

PERSONAL INFORMATION


Sorin Ionut Vizireanu



 National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, 409 Atomistilor Street, 77125, Romania.

 +40214574470  +40723083553

 s_vizi@infim.ro

 <http://plasmata.inflpr.ro/people.html>

Sex Masculin | Date of birth 24/10/1976 | Nationality Romanian

POSITION WITHIN THE PROJECT

Participant

WORK EXPERIENCE

08/2014-present

Senior Scientist II

National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, 409 Atomistilor Street, 77125, Romania. <http://www.Inflpr.ro>

- Data processing and investigation in the field of plasma physics, plasma setup design. Plasma deposition, functionalization and investigation of thin films and nanostructured carbon. Testing the applications for the as-synthesized and/or plasma treated nano-materials. Proposals and leading research projects. Dissemination and elaboration of scientific papers.

Business or sector Research

08/2008-08/2015

Senior Scientist II

National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, 409 Atomistilor Street, 77125, Romania. <http://www.Inflpr.ro>

- Data processing and investigation in the field of plasma physics, plasma setup design. Deposition, functionalization and investigation of thin films and nanostructured carbon. Plasma treatment of various nanostructured carbon materials. Proposals and leading research projects. Dissemination and elaboration of scientific papers

Business or sector Research

06/2004-08/2008

Research Scientist

National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, 409 Atomistilor Street, 77125, Romania. <http://www.Inflpr.ro>

- Measurements and data processing in the field of plasma physics, plasma setup design. Deposition and investigation of thin films and nanostructured carbon materials.

Business or sector Research

12/2000-06/2004

Research assistant

National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, 409 Atomistilor Street, 77125, Romania. <http://www.Inflpr.ro>

- Deposition of carbonic and metal/metal oxides materials. Measurements and processing of data acquisition in the field of low-temperature plasmas.

Business or sector Research

12/2000–12/2001 **Research beginner**
 National Institute for Lasers, Plasma and Radiation Physics, Bucharest-Magurele, 409 Atomistilor Street, 77125, Romania. <http://www.lnflpr.ro>
 ▪ Plasma physics experiments
Business or sector Research

EDUCATION AND TRAINING

2010-March 2013 **Post-Doctoral stage in Nanomaterials** ISCED 6
 Petrol – Gaze University, Ploiesti, Romania
 ▪ Plasma synthesis and postsynthesis treatment of carbon nanomaterials

2001-2008 26 September **PhD degree in Physics, with distinction Summa Cum Laude -subject "Depositions of carbon material by plasma techniques"** ISCED 6
 University of Bucharest
 ▪ Plasma Physics Studies

01/09-30/11/2003 **Research stage** ISCED 6
 Institute of Physics, Slovak Academy of Sciences, Department of Multilayers", Bratislava, Slovakia in the project 5th Framework Program of the European Union
 ▪ Physics Studies- materials characterizations

21/01 - 6/03/2003 **Research stage** ISCED 6
 Hacettepe University, Institute for Pure & Applied Science Bioengineering, Food Engineering Department" Ankara -Turkey, in the project 527- Plasma Polymers and Related Materials
 ▪ Physics Studies- materials synthesis and characterizations

1999-03/2001 **Post-university classes in Informatics** ISCED 6
 Petrol – Gaze University, Ploiesti, Romania
 ▪ Computer science specializations

1999-03/2001 **MSc degree in Atomics, Molecular and Astrophysics of Physic** ISCED 6
 University of Bucharest, Romania
 ▪ Physics Studies - Specialization

10/1995-06/1999 **Bachelor in Physics** ISCED 5
 University of Bucharest, Romania
 ▪ Physics Studies - Specialization

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Proficient user	Proficient user	Proficient user	Proficient user	Proficient user
C1.					
French	Independent user	Independent user	Independent user	Independent user	Independent user
B1.					

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

Communication skills

- Team spirit: I am a good team person, with initiative, used to dead-lines, long hours work and under stress: I have worked in various research teams, with different structures;
- Intercultural skills: I adapt easily to new people, situations or environments: I have worked in various research teams.

Organisational / managerial skills

- Good sense of organisation: I have been actively involved in organising conferences/workshops and research seminars;
- Project management skills proved by participation at national and international projects.
- Good leadership skills: as project leader or project coordinator from INFLPR.
- 03/2010-03/2013-post-doctoral project in nanomaterials domain, theme: Synthesis and plasma postsynthesis treatments of carbon nanostructures, funded by European Social Funds through POSDRU/89/1.5/S/54785.
- period 08/2010-07/2013, I lead a young researcher team project TE_228/2010/ Plasma functionalization of carbon nanowalls for the control of superhydrophobicity and the attachment of nanoparticles and the biological entities.
- 3 partnership projects (where I'm responsible from INFLPR). These projects are carried along with Polytechnica of Bucharest, University of Bucharest and National Institute for Electrical Engineering ICPE-CA as project coordinators.
- -09/2012-12/2016, Developing new graphene-polymer composites biomaterials for scaffold fabrication with applicability in bone repair by coupling multiscale molecular modeling and experiments, Polygraph, project PN-IIPCCA-140-2012/MCT,
- -07/2014-12/2016, New multifunctional nanostructured coatings for orthopedic implants, acronym Nano-Coat, PN-II-PT-PCCA-253-2014/ MCT,
- -07/2014-12/2016, Redox battery with fast loading capacity, as main energy source for electrical vehicles, EV-Bat acronym, PN-II-PT-PCCA-220-2014/ MCT.

Job-related skills

- Plasma sources and plasma setup design (working at low and atmospheric pressure, including submerge under liquid plasma- for deposition and treatments)
- Plasma processing of carbon nanostructures (nanofibers, nanotubes and nanowalls);
- Plasma investigation during carbon synthesis (by Optical Emission Spectroscopy, Electrical Probes and Mass Spectrometry);
- Plasma treatment and plasma functionalization of nanostructures;
- Materials characterization, processing and interpreting the results of FTIR, XRD, XRR, EDX, SEM, TEM, AFM, UV-Vis, Raman Spectroscopy and contact angle measurements.

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](#)

Competence and ability to use computer software in Windows/Linux platform, MS Office, Corel Draw, Adobe Acrobat, Adobe Photoshop, OriginLab, CASA XPS, Web page design.

Driving licence B

ADDITIONAL INFORMATION

- Patents:**
- 1. Inducing Hydrogen into RF plasma and laser processing of structural fault in silicon in order to transfer mono-crystalline layers with thicknesses under 50 nm, cu autorii C. Ghica, L. C. Nistor, V. S. Teodorescu, S. Vizireanu, N. D. Scarisoreanu, patent national (inscris din 10/10/2009), RO125409-A0.
 - 2. Method of growing carbon nanowalls on a substrate, authors: Ita Junkar, Martina Modic, Alenka Vesel, Gheorghe Dinescu, Sorin Ionut Vizireanu, Silviu-Daniel Stoica, Karin Stana Kleinschek, Miran Mozetic, Great Britain 13.10.2014 Nr. 1418056

- Honours and awards**
- Romanian Academy Award in Physics -DRAGOMIR HURMUZESCU 2012, for the contribution at synthesis and characterizations of carbon nanowalls based on graphene structures

