

Europass Curriculum Vitae



First name(s) / Surname(s)	Silviu GURLUI
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E-mail/ web	sgurlui@uaic.ro ; http://spectroscopy.phys.uaic.ro
Nationality	Romanian
Date of birth	05.11.1971
Gender	male
Present employment / position	Assoc. Prof, PhD (Alexandru Ioan Cuza University of Iasi, Romania)
EDUCATION AND TRAINING	<ul style="list-style-type: none"> ✧ 1995 - Graduate the Faculty of Physics, Specialization Technological Physics (Awards, Diploma of Merit, score 9.92/10) ✧ 1996 - Graduate Master in Physics, Specialization Physics of Plasmas and Spectroscopy, score 10/10 ✧ 2003 - PhD thesis: <i>Contribution to the study of the processes and phenomena in non-homogeneous discharges plasmas gas mixtures</i> ✧ 2019 - Habilitation thesis: Laser spectroscopy techniques applied in the field of nanotechnology and environmental science, Alexandru Ioan Cuza University of Iasi, Faculty of Physics
Work experience	<ul style="list-style-type: none"> ✧ 25 years (Iasi, Romania); 3 years cumulated (Lille, France) ✧ 1996-2001: Assistant Prof. , Alexandru Ioan Cuza University of Iasi ✧ 2001-2006: Lecturer, Alexandru Ioan Cuza University of Iasi ✧ 2006-present: Assoc. Prof. PhD. Eng., Alexandru Ioan Cuza University of Iasi, Romania ✧ 2004-2016: Invited Prof. , Lille 1 University of Science and Technology, France, Laboratoire de Physique des Lasers, Atomes et Molécules
Research stages	Orsay, Paris XI (France), Orléans (France), Angers (France), Lille (France), Innsbruck (Austria)
Personal skills and competences	<ul style="list-style-type: none"> ✧ Organizational skills and competences ✧ Contribute in organization and co-organization of several National and International Conferences, Summer Schools or Workshops ✧ Referent: Physics of Plasmas, IEEE Transactions on Plasma Science, Modern Phys B MQW lasers, Surface Letter, Journal of Quantitative Spectroscopy and Radiative Transfer ✧ Expertise and assessment of national projects
Research directions	<ul style="list-style-type: none"> ✧ Regional Air Pollution and Global Climate Changes ✧ Plasmas, Spectroscopy and Lasers ✧ Atmosphere optics ✧ Optics and applied spectroscopy
Scientific research activity	<ul style="list-style-type: none"> ✧ Published 110 ISI papers; H-index 19; Times Cited >1100 ✧ Competence areas: <u>Lasers, Optics, Atmosphere optics, Spectroscopy, Environment, Physics of Plasmas</u>

Additional information ✧ **Head of Atmosphere Optics, Spectroscopy and Lasers Laboratory (LOA-SL)** <http://spectroscopy.phys.uaic.ro/>

✧ **Expert Mission Advisory Group (MAG) of European Space Agency (ESA)**, to up the coming - Traceable Radiometry Underpinning Terrestrial- and Helio- Studies (**TRUTHS**)

Network ➤ Member of: **ACTRIS and AERONET** networks: http://aeronet.gsfc.nasa.gov/cgi-bin/type_one_station_opera_v2_new?site=iasi_LOASL&nachal=2&level=1&place_code=10

➤ From 2017 LOASL becomes member of the facility for antiproton and ion research (**FAIR**), **Darmstadt, Germany**
<https://www.gsi.de/forschungbeschleuniger/fair.htm>

Language English, French

Self-assessment
European level (*)

Understanding		Speaking		Writing			
Listening		Reading		Spoken interaction		Spoken production	
C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user

Digital competence ✧ advanced knowledge of mathematics, computer science (algorithms, programming techniques, software)

Awards [see web-site <http://spectroscopy.phys.uaic.ro/Headlines.html>]

- **Gold Medal, The Hamangia Thinker for Novel Romanian LIDAR system**, XVII-th International Exhibition of Inventics, Research and Technological Transfer "INVENTICA 2013", and the XVII-th International Conference of Inventics, Iasi, 2013
- **Special Prize of the International Personel of Academy (KIEV)**, XVII-th International Exhibition of Inventics, Research and Technological Transfer "INVENTICA 2013", and the XVII-th International Conference of Inventics, Iasi, 2013

ANNEXES ✧ Publications and Projects pg 3-11

Appendices

Books:

1. P.E. Nica, S.A. Irimiciuc, M. Agop, S. Gurlui, M. Ziskind and C. Focsa, Experimental and Theoretical Studies on the Dynamics of Transient Plasmas Generated by Laser Ablation in Various Temporal Regimes, IntechOpen, 2017;
2. G. Strat, M. Strat, S. Gurlui, C. Focsa, D. Dimitriu, Self-organization in nanomaterials, vol 5, p. 53-91, Ed. INOE (2007).
3. S. Gurlui, M. Delibaş, Optics. Exercises and problems, ed. TehnoPress, Iaşi, 445p (2005).
4. S. Gurlui, D. Dimitriu, Plasma double layers, ed. TehnoPress, Iaşi, 346p (2005).

Since 2007, I founded LOASL which became the university's representative in research partnerships in the country and abroad. LOASL is a member of the only national network of LIDARS systems in Romania and passive optical instruments interconnected to the worldwide infrastructure ACTRIS.

Under my direct coordination and in partnerships with teams of researchers and professors from France (Lille 1 University, Paris XI /LPGP, Orsay, University of Angers) from Austria (University of Innsbruck) and from Romania ("Alexandru Ioan Cuza" University of Iasi, "Gh Asachi" Technical University of Iasi, University of Craiova, University of Bucharest, INOE Bucharest, INFLPR Magurele, etc.) I trained over 30 PhD students who completed their theses in these laboratories.

For most of them but also for other PhD students, I was nominated in the examination commissions and I was part of the team of referents, both from Romania and from abroad. I have been a scientific reference in Romania and abroad for over 20 doctoral theses. I am a doctoral supervisor and the team of the laboratory I coordinate includes both doctoral students, postdoc students, researchers and professors, being supported exclusively from grants won through national and international competitions (total value of over **3 million euros**), as following:

Director/ Research Projects <http://spectroscopy.phys.uaic.ro/PROJECTS.html>

1. ENIAN: Enhanced ion acceleration by laser irradiation of special thin polymers layers containing nanoparticles, APPA/MML/Plasma Physics/PHELIX, FAIR 05_2020, **320.000 EURO**
2. ROBIM: MicroLIBS sensors for robotic planetary and astrobiological exploration missions, PN-III-P4-ID-PCE2020-0332, UEFISCDI, **220.000 EURO**
3. SATY: Satellite hybrid micro-thrusters, Romanian Space Agency (ROSA), 2017-2018 (**370.000 EURO**)
4. AiRFRAME: Aerosol properties retrieval from remote sensing spectroscopic measurements (partner UAIC), (ROSA), 2017-2018 (**45.000 EURO**)
5. LEO: LOASL's Earth Observatory, Romanian Space Agency (ROSA), ID 499/2016-2017 (**1.000.000 EURO**)
6. ELIAN: Extreme Light Induced Ablation Plasma Jet And Nano-patterning, ELI-NP, CAPACITIES / RO-CERN E03/30.06.2014, 2014-2016 (**140.000 EURO**)
7. DARLIOES: Fast Laser Imaging, Detection and Ranging Of Aerosol Emissions in Aircraft Plumes, Romanian Space Agency (ROSA) within Space Technology and Advanced Research (STAR) Program. Project nr. 98/29.11.2013, 2013-2016 (**177.000 EURO**)
8. "Dynamics of laser ablation plasmas: fundamentals and applications to pulsed laser deposition of thin films": bilateral project ANCS-ANR (Romania – France), ID project PN-II-CT-RO-FR-2012-1-0058; 2013-2014.
9. "The study of polymer-laser radiation interactions in controlled atmosphere. Laser ablation nanostructured thin films layers. Applications" PN-II-ID-PCE-2011-3-0650, 2011-2014. (**350.000 EURO**)
10. "Join Physicist in Festival (My Physics, My World)" FP7-PEOPLE, 244978/2009, 2009.
11. RADO: "Romanian Atmospheric Research 3D Observatory" funded by Innovation Norway, STVES 115266/2008; 2008-2010. (**247.600 EURO**)

12. "New methods and technologies to investigate complex plasma nanostructures obtained through laser ablation. Technological applications" CEEEX type II – Excellence research projects for young researchers, 5879/2006, ET 70, 2006-2008. **(31.000 EURO)**
13. ROLINET: "Romanian Network of LIDAR systems" PN II Cooperation, 31-002/2007, 2007-2010. **(71.000 EURO)**
14. "Study of the physical processes and phenomena from plasma double layers and biological cell membranes. Analogies and applications" CNCSIS, 33373/2004, AT 71, 2004-2005.
15. "Study of the processes and phenomena from electrical discharges (un-homogeneous) in atomic and molecular gases. Theoretical models and applications" CNCSIS, 33531/2002, AT 284, 2002-2003.

Links to:

- SCOPUS ID: [Silviu Gurlui](#)
- ORCID: <https://orcid.org/0000-0003-2248-9954>;
- RESEARCHER ID: https://www.researchgate.net/profile/Silviu_Gurlui/publications
- LOASL website: <http://spectroscopy.phys.uaic.ro/LOASL.html>

Articles ISI (web of Science):

1. A. Cocean, I. Cocean, N. Cimpoesu, G. Cocean, R. Cimpoesu, C. Postolachi, V. Popescu and **S. Gurlui**, Laser Induced Method to Produce Curcuminoid-Silanol Thin Films for Transdermal Patches Using Irradiation of Turmeric Target, Appl. Sci. 2021, 11(9), 4030.
2. A. Cocean, I. Cocean, G. Cocean, C. Postolachi, D. A. Pricop, B. S. Munteanu, N. Cimpoesu and **S. Gurlui**, Study of Physico-Chemical Interactions during the Production of Silver Citrate Nanocomposites with Hemp Fiber, Nanomaterials 2021, 11, 2560. <https://doi.org/10.3390/nano11102560>
3. A. Cocean, I. Cocean, **S. Gurlui**, Influence of the impurities to the composite materials in laser ablation phenomena, (2021), UPB Scientific Bulletin, Series A: Applied Mathematics and Physics, 83 (3), pp. 225-238
4. L. Kadri, G. Bulai, A. Carlescu, S. George, **S. Gurlui**, L. Leontie, C. Doroftei, M. Adnane, Effect of target sintering temperature on the morphological and optical properties of pulsed laser deposited TiO₂ thin films, (2021), Coatings, 11 (5), art. no. 561
5. I. Cocean, A. Cocean, F. Iacomì, **S. Gurlui**, City water pollution by soot-surface-active agents revealed by FTIR spectroscopy, Applied Surface Science 499 (2020) 142487
6. S. Irimiciuc, F. Enescu, H. Bedeleian, **S. Gurlui**, M. Agop, Space-and time-resolved optical investigations on ns-laser produced plasmas on various geological samples, (2020) Spectrochimica Acta - Part B Atomic Spectroscopy, 170, art. no. 105904,
7. G. Bulai, L. Epure, M. Strat, S. Toma, N. Cimpoesu, **S. Gurlui**, R. Constantinel, N. Hurduc, Azopolysiloxanes spontaneous surface relief grating by pulsed laser irradiation, (2020) Applied Physics A: Materials Science and Processing, 126 (8), art. no. 616, .
8. I. Cocean, M. Diaconu, A. Cocean, C. Postolachi, **S. Gurlui**, Landfill Waste Fire Effects over Town Areas under Rainwaters, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012048
9. A. Cocean, I. Cocean, C. Postolachi, D. Pricop, F. Husanu, **S. Gurlui**, Laser Induced Dyeing (LID) with Reactive Blue 21 on Hemp Fibers, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012022
10. A. Cocean, I. Cocean, C. Postolachi, N. Cimpoesu, F. Husanu, B. Munteanu, **S. Gurlui**, Copper Sulfate Pentahydrate Target Behavior during Pulsed Laser Deposition to Produce Dichroic Coatings for Beam Splitters, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012005, .

11. S. Garofalide, M. Diaconu, I. Cocean, A. Cocean, V. Pelin, **S. Gurlui**, L. Leontie, Study of Physico-Chemical Characteristics of Some Major Urban Air Pollutants, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012049
12. S.A. Irimiciuc, B.C. Hodoroaba, G. Bulai, **S. Gurlui**, V. Craciun, Multiple structure formation and molecule dynamics in transient plasmas generated by laser ablation of graphite, (2020) Spectrochimica Acta - Part B Atomic Spectroscopy, 165, art. no. 105774, .
13. M. Agop, N. Cimpoesu, **S. Gurlui**, S.A. Irimiciuc, Investigations of transient plasma generated by laser ablation of hydroxyapatite during the pulsed laser deposition process, (2020) Symmetry, 12 (1), art. no. 132
14. I. Stoica, I. Sava, G. Bulai, G. Stoian, M. Strat, **S. Gurlui**, B. Oprisan, Development and morphological characterization of novel polyimide/Metal nano hybrid materials, (2020) Materiale Plastice, 57 (2), pp. 94-103.
15. N. Cimpoesu, **S. Gurlui**, G. Bulai, R. Cimpoesu, V. Paun, S.A. Irimiciuc, M. Agop, In-situ plasma monitoring during the pulsed laser deposition of Ni60Ti40 thin films, (2020) Symmetry, 12 (1), art. no. 5605
16. G. Bulai, V. Trandafir, S.A. Irimiciuc, L. Ursu, C. Focsa, **S. Gurlui**, Influence of rare earth addition in cobalt ferrite thin films obtained by pulsed laser deposition, (2019) Ceramics International, 45 (16), pp. 20165-20171
17. F. Enescu, S.A. Irimiciuc, N. Cimpoesu, H. Bedeleian, G. Bulai, **S. Gurlui**, M. Agop, Investigations of laser produced plasmas generated by laser ablation on geomaterials. Experimental and theoretical aspects, (2019) Symmetry, 11 (11), art. no. 1391
18. S.A. Irimiciuc, **S. Gurlui**, M. Agop, Particle distribution in transient plasmas generated by ns-laser ablation on ternary metallic alloys, (2019) Applied Physics B: Lasers and Optics, 125 (10), art. no. 190,
19. I. Cocean, A. Cocean, C. Postolachi, V. Pohoata, N. Cimpoesu, G. Bulai, F. Iacomi, **S. Gurlui**, Alpha keratin amino acids BEHAVIOR under high FLUENCE laser interaction. Medical applications, (2019) Applied Surface Science, 488, pp. 418-426.
20. R. Schrittwieser, C.T. Teodorescu-Soare, F. Enescu, C. Ionita, D.G. DImitriu, **S. Gurlui**, F. Mazzanti, Irimiciuc,, S.-A., Hodoroaba, B., O'Hara, T., Vasilovici, O., Amarandi, L., Oscillatory behavior of hollow grid cathode discharges, (2019) Proceedings of the 2019 21st International Conference on Electromagnetics in Advanced Applications,, ICEAA 2019, art. no. 8879126, pp. 1359-1362.
21. P. Nica, **S. Gurlui**, M. Agop, C. Focsa, Oscillatory regimes of Langmuir probe current in femtosecond laser-produced plasmas: Experimental and theoretical investigations, (2019) Applied Surface Science, 481, pp. 125-132.
22. G. Bulai, O. Pompilian, **S. Gurlui**, P. Nemec, V. Nazabal, N. Cimpoesu, B. Chazallon, C. Focsa, Ge-Sb-Te chalcogenide thin films deposited by nanosecond, picosecond, and femtosecond laser ablation, (2019) Nanomaterials, 9 (5), art. no. 676
23. S.A. Irimiciuc, G. Bulai, **S. Gurlui**, M. Agop, On the separation of particle flow during pulse laser deposition of heterogeneous materials - A multi-fractal approach, Powder Technology, vol 339, 273, (2018)
24. S. Irimiciuc, G. Bulai, M. Agop, **S. Gurlui**, , Influence of laser-produced plasma parameters on the deposition process: in situ space- and time-resolved optical emission spectroscopy and fractal modeling approach Applied physics a-materials science & processing Volume: 124 Issue: 9 Article Number: 615, (2018)
25. L. Leontie, R. Danac, A. Carlescu, C. Doroftei, GG Rusu, V. Tiron, **S. Gurlui**, O. Susu, Electric and optical properties of some new functional lower-rim-substituted calixarene derivatives in thin films, Applied physics a-materials science & processing Volume: 124 Issue: 5 Article Number: 355 (2018)
26. A. Cocean, I. Cocean, MM Cazacu, G. Bulai, F. Iacomi, **S. Gurlui**, Atmosphere self-cleaning under humidity conditions and influence of the snowflakes and artificial light interaction for water dissociation simulated by the means of COMSOL, APPLIED SURFACE SCIENCE Volume: 443 Pages: 83-90 (2018)
27. G. Bulai, O. Rusu, MM Cazacu, F. Tudorache, B. Chazallon, C. Focsa, **S. Gurlui**, Structural, magnetic and humidity sensing properties of rare earth doped cobalt ferrite thin films

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28. V. Pelin, O. Rusu, MM Cazacu, **S. Gurlui**, AV. Sandu. I. Radinschi, V. Ciocan, I. Sandu, Assessment of Hydrophobic Coating on Porous Calcareous Rocks Surface Exposed in Urban Ambient Air Pollution, *IOP Conference Series: Materials Science and Engineering*, Vol 374, pag 12091, (2018)
 29. R. W. Schrittwieser, C. Ionita, C. T. Teodorescu-Soare, O. Vasilovici, **S. Gurlui**, S. A. Irimiciuc and D. G. Dimitriu, Spectral and electrical diagnosis of complex space-charge structures excited by a spherical grid cathode with orifice, *Phys. Scr.* 92 044001 (2017)
 30. S. A. Irimiciuc, **S. Gurlui**, P. Nica, C. Focsa, and M. Agop, A compact non-differential approach for modeling laser ablation plasma dynamics, *Journal of Applied Physics* 121, 083301 (2017)
 31. C. Focsa, **S. Gurlui**, P. Nica, M. Agop, M. Ziskind, Plume splitting and oscillatory behavior in transient plasmas generated by high-fluence laser ablation in vacuum, *Applied Surface Science*, Vol 424, pag 299 (2017),
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 34. A. Cocean, V. Pelin, MM. Cazacu, I. Cocean, I. Sandu, **S. Gurlui**, F. Iacomì, Thermal effects induced by laser ablation in non-homogeneous limestone covered by an impurity layer, *Applied Surface Science*, Vol 424, pag 324 (2017)
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 39. V. Pelin, I.G. Breaban, I. Sandu, **S. Gurlui**, The atmospheric pollution influence on the surface structures of porous geomaterials in correlation with some natural radionuclides, *Revista de Chimie*, vol 68, 1431 (2017)
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 44. V Pelin, I Sandu, M Munteanu, C T Iurcovschi, **S Gurlui**, AV Sandu, V Vasilache, M Brânzilă and I G Sandu, Colour change evaluation on UV radiation exposure for Păun-Repedeă calcareous geomaterial, *INTERNATIONAL CONFERENCE ON INNOVATIVE RESEARCH - ICIR EUROINVENT 2016*

- Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 133, Article Number: UNSP 012061, DOI: 10.1088/1757-899X/133/1/012061
45. I. Caraman, L. Dmitroglu, I. Evtodiev, L. Leontie, D. Untila, S. Hamzaoui, M. Zerdali, O. Şuşu, G. Bulai, **S. Gurlui**, Optical properties of ZnO thin films obtained by heat treatment of Zn thin films on amorphous SiO₂ substrates and single crystalline GaSe lamellas, THIN SOLID FILMS Volume: 617 Special Issue: SI Pages: 103-107 Part: B Published: OCT 30 2016
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 50. M. M. Cazacu, O. G. Tudose, A. Timofte, O. Rusu, L. Apostol, L. Leontie, **S. Gurlui**, Case study of the behavior of aerosol optical properties under the incidence of a saharian dust intrusion event, Applied ecology and environmental research, Volume: 14 Issue: 3 Pages: 183-194 Published: 2016large
 51. L. Belegante, M.M. Cazacu, A. Timofte, F. Toanca, J. Vasilescu, M.I. Rusu, N. Ajtai, H.I. Stefanie, I. Vetres, A. Ozunu, **S. Gurlui**, Case study of the first volcanic ash exercise in romania using remote sensing techniques, Environmental Engineering and Management, Journal Volume: 14 Issue: 11 Pages: 2503-2514 Published: NOV 2015
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 54. A. Timofte, L. Belegante, M. M. Cazacu, B. Albina, C. Talianu, **S. Gurlui**, Study of planetary boundary layer height from LIDAR measurements and ALARO model, Journal of Optoelectronics and Advanced Materials, 17 (7-8), pp. 911-917 (2015)
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Conferințe invitate

1. **S. Gurlui**, Invited Speakers, Trace elements Photo-Analysis for environmental applications: a case study, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, June 28-29, 2021
2. **S. Gurlui**, Keynote Speakers, INTERNATIONAL CONFERENCE ON INNOVATIVE RESEARCH, ICIR Euroinvent 2018,
3. **S. Gurlui**, P. Nica, M. Agop, M. Osiac, C. Focsa, *Two-temperature plasmas generated by femtosecond laser ablation of metallic targets*, 16th International conference on plasma, physics and applications, June 20-25, 2013, Magurele, Bucharest, Romania
4. **S. Gurlui** and C. Focsa, *Development of Laser-Produced Plasma Technology. Fundamentals and Applications*, 8th BPU, the 8th General Conference of Balkan Physical Union, 5-7 July 2012, Constanta, Romania.
5. O. G. Pompilian, G. Dascalu, **S. Gurlui**, C. Focsa, *Processing and characterization of advanced materials by laser ablation techniques*, 9th International Conference on Physics of Advanced Materials, 20 - 23 September 2012, Iasi, Romania;
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8. **S. Gurlui**, C. Focsa, P. Nica, M. Osiac, *High-Fluence Laser Ablation Plasma Dynamics: Fundamentals and Applications*, the 4-th National Conference of Applied Physics (CNFA-2010) in Iasi, Romania.
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Organizing committee, member:

- Summer School: Physics and chemistry of the atmosphere: from laboratory experiments to field campaigns, "Alexandru Ioan Cuza" University of Iasi, Romania, 2 - 14 July, 2006
- Workshop entitled "Modern Techniques in Atmospheric Physics and Chemistry", University of Szeged, Hungary, 2 - 4 Mai, 2007;
- Physics and chemistry of the atmosphere: from laboratory experiments to field campaigns. "Ovidius" University of Constanta, Romania, 10 - 16 July, 2008.

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