

INFORMATII PERSONALE

Cristina Cirtoaje

 Universitatea Politehnica din București


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Nationalitate Romana

 EXPERIENȚA
PROFESIONALĂ

2022- prezent	Director, Departamentul de Fizică
2020-2022	Prodecan, Facultatea de Științe Aplicate, Universitatea Politehnica din București,
2019 - prezent	Septembrie 2019 Conferențiar universitar Departamentul de Fizică Universitatea Politehnica din București, Facultatea de Științe Aplicate,
2012 - 2019	Șef lucrări Departamentul de Fizică Universitatea Politehnica din București, Facultatea de Științe Aplicate,
2006 - 2012	Asistent universitar Departamentul de Fizică, Universitatea Politehnica din București
2002- 2006	Preparator universitar Departamentul de Fizică, Universitatea Politehnica din București Atribuții: instruirea studenților în fizica generală și discipline de specialitate (Biofizica alimentara), cercetare științifică Sector de activitate Academic, învățământ universitar, cercetare științifică

EDUCAȚIE

2002 - 2010	Doctor în fizică , Domenii aprofundate <ul style="list-style-type: none"> ▪ Fizica cristalelor lichide ▪ Proprietățile magneto-optice ale cristalelor lichide ▪ Amestecuri de cristale lichide cu nanoparticule 	Universitatea Politehnica din București
2001 - 2002	Master in Fizică Cursuri semnificative <ul style="list-style-type: none"> ▪ Semiconductori organici ▪ Metrologie ▪ Metrologie cuantică ▪ Sisteme cu microprocesoare 	Universitatea din Bucuresti, Facultatea de Fizică
1996 - 2001	Inginer diplomat, domeniul Metrologie-Defectoscopie Cursuri semnificative <ul style="list-style-type: none"> ▪ Fizică fundamentală și modernă ▪ Matematică ▪ Metrologie ▪ Metode de control nedistructiv ▪ Nanomateriale electronice organice. 	Universitatea din Bucuresti, Facultatea de Fizică



**ABILITĂȚI
PERSONALE**

Limba maternă Romanian

Alte limbi străine cunoscute)	INTELEGERE		VORBIRE		SCRIERE
	Ascultare	Citire	Conversatie	Discurs oral	Exprimare scrisă
Engleza	C1	C2	C1	C1	C1
Rusa	A1	B1	A1	A1	A1

 Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)
Abilități de comunicare ▪ colaborare buna cu colegii în timpul activității didactice și in cadrul proiectelor de cercetare

Competențe și aptitudini organizatorice ▪ - experiență în coordonarea activitatii grupelor de studenti in orele de aplicatii teoretice sau practice și in diferite proiecte de cercetare , coordonarea unor grupuri de cercetare in diferite proiecte

Competențe și aptitudini tehnice ▪ - utilizarea dispozitivelor electrice, optice, magnetice utilizate in practica studenteasca si in laboratoarele de cercetare, asamblarea și punerea in funcțiune a unor dispozitive de laborator

Competențe digitale
AUTOEVALUARE

Procesarea informatiei	Comunicare	Redactare documente	Securitatea datelor	Rezolvarea problemelor
Utilizator experimentat	Utilizator experimentat	Utilizator independent	Utilizator independent	Utilizator experimentat

 Levels: Basic user - Independent user - Proficient user
[Digital competences - Self-assessment grid](#)
**INFORMAȚII
SUPLIMENTARE**

Publicații	42 publicații indexate Web of Science (37 articole +3 ISI Proceedings)
Proiecte	8 proiecte ca responsabil, 9 proiecte ca membru al echipei
Referințe bibliografice	6 cărți
Citări	343 citări in lucrări Web of Science (fara autocitari)

ANEXE

ANEXA 1	Lista lucrari
ANEXA 2	Proiecte
ANEXA 3	Carti
ANEXA 4	Conferințe



ANEXA 1: Lista de lucrări

1. On the spectral emission of MBBA embedded CdTe quantum dots Cirtoaje, C; Anton, SR; Ghidic, V; Stanciu, SG (MATERIALS LETTERS Volume384 DOI10.1016/j.matlet.2025.138031 Article Number 138031 Published APR 1 2025
2. Antibacterial Interactions of Ethanol-Dispersed Multiwalled Carbon Nanotubes with Staphylococcus aureus and Pseudomonas aeruginosa, Asaftei, M (Asaftei, Mihaela) Lucidi, M (Lucidi, Massimiliano); Anton, SR ; Trompeta, AF ; Hristu, R ; Tranca, DE; Fiorentis, E; Cirtoaje, C (Cirtoaje, Cristina) [1] ; Lazar, V; Stanciu, GA; Cincotti, G; Ayala, P; Charitidis, CA; Holban, A; Visca, P; Stanciu, SG, ACS OMEGA, Volume9Issue31Page33751-33764, DOI10.1021/acsomega.4c03044 2024
3. EFFECT OF MWCNT DOPING ON THE T NI TRANSITION TEMPERATURES AND EMISSION BEHAVIOR OF A NONMESOGENIC LUMINESCENT PLATINUM(II) COMPLEX IN NEMATIC LIQUID CRYSTAL 5CB Neaga, B; Iliș, M; ; Cirtoaje, C ; Danila, O ; Manaila-Maximean, D Cîrcu, V, 2024, UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN-SERIES A-APPLIED MATHEMATICS AND PHYSICS 86 (2) , pp.153-166 2024
4. OPTICAL PROPERTIES OF NEMATIC LIQUID CRYSTALS WITH MULTIWALL CARBON NANOTUBES Petrescu, E; Cirtoaje, C and Săparov, B, 2024 UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN-SERIES A-APPLIED MATHEMATICS AND PHYSICS 86 (2) , pp.137-146 2024
5. Fighting bacterial pathogens with carbon nanotubes: focused review of recent progress Asaftei, M; Lucidi, M; Cirtoaje, C; Holban, AM; Charitidis, CA; Yang, F; Wu, AG; Stanciu, GA; Sağlam, O; Lazar, V] ; Visca, Stanciu, SG (12 autori) RSC ADVANCES, Volume13Issue29Page19682-19694, DOI10.1039/d3ra01745a 2023
6. Petrescu, Emil; Cirtoaje, Cristina) Electric Properties of Multiwalled Carbon Nanotubes Dispersed in Liquid Crystals and Their Influence on Freedericksz Transitions, NANOMATERIALS, Volume12, Issue7, Article Number1119 DOI10.3390/nano12071119, Published APR 2022 2021
7. Freedericksz Transition In Nematic Liquid Crystals With Carbon Nanomaterials, Petrescu, Emil; Cirtoaje, Cristina ; Postelnicu, Stefan UNIVERSITY POLITEHNICA OF BUCHAREST SCIENTIFIC BULLETIN-SERIES A-APPLIED MATHEMATICS AND PHYSICS, Volume 84, Issue1, Page201-208, Published2022 2021
8. Cirtoaje, Cristina; Ferroelectric particles in nematic liquid crystals with soft anchoring, MOLECULES Volume: 26 Issue: 4 Article Number: 1166 Published: FEB 2021 2021
9. Cirtoaje, Cristina; Iacobescu, Gabriela; Petrescu, Emil Freedericksz Transitions in Twisted Ferronematics Subjected to Magnetic and Laser Field CRYSTALS Volume: 10 Issue: 7 Article Number: 567 Published: JUL 2020 2020
10. Cirtoaje, Cristina; Petrescu, Emil The Influence of Single-Walled Carbon Nanotubes on the Dynamic Properties of Nematic Liquid Crystals in Magnetic Field MATERIALS Volume: 12 Issue: 24 Article Number: 4031 Published: DEC 2 2019 2019
11. Cirtoaje, Cristina; Petrescu, Emil; Stan, Cristina; Andrey Rogachev, Electric Freedericksz transition in nematic liquid crystals with graphene quantum dot mixture Conference: 12th International Conference on Physics of Advanced Materials (ICPAM) Location: Heraklion, GREECE Date: SEP 22-28, 2018 APPLIED SURFACE SCIENCE Volume: 487 Pages: 1301-1306 Published: SEP 1 2019 2019



12. Cirtoaje, Cristina New method to detect low tritium concentration in metals UPB Scientific Buletin Series A, Applied Mathematics and Physics Volume: 81 Issue: 1 Pages: 229-240 WOS:000461794200023 2019
13. Emil Petrescu, Cristina Cirtoaje and Octavian Danila, Dynamic behaviour of nematic liquid crystal mixtures with quantum dots in electric fields, Beilstein J. Nanotechnol. Beilstein J. Nanotechnol. 2018, 9, 399–406, doi:10.3762/bjnano.9.39 WOS:000424048500002 2018
14. Emil Petrescu, Cristina Cirtoaje, Dynamic behaviour of a nematic liquid crystal with added carbon nanotubes in an electric field, Beilstein J. Nanotechnol. 2018, 9, 233–241, doi:10.3762/bjnano.9.25, WOS:000423192400001 2018
15. Cirtoaje, Cristina; Petrescu, Emil The influence of graphene nanoplatelets on the Freedericksz transition threshold in nematic liquid crystals ADVANCED TOPICS IN OPTOELECTRONICS, MICROELECTRONICS, AND NANOTECHNOLOGIES IX Book Series: Proceedings of SPIE Volume: 10977 Article Number: UNSP 109770J , WOS:000458717900018 published 2018 2018
16. Emil Petrescu, Cristina Cirtoaje and Cristina Stan, Dynamic behaviour of a nematic liquid crystal mixed with CoFe₂O₄ ferromagnetic nanoparticles in a magnetic field, Beilstein J. Nanotechnol. 2017, 8, 2467–2473. doi:10.3762/bjnano.8.246, WOS:000416166400001 2017
17. E.C. Niculescu, C. Stan, C D. Bejan, C. Cirtoaje Impurity and eccentricity effects on the nonlinear optical rectification in a quantum ring under lateral electric fields JOURNAL OF APPLIED PHYSICS Volume: 122 Issue: 14 Article Number: 144301, DOI: 10.1063/1.4999673, WOS:000413038500020 2017
18. Manaila-Maximean, D.; Cirtoaje, C.; Danila, O.; Donescu, D. Novel colloidal system: Magnetite-polymer particles/lyotropic liquid crystal under magnetic field JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS Volume: 438 Pages: 132-137 , DOI: 10.1016/j.jmmm.2017.02.034, WOS:000402480500021 2017 2017
19. Cristina Cirtoaje, Emil Petrescu, Measurement of magnetic anisotropy of multiwalled carbon nanotubes in nematic, Physica E, 84, pag. 244-248, (2016), DOI: 10.1016/j.physe.2016.06.011, WOS:000370089900006 2016
20. Cristina Cîrtoaje, Emil Petrescu, Cristina Stan, Dorina Creangă Ferromagnetic nanoparticles suspensions in twisted nematic, Physica E, 79, pag 38-43, (2016) DOI: 10.1016/j.physe.2015.12.006 WOS:000370089900006 2016
21. Cristina Cîrtoaje, Emil Petrescu, Victor Stoian, Electrical Freedericksz transitions in nematic liquid crystals containing ferroelectric nanoparticles, Physica E: Low-dimensional Systems and Nanostructures, Volume 67, Pages 23-27 (March 2015), DOI: 10.1016/j.physe.2014.11.004, WOS:000348266500005 2015
22. Victor Stoian, Cristina Cîrtoaje, Emil Petrescu, Cornelia Moțoc, Optical nonlinearities induced by electric fields in nematic liquid Crystals, Proc. Of SPIE Optics, Optoelectronics, 9503, 95030T-7 (2015), DOI: 10.1117/12.2178320, WOS:000356606800018 2015
23. Cristina Cîrtoaje, Victor Stoian, Emil Petrescu, Cornelia Moțoc, Relaxation phenomena in nematic liquid crystals with multiwall carbon nanotubes adding, Proc. Of SPIE Microtechnologies, Vol. 9517, 95171G-10 2015, DOI: 10.1117/12.2178333, WOS:000357978500043 2015
24. Petrescu, Emil; Calin, Mihaela Antonina; Marinescu, Bogdan; Cirtoaje, Cristina In vivo study of mal-pdt using fluorescence spectra , U.P.B. Sci. Bull., Series A, Volume: 77 Issue: 2 Pages: 269-276, WOS:000355574100026 2015



25. Cristina Cîrtoaje, Emil Petrescu, Mihaela Antonina Călin, Gina Izvoranu, Spectral analysis of methyl-aminolevulinic acid based photodynamic therapy using fractionated light, U.P.B. Sci. Bull., Series A, Vol. 76, Iss. 4, 2014, WOS:000346133600019 2014
26. Cristina Cîrtoaje, Ferrocholesteric - ferronematic transition in magnetic and laser field, U.P.B. Sci. Bull., Series A, Volume: 76 Issue: 1 Pages: 187-196 , WOS:000332914700019 2014
27. Cristina Cîrtoaje, Emil Petrescu, Cornelia Moțoc, Electric field effects in nematic liquid crystals doped with carbon nanotubes Physica E, Volume: 54, Pages: 242-246, (2013), DOI: 10.1016/j.physe.2013.07.005, WOS:000325385100043 2013
28. Stoian Victor, Cîrtoaje Cristina, Emil Petrescu, Cornelia Moțoc, Nonlinearities induced by magnetic fields in nematic liquid crystals, Optics Communications, Volumes: 309, Pages: 286-290 (2013) ISSN 0030-04018, DOI: 10.1016/j.optcom.2013.07.070, WOS:000328527800049 2013
29. Emil Petrescu, Bena Rodica, Cîrtoaje Cristina, Polarisation gratings using ferronematics-an elastic continuum theory, Journal of Magnetism and Magnetic Materials, vol. 336, pages 44-48 (2013) ISSN 0304-8853, DOI: 10.1016/j.jmmm.2013.02.018, WOS:000316732400008 2013
30. Moțoc, Cornelia; Cîrtoaje, Cristina; Stoica, Adriana; Stoian, Victor; Albu, Ana Maria RELAXATION PHENOMENA IN NEMATIC- POLYMER MIXTURES , U.P.B. Sci. Bull., Series A , Volume: 75 Issue: 3 Pages: 181-186 WOS:000322847600018 2013
31. Cristina Cîrtoaje, Cornelia Moțoc, Emil Petrescu, Transition induced by superposed electric and magnetic fields in cholesteric and ferrocholesteric liquid crystals, U.P.B. Sci. Bull., Series A , vol. 73, issue 3, pages 125-132 (2011) ISSN 1223-7027, WOS:000294238100011 2011
32. Cristina Cîrtoaje, Emil Petrescu, Cornelia Moțoc, Self-focusing in nematic liquid crystals subjected to magnetic fields, Optoelectronics and Advanced Materials-Rapid Communications vol. 5, issue: 2, pages: 106-111 (2011) ISSN 1842-6573, WOS:000288625000023 2011
33. Cristina Cîrtoaje, Cornelia Moțoc, Emil Petrescu, R.E. Bena New magnetic methods for determining of elastic constants and rotational viscosity coefficient in nematic liquid crystals, U.P.B. Sci. Bull., Series A , vol. 72, issue 4, pages 233-246 (2010) ISSN 1223-7027, WOS:000286087500022 2010
34. Rosu, C.; Cîrtoaje, C.; Paun, A. L. Magneto-optical effects in nematic liquid crystal doped with Prussian Blue, OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS Volume: 3 Issue: 2 Pages: 127-131 Published: FEB, WOS:000264239300010 2009
35. Bena, Eleonora - Rodica; Cîrtoaje, Cristina Surface influence on the optical freedericksz transition in nematic liquid crystals cells, UPB Scientific Bulletin Series A Volume: 71 Issue: 2 Pages: 85-94 WOS:000266514200009 2009
36. Iacobescu, Gabriela; Paun, Adrian Liviu; Cîrtoaje, Cristina Magnetically induced Freedericksz transition and relaxation phenomena in nematic liquid crystals doped with azo-dyes JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS Volume: 320 Issue: 17 Pages: 2180-2184 DOI: 10.1016/j.jmmm.2008.03.050, WOS:000256378000009 2008
37. Emil Petrescu, Eleonora Rodica Bena, Cristina Cîrtoaje, Adrian Liviu Păun, Laser-field-induced ferronematic-ferrocholesteric transition in homeotropic cells, University Politehnica of Bucharest Scientific Bulletin- Series A- Applied Mathematics and



Physics, Volume: 70, Issue: 1, Pages: 77–85, (2008), ISSN 1223-7027, WOS:000262922900007 2008

38. Cirtoaje, Cristina; Plonski, Ileana-Hanta Macroscopic potential energy surfaces of heavy and superheavy nuclei, ROMANIAN REPORTS IN PHYSICS Volume: 59 Issue: 2 Pages: 387-396 , WOS:000254995900017 2007
39. Emil Petrescu, Eleonora – Rodica Bena, C. Moțoc, C. Cârtoaje, Magnetic -field-induced ferronematic-ferrocholesteric transition in homeotropic cells, U.P.B. Sci. Bull., Series A, Vol. 69, No. 4, 89-97, (2007), ISSN 1223-7027, WOS:000409865300010, 2007



ANEXA 2: Proiecte

Ca responsabil:

1. Research project “Research and Development in the field of high power passive enhancement cavity” valoare **2 500 000 EURO**
2. Research project Advanced Infrastructure for Nuclear Photonics research experiments at ELI92-NP / ELI-INFRA ELI-NP Infrastructure development project ELI-RO/DEZ/2023-001, valoare **3 000 000 RON**

Ca membru al echipei:

1. HORIZON EUROPE 101137466 – Real-time biomarker detection systems for rapid medical decision-making in cancer and cardiac diseases REALCARE
2. ELI-RO/DEZ/2023 - OPTILAS

ANEXA 3: Cărți (ultimii 5 ani):

1. Petrescu Emil, Cristina Cîrtoaje Fizica clasica Politehnica Press 2023 978-606-9608-47-0
2. Petrescu Emil, Cristina Cîrtoaje Fizica moderna Politehnica Press 2023 978-606-9608-50-0

ANEXA 4: Prezentări la conferințe internaționale (ultimii 5 ani):

1. *“Electrical Behavior of Thermotropic Nematic Liquid Crystals Doped with Carbon Nanomaterials”*, Cristina Cirtoaje, Stefan G. Stanciu, Ștefan Anton, Ștefan Postelnicu, Olivia Stefanoiu, 25th Anniversary International Conference on Transparent Optical Networks, 6-10 iulie 2025 Barcelona, Spania- *lucrare invitată*
2. *„Physical properties characterisation of 5CB composites with CdSe/ZnS quantum dots”*, Cristina Cirtoaje*, Stefan Stanciu, Stefan Postelnicu and Stefan Anton, The 11th World Congress of Advanced Materials, 12-14 mai 2025, Kobe, Japonia
3. *„Liquid crystal-based composites for photonic sensors applications”* Cristina Cirtoaje, Stefan G. Stanciu, Stefan Anton, Andrei Zabreanu 1st Carpatian Biophotonics, 6-10 septembrie 2025, Sinaia, România
4. *Freedericksz transition voltage in nematic liquid crystal with CdSe/ZnS quantum dots*, Cristina Cîrtoaje, 2-nd International Conference Advances in 3OM: opto-mechatronics, opto-mechanics, optical metrology, 11-14 decembrie, Timișoara, România
5. *Investigations on liquid crystal embedded CdTe quantum dots with spectrally resolved confocal laser scanning microscopy (Invited)*, C. Cirtoaje, S. R. Anton, V. Ghidic, S. G. Stanciu, 24th International Conference on Transparent Optical Networks, 2-6 iulie 2023, București, România.