2), p. 396-404, 2007.
20. E.I. Scarlat, Cristina Stan, C.P. Cristescu, “Self-similar characteristics of the currency exchange rate in an economy in transition”, Physica A, **379**, p. 188–198, 2007.
21. Stan, C., Cristescu, C.P., Agop, M. Golden mean relevance for chaos inhibition in a system of two coupled modified van der Pol oscillators (2007) Chaos, Solitons and Fractals, **31** (4), pp. 1035-1040.
22. V. A. Popescu, Determination of propagation constants in a multiple quantum well optical waveguide, Optics Communications **271**, 96-99 (2007)
23. M. Stafe, I. Vlădoiu, I.M. Popescu, Impact of the laser wavelength and fluence on the ablation rate of aluminium, Central European Journal of Physics, **6**(2), 327-331, (2008)
24. Stan C., Cristescu C.P., Alexandroaei, D., Agop, M. Stochastic resonance and vibrational resonance in an excitable system: The golden mean barrier (2008) *Chaos, Solitons and Fractals*, Article in Press.
25. D.Ghita, Gh.Căta-Danil, M.Ivașcu, N.V.Zamfir, L.Stroe, C.Mihai “ $^{124}Te$  and the  $E(5)$  critical point symmetry” International Journal of Modern Physics, **E17**, no.8, 1453-1466 (2008)
26. D.Bucurescu, N.V.Zamfir, Gh.Căta-Danil, M.Ivașcu, N.Mărginean et all. “Universality of Mallman correlations for nuclear band structures” Phys. Rev. **C78**,044322 (2008)
27. I.Căta-Danil D.Bucurescu, N.V.Zamfir, Gh.Căta-Danil, M.Ivașcu, N.Mărginean et all. “Astrophysical  $S$  factor for alpha capture on  $^{117}Sn$ ” Phys. Rev. **C78**, 035803 (2008)
28. M. Mihăilescu, A.M. Preda, D. Cojoc, E. Scarlat, L. Preda, “Diffraction pattern from a phyllotaxis type arrangement”, Optics and Lasers in Eng., **46** (nov. 2008) p. 802–809.
29. N. N. Puscas, Noise modelling of improved detection scheme for displacement optic sensors, Sensor Review, Vol. 28, No. 4, p. 317-320, (2008).

30. N. Semmar, M. Tebib, J. Tesar, N. N. Puscas, E. Amin-Chalhoub, *Thermodynamic transitions during KrF laser processing investigated by time-resolved pyro/reflectometry*, Applied Surface Science, (2008).
31. A. Radu, E.C. Niculescu, M. Cristea, *Laser dressing effects on the energy spectra in different shaped quantum wells under an applied electric field*, JOAM, vol.10, nr.10, p.2555, 2008
32. Emil Petrescu, Eleonora –Rodica Bena. *Influence of the magnetic and laser fields on the director structures of a ferrocholesteric liquid cristal in homeotropic cells*, Journal of Magnetism and Magnetic Materials, Vol. 320, Issues 3-4, 299-303, (2008), ISSN 0304-8853
33. H.D. Cornean, A. Nenciu, G. Nenciu: "Optimally localized Wannier functions for quasi one-dimensional nonperiodic insulators", J. Phys. A: Math. Theor. 41 (2008) 125202, IOP Publishing
34. M. Agop, V.-P. Paun, A. Harabagiu, "El Naschie's  $\phi$  theory and effects of nanoparticle clustering on the heat transport in nanofluids", Chaos, Solitons and Fractals 37, 1269–1278, 2008
35. M. Agop, P.E. Nica, P.D. Ioannou, A. Antici, and V.-P. Paun, "Fractal model of the atom and some properties of the matter through an extended model of scale relativity", European Physical Journal D, 49, 239-248, 2008
36. V. Enache, C. Popa, V.-P. Paun, M. Agop, "Reissner-Nordström-de Sitter type solution through a gauge theory of gravity", Chinese Physics Letters, vol 25, No 10, 3570-3573, 2008
37. Cristina Cârtoaje, Gabriela Iacobescu, Adrian Liviu Păun, *Magnetically Induced Freedericksz Transition and Relaxation Phenomena in Nematic Liquid Crystals Doped with Azo-Dye*, Journal of Magnetism and Magnetic Materials, Vol. 320, Issue 17, 2180-2184 (2008)
38. Irina-Alexandra Paun, Paraskevi Pouli,; Giannis Bounos, Savas Georgiou, Costas Fotakis, *The potential of UV femtosecond laser ablation for varnish removal in the restoration of painted works of art*, Applied Surface Science 254 (2008) 6875–6879
39. C.P. Cristescu, C. Stan, E. Scarlat, Dynamics of exchange rate time series and "The Chaos Game", Physica A; (ISSN: 0378-4371, ISI 1.430), 379, 188–198, 2009
40. C.P. Cristescu, Alexandroaie D, Agop M. C. Stan, Stochastic resonance and vibrational resonance in an excitable system: The golden mean barrier, Chaos Solitons and Fractals, 41 (2), pp. 727-734, 2009
41. C.P. Cristescu, C. Stan, Agop M, Mereu B., Feigenbaum scenario in the dynamics of a metal-oxide semiconductor heterostructure under harmonic perturbation. Golden mean criticality Chaos Solitons and Fractals, 40 (2), pp. 975-980, 2009
42. M. Mihailescu, A. M. Preda, A. Sobetkii, A.C. Petcu, Fractal-like diffractive arrangement with multiple focal points, Opto-Electronics Review, Springer 17(4), 330–337, 2009
43. C.Rusu, C.A.Ur, D. Bucurescu, A. Iordachescu, N.Marginean, Gh. Cata-Danil, (18 autori), In-beam gamma-ray spectroscopy and shell-model description of  $^{85,86}\text{Y}$  isotopes" Nuclear Physics A 818 (2009) 1-35
44. S. Pascu, Gh. Căta-Danil, D. Bucurescu, N. Mărginean, N. V. Zamfir, G. Graw, A. Gollwitzer, D. Hofer, and B. D. Valnion "Investigation of the  $^{128}\text{Ba}$  nucleus with the (p,t) reaction" Phys. Rev. C 79, 064323 (2009)
45. S. Pascu, Gh. Căta-Danil, D. Bucurescu, N. Mărginean, N. V. Zamfir, G. Graw, A. Gollwitzer, D. Hofer, and B. D. Valnion "Structure investigation with the (p, t) reaction on  $^{132,134}\text{Ba}$  nuclei, Phys Rev C 81, 014304 (2009)
46. Vadim A Babkin, Gh. Căta-Danil, Viacheslav M. Golovatyuk, Aleksandr G. Molokanov, Mihaela Paraipan, Gennady N. Timoshenko, SOBP forming for carbon therapy, Central European Journal of Physics, (2009)
47. Alexandru Mihăilescu, Gh. Căta-Danil Gamma ray production in the  $^{170}\text{Er}$  (p,n)  $^{170}\text{Tm}$  nuclear reaction Central European Journal of Physics, (2009)
48. I. Vlădoiu, M. Stafe, C. Neguțu, I.M. Popescu, Influence of the pulses number and fluence of a nanosecond laser on the ablation rate of metals, semiconductors and dielectrics, European Physical Journal-Applied Physics 47 (2009), 30702-p<sub>1</sub> ÷ 30702-p<sub>6</sub>, (2009)
49. E.C. Niculescu, A. Radu, M. Stafe, 'Laser effects on the donor states in V-shaped and inverse V-shaped quantum wells', Superlattices and Microstructures 46 (2009), pp. 443-450
50. Irina-Alexandra Paun, Alexandros Selimis, Giannis Bounos, Gabriella Kecskemeti, Savas Georgiou, Nanosecond and femtosecond UV laser ablation of polymers: Influence of molecular weight, Applied Surface Science 255 (2009) 9856–9860, Editor Springer
51. N. Semmar, M. Tebib, J. Tesar, N. N. Puscas, E. Amin-Chalhoub, Thermodynamic transitions during KrF laser processing investigated by time-resolved pyro/reflectometry, Applied Surface Science, Vol. 255, p. 5549–5552, (2009).
52. L. A. Puscas, R. Galatus, N. N. Puscas, Theoretical Study of the Statistical Properties of Single and Double Pass M-Mode Er-Ti:LiNbO<sub>3</sub> Straight Waveguide Amplifiers, Fiber and Integrated Optics, Vol. 28, No. 2, p. 170-178, (2009).
53. Emil Petrescu, Eleonora-Rodica Bena, Surface anchoring energy and the Freedericksz transitions in ferromagnetics Journal of Magnetism and Magnetic Materials 321 (2009) 2757–2762

**Granturi de cercetare/proiecte castigate prin competitie internationala (PC5, PC6, NATO etc.)**

1 Gheorghe Cata-Danil, proiect FP6 – EWON

2. Contract nr. EVG1-CT-2002-00062, „Novel Optical Devices and Techniques for Seismic Activity Detection and Measurements,, Program Framework V, European Commission Research, Directorate General, Directorate I-Preserving the Ecosystem: environmental research 2002-2006 Director de proiect Niculae Puşcaş