

L I S T A

lucrărilor științifice în domeniul disciplinelor din postul didactic

A. Teza de doctorat

Denumirea tezei, *Cercetări privind interacția radiației laser cu substanța: durificarea suprafeței materialului, analiza și controlul în timp real a adâncimii de pătrundere a radiației în materialele metalice*

Domeniul tezei, *Inginerie Electronică și telecomunicații, Domeniul Fizică Tehnică*

Instituația la care a fost obținută, *Universitatea Politehnică din București*

Anul 2006

B. Cărți și capitole în cărți

1. Popescu, I. M., Cone, G., **Neguțu, C.**, Stafe, M., *Fizică – Fizică moleculară și căldură (Termodinamică și teoria cinetico - moleculară) volumul I și volumul II*, Editura Politehnica Press, București, (2010),

2. **Neguțu C.**, *Fizică - Introducere în mecanica cuantică*, Politehnica Press București, (2010).

3. Popescu I. M., **Neguțu C.**, Stafe M., *Fizică Introducere în optica neliniară*, Politehnica Press București, (2016).

4. Colectiv *Teste de fizică 2018*, Politehnica Press, București, (2018),

C. Lucrări indexate ISI/BDI publicate

C1. Articole publicate în reviste de specialitate (ISI)

1. N. N. Puscas, S. S. Ciobanu, **C. Negutu**, M. Stafe, 'Modelling of the Er³⁺-doped Ti:LiNbO₃ optical waveguide couplers', 2009 Proceedings of SPIE, The International Society for Optical Engineering 7426, art. pp. 74690W-74690W-6 (2010).

2. Mihai Stafe, Ionut Vladoiu, **Constantin Negutu**, Ion M. Popescu, *Experimental investigation of the laser-drilled holes in aluminium*, University "Politehnica" of Bucharest- Scientific Bulletin, Series A: Applied Mathematics and Physics Vol. 71 No. 4, pp.73-80, (2009).

3. M. Stafe, **C. Negutu**, N. N. Puscas, I. M. Popescu, *Pulsed laser ablation of solids*, Rom. Rep. Phys. Vol. 62 No. 4, pp. 758 – 770, (2010).

4. Stafe, M., **Neguțu, C.**, Vladoiu, I., Ciobanu, S.S., Savu, B., Puscas, N.N., *Spectroscopic study of the plasmas generated by nanosecond laser ablation of Er³⁺-doped Ti:LiNbO₃ targets*, Proceedings of SPIE, The International Society for Optical Engineering 7469, art. 746907, (2010)

5. **Neguțu, C.**, Vladoiu, I., Stafe, M., Rizea A., Puscas N. N. Popescu I. M. Effect of pulse number on the ablation rate of metals in PLA multi-pulse regime, Proceedings of SPIE, The International Society for Optical Engineering 7821, art. 78210G, (2010)

6. M. Stafe, **C. Negutu**, A. Ducariu, N. N. Puscas, *A spectroscopic study of the ablation plasma produced on Er³⁺-doped Ti:LiNbO₃*, University "Politehnica" of Bucharest- Scientific Bulletin, Series A: Applied Mathematics and Physics vol. 73 (2), pp.147-154, (2011).

7. **Neguțu, C.**, Stafe, M., Ciobanu S. S., Puscas N. N., *Characterization of the laser-ablation plasmas using optical spectroscopy and opto-acoustic methods*, Journal of Optoelectronics and Advanced Materials, Vol. 13, No. 7, p. 815-823, (2011)

8. Stafe, M., **Negutu, C.**, *Real-time monitoring of the pulsed laser ablation of metals using ablation plasma spectroscopy*, Plasma Chemistry and Plasma Processing, 2012, Vol. 32, No. 3, p 643-653, (2012)

9. Vasile, G.C., Savastru, R., Popescu, A.A., Stafe, M., Savastru, D., Dontu, S., Baschir, L., Sava, V., Chiricuta, B., Mihailescu, M., **Negutu, C.**, Puscas, N.N., *Modelling the 2D plasmonic structures with active chalcogenide glass layer*, Romanian Reports in Physics, Volume 65, Issue 3,, Pages 1012-1018 (2013)

10. Popescu, A.A., Mihailescu, M., **Negutu, C.**, Baschir, L., Stafe, M., Vasile, G.C., Savastru, D., Iovu, M.S., Verlan, V.I., Bordian, O.T., Moldovan, A., Enachescu, M., Puscas, N.N., *Preparation of chalcogenide bulk and thin films and their characterization using optical methods*, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics Volume 76, Issue 3, Pages 211-218, (2014)

11. Moldovan, A., Enăchescu, M., Popescu, A.A., Mihailescu, M., **Negutu, C.**, Baschir, L., Vasile, G.C., Savastru, D., Iovu, M.S., Verlan, V.I., Bordian, O.T., Vasile, I.M., Pușcaș, N.N., *Characterization of As₂S₃ thin surface films using sem and afm methods*, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics, Volume 76, Issue 2, Pages 215-222, (2014)

12. Stafe, M., **Negutu, C.**, Ducariu, A., Pulsed laser ablated craters on aluminium in gaseous and aqueous environments, Romanian Reports in Physics, Vol. 64 (1), p. 155-162, (2012)

13. Simona Donțu, Aurelian A. Popescu, Dan Savastru, Vasile Sava, Bogdan Chiricuță, Mona Mihailescu, **Constantin Negutu**, Georgiana C. Vasile, Niculae N. Pușcaș, Advanced methods of characterisation of the thin chalcogenide films, passive and active optical waveguides,, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics 01/2013; 75(1):163-180.(2013)

14. Georgiana C. Vasile, A. A. Popescu, M. Stafe, S.A. Koziukhin, D. Savastru, Simona Dontu, L. Baschir, V. Sava, B. Chiricuta, M. Mihailescu, **C. Negutu**, N. N. Puscas, Plasmonic waveguides features correlated with surface plasmon resonance performed with a low refractive index prism, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics Vol. 75, No. 4, (2013)

15. Stafe, M., Vasile, G. C., Popescu, A.A., Savastru, D., Baschir, L., Mihailescu, M., **Negutu, C.**, Puscas, N.N., Numerical simulations of surface plasmon resonances in metal-chalcogenide waveguides, Proceedings of SPIE, Vol. 9258, Article Number: 92582H, (2015).

16. A. A. Popescu, L. Baschir, D. Savastru, M. Stafe, **C. Negutu**, V. Savu, Georgiana Vasile, Mona Mihailescu, Victor V. Verlan, Olga Bordian, N. N. Puscas, Surface plasmon resonance and photoinduced dichroism in amorphous chalcogenide As₂S₃ films for 2D optical memory, Romanian Reports in Physics, Vol. 67, Iss. 4, p. 1421-1430, (2015)

17. Aurelian A. Popescu, Laurențiu Baschir, Dan Savastru, Mihai Stafe, Georgiana C. Vasile, Sorin Miclos, **Constantin Negutu**, Mona Mihailescu, Niculae N. Pușcaș, Analytical considerations and numerical simulations for surface plasmon resonance in four layers plasmonic structures which contain high refractive index waveguide, Scientific Bulletin, Series A: Applied Mathematics and Physics, ISSN 1223-7027, Vol. 77, Iss. 4, p. 233 – 244, (2015)

18. **Negutu, C.**, Vasile, GC, Puscas, NN, Analysis of optimum conditions for third order harmonic generation, Scientific Bulletin, Series A: Applied Mathematics and Physics, ISSN 1223-7027, Vol. 77, Iss. 4, p. 303-306, (2015)

19. Stafe, M, **Negutu, C.**, Vasile, GC, Puscas, NN, Analysis of optimum conditions for high order harmonic generation in gaseous medias, Scientific Bulletin, Series A: Applied Mathematics and Physics, ISSN 1223-7027, Vol. 77, Iss. 1, p. 187-202 (2015)

20. M. Stafe, G. C. Vasile, A. Ducariu, M. Mihailescu, **C. Negutu**, N.N. Pușcaș, Optical bistability with a plasmonic chalcogen-based waveguide structure, University “Politehnica” of Bucharest- Scientific Bulletin, Series A: Applied Mathematics and Physics, Vol. 78, Iss. 4, p. 321 – 328, (2016)

21. Stafe, M.; Vasile, GC.; **Negutu, C.** ; Popescu, AA. ; Baschir, L. ; Mihailescu, M. ; Puscas, NN., ANALYSIS OF THE OPTICAL ABSORPTION AND PHOTOINDUCED BIREFRINGENCE

IN As₂S₃ CHALCOGENIDE FILMS, University "Politehnica" of Bucharest- Scientific Bulletin, Series A: Applied Mathematics and Physics, Vol. 78, Iss. 1, p. 243 – 256, (2016)

22. Stafe, M; Popescu, AA; Savastru, **Negutu, C**; Vasile, G; Mihailescu, M; Ducariu, A; Savu, V; Tenciu, D; Miclos, S; Baschir, L; Verlan, VV; Bordian, O; Puscas, NN, . Optical hysteresis in SPR structures with amorphous As₂S₃ film under low-power laser irradiation, JOURNAL OF PHYSICS D-APPLIED PHYSICS, Volume: 51, Issue: 12, Article Number: 125106, (2018)

23. Stafe, M; **Negutu, C**; Puscas, NN, Third harmonic from air breakdown plasma induced by nanosecond laser pulses , APPLIED PHYSICS B-LASERS AND OPTICS, Volume: 124, Issue: 6, Article Number: 106 , (2018),

24. Popescu, A.A., Stafe, M., Savastru, D., Baschir, L., **Negutu, C.**, Puscas, N., Study of surface plasmon resonance structure with as₂s₃ amorphous chalcogenide compound waveguide, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics Open Access, Volume 81, Issue 3, Pages 253-264, (2019).

25. Vasile, GC, ; Stafe, M., ; Popescu, A.; Savastru, D.;Tenciu, D.; **Negutu, C.**; Puscas, NN., Ge-Sb-Se AMORPHOUS CHALCOGENIDE BASED PLASMONIC PLANAR WAVEGUIDES FOR OPTICAL MEMORIES APPLICATIONS, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics, Volume 83, Issue 4, Pages 275-284, (2021).

26. Stafe, M; **Negutu, C** ; Vasile, GC ; Puscas, NN.,THEORETICAL AND EXPERIMENTAL STUDY ON GEOMETRY RELATED PHASE-MATCHING CONDITION FOR THIRD HARMONIC GENERATION, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics, Volume 84, Issue 2, Pages 163-174, (2022).

27. Popescu, A ,; Savastru, D,; Vasile, GC,; Stafe, M , Tenciu, D,; **Negutu, C,**; Miclos, S,; Puscas, NN ., AMORPHOUS ARSENIC SELENIDE FILMS FOR OPTICAL MEMORY BASED ON SURFACE PLASMON RESONANCE, UPB Scientific Bulletin, Series A: Applied Mathematics and Physics, Volume 84, Issue 3, Pages 149-156, (2022).

28. Marcu, A ; Stafe, M ; Groza, A ; Serbanescu, M ; Ungureanu, R ; Cojocaru, G ; Mihalcea, B ; Ganciu M ; **Negutu, C** ; Giubega, G ,; Puscas, N , Correlation of Laser-Accelerated Electron Energy with Electromagnetic Pulse Emission from Thin Metallic Targets, APPLIED SCIENCES-BASEL, Volume 15, Issue 1, DOI 10.3390/app15010029,(2025)

29. Niculescu, E; Gearba,; Cone, G; **Negutu, C**, Magnetic field dependence of the binding energy of shallow donors in GaAs quantum-well wires, SUPERLATTICES AND MICROSTRUCTURES, Volume 29, Issue 5, Page 319-328, DOI10.1006/spmi.2000.0895, (2001)

30. Stafe, M; **Negutu, C** ; Popescu, IA , Theoretical determination of the ablation rate of metals in multiple-nano second laser pulses irradiation regime, APPLIED SURFACE SCIENCE, Volume 253, Issue 15, Page 6353-6358, Special Issue, DOI10.1016/j.apsusc.2007.01.060 (2007)

31. Vladoiu, I; Stafe, M; **Negutu, C**; Popescu, IM, The dependence of the ablation rate of metals on nanosecond laser fluence and wavelength, JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, Volume 10, Issue 12, Page 3177-3181, (2008)

32. Stafe, M; Vladoiu, I; **Negutu, C**; Popescu, IM, Experimental investigation of the nanosecond laser ablation rate of aluminum, ROMANIAN REPORTS IN PHYSICS, Volume 60, Issue 3, Page789-796, (2008)

33. Stafe, M; **Negutu, C**; Popescu, IM, Real-time determination and control of the laser-drilled holes depth, SHOCK WAVES, Volume 14, Issue 1-2, Page123-126, DOI10.1007/s00193-004-0240-7, (2005)

34. Vladoiu, I; Stafe, M; **Negutu, C**; Popescu, IM, NANOPULSED ABLATION RATE OF METALS DEPENDENCE ON THE LASER FLUENCE AND WAVELENGTH IN ATMOSPHERIC AIR, UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN-SERIES A-APPLIED MATHEMATICS AND PHYSICS, Volume 70, Issue 4, Page 119-126 (2008)

35. Vladiu, I; Stafe, M; **Negutu, C**; Popescu, IM, Influence of the pulse number and fluence of a nanosecond laser on the ablation rate of metals, semiconductors and dielectrics, EUROPEAN PHYSICAL JOURNAL-APPLIED PHYSICS, Volume 47, Issue 3. DOI10.1051/epjap/2009100 (2009)
36. Stafe, M; **Negutu, C**; Ducariu, AN; Puscas, NN, A spectroscopic and theoretical study of the laser ablation rate of Al, ADVANCED TOPICS IN OPTOELECTRONICS, MICROELECTRONICS, AND NANOTECHNOLOGIES VI, Volume 8411, DOI10.1117/12.973753 (2012)
37. Stafe, M; **Negutu, C**; Popescu, IM, Combined experimental and theoretical investigation of multiple-nanosecond laser ablation of metals, JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, Volume 8I, ssue 3, Page 1180-1186 (2006)
38. **Negutu, C**; Stafe, M; Ciobanu, SS; Vladiu, I ; Puscas, NN , SPECTROSCOPIC STUDY OF THE PLASMAS GENERATED BY NANOSECOND LASER ABLATION OF AL AND CU TARGETS, UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN-SERIES A-APPLIED MATHEMATICS AND PHYSICS, Volume 70, Issue 3, Page 85-91, (2008)

**D. Lucrări publicate în reviste și volume de conferințe cu referenți
(neindexate)**

- Selecție cu maximum 20 lucrări în volume de conferințe

1. **C. Negutu**, I. Vladiu, M. Stafe, A. Rizea, N. N. Puscas, I. M. Popescu, *Effect of pulse number on the ablation rate of metals in PLA multi-pulse regime*, ATOM N (2010).
2. M. Stafe, **C. Negutu**, S. S. Ciobanu, N. N. Puscas, *Laser-induced breakdown spectroscopy of the Er^{3+} -doped $Ti:LiNbO_3$ target irradiated with IR, VIS and UV nanosecond pulses*, ATOM N (2010).
3. Stafe, M., **Negutu, C.**, Ducariu, A., Puscas, N., N., *A spectroscopic and theoretical study of the laser ablation rate of Al*, ATOM-N, (2012)

E. Brevete obținute în întreaga activitate

1. Optical memory cell and method for manufacturing cell comprises a glass prism on whose base a metal film and a film of amorphous chalcogenide material are deposited, **Patent Number(s):**RO132008-A2, **Inventor(s):** POPESCU A, PUSCAS N, SAVASTRU D, BASCHIR L, NEGUTU C, STAFE M, SAVU V, TENCIU D, VASILE G, MIHAILESCU M, **Patent Assignee Name(s) and Code(s):** INOE 2000 INST NAT CERC DEZVOLTARE OPTOE (INOE-Non-standard), UNIV POLITEHNICA DIN BUCURESTI (UYPO-Non-standard) , **Derwent Primary Accession Number:** 2017-441182, (2017)
2. Method and device for optical modulation of light has a monochromatic light beam, which is to be modulated, through a prism which has the role of reducing the beam incidence angle, **Patent Number(s):**RO131293-A2, **Inventor(s):** PUSCAS N, POPESCU A, MICLOS S, SAVASTRU D, STAFE M, NEGUTU C, BASCHIR L, SAVU V, TAUTAN M, VASILE G, MIHAILESCU M **Patent Assignee Name(s) and Code(s):** INOE 2000 INST NAT CERC DEZVOLTARE OPTOE (INOE-Non-standard), UNIV POLITEHNICA DIN BUCURESTI (UYPO-Non-standard) **Derwent Primary Accession Number:** 2016-52539, (2016)

Data:

29.09.2025

Semnătura:

