







PERSONAL INFORMATION Cristina Cirtoaje

-  University Politehnica of Bucharest
-  Replace with telephone number  0728193185
-  cristina.cirtoaje@upb.ro , cristina_cirtoaje@yahoo.com
-  State personal website(s)
-  **Yahoo Messenger** cristina_cirtoaje@yahoo.com

Sex Female | Date of birth 29/07/1977 | Nationality Romanian

POSITION WITHIN THE GRANT/PROJECT Researcher

WORK EXPERIENCE

- 2022 - present **Head of the Physics Department, Applied Science Faculty, National University for Science and Technology Politehnica Bucuresti**
 Splaiul Independentei 313, Bucharest, 060042, ROMANIA Tel: +402140291 00 ; +402131810 22 / 23 / 24 / 25, www.pub.ro
- Activities:
- Responsible with Educational Activity of the Faculty, Research development and reports,
 - Promoting the faculty
 - Supervising the on-line educational platform
- Business or sector** Academic. Education and research.
- 2019 -present **Associate Professor**
- 2012- 2019, **Lecturer**
- 2006-2012, **Assistant Lecturer**
- 2002-2006, **Graduate Teaching Assistant**
- Politehnica University of Bucharest**, Splaiul Independentei 313, Bucharest, 060042, ROMANIA Tel: +402140291 00 ; +402131810 22 / 23 / 24 / 25
- www.pub.ro
- Business or sector** Academic. Education and research.
- Activities:
- Student training and scientific research in liquid crystals and nanoparticles

EDUCATION AND TRAINING

- 2002 - 2010 **Phd** EQF level 8
 University Politehnica of Bucharest
- Semiconductor Physics
 - Liquid crystals Physics
 - Nanoparticles physical characterization
- 2001 - 2002 **Master's Degree** EQF level 7
 University of Bucharest, Physics Faculty
- Metrology
 - Quantum metrology
 - Microcontroller systems
 - Organic semiconductors
- 1996 - 2001 **Bachelor's Degree** EQF level 6



University of Bucharest, Physics Faculty

- Mathematics
- Fundamental physics
- Metrology
- Non-destructive testing
- Nano-electronics.
- Organic semiconductors.
- Materials Science

1992 - 1996

Bacalaureat

EQF level 3

"Alexandru Ioan Cuza" High School

- Basic education

PERSONAL SKILLS

Mother tongue(s) Replace with mother tongue(s)

| Other language(s) | UNDERSTANDING | | SPEAKING | | WRITING |
|-------------------|---------------|---------|--------------------|-------------------|---------|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | C2 | C2 | C2 | C2 | C2 |
| Russian | A1 | A1 | A1 | A1 | A1 |

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills ▪ good communication skills gained through my teaching experience

 Organisational / managerial skills ▪ organizational skills gained from students organizing and tutoring during classes or laboratory research
 ▪ leading skills gained from research team and master's degree theses

Job-related skills ▪ training skills from working with undergraduate or graduate students

Digital competence

| SELF-ASSESSMENT | | | | |
|------------------------|-----------------|------------------|------------------|------------------|
| Information processing | Communication | Content creation | Safety | Problem solving |
| Proficient user | Proficient user | Independent user | Independent user | Independent user |

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

Replace with name of ICT-certificate(s)

- good command of office suite (word processor, spread sheet, presentation software)
- good command of photo editing software gained as an amateur photographer



ADDITIONAL
INFORMATION

Publications

- E. Petrescu, C. Cirtoaje*, C. Stan Dynamic behavior 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.
- Emil Petrescu and Cristina Cirtoaje*, Dynamic behavior 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
- **Cristina Cirtoaje**, Emil Petrescu *Measurement of magnetic anisotropy of multiwalled carbon nanotubes in nematic host* Physica E 84(2016)244–248
- **Cristina Cirtoaje**, Emil Petrescu, Cristina Stan, Dorina Creangă *Ferromagnetic nanoparticles suspensions in twisted nematic*, Physica E, 79, pag 38-43, (2016)
- WOS:000370089900006 DOI: 10.1016/j.physe.2015.12.006
- **Cristina Cirtoaje**, Emil Petrescu, Comelia Moțoc, *Electric field effects in nematic liquid crystals doped with carbon nanotubes* Physica E, Volume: 54, Pages: 242-246, (2013) WOS:000325385100043 DOI: 10.1016/j.physe.2013.07.005
- **Cristina Cirtoaje**, Victor Stoian, Emil Petrescu, Comelia Moțoc, *Relaxation phenomena in nematic liquid crystals with multiwall carbon nanotubes adding*, Proc. of SPIE Microtechnologies, Vol. 9517, 95171G-10 2015
- WOS:000357978500043 DOI: 10.1117/12.2178333

Proiects (as team leader)

- Graphene nanoparticles dispersions in soft crystalline environment Research project 9/ 02-1-1107-2011-2019 Cooperation program between JINR and the institutions in Romania based on JINR Order No 397/27.05.2019
- The study of carbon nanotubes selfassembling in nematic host Research project 8/ 02-1-1107-2011-2019 Cooperation program between JINR and the institutions in Romania based on JINR Order No 397/27.05.2019
- The study of carbon nanotubes alignment in thermotropic nematic liquid crystals Research project 13/ 02-1-1107-2011-2019 Cooperation program between JINR and the institutions in Romania based on JINR Order No 322/21.05.2018
- Research project 64/tema 04-4-1121-2015/2017 *The physical properties study of micro-particles organized with nematic liquid crystals* between JINR and the institutions in Romania based on JINR Order No 96/15.02.2016
- Research project 61/tema 04-4-1069-2009/2014 *Investigation of DESO/LIPID membranes interaction by X-ray scattering* between JINR and the institutions in Romania based on JINR Order No 96/17.02.2014
- Research project 61/tema 04-4-1069-2009/2014 *Investigation of DESO/LIPID membranes interaction by X-ray scattering* between JINR and the institutions in Romania based on JINR Order No 82/18.02.2013
- Excellence Research Grants' Program, UPB–GEX. Identifier: UPB–EXCELENT_A~ – 2016 Phase modulation in nematic liquid crystals subjected to magnetic field. Contract number 139 24/26.09.2016.

Courses

- E. Petrescu, C. Cîrtoaje, Elemente de termodinamica si fizica statistica, Editura Politehnica Press, 2016
- Emil Petrescu, **Cristina Cirtoaje** Radiatii ionizante si elemente de dozimetrie Editura Politehnica Press ISBN: 978-606-515-656-2, București, 2016
- Gabriela Iacobescu, **Cristina Cirtoaje**, Emil Petrescu, Introducere în biofizică, Editura Universitaria Craiova ISBN: 976-606-140-288-5, Craiova, 2011

 ANNEXES

- publications
- research projects as team member.

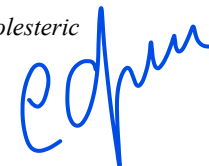


Publications

1. Asaftei, M; Lucidi, M; Cirtoaje C; Holban AM; Charitidis; CA, Yang F; Wu, AG; Stanciu, GA; Saglam, O; Lazar, V; Visca, P; Stanciu, SG, *Fighting bacterial pathogens with carbon nanotubes: focused review of recent progress* Jun 29 2023 | 13 (29) , pp.19682-19694
2. Petrescu, E and Cirtoaje, C., *Electric Properties of Multiwalled Carbon Nanotubes Dispersed in Liquid Crystals and Their Influence on Freedericksz Transitions*, Apr 2022 | NANOMATERIALS 12 (7)
3. Cirtoaje, Cristina, *Ferroelectric Particles in Nematic Liquid Crystals with Soft Anchoring* MOLECULES Volume: 26 Issue: 4 Article Number: 1166 Published: FEB 2021
4. 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
5. 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
6. 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
7. 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 0.094 0.461
8. 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 0.745 2.968
9. 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 0.745 2.968
10. 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 2018
11. E. Petrescu, C. Cirtoaje, C. Stan *Dynamic behavior 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
12. E. C. Niculescu, C. Stan, D. Bejan, and C. Cirtoaje *Impurity and eccentricity effects on the nonlinear optical rectification in a quantum ring under lateral electric fields* JOURNAL OF APPLIED PHYSICS 122, 144301 (2017)
13. D.Mănăilă-Maximean, C.Cirtoaje, O.Dănilă, D.Donescu *Novel colloidal system: Magnetite-polymer particles/lyotropic liquid crystal under magnetic field* Journal of Magnetism and Magnetic Materials 336 (2017) 44–48
14. **Cristina Cirtoaje**, Emil Petrescu *Measurement of magnetic anisotropy of multiwalled carbon nanotubes in nematic host* Physica E 84(2016)244–248
15. **Cristina Cirtoaje**, Emil Petrescu , Cristina Stan, Dorina Creangă *Ferromagnetic nanoparticles suspensions in twisted nematic*, Physica E, 79, pag 38-43, (2016) WOS:000370089900006 DOI: 10.1016/j.physe.2015.12.006
16. Emil Petrescu, Mihaela Antonina Călin, Bogdan Marinescu, **Cristina Cirtoaje**, *In vivo study of mal-pdt using fluorescence Spectra*, U.P.B. Sci. Bull., Series A, Vol. 77, Iss. 2, 269-274, 2015 WOS:000355574100026
17. Victor Stoian, **Cristina Cirtoaje**, Emil Petrescu, Cornelia Moțoc, *Optical nonlinearities induced by electric fields in nematic liquid Crystals*, Proc. of SPIE Optics+ Optoelectronics, 9503, 95030T-7 (2015) WOS:000356606800018 DOI: 10.1117/12.2178320
18. **Cristina Cirtoaje**, 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
WOS:000357978500043 DOI: 10.1117/12.2178333
19. **Cristina Cîrtoaje**, Emil Petrescu, Victor Stoian, *Electrical Fredericksz transitions in nematic liquid crystals containing ferroelectric nanoparticles*, Physica E: Low-dimensional Systems and Nanostructures, Volume 67, Pages 23-27 (March 2015)
WOS:000348266500005 DOI: 10.1016/j.physe.2014.11.004
 20. **Cristina Cîrtoaje**, Ferrocholesteric - ferronematic transition in magnetic and laser field, University Politehnica of Bucharest Scientific Bulletin- Series A – Applied Mathematics and Physics, vol. 76, issue 1, pages 187-196 (2014) ISSN 1223-7027 FI: 0.300/2014
 21. **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
 22. Moțoc Cornelia, Cristina Cîrtoaje, Adriana Stoica, Stoian Victor, *Relaxation phenomena in nematic – polimer mixtures*, University Politehnica of Bucharest Scientific Bulletin- Series A – Applied Mathematics and Physics, vol. 75, issue 3, pages 181-186 (2013)
 23. **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) WOS:000325385100043
DOI: 10.1016/j.physe.2013.07.005
 24. 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 0030-4018 WOS:000328527800049 DOI: 10.1016/j.optcom.2013.07.070
 25. 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
WOS:000316732400008 DOI: 10.1016/j.jmmm.2013.02.018
 26. **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
 27. **Cristina Cîrtoaje**, Cornelia Moțoc, Emil Petrescu, *Transition induced by superposed electric and magnetic fields in cholesteric and ferrocholesteric liquid crystals*, University Politehnica of Bucharest Scientific Bulletin- Series A – Applied Mathematics and Physics, vol. 73, issue 3, pages 125-132 (2011) ISSN 1223-7027, WOS:000294238100011
 28. **Cristina Cîrtoaje**, Cornelia Moțoc, Emil Petrescu, *New magnetic methods for determining of elastic constants and rotational viscosity coefficient in nematic liquid crystals*, University Politehnica of Bucharest Scientific Bulletin- Series A – Applied Mathematics and Physics, vol. 72, issue 4, pages 233-246 (2010) ISSN 1223-7027 WOS:000286087500022
 29. Eleonora Rodica Bena, **Cristina Cîrtoaje** *Surface Influence On The Optical Fredericksz Transition In Nematic Liquid Crystals Cells* University Politehnica of Bucharest Scientific Bulletin- Series A – Applied Mathematics and Physics, vol.71 issue 2 pages 85-94, 2009, ISSN 1223-7027
 30. Iacobescu Gabriela, Paun, Adrian Liviu **Cartoaje, Cristina** *Magnetically induced Fredericksz transition and relaxation phenomena in nematic liquid crystals doped with azo-dyes*, Journal of Magnetism and Magnetic Materials, Volume: 320 Issue: 17, 2008, Pages: 2180-2184 ISSN 0304-8853
WOS:000256378000009 DOI: 10.1016/j.jmmm.2008.03.050
 31. Roșu Constantin, **Cristina Cîrtoaje**, Adrian Liviu Păun, Al. *Magneto-Optical Effects In Nematic Liquid Crystal Doped With Prussian Blue* Optoelectronics And Advanced Materials-Rapid Communications Volume: 3 Issue: 2, Pages: 127-131, 2009
 32. Emil Petrescu, Eleonora Rodica Bena, **Cristina Cîrtoaje**, Adrian Liviu Păun, *Laser-field-induced ferronematic-ferrocholesteric transition in homeotropic cells*, University Politehnica Bucharest Scientific Bulletin- Series A- Applied Mathematics and Physics, Volume: 70, Issue: 1, Pages: 77–85, (2008), ISSN 1223-7027
 33. **Cristina Cîrtoaje**, Ileana-Hania Plonski, *Macroscopic Potential Energy Surfaces Of Heavy And Superheavy Nuclei* Romanian Reports in Physics, vol. 59, No. 2, pages: 387–396, 2007 ISSN: 1221-146X, WOS:000262922900007
 34. Petrescu, E. , Bena, E.R., Motoc, C., Cartoaje, *Magnetic - field - induced ferronematic-ferrocholesteric*



transition in homeotropic cells, University Politehnica Of Bucharest Scientific Bulletin-Series A-Applied Mathematics And Physics Volume: 69 Issue: 4 Pages: 89-97

Research grants as team member

1. Project CEEX/ 6104/2.10.2005 NI 18.05.13, Ultra-sensitive AMS analysis for tritium and deuterium deep concentrations with important applications in environmental physics and nuclear fusion diagnosis; (2005-2008)
2. Project CEEX/79/1.08.2006 NI 18.06.12 Fundamental approach of nuclear physics applications; (2006-2008)
3. Project CENVIT, (292/2006) CEEX- RELANSIN Researches of structure-material properties relationship during the high-speed implementations of these technologies in industry and its effects in national economy competitiveness; (2006-2008)
4. Project CEEX 283/13.09.2006 AMS – Nuclear monitoring method for environmental protection; (2006-2008)
5. Project PN II, 72185/01.10.2008 A study of tritium behaviour using AMS nanotechnology in material used in tritium remover from the water used in nuclear power stations in order to protect the environment and the personnel; **member** (2008-2011)
6. Project CEX-05-D10-74 / 14.10.2005 The dynamics of binary quantum systems; (2005-2008)
7. Project PN II, 62074/01.10.2008 The development of the SIFROC method in photodynamic therapy with MAL-PDT of pre-malign and non melanocytic malignant skin disease; (2008-2011)
8. Project PN II 126/14.09.2007 Advanced materials and technologies for optoelectronic applications; (2007-2009)
9. Project PN II 91038/14.09.2007 The development of the interdisciplinary academic research for the improvement of the international competitiveness of the Romanian universities; (2007-2010)
10. Project IDEI nr contract 677/2009 New nanocomposite systems with liquid crystals. Thermophysical properties and optical response in magnetic field (2009-2012)

