

A N E X A 4 . 1Nume Prenume: **PAUN IRINA ALEXANDRA**Gradul didactic: **PROFESOR**Instituția unde este titular: **Universitatea Nationala de Știință și Tehnologie POLITEHNICA București**Facultatea: **Facultatea de Științe Aplicate**Departamentul: **Departamentul de Fizica****L I S T A****lucrărilor științifice în domeniul disciplinelor din postul didactic****A. Teza de doctorat**

1. Teza de doctorat cu titlul „Studii asupra proprietăților materialelor utilizând interacția radiației laser cu substanța”, susținută în anul 2009 în cadrul Facultății de Științe Aplicate, Universitatea Politehnica din București. Diplomă de Doctor în domeniul Științe Exacte, emisă de Universitatea Politehnica București (2009) (Diploma seria G nr 0000074).

B. Cărți și capitole în cărți publicate în ultimii 10 ani

1. M. Mihailescu, **I.A. Paun**, L. A-M. Nita, "Fizică și Biofizică Probleme și Aplicații", Politehnica Press ISBN 978-606-515-953-2 (2021).
2. Mihailescu, M.; **Păun I.A.**; "Modelarea fenomenelor din biofizică prin soft specializat: îndrumar de laborator"; București, Politehnica Press 177 pag. ISBN 978-606-515-703-3 (2016).
3. F. Stokker-Cheregi, A. Palla-Papavlu, **I.A. Paun**, T Lippert and M. Dinescu, Laser Structuring of Soft Materials: Laser-Induced Forward Transfer and Two-Photon Polymerization, Chapter 9 in Advances in the Application of lasers in Materials Science, Springer Series in Materials Science 274 © Springer Nature Switzerland, P. M. Ossi (ed.) ISBN978-3-319-96844-5 (2018).
4. M. Mihailescu, E.I. Scarlat, **I.A. Păun**, I.Grigorescu, R. Radu, O.T. Nedelcu Fractal descriptor on holographic images of cervical cells, Computational Vision and Medical Image Processing, Editors J. M. Tavares, R. M. Natal Jorge, Taylor and Francis Group, ISBN 978-1-138-02926-2 255-260 (2015).

C. Lucrări indexate ISI/BDI publicate în ultimii 10 ani**C1. Lucrari indexate ISI (cu precizare WOS) in ordine descrescatoare a datei publicarii**

1. Pleava, A.M.; Negoita, .RD. ; Ilisanu, M.A.; Mihailescu, M.; Morega, M. ; Calin, VL. ; Scarlat, EN.; **Paun, I.A.**, Holographic Microscopy of Cell Compartments to Build Realistic Models for Electric Field Simulations, ROMANIAN REPORTS IN PHYSICS 75(7) 602 WOS:000951079200001 (2023)
2. Calin, B.S.; **Paun, IA** A Review on Stimuli-Actuated 3D Micro/Nanostructures for Tissue Engineering and the Potential of Laser-Direct Writing via Two-Photon Polymerization for Structure Fabrication INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 23 1240 DOI10.3390/ijms232214270 WOS:000887428700001 (2022)"
3. **Paun I.A.**, Calin BS, Popescu RC, Tanasa E, Moldovan A Laser Direct Writing of Dual-Scale 3D Structures for Cell Repelling at High Cellular Density INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 3(6) 3247 DOI10.3390/ijms2306 WOS:000775310000001 (2022)"
4. **Paun I. A.**; Calin B. S.; Mustaciosu, C.C.; Tanasa E.; Moldovan A.; Niemczyk A.; Dinescu M. Laser Direct Writing via Two-Photon Polymerization of 3D Hierarchical Structures with Cells-Antiadhensive Properties INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 22(11) DOI 10.3390/ijms22115653 WOS 000660205600001 (2021)
5. Scarlat E.; Mihailescu M.; **Paun I.A.**; Identification of independent modes in two inputs free space communications system OPTICS AND LASERS IN ENGINEERING 136 DOI 10.1016/j.optlaseng.2020.106320 WOS 000583900900002 (2021)
6. **Paun I. A.**; Mustaciosu C.C.; Mihailescu M.; Calin B.S.; Sandu A.M. Magnetically-driven 2D cells organization on superparamagnetic micromagnets fabricated by laser direct writing SCIENTIFIC REPORTS 10(1) DOI 10.1038/s41598-020-73414-4 WOS 000577151500013 (2020)
7. **Paun I.A.**; Mustaciosu C.C.; Popescu R.C.; Calin B.S.; Mihailescu M. Collagen/Chitosan Functionalization of Complex 3D Structures Fabricated by Laser Direct Writing via Two-Photon Polymerization for Enhanced Osteogenesis INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 21(17) DOI 10.3390/ijms21176426 WOS 000570323200001 (2020)
8. Stochioiu A.; Luculescu C.R.; **Paun I.A.**; Jinga L.I.; Stochioiu C. Fabrication and Characterization of Biplasmonic Substrates Obtained by Picosecond Laser Pulses APPLIED SCIENCES-BASEL 10(17) DOI 10.3390/app10175938 WOS 000569785700001 (2020)
9. Gatin E.; Nagy P.; **Paun I.A.**; Dubok O.; Bucur V; Windisch P. Raman Spectroscopy: Application in Periodontal and Oral Regenerative Surgery for Bone Evaluation IRBM 40(5) 279-285 DOI 10.1016/j.irbm.2019.05.002 WOS 000492090000004 (2019)
10. **Paun I.A.**; Calin B.S.; Mustaciosu C.C.; Mihailescu M.; Moldovan A.; Crisan O.; Leca A.; Luculescu C.R. 3D Superparamagnetic Scaffolds for Bone Mineralization under Static Magnetic Field Stimulation MATERIALS 12(17) DOI 10.3390/ma12172834 WOS 000488880300187 (2019)
11. **Paun I.A.**; Calin B.S; Mustaciosu C.C.; Mihailescu M.; Popovici C.L.; Luculescu C.R. Osteogenic cells differentiation on topological surfaces under ultrasound stimulation JOURNAL OF

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12. Scarlat E. I.; Mihailescu M.; Mihale N.; **Paun I.A.**; Calin B. S.; Luculescu C. R.; Tranca D. Adaptive phase steps for diffractive phase elements using two-photon polymerization JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS 21(3-4) 153-162 WOS 000472534300001 (2019)
 13. Luculescu C.R.; Acasandrei A.M.; Mustaciosu C.C.; Zamfirescu M.; Dinescu M.; Calin B.S.; Popescu A.; Chioibas D.; Cristian D; **Paun I.A.** Electrically responsive microstructured polypyrrole-polyurethane composites for stimulated osteogenesis APPLIED SURFACE SCIENCE 433 166-176 DOI 10.1016/j.apsusc.2017.09.149 WOS 000418883800022 (2018)
 14. **Paun I.A.**; Popescu R.C.; Calin B.S.; Mustaciosu C.C.; Dinescu M.; Luculescu C.R. 3D Biomimetic Magnetic Structures for Static Magnetic Field Stimulation of Osteogenesis INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 19(2) DOI 10.3390/ijms19020495 WOS 000427527400179 (2018)
 15. **Paun I.A.**; Popescu R.C.; Mustaciosu C.C.; Zamfirescu M.; Calin B.S.; Mihailescu M.; Dinescu M.; Popescu A., Chioibas D.; Sopronyi M.; Luculescu C.R. Laser-direct writing by two-photon polymerization of 3D honeycomb-like structures for bone regeneration BIOFABRICATION (10)2 DOI 10.1088/1758-5090/aaa718 WOS 000424236400002 (2018)
 16. Popescu C.; Cristea D.; Bită B.; Cristescu R.; Craciun., Chioibas D.G.; Luculescu C.R.; **Paun I.A.**; Duta L.; Popescu A.C. An Experimental Study on Nano-Carbon Films as an Anti-Wear Protection for Drilling Tools COATINGS 7(12) DOI 10.3390/coatings7120228 WOS 000419197100021 (2017)
 17. **Paun I.A.**; Zamfirescu M.; Luculescu C.R.; Acasandrei A.M.; Mustaciosu C.C.; Mihailescu M.; Dinescu M. Electrically responsive microreservoirs for controllable delivery of dexamethasone in bone tissue engineering APPLIED SURFACE SCIENCE 392 321-331 DOI 10.1016/j.apsusc.2016.09.027 WOS 000389088300037 (2017)
 18. Chioibas D.; Sima A.; Dobrea C.; **Paun I.A.**; Popescu, A.; Luculescu C.R.; Tiseanu I.; Puscas N. Non-destructive optical analysis of porosity content during Yt: YAG laser welding of Al alloy 1050 using x-Ray micro-tomography UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN-SERIES A-APPLIED MATHEMATICS AND PHYSICS 79(4) 307-316 WOS 000419176800027 (2017)
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 21. Mihailescu M.; **Paun I. A.**; Zamfirescu, M.; Luculescu C. R.; Acasandrei A. M.; Dinescu M. Laser-assisted fabrication and non-invasive imaging of 3D cell-seeding constructs for bone tissue

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23. **Paun I.A.**; Acasandrei A.M.; Luculescu C.R.; Mustaciosu C.C.; Ion V.; Mihailescu M.; Vasile E.; Dinescu M. MAPLE deposition of polypyrrole-based composite layers for bone regeneration APPLIED SURFACE SCIENCE 357 975-984 DOI 10.1016/j.apsusc.2015.09.083 WOS 000366216900128 (2015)
24. **Paun I.A.**; Stokker-Cheregi F.; Luculescu C.R.; Acasandrei A.M.; Ion V.; Zamfirescu M.; Mustaciosu C.C.; Mihailescu M.; Dinescu M. Electrically stimulated osteogenesis on Ti-PPy/PLGA constructs prepared by laser-assisted processes MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS 55 61-69 DOI 10.1016/j.msec.2015.05.059 WOS 000358809500008 (2015)
25. **Paun I.A.**; Zamfirescu M.; Mihailescu M.; Luculescu C.R.; Mustaciosu C.C.; Dorobantu I.; Calenic B.; Dinescu M. Laser micro-patterning of biodegradable polymer blends for tissue engineering JOURNAL OF MATERIALS SCIENCE 50(2) 923-936 DOI 10.1007/s10853-014-8652-y WOS 000345407900043 (2015)
26. Calenic B.; **Paun I.A.**; van Staden R. I.; Didilescu A.; Petre A.; Dinescu M.; Greabu M. Novel method for proliferation of oral keratinocyte stem cells JOURNAL OF PERIODONTAL RESEARCH 49(6) 711-718 DOI 10.1111/jre.12153 WOS 000345152300005 (2014)
27. Mihailescu M.; Popescu R. C.; Matei A.; Acasandrei A.M.; **Paun I. A.**; Dinescu M. Investigation of osteoblast cells behavior in polymeric 3D micropatterned scaffolds using digital holographic microscopy APPLIED OPTICS 53(22) 4850-4858 DOI 10.1364/AO.53.004850 WOS 000340824800018 (2014)

C2. Lucrari indexate BDI (cu precizare ISSN/ISBN publicatie) in ordine descrescatoare a datei publicarii

1. Sandu, AM; Ungureanu, MA; Morega, M; Calin, VL; Moiescu, MG; **PAUN, IA**; Mihailescu, M *Realistic models of cultured cells for electroporation simulations starting from phase images* ADVANCED TOPICS IN OPTOELECTRONICS, MICROELECTRONICS AND NANOTECHNOLOGIES X Edited by: Vladescu, M; Tamas, R; Cristea I Proceedings of SPIE Volume 1718 Article Number117180W (2020) DOI: 10.1117/12.2571092

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2. Mihailescu, M; **PAUN, IA**; Scarlat, EI; Mihale, N; Tranca, D; Calin, BS; Luculescu, CR *Optimal Unequal Phase Steps for Laser Direct Writing in DPE Manufacturing*, HOLOGRAPHY, DIFFRACTIVE OPTICS, AND APPLICATIONS VIII Proceedings of SPIE Volume10818 Article Number UNSP 108181V (2018)
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3. M. Mihăilescu, N. Mihale, R. C. Popescu, A. Acasandrei, **PAUN, I. A.** M. Dinescu, E. Scarlat, *Focusing criterion in digital holographic microscopy image reconstruction*, Proceedings of SPIE Volume9258 Article Number92580U (2015)
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4. M. Mihăilescu.; Matei A.; Acasandrei A.; Popescu, R. C.; **PAUN, I. A.**; Dinescu, M., *MG63 cells behavior on rough Polypyrrole scaffolds investigated by digital holographic microscopy*, Proceedings of SPIE Volume 9204 Article Number 92040N Edited by Furlong, C; Gorecki, C; DeGroot, PJ; Novak, EL DOI: 10.1117/12.2062016 Conference on Interferometry XVII - Advanced Applications San Diego, Aug 18-20, 2014
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D. Lucrări publicate în ultimii 10 anii în reviste și volume de conferințe cu referenți (neindexate BDI)

- Reviste (neindexate BDI)



E. Brevete obținute în întreaga activitate

1. *Brevet de invenție* Mihailescu M , Scarlat EN, Nicolae M, **PAUN IA**, Luculescu CR, Calin BS, Sistem de comunicații optice în spațiul liber cu arhitectură ramificată folosind lame cu fază elicoidală și holograme pentru multiplexarea modurilor, OSIM nr. A00890 din 12.11.2018

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Semnătura: