


**PERSONAL INFORMATION**

First name(s) / Surname(s)

**Silviu-Octavian GURLUI**

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[sgurlui@uaic.ro](mailto:sgurlui@uaic.ro); <http://spectroscopy.phys.uaic.ro>

Nationality

Romanian

Date of birth

05.11.1971

Gender

Male

**Position within the project**
**Director**
**Present employment / position**

Prof PhD Habil, Alexandru Ioan Cuza University of Iasi, Romania, Faculty of Physics

**EDUCATION AND TRAINING**

- 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, *Contribution to the study of the processes and phenomena in non-homogeneous discharges plasmas gas mixtures*
- 2019 - Habilitation Thesis, *Laser spectroscopy techniques applied in the field of nanotechnology and environmental science*, Alexandru Ioan Cuza University in Iasi, Faculty of Physics

**Work experience**
**28 years (Iasi, Romania); 12 years (Lille, France)**

- 1996-2001: Assistant Prof. , Alexandru Ioan Cuza University of Iasi
- 2001-2006: Lecturer, Alexandru Ioan Cuza University of Iasi
- 2006-2022: Assoc. Prof. PhD. Eng., Alexandru Ioan Cuza University of Iasi, Romania
- 2022 - present: **Prof. PhD. Eng. Habil.**, Alexandru Ioan Cuza University of Iasi, Romania

	<ul style="list-style-type: none"> <li>2004-2016: Invited Prof. , <b>Lille 1 University of Science and Technology, France</b>, Laboratoire de Physique des Lasers, Atomes et Molécules</li> </ul>																																								
<b>Research stages</b>	<ul style="list-style-type: none"> <li>Orsay, Paris XI (France), Orléans (France), Angers (France), Lille (France), Innsbruck (Austria)</li> </ul>																																								
<b>Personal skills and competences</b> Organisational skills and competences  Teaching activities (courses)  Scientific research activity	<ul style="list-style-type: none"> <li>Contribute in organization and co-organization of several National and International Conferences, Summer Schools or Workshops</li> <li>Referent: Physics of Plasmas, IEEE Transactions on Plasma Science, Modern Phys B MQW lasers, Surface Letter, Journal of Quantitative Spectroscopy and Radiative Transfer</li> <li>Expertise and assessment of national projects</li> <li><b>Regional Air Pollution and Global Climate Changes</b></li> <li><b>Optical spectroscopy: methods and instrumentation</b></li> <li><b>Applied spectroscopy, Optics, Lasers and spectroscopy</b></li> <li>Published <b>130 ISI papers; H-index 22; Times Cited 1600</b></li> <li>Competence areas: Lasers, Optics, Spectroscopy, Environment, Physics of Plasmas</li> <li><b>Head of Atmosphere Optics, Spectroscopy and Lasers Laboratory (LOA-SL)</b> <a href="http://spectroscopy.phys.uaic.ro/">http://spectroscopy.phys.uaic.ro/</a></li> <li>Represented Romania at the <b>European Space Agency ESA</b>, in a new terrestrial research satellite project of scientific interest. <a href="https://www.esa.int/Applications/Observing_the_Earth/TRUTHS">https://www.esa.int/Applications/Observing_the_Earth/TRUTHS</a></li> </ul>																																								
<b>Additional information</b>	<ul style="list-style-type: none"> <li>Member of: <b>ACTRIS and AERONET</b> networks: <a href="http://aeronet.gsfc.nasa.gov/cgi-bin/type_one_station_opera_v2_new?site=Iasi_LOASL&amp;nachal=2&amp;level=1&amp;place_code=10">http://aeronet.gsfc.nasa.gov/cgi-bin/type_one_station_opera_v2_new?site=Iasi_LOASL&amp;nachal=2&amp;level=1&amp;place_code=10</a></li> <li>From 2017 LOASL becomes member of the facility for antiproton and ion research (<b>FAIR</b>), <b>Darmstadt, Germany</b> <a href="https://www.gsi.de/forschungbeschleuniger/fair.htm">https://www.gsi.de/forschungbeschleuniger/fair.htm</a></li> <li>Founder member of SNSIM (National Society of Environmental Science) <a href="http://snsim.ro/?page_id=6">http://snsim.ro/?page_id=6</a></li> </ul>																																								
<b>Network</b>																																									
<b>Language</b>	<b>English, French</b>																																								
Self-assessment <i>European level (*)</i>	<table border="1"> <thead> <tr> <th colspan="4">Understanding</th> <th colspan="4">Speaking</th> <th colspan="2">Writing</th> </tr> <tr> <th colspan="2">Listening</th> <th colspan="2">Reading</th> <th colspan="2">Spoken interaction</th> <th colspan="2">Spoken production</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>C</td><td>Proficient</td> <td>C</td><td>Proficient</td> <td>C</td><td>Proficient</td> <td>C</td><td>Proficient</td> <td>C</td><td>Proficient</td> </tr> <tr> <td>2</td><td>user</td> <td>2</td><td>user</td> <td>2</td><td>user</td> <td>2</td><td>user</td> <td>2</td><td>user</td> </tr> </tbody> </table>	Understanding				Speaking				Writing		Listening		Reading		Spoken interaction		Spoken production				C	Proficient	C	Proficient	C	Proficient	C	Proficient	C	Proficient	2	user	2	user	2	user	2	user	2	user
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**Digital competence**

☞ advanced knowledge of mathematics, computer science (algorithms, programming techniques, software)

**Awards**

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

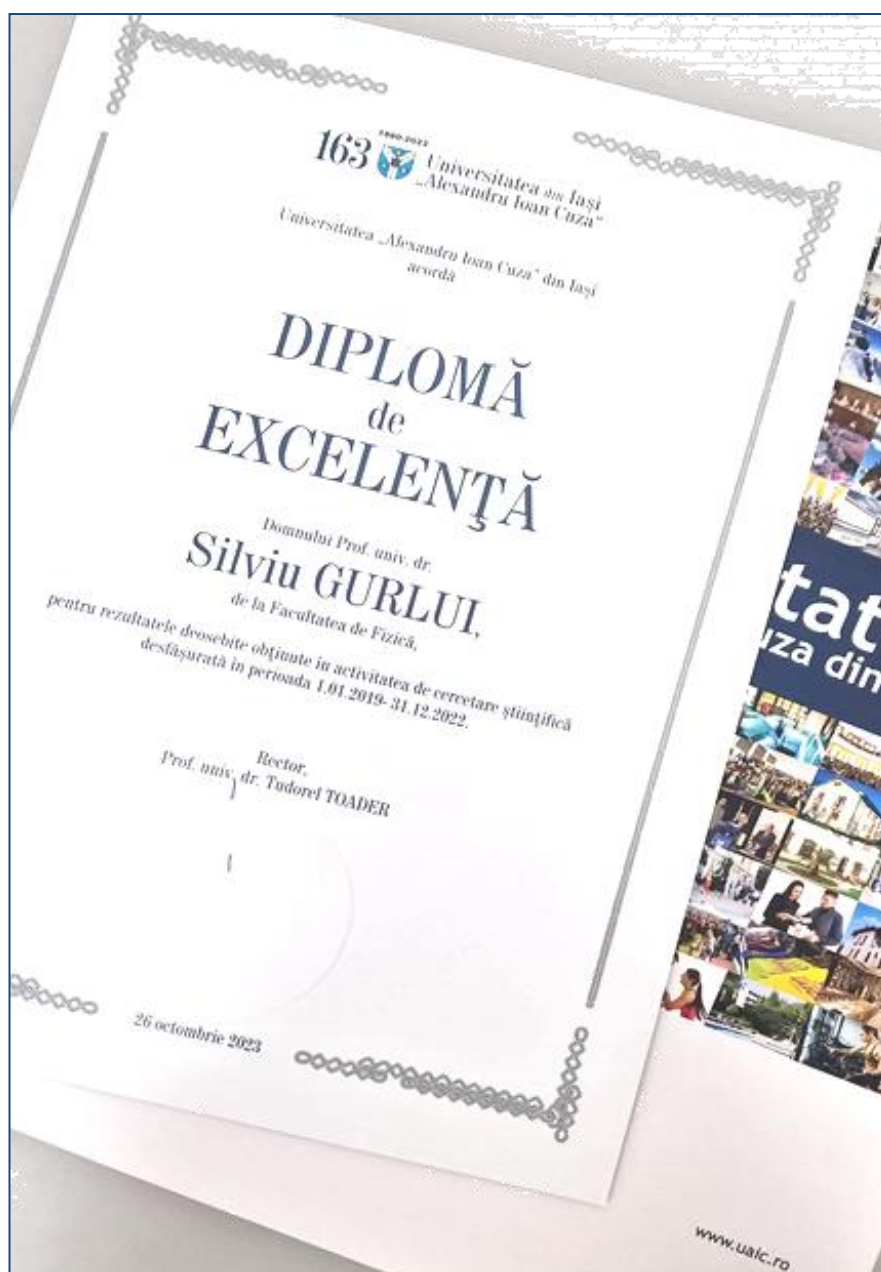
- **Gold Medal, The Hamangia Thinker for Novel Romanian LIDAR system**, XVII-th International Exhibition of Inventics, Research and Technological Transfer "INVENTICA 2013", and the XVII-th International Conference of Inventics, Iasi, 2013
- **Special Prize of the International Personel of Academy (KIEV)**,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

**ANEXES**

☞ Publications and Projects ..... pg 4-25

Silviu GURLUI published 130 ISI papers; H-index = 22; Times Cited >1600 papers

**DIPLOMA OF EXCELLENCE** awarded by the **Alexandru Ioan Cuza University in Iași**  
**BEST RESEARCH ACTIVITY AT THE FACULTY OF PHYSICS, IN THE LAST 4 YEARS.**



**LINKS TO:**

SCOPUS ID: [Silviu Gurlui](#)

ORCID: <https://orcid.org/0000-0003-2248-9954>;

RESEARCHER ID: [https://www.researchgate.net/profile/Silviu\\_Gurlui/publications](https://www.researchgate.net/profile/Silviu_Gurlui/publications)

LOASL website: <http://spectroscopy.phys.uaic.ro/LOASL.html>

### 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, Iași, 445p (2005).
4. S. Gurlui, D. Dimitriu, Plasma double layers, ed. TehnoPress, Iași, 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 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:

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" CEEX 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.

### Articles

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. Konrad-Soare C.T., Enescu F., Dimitriu D.G., Dobromir M., Teodorescu-Soare E.G., Mazzanti F., Irimiciuc S.A., Ionita C., Schrittwieser R., **Concentric double hollow grid cathode discharges. Spectral investigations and phenomenological approach**, Plasma Sources Science and, Volume 30, Issue 8, August 2021, Article number 085006
4. Kadri, L., Bulai, G., Carlescu, A., George, S., Gurlui, S., Leontie, L., Doroftei, C., Adnane, M., **Effect of target sintering temperature on the morphological and optical properties of pulsed laser deposited TiO<sub>2</sub> thin films**, (2021), Coatings, 11 (5), art. no. 561
5. Catalin Panaghie, Ramona Cimpoesu, Bogdan Istrate, Nicanor Cimpoesu, Mihai-Adrian Bernevig, Georgeta Zegan, Ana-Maria Roman, Romeu Chelariu and Alina Sodor, **New Zn<sub>3</sub>Mg-xY Alloys: Characteristics, Microstructural Evolution and Corrosion Behavior**, Materials 2021, 14, 2505.
6. Alexandru Cocean, Cristina Postolachi, Georgiana Cocean, Georgiana Bulai, Bogdanel Silvestru Munteanu, Nicanor Cimpoesu, Iuliana Cocean and Silviu Gurlui, **The Origin and Physico-Chemical Properties of Some Unusual Earth Rock Fragments**, Appl. Sci. 2022, 12, 983. <https://doi.org/10.3390/app12030983>
7. Georgiana Cocean, Alexandru Cocean, Cristina Postolachi, Silvia Garofalide, Georgiana Bulai, Bogdanel Silvestru Munteanu, Nicanor Cimpoesu, Iuliana Cocean and Silviu Gurlui, **High-Power Laser Deposition of Chitosan Polymers: Medical and Environmental Applications**. Polymers 2022, 14, 1537. <https://doi.org/10.3390/polym14081537>

8. Silvia Garofalide, Cristina Postolachi, Alexandru Cocean, Georgiana Cocean, Iuliana Motrescu, Iuliana Cocean, Bogdanel Silvestru Munteanu, Marius Prelipceanu, Silviu Gurlui and Liviu Leontie, **Saharan Dust Storm Aerosol Characterization of the Event (9 to 13 May 2020) over European AERONET Sites**, Atmosphere 2022, 13, 493. <https://doi.org/10.3390/atmos13030493>
9. Cocean, A.; Cocean, G.; Diaconu, M.; Garofalide, S.; Husanu, F.; Munteanu, B.S.; Cimpoesu, N.; Motrescu, I.; Puiu, I.; Postolachi, C.; Cocean, I.; Gurlui, S. **Nano-biocomposite materials obtained from laser ablation of hemp stalks for medical applications and potential component in new solar cells**. International Journal of Molecular Sciences 2023, 24, 3892. <https://doi.org/10.3390/ijms24043892>
10. Kadri, L.; Abderrahmane, A.; Bulai, G.; Carlescu, A.; Doroftei, C.; Motrescu, I.; Gurlui, S.; Leontie, L.; Adnane, M. **Optical and structural analysis of TiO<sub>2</sub>-SiO<sub>2</sub> nanocomposite thin films fabricated via pulsed laser deposition technique**. Nanomaterials 2023, 13, 1632. <https://doi.org/10.3390/nano13101632>
11. Sprincean, V.; Leontie, L.; Caraman, I.; Lupan, O.; Adeling, R.; Gurlui, S.; Carlescu, A.; Doroftei, C.; Caraman, M. **Preparation, chemical composition, and optical properties of (β-Ga<sub>2</sub>O<sub>3</sub> composite thin films)/(Ga<sub>Sx</sub>Se<sub>1-x</sub> lamellar solid solutions) nanostructures**. Nanomaterials 2023, 13, 2052. <https://doi.org/10.3390/nano13142052>
12. Cocean, G.; Cocean, A.; Garofalide, S.; Pelin, V.; Munteanu, B.S.; Pricop, D.A.; Motrescu, I.; Dimitriu, D.G.; Cocean, I.; Gurlui, S. **Dual-pulsed laser ablation of oyster shell producing novel thin layers deposited to Saccharomyces cerevisiae**. Polymers 2023, 15, 3953. <https://doi.org/10.3390/polym15193953>
13. Balbarau, A.; Ivanescu, L.M.; Martinescu, G.; Rimbu, C.M.; Acatrinei, D.; Lazar, M.; Cocean, I.; Gurlui, S.; Cocean, A.; Miron, L. Septicemic outbreak in a rainbow trout intensive aquaculture system: Clinical finds, etiological agents, and predisposing factors. Life 2023, 13, 2083. <https://doi.org/10.3390/life13102083>
14. M. Diaconu, S. Garofalide, G. Cocean, A. Cocean, D. A. Pricop, I. Cocean and S. Gurlui, Physico-chemical degradation of some land-fill wastes contaminating on surface and ground surrounding waters, INTERNATIONAL JOURNAL OF CONSERVATION SCIENCE Volume 14, Issue 3, July-September 2023: 1045-1056, DOI: 10.36868/IJCS.2023.03.17
15. L. Balika, C. Focsa, S. Gurlui, S. Pellerin, N. Pellerin, D. Pagnon and M. Dudeck, **Laser ablation in a running hall effect thruster for space propulsion**, Appl. Phys A, DOI 10.1007/s00339-012-7211-0, (2012)



16. L. Balika, C. Focsa, S. Gurlui, S. Pellerin, N. Pellerin, D. Pagnon and M. Dudeck, **Laser-induced breakdown spectroscopy in a running Hall Effect Thruster for space propulsion**, Spectrochimica Acta Part B 74-75, 184-189 (2012)
17. C. Focsa, M. Ziskind, C. Ursu, S. Gurlui, D. Pagnon, S. Pellerin, N. Pellerin, M. Dudeck, **Laser - BnSiO<sub>2</sub> Ceramics Interaction: simulation of the energy deposition on dielectric wall surfaces in Hall thrusters**, J. Optoelectron. Adv. Mater. 10 2380 (2008);
18. C. Ursu, O. G. Pompilian, S. Gurlui, P. Nica, M. Agop, M. Dudeck and C. Focsa, **Al<sub>2</sub>O<sub>3</sub> ceramics under high-fluence irradiation: plasma plume dynamics through space- and time-resolved optical emission spectroscopy**, Applied physics a: materials science & processing, Volume 101, Number 1, 153-159, (2010), DOI: 10.1007/s00339-010-5775-0
19. S. Gurlui, M. Agop, P. Nica, M. Ziskind, C. Focsa, **Experimental and Theoretical Investigations of a Laser Produced Aluminum Plasma**, Phys. Rev. E, 78, 026405 (2008). Article selected for publication in the Virtual Journal of Ultrafast Science (Vol. 7, No. 9, September 2008)
20. M. M. Cazacu, A. Timofte, F. Unga, B. Albina, S. Gurlui, **Aeronet data investigation of the aerosol mixtures over iasi area, one-year time scale overview**, Journal of Quantitative Spectroscopy and Radiative Transfer, 153, pp. 57-64 (2015)
21. A. Cocean, I. Cocean, M.M. Cazacu, G. Bulai, F. Iacomì, 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**, (2018) Applied Surface Science, 443, pp. 83-90.
22. P. Nica, M. Agop, S. Gurlui and C. Focsa, **Oscillatory Langmuir probe ion current in laser produced plasma expansion**, Epl-Europhys LETT 89, 6 Art no: 65001 (2010)
23. 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
24. S. Gurlui, O. Niculescu, D. G. Dimitriu, C. Ionita, R. W. Schrittwieser – **Elementary processes in the dynamics of two simultaneously excited fireballs in plasma**, International Journal of Mass Spectrometry Volume: 365 Special Issue: SI Pages: 42-47 (2014)
25. 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)
26. M. Girtan, G. I. Rusu, G.G. Rusu, S. Gurlui, **Influence of oxidation conditions on the properties of indium oxide thin films**, Appl. Surf. Sci., 162, 492 (2000);
27. M. Strat, G. Strat, S. Gurlui, **Basic processes in discharge plasma double layers**, J. Phys. D: Appl. Phys. 32 34

28. Irimiciuc, S., Enescu, F., Bedeleian, H., Gurlui, S., Agop, M., **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,
29. Bulai, G., Epure, L., Strat, M., Toma, S., Cimpoesu, N., Gurlui, S., Constantinel, R., Hurduc, N., **Azo-polysiloxanes spontaneous surface relief grating by pulsed laser irradiation**, (2020) Applied Physics A: Materials Science and Processing, 126 (8), art. no. 616, .
30. Cocean, I., Diaconu, M., Cocean, A., Postolachi, C., Gurlui, S., **Landfill Waste Fire Effects over Town Areas under Rainwaters**, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012048
31. Cocean, A., Cocean, I., Postolachi, C., Pricop, D., Husanu, F., Gurlui, S., **Laser Induced Dyeing (LID) with Reactive Blue 21 on Hemp Fibers**, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012022
32. Cocean, A., Cocean, I., Postolachi, C., Cimpoesu, N., Husanu, F., Munteanu, B., Gurlui, S., **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, .
33. Garofalide, S., Diaconu, M., Cocean, I., Cocean, A., Pelin, V., Gurlui, S., Leontie, L., **Study of Physico-Chemical Characteristics of Some Major Urban Air Pollutants**, (2020) IOP Conference Series: Materials Science and Engineering, 877 (1), art. no. 012049
34. Irimiciuc, S.A., Hodoroaba, B.C., Bulai, G., Gurlui, S., Craciun, V., **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, .
35. Agop, M., Cimpoesu, N., Gurlui, S., Irimiciuc, S.A., **Investigations of transient plasma generated by laser ablation of hydroxyapatite during the pulsed laser deposition process**, (2020) Symmetry, 12 (1), art. no. 132
36. Stoica, I., Sava, I., Bulai, G., Stoian, G., Strat, M., Gurlui, S., Oprisan, B., **Development and morphological characterization of novel polyimide/Metal nano hybrid materials**, (2020) Materiale Plastice, 57 (2), pp. 94-103.
37. Cimpoesu, N., Gurlui, S., Bulai, G., Cimpoesu, R., Paun, V.-P., Irimiciuc, S.A., Agop, M., **In-situ plasma monitoring during the pulsed laser deposition of Ni60Ti40 thin films**, (2020) Symmetry, 12 (1), art. no. 5605
38. Bulai, G., Trandafir, V., Irimiciuc, S.A., Ursu, L., Focsa, C., Gurlui, S., **Influence of rare earth addition in cobalt ferrite thin films obtained by pulsed laser deposition**, (2019) Ceramics International, 45 (16), pp. 20165-20171

39. Enescu, F., Irimiciuc, S.A., Cimpoesu, N., Bedeleian, H., Bulai, G., Gurlui, S., Agop, M., **Investigations of laser produced plasmas generated by laser ablation on geomaterials. Experimental and theoretical aspects**, (2019) *Symmetry*, 11 (11), art. no. 1391
40. Irimiciuc, S.A., Gurlui, S., Agop, M., **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,
41. Cocean, I., Cocean, A., Postolachi, C., Pohoata, V., Cimpoesu, N., Bulai, G., Iacomi, F., Gurlui, S., **Alpha keratin amino acids BEHAVIOR under high FLUENCE laser interaction. Medical applications**, (2019) *Applied Surface Science*, 488, pp. 418-426.
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43. Nica, P., Gurlui, S., Agop, M., Focsa, C., **Oscillatory regimes of Langmuir probe current in femtosecond laser-produced plasmas: Experimental and theoretical investigations**, (2019) *Applied Surface Science*, 481, pp. 125-132.
44. Bulai, G., Pompilian, O., Gurlui, S., Nemeș, P., Nazabal, V., Cimpoesu, N., Chazallon, B., Focsa, C., **Ge-Sb-Te chalcogenide thin films deposited by nanosecond, picosecond, and femtosecond laser ablation**, (2019) *Nanomaterials*, 9 (5), art. no. 676
45. Cocean, I., Cocean, A., Pohoata, V., Iacomi, F., Gurlui, S., **City water pollution by soot-surface-active agents revealed by FTIR spectroscopy**, (2019) *Applied Surface Science*
46. Irimiciuc, S.A., Bulai, G., Gurlui, S., Agop, M., **On the separation of particle flow during pulse laser deposition of heterogeneous materials - A multi-fractal approach**, (2018) *Powder Technology*, 339, pp. 273-280
47. Irimiciuc, S., Bulai, G., Agop, M., Gurlui, S., **Influence of laser-produced plasma parameters on the deposition process: in situ space- and time-resolved optical emission spectroscopy and fractal modeling approach**, (2018) *Applied Physics A: Materials Science and Processing*, 124 (9), art. no. 615
48. Pelin, V., Rusu, O., Cazacu, M.M., Gurlui, S., Sandu, A.V., Radinschi, I., Ciocan, V., Sandu, I., **Assessment of Hydrophobic Coating on Porous Calcareous Rocks Surface Exposed in Urban Ambient Air Pollution**, (2018) *IOP Conference Series: Materials Science and Engineering*, 374 (1), art. no. 012091
49. Leontie, L., Danac, R., Carlescu, A., Doroftei, C., Rusu, G.G., Tiron, V., Gurlui, S., Susu, O., **Electric and optical properties of some new functional lower-rim-substituted calixarene**

- derivatives in thin films**, (2018) Applied Physics A: Materials Science and Processing, 124 (5), art. no. 355
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### AdvPhotoCat-EE2021 (28 - 29 June 2021)

1. Invited Speaker: Silviu Gurlui: Trace elements Photo-Analysis for environmental applications: a case study, Alexandru Cocean, Iuliana Cocean, Georgiana Bulai, Cristina Postolachi, Bogdan Munteanu, Nicanor Cimpoesu, Silviu Gurlui, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
2. Oral Presentation: Laser induced chitin deacetylation- cutting-edge technology for "natural biological waste", Alexandru COCEAN, Iuliana COCEAN, Cristina POSTOLACHI, Georgiana COCEAN and Silviu GURLUI, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
3. Oral Presentation: Photo-degradation of some landfill contaminants on the surrounding waters, Iuliana COCEAN, Maria DIACONU, Alexandru COCEAN, Cristina POSTOLACHI and Silviu GURLUI, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
4. Poster Presentation: AMC-COMSOL: the new finite element technique to increase solar cell conversion, Alexandru Cocean, Dorin Botoc, Monica Siroux, Cristina Postolachi, Iuliana Cocean, Silviu Gurlui, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
5. Poster Presentation: Quantum Dots Pulsed Laser Deposition – a new simulation technique, Alexandru Cocean, Cristina Postolachi, Iuliana Cocean, Silviu Gurlui, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
6. Poster Presentation: CdSe Quantum Dots insertion effect on the alpha-keratin PLD-thin films, Cristina POSTOLACHI, Mirela SUCHEA, Ioan-Valentin TUDOSE, Alexandru COCEAN, Iuliana COCEAN, Bogdanel Silvestru MUNTEANU, Nicanor CIMPOESU and Silviu GURLUI, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
7. Poster Presentation: Chemical processes induced by light on the AuNP-citrate surface, Daniela Angelica PRICOP, Alexandru COCEAN, Florin BRANZA, Cristina POSTOLACHI, Iuliana COCEAN, Adina COROABA, Dorina Emilia CREANGA, Felicia IACOMI, Silviu GURLUI,

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8. Poster Presentation: High pulsed-laser effect on the hemp composite - advanced materials, Iuliana COCEAN, Alexandru COCEAN, Cristina POSTOLACHI, Bogdanel Silvestru MUNTEANU, Nicanor CIMPOESU and Silviu GURLUI, AdvPhotoCat-EE2021 (28 - 29 June 2021)
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  10. Poster Presentation: Washing municipal streets – the origin of some photo-contaminants pollution, Iuliana COCEAN, Maria DIACONU, Silvia GAROFALIDE, Alexandru COCEAN, Cristina POSTOLACHI, Vasile PELIN and Silviu GURLUI, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
  11. Poster Presentation: Huge ice lump fell from the atmosphere: effect of complex cumulative pollution phenomenon, Iuliana COCEAN, Daniela Angelica PRICOP, Alexandru COCEAN, Francisca HUSANU, Nicanor CIMPOESU, Bogdanel MUNTEANU, Maria DIACONU, Cristina POSTOLACHI and Silviu GURLUI, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
  12. Poster Presentation: Photochemical effects on heritage asset because environmental stress, Vasile PELIN, Alexandru COCEAN, Cristina POSTOLACHI, Silvia GAROFALIDE, Francisca HUSANU, Iuliana COCEAN and Silviu GURLUI, The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications AdvPhotoCat-EE 2021, <https://photocatalysis-workshop.eu/>
  13. Cocean, A., Postolachi, C., Cocean, G., Garofalide, S., Bulai, G., Munteanu, B. S., Cimpoesu, N., Motrescu, I., Pelin, V., Cocean, I. and Gurlui, S., High pulsed power laser inducing phase change - chemical transformations. Coupled modeling and analytical chemistry techniques. International Conference on Analytical and Bioanalytical Techniques, Bio Analytica 2022 - oral presentation, Invited Speaker: Alexandru Cocean <https://magnusconferences.com/bio-analytical-chemistry/speakers/2022> ; <https://magnusconferences.com/bio-analytical-chemistry/speaker/alexandru-cocean>

14. Cocean, A., Garofalide, S., Pelin, V., Cocean, G., Postolachi, C., Motrescu, I., Leontie, L., Cocean, I. and Gurlui, S., Study of the efficiency of solar cells in polluted environments: advanced analysis techniques in vivo and in the laboratory, through COMSOL type simulations, 14th International Conference on Physics of Advanced Materials (ICPAM-14) and the 5th Autumn School on Physics of Advanced Materials (PAMS-5); 8-15 September 2022, Dubrovnik, Croatia, presenting author: Silvia Garofalide.
15. Cocean, A., Postolachi, C., Cocean, G., Bulai, G., Garofalide, S., Pelin, V., Munteanu, B. S., Cimpoesu, N., Motrescu, I., Cocean, I. and Gurlui, S., Laser plasma threshold. Numerical study in COMSOL, International Conference 3NANO 2022; Nano Science/ Technology/ Biotechnology; ROMA, 20 - 23 September 2022; Topic: Theoretical modeling and computer simulations; presenting author: Georgiana Bulai (<https://www.3nano.it/home>)
16. Alexandru Cocean, Georgiana Cocean, Silvia Garofalide, Vasile Pelin, Dana Angelica Pricop, Bogdanel Silvestru Munteanu, Nicanor Cimpoesu, Dan Gheorghe Dimitriu, Iuliana Cocean and Silviu Gurlui, Numerical simulation in assisting the experimental study as a tool for estimating the working parameters, anticipating and explaining the experimental results. COMSOL Multiphysics and Gaussian 6 software, Conferința FTEM (Fizica și Tehnologiile Educaționale Moderne) 20 mai 2023, <http://fem.faculty.ro/>
17. Georgiana Cocean, Alexandru Cocean, Silvia Garofalide, Cristina Postolachi, Maria Diaconu, Francisca Husanu, Bogdanel Silvestru Munteanu, Nicanor Cimpoesu, Iuliana Motrescu, Ioan Puiu, Iuliana Cocean and Silviu Gurlui, Hemp stalk components transfer into composite nanostructures under high power pulsed laser ablation and deposition to produce functional materials, Conferința FTEM (Fizica și Tehnologiile Educaționale Moderne) 20 mai 2023, <http://fem.faculty.ro/>
18. Cocean, G.; Cocean, A.; Postolachi, C.; Garofalide, S.; Pricop, D.A.; Munteanu, B.S.; Cocean, I.; Gurlui, S.; Saccharomyces cerevisiae and Fourier Transform Infrared Spectroscopy technique used to identify photo-chemical processes during laser ablation of hemp stalk, 4th International Workshop Advances on Photocatalysis (<https://photocatalysis-workshop.eu/>), 25-28 iulie 2023, online poster session (<https://photocatalysis-workshop.eu/program/>).
19. Postolachi, C.; Cocean, A.; Cocean, G.; Garofalide, S.; Pricop, D.A.; Munteanu, B.S.; Cimpoesu, N.; Motrescu, I.; Cocean, I.; Gurlui, S.; High pulsed laser energy to produce structural morphology of thin layers for green chemical processes, 4th International Workshop Advances on Photocatalysis (<https://photocatalysis-workshop.eu/>), 25-28 iulie 2023, online poster session (<https://photocatalysis-workshop.eu/program/>).
20. IASI ACADEMIC DAYS, XXXVIII Edition, National Scientific Session Vectors of Rural Development in the North-East Region of Romania (III Edition) Sustainable agro-food systems

October 12, 2023, Alexandru Cocean, Georgiana Cocean, Cristina Postolachi, Silvia Garofalide, Diana Manuela Lina, Vasile Pelin, Maria Diaconu, Daniela Angelica Pricop, Răzvan Ababei, Dan Gheorghe Dimitriu, Bogdănel Silvestru Munteanu, Georgiana Bulai, Nicanor Cimpoescu, Iuliana Motrescu, Ioan Puiu, Iuliana Cocean and Silviu Gurlui, Cutting-edge technology based on laser interaction with the matter involved in the development of the rural economy. Its applicability in the short term and in the long term /Cutting-edge technology based on the interaction of laser with matter involved in the development of rural economy. Its short-term and long-term applicability; The scientific session took place online, on October 12, 2023, between 9:30 a.m. and 4:30 p.m., on the Zoom platform. -presentation Iuliana Cocean

ICPAM 13: 24 -30 September 2021

1. Alexandru COCEAN, Iuliana COCEAN, Georgiana COCEAN, Cristina POSTOLACHI, Bogdanel Silvestru MUNTEANU, Nicanor CIMPOESU and Silviu GURLUI, Keratin-based polymer nanofilm membranes for medical applications
2. Cristina POSTOLACHI, Alexandru COCEAN, Iuliana COCEAN, Georgiana COCEAN, Bogdanel Silvestru MUNTEANU, Nicanor CIMPOESU, and Silviu GURLUI, Study of Si/SiO<sub>2</sub> core/shell Quantum Dots produced by Pulsed Laser Deposition.
3. Alexandru COCEAN, Cristina POSTOLACHI, Silvia GAROFALIDE, Diana PATA, Maria DIACONU, Francisca HUSANU, Georgiana BULAI, Bogdan MUNTEANU, Nicanor CIMPOESU, Dan- Gheorghe DIMITRIU, Iuliana COCEAN, Silviu GURLUI, Dual-pulse ns-laser-induced Raman and breakdown spectroscopy to enhance performance on atoms and molecular detection

### Invited Lectures:

1. S. Gurlui, *Keynote Speakers*, INTERNATIONAL CONFERENCE ON INNOVATIVE RESEARCH, ICIR Euroinvent 2018,
2. S. Gurlui, P. Nica, M. Agop, M. Osiac, C. Focsa, *Two-temperature plasmas generated by femtosecond laser ablation of metallic targets*, 16<sup>th</sup> International conference on plasma, physics and applications, June 20-25, 2013, Magurele, Bucharest, Romania
3. 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.
4. 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;
5. O.G. Pompilian, G. Dascalu, S. Gurlui, C. Focsa, *Laser-induced plasma: fundamentals and applications*, Physics Conference TIM-12, 27-30 November 2012, Timisoara, Romania.
6. C. Focsa, M. Ziskind, B. Chazallon, S. Gurlui, V. Nazabal, P. Nemeč, *Laser ablation fundamentals and applications to the study of some inorganic materials with high technological potential*, 10<sup>th</sup> International conference Solid State Chemistry, Pardubice, Czech Republic, June 10-14, 2012
7. 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.
8. C. Focsa, S. Gurlui, M. Ziskind, *Transient plasmas generated by high-fluence laser ablation: Fundamentals and applications*, International Balkan Workshop on Applied Physics, Constanta, Roumanie, 7-9 juillet 2010
9. S. Gurlui, G. Strat , D. Lihtețchi, V. Hurduc and M. Strat, *Nanostructured surfaces and nanoagregates of photoreactive polymers in solutions and film state*, International Balkan Workshop on Applied Physics, Constanta, Roumanie, 7-9 juillet 2010
10. S. Gurlui, E. Buruiana, T. Buruiana, G. Strat, M. Strat, V. Pohoata, *Fluorescence properties of some polyurethane derivatives with stilbene and pyrene rings*, 47th microsposium. ADVANCED POLYMER MATERIALS FOR PHOTONICS AND ELECTRONICS, PRAGUE, 15 – 19 July 2007
11. G. Strat, M. Strat, S. Gurlui and D. Dimitriu, *Optogalvanic effect in nonlinear systems*, BPU-5, Vrnjacka Banja, Serbia and Montenegro, August 25-29, 2003



**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.

Iasi, 5 May, 2024

S. Gurlui

