



## Europass Curriculum Vitae



### Personal information

Name / surname **Ioana-Laura VELICU**  
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Nationality Romanian

### Professional experience

#### TEACHING EXPERIENCE

Dates	<b>2018 – present</b>
Occupation or position held	<b>Lecturer</b>
Main activities and responsibilities	– Classical Mechanics (course, seminar, laboratory); – Mathematical Models in Science (course, seminar); – Molecular Physics and Heat (seminar, laboratory); – Practical Work: First-year undergraduate students; First-year M.S. students (Advanced Materials. Nanotechnologies).
Name and address of employer	“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania
Type of business or sector	Higher Education
Dates	<b>February 2022 – July 2022</b>
Occupation or position held	<b>Teacher / Higher Level Teaching Assistant / Teaching Assistant</b>
Main activities and responsibilities	– Lesson planning, teaching primary-age children, working 1:1 with small groups of students diagnosed with a variety of different educational support needs;
Name and address of employer	Primary and secondary mainstream / SEN schools in NW London, UK
Type of business or sector	Education
Dates	<b>01.11.2019 – 30.06.2020</b>
Occupation or position held	<b>Tutor</b> in the project “Development of the academic and psycho-social skills of the students of the Faculty of Physics to combat the school dropout EVRIKA!”
Main activities and responsibilities	Facilitating the understanding of the contents and basic terminology necessary for the study of elementary physics courses related to the first year of undergraduate studies; Improving the academic performance of students on the target group; Contributing through tutorial activities to improving students' communication skills.
Name and address of employer	“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania
Type of business or sector	Higher Education
Dates	<b>2015 – 2018</b>
Occupation or position held	<b>Assistant Professor</b>

Main activities and responsibilities	<ul style="list-style-type: none"> <li>– Physics Problems-Solving (course, seminar);</li> <li>– Molecular Physics and Heat (seminar, laboratory);</li> <li>– Classical Mechanics (seminar);</li> <li>– Mathematical Models in Science (seminar);</li> <li>– Practical Work: First-year undergraduate students; First-year M.S. students (Advanced materials. Nanotechnologies).</li> </ul>
Name and address of employer	“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania
Type of business or sector	Higher Education
Dates	<b>01.10.2012 – 01.02.2015</b>
Occupation or position held	<b><i>Associated Assistant Professor</i></b>
Main activities and responsibilities	<ul style="list-style-type: none"> <li>– Chaos and self-organization (course, seminar);</li> <li>– Molecular Physics and Heat (laboratory);</li> <li>– Practical Work: First-year M.S. students (Environmental Physics and Protection).</li> </ul>
Name and address of employer	“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania
Type of business or sector	Higher Education
Dates	<b>01.10.2010 – 01.02.2012</b>
Occupation or position held	<b><i>Substitute Assistant Professor</i></b>
Main activities and responsibilities	– General Physics (course, seminar, laboratory).
Name and address of employer	“Gheorghe Asachi” Technical University, 67 Dimitrie Mangeron Blvd., 700050, Iasi, Romania
Type of business or sector	Higher Education
Dates	<b>MANAGEMENT EXPERIENCE</b> <b>April 2021 – February 2022</b>
Occupation or position held	<b><i>Programme Manager</i></b> of a <b>£4.5 million</b> (5,3 mil €) grant ( <b>Grant Title:</b> UKRI Interdisciplinary Centre for CircularMetal – led by Brunel University London, with partners University of Warwick, University College London, and Loughborough University). The centre is dedicated to exploring how the reuse of metals can benefit the environment and the British economy, and will aim to develop an understanding of how the country can best shift towards a carbon-neutral, circular economy by 2050.
Main activities and responsibilities	Establish resourcing requirements for the overall programme and individual projects / Develop appropriate procedures to monitor, control and report on all aspects of the Research Programme and associated research activities / Contribute to development of project plans / Clarify the scope and definition of the Programme / Assist in the development of plans to achieve the Programme goals / Develop and manage procedures for collecting and reporting relevant statistics.
Name and address of employer	Brunel University London, Uxbridge, UB83PH, UK
Type of business or sector	Research
Dates	<b>March – October 2019</b>
Occupation or position held	Trained by World Bank experts (during Research Valorization Program) on Technology Transfer Office (TTO) management, principles of research and technology commercialization, and tools for intellectual property rights (IPR) protection. <i>Supporting Innovation in Romanian Catching up Regions Project</i> assisted by <b>The World Bank (WB)</b> and <b>DG REGIO of the European Commission</b>
Name and address of employer	“Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania
Type of business or sector	Research

**RESEARCH EXPERIENCE – scientific grants and fellowships (principal investigator)**

Dates **December 2015 – November 2016**  
Occupation or position held **Project manager**, *Optimizing the HiPIMS configuration to improve the deposition process and to obtain thin films with advanced properties*, Grant GI-2015-07 (20 000 RON).  
Main activities and responsibilities – Thin films deposition and characterization, plasma diagnosis.  
Name and address of employer “Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania  
Type of business or sector Research

Dates **October 2010 – September 2013**  
Occupation or position held *Contributions regarding the obtaining and characterization of FeCuNbSiB amorphous and nanocrystalline thin films* (Doctoral fellowship), POSDRU/CPP 107/DMI 1.5/S/78342 (72 000 RON)  
Name and address of employer “Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania  
Type of business or sector Research

**RESEARCH EXPERIENCE – scientific grants (member)**

Dates **September 2020 – September 2022**  
Occupation or position held **Researcher**, PN-III-P1-1.1-TE-2019-1209, TE 59/31.08.2020 (431 989 RON)  
Main activities and responsibilities – Thin films deposition and characterization, processing and interpretation of experimental data, writing scientific papers and reports.  
Name and address of employer Department of Materials Science, Faculty of Materials Science and Engineering, Transilvania University, 500068 Brasov, Romania  
Type of business or sector Research

Dates **July 2018 – September 2020**  
Occupation or position held **Senior Researcher**, *Romanian participation at EUROfusion program WPPFC and complementary research, PFC-RO, PNCDI III / 1EU-1/2 / 01.07.2016.*  
Main activities and responsibilities – Thin films deposition and characterization for WPPFC project (work package “Plasma-Facing Components”).  
Name and address of employer “Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania  
Type of business or sector Research

Dates **October 2014 – December 2016**  
Occupation or position held **Assistant Researcher**, *Process and device for thin films deposition in highly ionized pulsed plasma*, Grant PN-II-PT-PCCA-2011-3.2-1340.  
Main activities and responsibilities Experimental devices designing, diagnosis of plasma subjected to an additional magnetic field, thin films deposition and characterization, processing and interpretation of experimental data, writing scientific papers and reports.  
Name and address of employer “Alexandru Ioan Cuza” University of Iasi, 11 Carol I Blvd., 700506, Iasi, Romania  
Type of business or sector Research

Dates **October 2010 – April 2011**  
Occupation or position held **Trainee Research Assistant**  
Main activities and responsibilities – Magnetic thin films deposition using various deposition techniques – Radio Frequency Magnetron Sputtering, Electron Beam Evaporation, etc.  
– Thin films characterization – surface and bulk magnetic behaviour.  
Name and address of employer National Institute of Research & Development for Technical Physics – IFT Iasi, 47 Mangeron Blvd., 700050, Iasi, Romania  
Type of business or sector Research

## Education and training

<p>Dates</p> <p>Title of qualification awarded</p> <p>Name and type of organization providing education and training</p>	<p><b>November 2012 – July 2013</b></p> <p>Graduation certificates for successful completion of the psycho-pedagogical module (postgraduate, level I and level II)</p> <p>“Alexandru Ioan Cuza” University of Iasi, Teacher Training Department</p>
<p>Dates</p> <p>Title of qualification awarded</p> <p>Principal subjects/occupational skills covered</p> <p>Name and type of organization providing education and training</p>	<p><b>01.10.2010 – 27.09.2013</b></p> <p>Ph.D. in Exact Sciences – Physics, with EXCELLENT (SUMMA CUM LAUDE), awarded with DOC-Paideia Prize of Excellence.</p> <p>Ph.D. thesis: <i>Contributions regarding the obtaining and characterization of FeCuNbSiB amorphous and nanocrystalline thin films</i></p> <p>Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi, Romania</p>
<p>Dates</p> <p>Title of qualification awarded</p> <p>Principal subjects/occupational skills covered</p> <p>Name and type of organization providing education and training</p>	<p><b>2008 – 2010</b></p> <p>M.Sc., Physics (Plasma Physics, Self-organization and Spectroscopy)</p> <p>Dissertation thesis: <i>Amorphous soft magnetic thin films: obtaining and characterization</i></p> <p>Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi, Romania</p>
<p>Dates</p> <p>Title of qualification awarded</p> <p>Principal subjects/occupational skills covered</p> <p>Name and type of organization providing education and training</p>	<p><b>2004 – 2008</b></p> <p>B.Sc., Physics (Computational Physics)</p> <p>License thesis: <i>Magneto-optical Kerr effect. The study of surface magnetization of soft magnetic thin films</i></p> <p>Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi, Romania</p>
<p>Dates</p> <p>Title of qualification awarded</p> <p>Principal subjects/occupational skills covered</p> <p>Name and type of organization providing education and training</p>	<p><b>2000 – 2004</b></p> <p>Baccalaureate Diploma</p> <p>Natural Sciences</p> <p>“Ovidius” Theoretical High school, Constanta</p>

## Personal skills and competences

Other language(s)

Self-assessment

*European level (\*)*

**English**

**French**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C2	Proficient user	C2	Proficient user	C1	Proficient user	C1	Proficient user
B1	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user

(\*) [Common European Framework of Reference for Languages](#)

Social skills and competences

Good communication, fast adaptation in new environments, team spirit.

Organizational skills and competences	<p>I took an active part in the organization of several international conferences and Autumn schools (<b>member of the local organizing committee</b>):</p> <ul style="list-style-type: none"> <li>• 10<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM-10, September 22-28 2014, Iasi, Romania;</li> <li>• 1<sup>st</sup> Autumn School on Physics of Advanced Materials – PAMS-1, September 22-28 2014, Iasi, Romania;</li> <li>• 11<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM11, 8-14 September 2016, Cluj-Napoca, Romania;</li> <li>• 2<sup>nd</sup> Autumn School on Physics of Advanced Materials, 8-14 September 2016, Cluj-Napoca;</li> <li>• 11<sup>th</sup> International Conference on Materials Science and Engineering – BRAMAT 2019, 13-16 March 2019, Brasov, Romania;</li> <li>• The XVIII<sup>th</sup> International Conference on Plasma Physics and Applications – CPPA 2019, 20-22 June 2019, Iasi, Romania;</li> </ul> <p>I took an active part in the organization of several events:</p> <ul style="list-style-type: none"> <li>• Doors Open Days;</li> <li>• Earth Day;</li> <li>• various promotional activities of the Faculty of Physics;</li> <li>• practical work sessions for the first-year M.S. students.</li> </ul>
Technical skills and competences	<p>Well skilled in:</p> <ul style="list-style-type: none"> <li>• deposition of amorphous and nanocrystalline thin films from a wide range of materials using various deposition techniques (RF Magnetron Sputtering, DC Magnetron Sputtering, High Power Impulse Magnetron Sputtering);</li> <li>• measurements for the study of: structural (X-ray diffraction), topological (Atomic Force Microscopy), magnetic (Vibrating Sample Magnetometry and Magneto-optical Kerr Effect), mechanical (nanoindentation) and tribological (nanoscratch) properties of thin films, as well as for the study of magnetoimpedance effect;</li> <li>• optical, electrical and spectral plasma diagnosis;</li> <li>• design and building of measuring devices for the study of magneto-optical Kerr and magnetostriction effects.</li> </ul>
Computer skills and competences	<ul style="list-style-type: none"> <li>• O.S.: Windows and Linux;</li> <li>• Microsoft Office;</li> <li>• Adobe (Acrobat, InDesign, Photoshop);</li> <li>• Corel Paint Shop Pro and Corel Draw;</li> <li>• Origin, Gwyddion, LabVIEW;</li> <li>• Computer Networks.</li> </ul>
Patent	<ul style="list-style-type: none"> <li>• „<i>Installation and Process for the Synthesis of Thin Layers in Pulsed Magnetron Discharge with High Degree of Ionization</i>”, V. Tiron, I.-L. Velicu, I. Mihăilă, M. Udrea, G. Popa, Patent Number: RO132311-A2, patent registered to OSIM, Patent RO132311-A2, 2017 (national).</li> <li>• “<i>Installation and process for energetic metal ion beam with application in space propulsion</i>”, V. Tiron, I.-L. Velicu, G. Popa, patent registered to OSIM, Patent: A/00304/2018 (national).</li> </ul>

## Awards

1. **Mention** – A.I. Bulai, **I.L. Velicu**, M. Neagu, V. Pohoata, B. Munteanu, *Magneto-optical System for Kerr Rotation Measurement*, a XXXIX-a Conferință Națională Fizica și Tehnologiile Educaționale Moderne, 2010, Iași, România.
2. **Second prize** – **I.L. Velicu**, M. Dobromir, M. Neagu, H. Chiriac, D. Luca, N. Lupu, V. Pohoată, B. Munteanu, *FeCuNbSiB Thin Films Deposited by RF Magnetron Sputtering*, a XL-a Conferință Națională Fizica și Tehnologiile Educaționale Moderne, 12-14 mai 2011, Iași, România.
3. **Prize offered by the Royal Society of Chemistry (U.K.) for the best poster presentation** and
4. **Honourable Mention offered by the organization committee for:**  
M. Dobromir, **L. I. Velicu**, M. Neagu, H. Chiriac, *FeCuNbSiB Thin Films Deposited by Pulsed Laser Deposition: Structural and Magnetic Properties*, Nanomaterials: Application & Properties, 16-21 septembrie 2013, Alushta, Ukraine.
5. **DOC-Paideia Prize of Excellence** for my Ph.D. thesis entitled: *Contributions regarding the obtaining and characterization of FeCuNbSiB amorphous and nanocrystalline thin films*.
6. **Sponsor's Prize for the most original contribution presented by a young scientist** for *Nanomechanical characterization of amorphous and nanocrystalline FeCuNbSiB thin films*, **Ioana-Laura Velicu**, Maria Neagu, Lucian Costinescu, Vasile Tiron, Daniel Munteanu, The 10<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM-10, September 22-28 2014, Iasi, Romania.
7. **Second Prize Winner** (Best Paper Competition) – *Copper thin films deposited under different power deliver modes and magnetron configurations: A comparative study*, **Ioana-Laura Velicu**, Vasile Tiron, Bogdan-George Rusu, Gheorghe Popa, The 7<sup>th</sup> International Conference on Fundamentals and Industrial Applications of HIPIMS, June 27-30, 2016, Sheffield, U.K.
8. **Third Prize Winner** (Best Paper Competition) – *Bipolar High Power Impulse Magnetron Sputtering: A new approach to control the metal ion flux*, I.-I. Velicu, C. Porosnicu, I. Mihăilă, I. Burducea, A. Velea, D. Cristea, D. Munteanu, V. Tiron, The 9<sup>th</sup> International Conference on Fundamentals and Industrial Applications of HIPIMS, 25-28 June 2018, Sheffield, UK.
9. **Research Excellence Award to recognize the results obtained in 2017**, offered by “Alexandru Ioan Cuza” University of Iasi, Romania.
10. **Special mention** at the 5<sup>th</sup> Edition of *Young Researchers in Science and Engineering Competition*, founded by Professor Rada Mihalcea, Cluj-Napoca, 2019.
11. **Gold Medal** and **Diploma of Honour** for the patent entitled “Installation and process for energetic metal ion beam with application in space propulsion”, The XXIII<sup>rd</sup> International Exhibition of Inventics, INVENTICA 2019.
12. **Research Excellence Award to recognize the results obtained in 2018**, offered by “Alexandru Ioan Cuza” University of Iasi, Romania.

## Others activities

- Reviewer @: IEEE Transactions on Magnetics (2008), Surface & Coatings Technology (2017, 2018, 2019), Thin Solid Films (2018), Applied Surface Science (2019);
- Associate Editor at Journal of Advanced Research in Physics;
- Member in the:
  - Council of the Faculty of Physics, “Alexandru Ioan Cuza” University of Iasi (2011-2013);
  - Council for Doctoral Studies, “Alexandru Ioan Cuza” University of Iasi (2012-2013);
  - Romanian Physical Society (secretary of the NE Branch);
  - EUROfusion (WP PFC);
  - IPARC – Iasi Plasma Advanced Research Centre;
- **5** (2019-2020);
- co-author of **42 ISI-WOS papers** (**23** as first/corresponding author) in peer-reviewed journals (ORCID ID: 0000-0002-7236-2495); **57** presentations at international (**45**) and national (**12**) conferences; **12**-times awarded; co-author of **2** national patents; member of **2** national grants; manager of a grant for young researchers; Hirsch Index: **16** (Google Scholar), **>350** citations in ISI journals without self-citations.

BA-Thesis Coordinator

Elements illustrating the visibility of the scientific activity

## Annexes

List of papers and conferences I participated to.

## A. Chapters in International Books:

1. **Velicu I.-L.**, Tiron V., Mihaila I., Costin C. (2018) Pulsed Magnetron Sputtering: The Role of the Applied Power on W Coatings Properties. In: Luca D., Sirghi L., Costin C. (eds) Recent Advances in Technology Research and Education. INTER-ACADEMIA 2017. Advances in Intelligent Systems and Computing, vol 660. Springer, Cham.

## A. Papers published in ISI-quoted journals with impact factor (IF):

1. D. Cristea, C. Croitoru, A. Marin, M. Dobromir, E. L. Ursu, I.-L. Velicu, V. Tiron, V. Crăciun, L. Cunha, *On the Chemistry, Photocatalytic, and Corrosion Behavior of Co-Sputtered Tantalum and Titanium Oxynitride Thin Films*, Applied Surface Science **592** (2022) 153260, <https://doi.org/10.1016/j.apsusc.2022.153260>.
2. V. Tiron, E.L. Ursu, D. Cristea, G. Bulai, G. Stoian, T. Matei, **I.-L. Velicu (corresponding author)**, Room Temperature Deposition of Nanocrystalline SiC Thin Films by DCMS/HiPIMS Co-Sputtering Technique, Nanomaterials **12** (2022) 512, <https://doi.org/10.3390/nano12030512>.
3. V. Tiron, M.A. Ciolan, G. Bulai, D. Cristea, **I.-L. Velicu (corresponding author)**, *Effect of Pulsing Configuration and Magnetic Balance Degree on Mechanical Properties of CrN Coatings Deposited by Bipolar-HiPIMS onto Floating Substrate*, Coatings **11** (2021) 1526, <https://doi.org/10.3390/coatings11121526>.
4. D. Cristea, **I.-L. Velicu (corresponding author)**, L. Cunha, N. Barradas, E. Alves, V. Craciun, *Tantalum-Titanium Oxynitride Thin Films Deposited by DC Reactive Magnetron Co-Sputtering: Mechanical, Optical, and Electrical Characterization*, Coatings **12** (2021) 36, <https://doi.org/10.3390/coatings12010036>
5. V. Tiron, G. Bulai, C. Costin, **I.-L. Velicu**, P. Dincă, D. Iancu, I. Burducea, *Growth and characterization of W thin films with controlled Ne and Ar contents deposited by bipolar HiPIMS*, Nuclear Materials and Energy **29** (2021) 101091, <https://doi.org/10.1016/j.nme.2021.101091>
6. B. Tiss, M. Benfraj, N. Bouguila, M. Kraini, S. Alaya, D. Cristea, C. Croitoru, V. Craciun, D. Craciun, P. Prepelita, **I.-L. Velicu**, V. Tiron, C. Moura, L. Cunha, *The effect of vacuum and air annealing in the physical characteristics and photocatalytic efficiency of In2S3:Ag thin films produced by spray pyrolysis*, Materials Chemistry and Physics **270** (2021) 124838, <https://doi.org/10.1016/j.matchemphys.2021.124838>
7. **I.-L. Velicu**, V. Tiron M.-A. Petrea, G. Popa, *New Concept of Metal Ion Thruster Based on Pulsed Thermionic Vacuum Arc Discharge*, Plasma Sources Science and Technology **30** (2021) 015006.
8. V. Tiron, **I.-L. Velicu (corresponding author)**, D. Cristea, T. Matei, L. Cunha, *Ultra-short pulse HiPIMS: a strategy to suppress arching during reactive deposition*, Coatings (open access) **10(7) 633** (2020) <https://doi.org/10.3390/coatings10070633>.
9. V. Tiron, **I.-L. Velicu (corresponding author)**, *Understanding the ion acceleration mechanism in bipolar HiPIMS: the role of the double layer structure developed in the after-glow plasma*, Plasma Sources Science and Technology **29** (2020) 015003 DOI: 10.1088/1361-6595/ab6156.
10. V. Tiron, E.-L. Ursu, D. Cristea, D. Munteanu, G. Bulai, A. Ceban, **I.-L. Velicu (corresponding author)**, *Overcoming the insulating materials limitation in HiPIMS: Ion-assisted deposition of DLC coatings using bipolar HiPIMS*, Applied Surface Science **494** (2019) 871-879.
11. C. Gabor, D. Cristea, **I.-L. Velicu**, T. Bedo, A. Gatto, E. Bassoli, B. Varga, M. A. Pop, V. Geanta, R. Stefanioiu, M. M. Codescu, E. Manta, D. Patroi, M. Florescu, S. I. Munteanu, I. Ghiuta, N. Lupu, D. Munteanu, *Ti-Zr-Si-Nb Nanocrystalline Alloys and Metallic Glasses: Assessment on the Structural Development, Thermal Stability, Corrosion and Mechanical Properties*, Materials (open access) **12(9) 1551** (2019) <https://doi.org/10.3390/ma12091551>.
12. T. Bedo, B. Varga, D. Cristea, A. Nitoi, A. Gatto, E. Bassoli, G. Bulai, **I.-L. Velicu**, I. Ghiuta, S. Munteanu, A. M. Pop, C. Gabor, M. Cosnita, L. Parv, D. Munteanu, *Metastable Al-Si-Ni alloys for additive manufacturing: structural stability and energy release during heating*, Metals (open access) **9(5) 483** (2019) <https://doi.org/10.3390/met9050483>.
13. D. Cristea, L. Cunha, C. Gabor, I. Ghiuta, C. Croitoru, A. Marin, **I.-L. Velicu**, A. Besleaga, V. Bogdan, *Tantalum oxynitride thin films: assessment on the photocatalytic efficiency and antimicrobial capacity*, Nanomaterials (open access) **9(3) 476** (2019) <https://doi.org/10.3390/nano9030476>.
14. V. Tiron, C. Porosnicu, P. Dinca, **I.-L. Velicu (corresponding author)**, D. Cristea, D. Munteanu, Á. Révész, G. Stoian, C. P. Lungu, *Beryllium thin films deposited by thermionic vacuum arc for nuclear applications*, Applied Surface Science **481** (2019) 327-336.
15. P. Dinca, V. Tiron, **I.-L. Velicu**, C. Porosnicu, B. Butoi, A. Velea, E. Grigore, C. Costin, C.P. Lungu, *Negative ion-induced deuterium retention in mixed W-Al layers codeposited in dual-HiPIMS*, Surface & Coatings Technology **363** (2019) 273-281.

16. I.-L. Velicu, G.-T. Ianoş, C. Porosnicu, I. Mihăilă, Ion Burducea, Alin Velea, Daniel Cristea, Daniel Munteanu, Vasile Tiron, *Energy-Enhanced Deposition of Copper Thin Films by Bipolar High Power Impulse Magnetron Sputtering*, *Surface & Coatings Technology* **359** (2019) 97-107.
17. V. Tiron, I.-L. Velicu, A. V. Nastuta, C. Costin, G. Popa, Z. Kechidi, C. Ionita, R. Schrittwieser, *Enhanced extraction efficiency of the sputtered material from a magnetically assisted high power impulse hollow cathode*, *Plasma Sources Science and Technology* **27** (2018) 085005.
18. V. Tiron, I.-L. Velicu (corresponding author), I. Pana, D. Cristea, B.G. Rusu, P. Dinca, C. Porosnicu, E. Grigore, D. Munteanu, S. Tascu, *HiPIMS deposition of silicon nitride for solar cell application*, *Surface & Coatings Technology* **344** (2018) 197-203.
19. V. Tiron, I.-L. Velicu (corresponding author), I. Mihăilă, G. Popa, *Deposition rate enhancement in HiPIMS through the control of magnetic field and pulse configuration*, *Surface & Coatings Technology* **337** (2018) 484–491.
20. V. Tiron, I.-L. Velicu (corresponding author), D. Cristea, N. Lupu, G. Stoian, D. Munteanu, *Influence of ion-to-neutral flux ratio on the mechanical and tribological properties of TiN coatings deposited by HiPIMS*, *Surface & Coatings Technology* **352** (2018) 690-698.
21. S. Brezinsek, J.W. Coenen, T. Schwarz-Selinger, K. Schmid, A. Kirschner *et al.* (168 authors), *Plasma-Wall Interaction Studies within the EUROfusion Consortium: progress on Plasma-Facing Components development and qualification*, *Nuclear Fusion* (open access) **57** (2017) 116041.
22. P. Dinca, C. Porosnicu, B. Butoi, I. Jepu, V. Tiron, O. G. Pompilian, I. Burducea, C. P. Lungu, I.-L. Velicu, *Beryllium-Tungsten Study on Mixed Layers obtained by m-HiPIMS / DCMS Techniques in a Deuterium and Nitrogen Reactive Gas Mixture*, *Surface & Coatings Technology* **321** (2017) 397-402.
23. V. Tiron, I.-L. Velicu, C. Porosnicu, I. Burducea, P. Dinca, P. Malinsky, *Tungsten Nitride Coatings Obtained by HiPIMS as Plasma Facing Materials for Fusion Applications*, *Applied Surface Science* **416** (2017) 878-884.
24. I.-L. Velicu, V. Tiron, C. Porosnicu, I. Burducea, N. Lupu, G. Stoian, G. Popa, D. Munteanu, *Enhanced properties of Tungsten thin films deposited with a novel HiPIMS approach*, *Applied Surface Science* **424** (2017) 397-406.
25. V. Tiron, I.-L. Velicu, D. Stanescu, H. Magnan, L. Sirghi, *High Visible Light Photocatalytic Activity of Nitrogen-Doped ZnO Thin Films Deposited by HiPIMS*, *Surface & Coatings Technology* **324** (2017) 594-600.
26. I.-L. Velicu, V. Tiron, B.-G. Rusu, G. Popa, *Copper thin films deposited under different power delivery modes and magnetron configurations: A comparative study*, *Surface & Coatings Technology* **327** (2017) 192-199.
27. I.-L. Velicu, I. Mihaila, G. Popa, *Operating the HiPIMS discharge with ultra-short pulses: a solution to overcome the deposition rate limitation*, *Romanian Reports in Physics* **69** (2017).
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1. D. Mihăilescu, C. Munteanu, C. Aniculăesei, I.-L. Velicu, *Backscattering Coefficients For 8-32 KeV Electrons: A Monte Carlo Investigation*, *Annals of West University, Timișoara, Physics Series* **25** (2008).

#### C. Papers published in extenso in volumes of international scientific manifestations:

1. M. Dobromir, I.-L. Velicu, M. Neagu, H. Chiriac, *FeCuNbSiB Thin Films Deposited by Pulsed Laser Deposition: Structural and Magnetic Properties*, *Proceedings of International Conference Nanomaterials: Application & Properties* **2** (2013) 01NTF09(3).
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1. I.-L. Velicu (corresponding author), M. Neagu, V. Tiron, *Magnetoimpedance effect in single-layered and sandwiched FeCuNbSiB thin films in frequencies up to 500 MHz*, *Journal of Advanced Research in Physics* **7(1)** (2017) 011701.

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1. M.-A. Petrea, T. Matei, C. Agheorghiesei, I.-L. Velicu, V. Tiron, *Visualizing the invisible using qualitative Schlieren imaging*, a XLVIII-a Conferința Națională Fizică și Tehnologiile Educaționale Moderne – FTEM, May 24-25, 2019, Iasi, Romania (oral).
2. A. Ceban, I.-L. Velicu, V. Tiron, *Plasma diagnosis of reactive HiPIMS discharge: assessment of optimal conditions for TiN coatings deposition*, a XLVIII-a Conferința Națională Fizică și Tehnologiile Educaționale Moderne – FTEM, May 24-25, 2019, Iasi, Romania (poster).
3. T. Matei, M.-A. Petrea, I.-L. Velicu, *Motion of objects through fluids. Estimating the drag force and terminal speed using dimensional analysis*, a XLVII-a Conferința Națională Fizică și Tehnologiile Educaționale Moderne – FTEM, May 19-20, 2018, Iasi, Romania (poster).
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5. D. Zanoschi, A. Ceban, T. Cîmpeanu, I.-L. Velicu, *Study on the diamagnetic behavior of water*, The 46<sup>th</sup> National Conference on Physics and Modern Education Technologies – FTEM 2017, May 19-20, 2017, Iasi, Romania (poster).
6. I.-L. Velicu, V. Tiron, G. Popa, *FINEMET-type thin films obtained by HiPIMS: influence of deposition conditions on the deposition rate*, The 5<sup>th</sup> National Conference of Applied Physics – CNFA 2013, May 23-24 2013, Iasi, Romania (poster).
7. I.-L. Velicu, V. Tiron, G. Popa, *Onset of sustained self-sputtering regime in HiPIMS discharge for growing FINEMET-type thin films*, Conferința Școlilor Doctorale, October 19, 2012, Iasi, Romania (oral).
8. I.-L. Velicu, M. Neagu, *FeCuNbSiB thin films deposited by HiPIMS: influence of deposition conditions and thermal treatment*, Conferința Școlilor Doctorale, October 21, 2011, Iasi, Romania (oral).
9. I.-L. Velicu, M. Dobromir, M. Neagu, H. Chiriac, D. Luca, N. Lupu, V. Pohoăț, B. Munteanu, *FeCuNbSiB thin films deposited by RF magnetron sputtering*, a XL-a Conferința Națională Fizică și Tehnologiile Educaționale Moderne – FTEM, May 12-14, 2011, Iasi, Romania (oral).
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11. A. Bulai, I.-L. Velicu, M. Neagu, V. Pohoăț, B. Munteanu, *Magneto-optical System for Kerr Rotation Measurement*, a XXXIX-a Conferință Națională Fizică și Tehnologiile Educaționale Moderne, May 15, 2010, Iasi, Romania (poster).
12. S. Stratulat, I.-L. Velicu, A. Bulai, B. Munteanu, H. Chiriac, M. Neagu, *Magnetostrictive behaviour in amorphous magnetic thin films*, a XXXIX-a Conferință Națională Fizică și Tehnologiile Educaționale Moderne, May 15, 2010, Iasi, Romania (poster).

## F. Participation in international conferences:

1. R. Schrittwieser, V. Tiron, **I.-L. Velicu**, A. V. Nastuță, C. Costin, G. Popa, Z. Kechidi, C. Ioniță, D. Alexandroaei, R. Apetrei, M. Asandulesa, P. Balan, M. Dobromir, C. Douat, S. Jaksch, C. Rusu, D. Luca, A. Murawski, C. Maszl, R. Niedrist, B. Olenici, G. B. Rusu, P. Scheier, I. Vojvodic, *Research on hollow cathodes*, The 19<sup>th</sup> International Balkan Workshop on Applied Physics, July 16-19, 2019, Constanța, Romania (**invited, co-author**).
2. V. Tiron, **I.-L. Velicu**, A. Ceban, D. Cristea, G. Bulai, D. Munteanu, *Enhanced optical and mechanical properties of silicon dioxide thin films deposited by reactive HiPIMS*, The XVIII<sup>th</sup> International Conference on Plasma Physics and Applications – CPPA 2019, 20-22 June 2019, Iasi, Romania (**poster**).
3. **I.-L. Velicu**, V. Tiron, D. Cristea, I. Mihăilă, D. Munteanu, G. Popa, *Bipolar HiPIMS: a step further in exploring new perspectives and horizons in coatings deposition*, The XVIII<sup>th</sup> International Conference on Plasma Physics and Applications – CPPA 2019, 20-22 June 2019, Iasi, Romania (**invited, author**).
4. V. Tiron, E.-L. Ursu, D. Cristea, D. Munteanu, A. Menharth, A. Ceban, **I.-L. Velicu**, *Overcoming the insulating materials limitation in HiPIMS: ion-assisted deposition of DLC coatings using bipolar HiPIMS*, 11<sup>th</sup> International conference on materials science and engineering – BRAMAT 2019, 13-16 March 2019, Brasov, Romania (**poster**).
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6. C. Porosnicu, P. Dinca, O.G. Pompilian, B. Butoi, V. Tiron, I. Burducea, **I.-L. Velicu**, C.P. Lungu, *BeW coatings deposited by hybrid HiPIMS/dcMS co-sputtering system as plasma facing material for fusion applications*, The 9<sup>th</sup> International Conference on Fundamentals and Industrial Applications of HiPIMS, 25-28 June 2018, Sheffield, UK (**oral**).
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8. **I.-L. Velicu**, V. Tiron, I. Mihaila, C. Costin, *Pulsed magnetron sputtering: the role of the applied power on W coatings properties*, The 16<sup>th</sup> International Conference on Global Research and Education – inter-Academia 2017, September 25-28, 2017, Iasi, Romania (**poster**).
9. **I.-L. Velicu**, V. Tiron, G. Popa, *High Power Impulse Magnetron Sputtering: An overview on the benefits of ultra-short pulse operating mode*, The XXXIII International Conference on Phenomena in Ionized Gases – ICPIG 2017, July 9-14 2017, Lisbon, Portugal (**oral**).
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29. E.P. Koumoulos, **I.-L. Velicu**, V.P. Tsikourkitoudi, C.A. Charitidis, M. Neagu, V. Tiron, *Nanomechanical properties of FINEMET-type thin films deposited by HiPIMS for sensing applications*, The 9<sup>th</sup> International Conference on Nanosciences & Nanotechnologies (NN12), July 3-6 2012, Thessaloniki, Grecia (**poster**).
30. M. Dobromir, **I.-L. Velicu**, M. Neagu, H. Chiriac, *Structural and magnetic properties of pulsed laser deposited FeCuNbSiB thin films*, International Conference on Materials and Applications for Sensors and Transducers, May 24-28, 2012, Budapesta, Ungaria (**poster**).
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