

PERSONAL INFORMATION



Valentina MĂRĂSCU

📍 National Institute for Laser, Plasma and Radiation Physics (INFLPR), Low Temperature Plasma Laboratory – 409 Atomistilor Street, Po- Box Mg- 36, RO-077125 Magurele, ROMANIA.

✉ valentina.marascu@inflpr.ro | *Experience in R&D:* > 13 years;

🆔 <https://orcid.org/0000-0002-5170-1398>

🔗 <https://scholar.google.ro/citations?user=lsJzsb0AAAAJ&hl=ro>

Scopus® <https://www.scopus.com/authid/detail.uri?authorId=55980918200>

Nationality: Romanian | WoS *H-Index*: 10 | WoS Citations: 224

CURRENT POSITION

- Scientific Researcher 3rd Degree (*plasma physics domain*)
- University Lecturer (*computer science domain*)

PROFESSIONAL EXPERIENCE

September 2022 - present

Scientific Researcher 3rd degree

National Institute for Laser, Plasma and Radiation Physics (INFLPR), Low Temperature Plasma Laboratory – 409 Atomistilor Street, Po- Box Mg- 36, RO-077125 Magurele, ROMANIA.

<http://www.inflpr.ro>

- Studies/experiments on interactions between plasma and fusion-related materials.
- Proposal and development of laboratory-scale experiments related to fusion.
- Materials relevant to fusion and dust production by plasma methods.
- Numerical calculation/statistical analysis of nano- and microstructures.
- Development of algorithms for laboratory-scale plasma simulations.
- Characterization of materials, deposited by different plasma and laser techniques, by AFM, FTIR, profilometry, contact angle, and optical microscopy.
- Experimental physics laboratories/practice internships/preparatory internships, etc., with undergraduate/master's students.
- Dissemination of scientific results.

Business or sector: Research & Development Sector (*R&D*)

October 2023- present

University Lecturer

Faculty of Engineering and Computer Science, SPIRU HARET University – 46 G Fabricii Street Sector 6, Bucharest, ROMANIA.

<https://misn-b.spiruharet.ro/>

- Courses: *Computational Methods in Natural Sciences*.
- Laboratories for the disciplines: *Computational Methods in Natural Sciences; Functional Programming; Development of Web Applications*.

Business or sector: Academic/ Educational Sector

February 2025-
March 2025
(1 month)

Research Stage

Faculty of Sciences, Moulay Ismail University (UMI)- registered office at Marjane II, Meknes, 50000, MOROCCO.

<https://www.fs-umi.ac.ma/>

- Development of software solutions for acquiring and processing data from various sensors.
- Research and innovation activities specific to the project 101007653 — CANLEISH — H2020-MSCA-RISE-2020

Business or sector: Research/ Industry Sector

November 2024
(1 month)

Research Stage

Electronic Nose Company Limited (ENCL)- registered office at 119/242, Mu 1, Sai Ma Sub-District, Mueang Nonthaburi District, Nonthaburi, THAILAND.

<https://erd.decubber.org/organisation/60216>

- Development of software programs for extracting and analysing data obtained from various sensors.
- Research and innovation activities specific to the project 101007653 — CANLEISH — H2020-MSCA-RISE-2020

Business or sector: Research/ Industry Sector

October 2022- June
2024

Internship

S.C. DAPYX SOLUTION S.R.L. – Sector 5, Bucharest, ROMANIA.

- Development of software programs (Python, C#).
- Identification and assessment of cyber threats specific to IoT devices.
- Application of encryption and security technologies for data protection.
- Development and implementation of simulated attack scenarios.
- Application of mathematical modeling techniques in the context of plasma physics.

Business or sector: Industry Sector

February 2023-
June 2023

University Teaching Assistant (*associate teaching staff*)

Faculty of Engineering and Computer Science, SPIRU HARET University – 46 G Fabricii Street Sector 6, Bucharest, ROMANIA.

<https://misn-b.spiruharet.ro/>

- Laboratories for the discipline: *Development of Web Applications*.

Business or sector: Academic/ Educational Sector

October 2021-
present

Volunteer - Mentor

The Michigan Institute for Plasma Science and Engineering (MIPSE)– 2236 EECS Bldg., 1301 Beal Avenue, Ann Arbor, Michigan 48109-2122, USA.

<https://mipse.umich.edu/mentors.php>

- To offer advice and discuss their experiences in proposal development, teaching, and other areas

Business or sector: Academic/ Educational Sector

July 2021 - August
2022

Scientific Research Assistant

National Institute for Laser, Plasma and Radiation Physics (INFLPR), Low Temperature Plasma Laboratory – 409 Atomistilor Street, Po- Box Mg- 36, RO-077125 Magurele, ROMANIA.

<http://www.inflpr.ro>

- Production of W particles using atmospheric and low-pressure plasma jets.
- RF (13.56 MHz) plasma-surface interaction studies/experiments.
- Numerical calculation/ statistical analysis of particles.
- Characterization of materials, deposited by different plasma and laser techniques, by AFM, FTIR, profilometry, contact angle, and optical microscopy.
- Dissemination of scientific results.

Business or sector: Research & Development Sector (*R&D*)

January 2020 -July
2021

Postdoctoral Fellowship

Commissariat à l'énergie atomique et aux énergies alternatives (CEA), Paris-Saclay Center, DRF/ JOLIOT/ SCBM/ Tritium Labelling Laboratory, 91191 Gif-sur-Yvette Cedex, FRANCE.

<http://www.cea.fr/>

- Experiments on tritium loading studies in different materials (dust and bulk materials) via the gas phase.
- Ambient/high-temperature desorption analyses of tritiated materials.
- Plasma matter interaction studies/experiments in microwaves (2.45 GHz).
- Numerical calculation/statistical analysis of material structures.
- Material characterization by LSC and LVEM-TEM/ SEM techniques.
- Dissemination of scientific results.

Business or sector: Research & Development Sector (*R&D*)

July 2014 - January
2020

Scientific Research Assistant

National Institute for Laser, Plasma and Radiation Physics (INFLPR), Low Temperature Plasma Laboratory – 409 Atomistilor Street, Po- Box Mg- 36, RO-077125 Magurele, ROMANIA.

<http://www.inflpr.ro>

- Production of W particles using atmospheric and low-pressure plasma jets.
- RF (13.56 MHz) plasma-surface interaction studies/experiments.
- Numerical calculation/ statistical analysis of particles.
- Characterization of materials, deposited by different plasma and laser techniques, by AFM, FTIR, profilometry, contact angle, and optical microscopy.
- Dissemination of scientific results

Business or sector: Research & Development Sector (*R&D*)

January 2016 -
September 2017

Scientific Research Assistant

Research Center for Polymers, Mesophases and Unconventional Methods for Environmental Protection/ Faculty of Physics University of Bucharest- 405 Atomistilor Street, Po- Box Mg- 11, 077125 Magurele, ROMANIA.

<http://fizica.unibuc.ro/>

- Deposition of polymer thin films and nanomaterials by different plasma techniques.
- High-resolution optical emission spectroscopy measurements.
- Characterization of materials, deposited by different plasma and laser techniques, by AFM, FTIR, profilometry, contact angle, and optical microscopy.
- Numerical calculation and statistical analysis of nanostructures.
- Dissemination of scientific results.

Business or sector: Research & Development Sector (*R&D*)

January 2014 -
July 2014

Trainee Scientific Research Assistant

National Institute for Laser, Plasma and Radiation Physics (INFLPR), Low Temperature Plasma Laboratory – 409 Atomistilor Street, Po- Box Mg- 36, RO- 077125 Magurele, ROMANIA.

<http://www.inflpr.ro>

- Synthesis of metal particles through plasma at atmospheric pressure RF (13.56 MHz).
- Numerical calculation and statistical analysis of nanostructures.
- Characterization of materials, deposited by different plasma and laser techniques, by AFM, FTIR, profilometry, contact angle, and optical microscopy.
- Dissemination of scientific results.

Business or sector: Research & Development Sector (*R&D*)

March 2012 -
December 2013

Technician 3rd degree

National Institute for Laser, Plasma and Radiation Physics (INFLPR), Low Temperature Plasma Laboratory – 409 Atomistilor Street, Po- Box Mg- 36, RO- 077125 Magurele, ROMANIA.

<http://www.inflpr.ro>

- Measurement and interpretation of FTIR spectra of various materials deposited by plasma and laser techniques.
- Dissemination of scientific results.

Business or sector: Research & Development Sector (*R&D*)

EDUCATION AND TRAINING

October 2015-May 2019	<p>Ph.D. in Exact Sciences (<i>physics field</i>)</p> <ul style="list-style-type: none"> • score: <i>Excellent (Summa cum Laudae)</i> <p>Faculty of Physics University of Bucharest- 405 Atomistilor Street, Po- Box Mg- 11, 077125 Magurele, ROMANIA.</p> <p>http://www.fizica.unibuc.ro</p> <ul style="list-style-type: none"> • Doctoral Program: <i>Optics, Spectroscopy, Plasma, and Lasers</i> 	ISCED 8
October 2022-June 2024	<p>Master in Computer Science</p> <p>Faculty of Engineering and Computer Science, <i>SPIRU HARET</i> University –46 G Fabricii Street Sector 6, Bucharest, ROMANIA.</p> <p>https://misn-b.spiruharet.ro/</p> <ul style="list-style-type: none"> • Master Program: <i>Modern Technologies in Information Systems Engineering</i> 	ISCED 7
October 2013–June 2015	<p>Master in Physics</p> <p>Faculty of Physics University of Bucharest- 405 Atomistilor Street, Po- Box Mg- 11, 077125 Magurele, ROMANIA.</p> <p>http://www.fizica.unibuc.ro</p> <ul style="list-style-type: none"> • Master Program: <i>Optics, Lasers and Applications</i> 	ISCED 7

October 2009–February 2013 Bachelor in Mathematics ISCED 6

Faculty of Mathematics and Computer Science, University of Bucharest,
14 Academiei Street, Sector 1, 010014, Bucharest, ROMANIA.

<http://www.fmi.unibuc.ro>

- Study program: *Mathematics and Computer Science*

March 2024–June 2024 Level II- Psychopedagogical Training Program

Department of Training for Teaching Careers and Social and Human Sciences, National University of Science and Technology POLITEHNICA Bucharest- Splaiul Independentei, no. 313, sector 6, RO-060042, Bucharest, ROMANIA.

<https://upb.ro/facultati/departamentul-de-formare-didactica-si-stiinte-socio-umane/>

October 2009–June 2012 Level I- Certification for Teaching Profession

Faculty of Psychology and Educational Sciences, Teaching Training Department, University of Bucharest- 1-3 Iuliu Maniu boulevard, Leu Complex, Building A, V Floor, Bucharest, ROMANIA.

<https://fpse.unibuc.ro/>

PERSONAL SKILLS

Mother tongue(s) ROMANIAN

Another 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
B2					

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

Job-related skills

- Teaching skills.
- Nano-, micro- materials and thin film depositions at low/atmospheric pressure plasma.
- Analyses via high-resolution optical emission spectroscopy (OES).
- Statistical analysis of nano- and micro-materials from SEM images with ImageJ/ Matlab.
- Materials characterization and interpretation via Thermo desorption, LSC, FTIR, Optical Microscopy, AFM, LVEM-TEM/ SEM, Profilometry, and Contact Angle.

Membership

- Romanian Physical Society (RPS)- *since 2013*.
- European Physical Society (EPS)- *2013 - 2023*.
- American Physical Society (APS)- *since 2019*.
- IEEE Advancing Technology for Humanity (IEEE)- *since 2019*.
- IEEE Nuclear and Plasma Sciences Society (IEEE NPSS)- *since 2019*.
- American Nuclear Society (ANS)- *since 2020*.
- IEEE Quantum- *since 2021*.

Guest Editor

- ❖ Special Issue *Advances in Fundamental and Applied Fusion Research domain*; Jurnalul COATINGS (ISSN 2079-6412), MDPI (Basel, Switzerland);
https://www.mdpi.com/journal/coatings/special_issues/fusion_research

Board Reviewers

- ❖ COATINGS Journal (ISSN 2079-6412), MDPI (Basel, Switzerland).

Education

- Applied computer science, experimental physics laboratories/internships/training internships, etc., with undergraduate/graduate, master's, doctoral students.

Chair Member

- ♣ Chair at Virtual Poster Session II, American Physical Society (APS) Global Physics Summit, March 16–21, 2025, Anaheim, CA, USA.
- ♣ Chair at Artificial Intelligence and Expert Systems II Session, 15th Edition International Conference on Electronics, Computers and Artificial Intelligence (ECAI 2023), June 29-30, 2023, Politehnica University, Bucharest, Romania.
- ♣ Chair at Morning Sessions, Virtual Plasma Hack Week, June 28 – July 2nd, 2021, USA.
- ♣ Chair at Tritium Side Session, at the Virtual FuseNet PhD Event, The European Fusion Education Network, November 23, 2020.

Jury Member

- Member of International Jury (oral sessions) at the Virtual American Nuclear Society Student Conference 2021, April 10, 2021, Nord Carolina State University, USA.
- Member of National Jury at 14th Edition Informatics Project Competition (INFOMATRIX), Lumina- The University of South-East Europe, April 8th, 2016, Bucharest Romania.

Member of the organizing team

- ✓ Member of the organizing team at the online event Plasma Hack Week, July 11 – July 15, 2022, Online, USA.
<https://hack.plasmapy.org/2022/about/>
- ✓ Member of the organizing team at the online event Plasma Hack Week, 28 June – 2 July 2021, Online, USA.
<https://hack.plasmapy.org/2021/about/>
- ✓ Member of the INFLPR organizing team: the European Researcher's Night project in 2018, 2015, 2014, and 2013, Bucharest, Romania.
- ✓ Member of the INFLPR organizing team: at the 19th, 17th, and 16th International Conference on Plasma Physics and Applications, in 2021, 2017, and 2013, Magurele, Ilfov, Romania.

Member of the volunteer team

- ♣ Reviewer @ *American Nuclear Society Student Conference 2022*, April 14-16, 2022, at the University of Illinois at Urbana-Champaign, USA.
- ♣ Reviewer @ *Virtual American Nuclear Society Student Conference 2021*, April 8-10, 2021, Nord Carolina State University, USA.
- ♣ Volunteer -Help Desk @ *APS DPP Job Faire from Virtual 62nd Annual Meeting of the American Physical Society, Division of Plasma Physics*, November 10 – 12, 2020, Memphis, Tennessee, USA.
- ♣ Proctor Volunteer @ *IEEE Xtreme 14.0 Programming Competition*, October 24th, 2020, Romanian Section.

Exhibitor (research sector)

- ❖ Exhibitor from INFLPR at *Sci+Fi Fest Project* in 2016, Bucharest, Romania.
- ❖ Exhibitor from INFLPR at *Bucharest International Technical Fair – TIB*, October 14-17, 2015, Romexpo, Bucharest, Romania.

Digital competence	SELF-ASSESSMENT				
	Information processing	Communication	Content creation	Safety	Problem- solving
	Proficient user	Proficient user	Proficient user	Proficient user	Proficient user
	Levels: Basic user - Independent user - Proficient user Digital competencies - Self-assessment grid				
	Romanian Ministry of Education, Research and Innovation Certificate of Professional Competence- Knowledge of computer operating, August 14 th , 2009				

Summer School participation list:

- ✓ 30 August – 3 September 2021 (Online Participation), MIT Plasma Science and Fusion Center, Cambridge MA-SUA: 2nd Computational Physics School for Fusion Research (CPS-FR 2021).
- ✓ 14 -18 June 2021 (Online Participation), CEA IRFM, France: 2nd TRANSAT Tritium School.
- ✓ 9 – 13 November 2020 (Online Participation), ELI-NP Magurele, Romania: ELI-NP Autumn School.
- ✓ 13 -17 June 2016, Kudowa-Zdrój, Polonia: 13th Kudowa Summer School “Towards fusion energy”. <https://www.fusenet.eu/node/1143>
- ✓ 5 -12 October 2013, Physikzentrum Bad Honnef, Germania: The 18th European Summer School: “Low Temperature Plasma Physics: Basics and Applications”/ Master Class: "Biomedical Applications of Cold Plasmas".

Awards:

- ❖ Journal of Physics D: Applied Physics, IOP Outstanding Reviewer Awards 2023
<https://accreditations.ioppublishing.org/f12c87d5-add1-44fa-9edb-9abf0dacbd82#gs.ckcj56>
- ❖ Coatings 2021 Outstanding Reviewer Award
<https://www.mdpi.com/journal/coatings/awards/1745>

Licenses and Certifications

- ❖ March 11, 2025, Japan Society for the Promotion of Science: *e-Learning Course on Research Ethics*.

- ❖ March 23, 2021, IOP Publishing, Online Workshop: *First stage of Peer Review Excellence: IOP training and certification.*
- ❖ IBM Data Science Professional Certificate- *authorized by IBM and offered through Coursera.*
 - 1) course 1: What is Data Science? *Issued Dec 30, 2021- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/9PJ BH72WFJZF>
- ❖ IBM Cybersecurity Analyst Professional Certificate - *authorized by IBM and offered through Coursera.*
<https://www.coursera.org/account/accomplishments/specialization/certificate/ECJYD8B8FB8Y>
 - 1) course 1: Introduction to Cybersecurity Tools & Cyber Attacks. *Issued Jan 4, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/Y6Y RAS87KTPB>
 - 2) course 2: Cybersecurity Roles, Processes & Operating System Security. *Issued Jan 11, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/PYN DB43EBD2D>
 - 3) course 3: Cybersecurity Compliance Framework & System Administration. *Issued Jan 11, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/KHF JP458J5YR>
 - 4) course 4: Network Security & Database Vulnerabilities. *Issued Jan 11, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/4JG QEGXRECZA>
 - 5) course 5: Penetration Testing, Incident Response and Forensics. *Issued Jan 11, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/2W BLV4Q52QZM>
 - 6) course 6: Cyber Threat Intelligence. *Issued Jan 12, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/H6Q 6PBKNG9LV>
 - 7) course 7: Cybersecurity Capstone: Breach Response Case Studies. *Issued Jan 17, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/8FP 2EYPQ558M>
 - 8) course 8: IBM Cybersecurity Analyst Assessment. *Issued Jan 26, 2022- no expiration date*
<https://www.coursera.org/account/accomplishments/certificate/J97 AAWCQUHXN>