Publications ▪ List of ISI papers

1. B. Mitu, **S. Vizireanu**, C. Petcu, G. Dinescu, M. Dinescu, R. Birjega, V.S. Teodorescu, *Carbon material deposition by remote RF plasma beam*, *Surface and Coatings Technology* 180, 238-243, 2004.
2. **S. Vizireanu**, B. Mitu, G. Dinescu, *Nanostructured carbon growth by expanding RF plasma assisted CVD on Ni-coated silicon substrate*, *Surface and Coatings Technology* 200, 1132– 1136, 2005.
3. G. Dinescu, **S. Vizireanu**, C. Petcu, B. Mitu, M. Bazavan, I. Iova, *Spectral characteristics of a radiofrequency nitrogen plasma jet continuously passing from low to atmospheric pressure*, *Journal of Optoelectronics and Advanced Materials*, 7, 5, 2477 – 2480, 2005.
4. B. Mitu, **S. Vizireanu**, R. Birjega, M. Dinescu, S. Somacescu, P. Osiceanu, V. Părvulescu, G. Dinescu, *Comparative properties of ternary oxides of ZrO₂-TiO₂-Y₂O₃ obtained by laser ablation, magnetron sputtering and sol-gel techniques*, *Thin Solid Films* 515, 6484–6488, 2007.
5. **S. Vizireanu**, B.Mitu, G. Dinescu, L. Nistor, C. Ghica, A. Maraloiu, M. Stancu, G. Ruxanda, *Varieties of nanostructured carbon grown by expanding radiofrequency plasma beam*, *Journal of Optoelectronics and Advanced Materials* 9, 6, 1649 – 1652, 2007.
6. A. Malesevic, **S. Vizireanu**, R. Kemps, A. Vanhulsel, C. Van Haesendonck, G. Dinescu, *Combined growth of carbon nanotubes and carbon nanowalls by plasma-enhanced chemical vapor deposition*, *Carbon* 45, 2932–2937, 2007.
7. **S. Vizireanu**, L. Nistor, M. Haupt, V. Katzenmaier, C. Oehr, G. Dinescu, *Carbon Nanowalls Growth by Radiofrequency Plasma-Beam-Enhanced Chemical Vapor Deposition*, *Plasma Processes and Polymers* 5, 263-268, 2008.
8. G. Ruxanda, M. Stancu, **S. Vizireanu**, G. Dinescu, D. Ciuparu, *Varieties of carbon nanostructures obtained by the AC arc discharge method*, *Journal of Optoelectronics and Advanced Materials* 10, 8, 2047-2051, 2008.
9. **S. Vizireanu**, G. Dinescu, D. Stoica, R. Birjega, C. Ghica, V. Teodorescu, L. Nistor, R. Ganea, *Fe-catalyzed carbon nanotubes growth on fluidized powders by remote radiofrequency plasma beam*, *Journal of Optoelectronics and Advanced Materials* 10, 8, 2056-2060, 2008.
10. I. Luciu, **S. Vizireanu**, T. Acsente, E. R. Ionita, B. Mitu, G. Dinescu, *Investigation of radiofrequency plasma jets at low and atmospheric pressure by optical emission spectroscopy*, *Journal of Optoelectronics and Advanced Materials*, 10, 8, 2015-2019, 2008.
11. G. Dinescu, B. Mitu, **S. Vizireanu**, E. R. Ionita, I. Luciu, M.D. Ionita, C. Stancu, C.E. Stancu, T. Acsente, L. Nistor, L. Kravets, *Materials processing with radiofrequency plasmas at low and atmospheric pressure*, *Romanian Reports in Physics* 60, 3, 67, 2008.
12. **S. Vizireanu**, S. D. Stoica, B. Mitu, M.A. Husanu, A. Galca, L. Nistor, G. Dinescu, *Radiofrequency plasma beam deposition of various forms of carbon based thin films and their characterization*, *Applied Surface Science* 255, 5378–5381, 2009.
13. R. Birjega, **S. Vizireanu**, G. Dinescu, L.C. Nistor, R. Ganea, *The effect of textural properties of the gamma-Al₂O₃:Ni catalyst template on the nanostructured carbon grown by PECVD*, *Superlattices and Microstructures* 46, 297-301, 2009.
14. C. Ghica, L.C. Nistor, M. Stefan, D. Ghica, B. Mironov, **S. Vizireanu**, A. Moldovan, M. Dinescu, *Specificity of defects induced in silicon by RF-plasma hydrogenation*, *Applied Physics A* 98, 4, 777-785, 2010.
15. C.Ghica, L. C. Nistor, B. Mironov, **S. Vizireanu**, *Hydrogen-plasma induced platelets and voids in silicon wafers*, *Romanian Reports in Physics* 62, 329-340, 2010.
16. E.C. Stancu, M.D. Ionita, **S. Vizireanu**, A.M. Stanciuc, L. Moldovan, G. Dinescu, *Wettability properties of carbon nanowalls layers deposited by a radiofrequency plasma beam discharge*, *Materials Science and Engineering B* 169, 119-122, 2010.
17. **S. Vizireanu**, S.D. Stoica, C. Luculescu, L.C. Nistor, B. Mitu, G. Dinescu, *Plasma techniques for nanostructured carbon materials synthesis. A case study: carbon nanowall growth by low pressure expanding RF plasma*, *Plasma Sources Science and Technology* 19, 034016, 2010.
18. C. Ghica, L.C. Nistor, **S. Vizireanu**, G. Dinescu, A. Moldovan, M. Dinescu, *Skin Layer Defects in Si by Optimized Treatment in Hydrogen RF Plasma*, *Plasma Processes and Polymers*, 7, 986, 2010.
19. C. Ghica, L.C. Nistor, V. S. Teodorescu, A. Maraloiu, **S. Vizireanu**, N. D. Scarisoreanu, M. Dinescu, *Laser treatment of plasma-*

- hydrogenated silicon wafers for thin layer exfoliation, *Journal of Applied Physics* 109, 063518, 2011.
20. C Ghica, L C Nistor, **S Vizireanu** and G Dinescu, Annealing of hydrogen-induced defects in RF-plasma-treated Si wafers: ex situ and in situ transmission electron microscopy studies, *Journal of Physics D: Applied Physics* 44 295401, 2011.
 21. **S. Vizireanu**, M. D. Ionita, G. Dinescu, I. Enculescu, M. Baibarac, I. Baltog, Post-synthesis Carbon Nanowalls Transformation under Hydrogen, Oxygen, Nitrogen, Tetrafluoroethane and Sulfur Hexafluoride Plasma Treatments, *Plasma Processes and Polymers* 9, 363, 2012.
 22. **S. Vizireanu**, B. Mitu, C.R. Luculescu L.C. Nistor, G. Dinescu, PECVD synthesis of 2D nanostructured carbon material, *Surface and Coatings Technology* 211, 2, 2012.
 23. Z. Gonzalez, **S. Vizireanu**, Gheorghe Dinescu, C. Blanco, R. Santamaria, Carbon Nanowalls thin films as nanostructured electrode materials in Vanadium Redox Flow Batteries, *Nano Energy* 1, 833-839, 2012.
 24. **S. Vizireanu**, G. Dinescu, L.C. Nistor, M. Baibarac, G. Ruxanda, M. Stancu, D. M. Ciuparu, Stability of carbon nanowalls against chemical attack with acid solutions, *Physica E: Low-Dimensional Systems and Nanostructures*, 47, 59, 2013.
 25. A. Achour, B. Belkerk, K. A. Aissa, **S. Vizireanu**, E. Gautron, M. Carette, P-Y. Jouan, G. Dinescu, L. Le Brizoual, Y. Scudeller, M-A. Djouadi, Thermal properties of carbon nanowalls layers measured by pulsed photothermal technique, *Applied Physics Letters* 102, 061903, 2013.
 26. A. Marcu, I. Enculescu, **S. Vizireanu**, R. Birjega, C. Porosnicu, Single crystal ZnO nanowire luminescence shifting by nanostructured ZnO layers, *Digest Journal of Nanomaterials and Biostructures* 8, 597-605, 2013.
 27. A. Achour, **S. Vizireanu**, G. Dinescu, Le Brizoual, M-A. Djouadi, M. Boujtita, Electrochemical anodic oxidation of nitrogen doped carbon nanowall films: X-ray photoelectron and Micro-Raman spectroscopy study, *Applied Surface Science* 273, 49– 57, 2013.
 28. **S. Vizireanu**, A. Lazea Stoyanova, M. Filipescu, D.-L. Cursaru, G. Dinescu, Carbon nanowalls as suitable layers for lubricity improvement, *Digest Journal of Nanomaterials and Biostructures* 8, 1145 - 1156, 2013.
 29. E. C. Stancu, A.-M. Stanciuc, **S. Vizireanu**, C. Luculescu, L. Moldovan, A. Achour, G. Dinescu, Plasma functionalization of carbon nanowalls and its effect on attachment of fibroblast-like cells, *Journal of Physics D: Applied Physics* 47, 265203, 2014.
 30. D. L. Cursaru, **S. Vizireanu**, S. Mihai, D. Ghita, S. D. Stoica, G. Dinescu, Friction and wear properties of carbon nanowalls coatings, *Digest Journal of Nanomaterials and Biostructures* 9, 1105-1114, 2014.
 31. A. Lazea-Stoyanova, M. Enculescu, **S. Vizireanu**, V. Marascu, G. Dinescu, Effects of process parameters on growth of metal particles by atmospheric pressure plasma jet, *Digest Journal of Nanomaterials and Biostructures* 9, 1241-1247, 2014.
 32. T.M. Dinh, A. Achour, **S. Vizireanu**, G. Dinescu, L. Nistor, A. Armstrong, D. Guay, D. Pech, Hydrous RuO₂/carbon nanowalls hierarchical structures for all-solid-state ultrahigh-energy-density micro-supercapacitors, *Nano Energy* 10, 288-294, 2014.
 33. R. Ion, **S. Vizireanu**, C. E. Stancu, C. Luculescu, A. Cimpean, G. Dinescu, Surface plasma functionalization influences macrophage behavior on carbon nanowalls, *Materials Science Engineering C: Materials for Biomedical Applications* 48, 118-125, 2015.
 34. M. Mozetic, A. Vesel, S.D. Stoica, **S. Vizireanu**, G. Dinescu, R. Zaplotnik, Oxygen atom loss coefficient of carbon nanowalls, *Applied Surface Science* 333, 207-213, 2015.
 35. C. Constantinescu, **S. Vizireanu**, V. Ion, G. Aldica, S.D. Stoica, A. Lazea-Stoyanova, A.-P. Alloncle, P. Delaporte, G. Dinescu G, Laser-induced forward transfer of carbon nanowalls for soft electrodes fabrication, *Applied Surface Science* 374, 49–55, 2016.
 36. A. Palla Papavlu, M. Filipescu, **S. Vizireanu**, L. Vogt, S. Antohe, M. Dinescu, A. Wokaun, T. Lippert, Laser-induced forward transfer of hybrid carbon nanostructures, *Applied Surface Science* 374, 312–317, 2016.
 37. M.D. Ionita, **S. Vizireanu**, S. D. Stoica, M. Ionita, A. M. Pandele, A. Cucu, I. Stamatina, L. C. Nistor, G. Dinescu, Functionalization of carbon nanowalls by plasma jet in liquid treatment, *European Physical Journal D* 70, 31, 2016.
 38. R. Ion, **S. Vizireanu**, C. Luculescu, A. Cimpean, G. Dinescu, Vertically, interconnected carbon nanowalls as biocompatible scaffolds for osteoblast cells, *Journal of Physics D: Applied Physics* 49, 274004, 2016.
 39. V. Satulu, M.D. Ionita, **S. Vizireanu**, B. Mitu, G. Dinescu, Plasma processing with fluorine chemistry for modification of surfaces wettability, *Molecules* 21, 1711, 2016.
 40. Z. Ben Cheikh, F. El Kamel, O. Gallot-Lavallée, M. A. Soussou, **S. Vizireanu**, A. Achour, K. Khirouni, Hydrogen doped BaTiO₃ films as solid-state electrolyte for micro-supercapacitor applications, *Journal of Alloys and Compounds*, 721, 276-284, 2017.
 41. H. Achour, A. Achour, S. Soleymani, M. Islam, **S. Vizireanu**, A. Arman, A. Ahmadpourian, G. Dinescu, Plasma surface functionalization of boron nitride nano-sheets, *Diamond and Related Materials* 77, 110-115, 2017.
 42. S. Vizireanu, M.D. Ionita, R.E. Ionita, S. D. Stoica, C. M. Teodorescu, M. A. Husanu, N. G. Apostol, M. Baibarac, D. Panaitescu, G. Dinescu, Aging phenomena and wettability control of plasma deposited carbon nanowall layers, *Plasma Processes and Polymers*, In Press 2017.

Date: 15/09/2017

Signature: