



**Curriculum vitae**  
**Europass**



**Informații personale**

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Naționalitate(-tăți) română

Data nașterii 02.01.1977

Sex masculin

**Locul de muncă vizat /** **Universitatea Alexandru Ioan Cuza / Cercetător Științific gr. III**  
**Domeniul ocupațional**

**Experiența profesională**

Perioada	Aprilie 2013 – prezent
Funcția sau postul ocupat	Cercetător științific gr. III
Activități și responsabilități principale	Procesarea materialelor cu plasma. Membru in echipa a 6 granturi de cercetare. Director proiect tip parteneriate
Numele și adresa angajatorului	Universitatea „Alexandru Ioan Cuza” din Iași, Blvd. Carol I, Nr. 11, Iași, 700506, România
Tipul activității sau sectorul de activitate	Cercetare
Perioada	Aprilie 2010 – Martie 2013
Funcția sau postul ocupat	Cercetător postdoctoral
Activități și responsabilități principale	Obținerea si caracterizarea fotodetectorilor de radiație UV. Membru in echipa a 4 granturi de cercetare.

Numele și adresa angajatorului      Universitatea „Alexandru Ioan Cuza” din Iași, Blvd. Carol I, Nr. 11, Iași, 700506, România

Tipul activității sau sectorul de activitate      Cercetare

Perioada      Februarie 2009 –Aprilie 2010

Funcția sau postul ocupat      Cercetător științific gr. III

Activități și responsabilități principale      Diagnoza plasmei descărcării magnetron; depuneri de straturi subțiri. Membru in echipa a 2 granturi de cercetare.

Numele și adresa angajatorului      Universitatea „Alexandru Ioan Cuza” din Iași, Blvd. Carol I, Nr. 11, Iași, 700506, România

Tipul activității sau sectorul de activitate      Cercetare

Perioada      Noiembrie 2006–Noiembrie 2008

Funcția sau postul ocupat      Asistent cercetare

Activități și responsabilități principale      Diagnoza plasmei descărcării magnetron; Depuneri de straturi subțiri. Membru in echipa a 3 granturi de cercetare.

Numele și adresa angajatorului      Universitatea „Alexandru Ioan Cuza” din Iași, Blvd. Carol I, Nr. 11, Iași, 700506,România

Tipul activității sau sectorul de activitate      Cercetare

## Educație și formare

Perioada      2002-2007

Calificarea / diploma obținută      Doctor în fizică

Disciplinele principale studiate / competențe profesionale dobândite      Fizica Plasmei

Numele și tipul instituției de învățământ / furnizorului de formare      Universitatea „Alexandru Ioan Cuza” din Iași

Perioada      2000-2002

Calificarea / diploma obținută      Master

Disciplinele principale studiate / competențe profesionale dobândite      Fizica Plasmei

Numele și tipul instituției de învățământ / furnizorului de formare      Universitatea „Alexandru Ioan Cuza” din Iași

Perioada	1996-2000				
Calificarea / diploma obținută	Licență				
Disciplinele principale studiate / competențe profesionale dobândite	Fizică				
Numele și tipul instituției de învățământ / furnizorului de formare	Universitatea „Alexandru Ioan Cuza” din Iași				
Aptitudini și competențe personale					
Limba(i) maternă(e)	română				
Limba(i) străină(e) cunoscută(e)	Engleză				
Autoevaluare					
Nivel european (*)	<b>Înțelegere</b>		<b>Vorbire</b>		<b>Scriere</b>
<i>Limba engleză</i>	Ascultare	Citire	Participare la conversație	Discurs oral	Exprimare scrisă
	C1	C2	B2	B1	C1
Competențe și abilități sociale și de lucru în echipă	Membru în echipele a 11 granturi de cercetare, director proiect tip parteneriate				
Competențe și aptitudini organizatorice	Am făcut parte din comitetul de organizare a 8 conferințe internaționale (CPPA 2003, CPPA 2005, CPPA 2010, CPPA 2019, InterAcademia 2006, InterAcademia 2011, InterAcademia 2017, ICPIG 2015), 2 școli de vară (Plasma non thermiques et applications 2003, Plasma diagnostics by electrical probes and lasers 2011) și a două expoziții de promovare a științei (Expo-Fusion, Machina Mundi)				
Competențe și aptitudini tehnice	<ul style="list-style-type: none"> <li>- instalații și tehnici de producere a plasmei și depuneri de straturi subțiri: magnetron și arc termoionic în vid;</li> <li>- diagnoza electrică (prin măsuratori de sonda și spectrometrie de masă) și spectrală (emisie, fotografiere ultra-rapidă, absorbție rezonată laser și fluorescență indusă laser) a plasmei;</li> <li>- achiziție, prelucrare și interpretare de date;</li> <li>- caracterizarea din punct de vedere morfologic, structural și compozițional a straturilor subțiri.</li> </ul>				
Competențe și aptitudini de utilizare a calculatorului	Competențe în Maple, Origin, Office.				
Informații suplimentare					

## Activitate științifică

**1. Articole științifice publicate *in extenso* în reviste cotate ISI Web of Science cu factor de impact**
**Autor, Titlu, Revista, volum, pagina, an**
**(revistele în curs de publicare se vor indica prin DOI sau se va atașa acceptul de publicare)**

1. **V. Tiron**, C. Vitelaru, M. Solomon, F. M. Tufescu, G. Popa, “*Transitory phenomena in pulsed reactive magnetron discharge*”, Journal of Optoelectronics and Advanced Materials 8(1) (2006) 66-70.

**IF = 1.106, AIS = 0.102**

2. C. VITELARU, **V. TIRON**, C. ANDREI, S. DOBREA, G. POPA, “*On the density of the argon metastable in a cylindrical magnetron discharge*”, Journal of Optoelectronics and Advanced Materials 10(8) (2008) 2003 – 2006.

**IF = 0.577, AIS = 0.102**

3. **V. Tiron**, C. Andrei, A. V. Nastuta, G. B. Rusu, C. Vitelaru and G. Popa, “*Carbon and Tungsten Sputtering in a Helium Magnetron Discharge*”, IEE Transaction on Plasma Science 37(8) (2009) 1581-1585.

**IF = 1.447, AIS = 0.492**

4. **V. Tiron**, S. Dobrea, C. Costin and G. Popa, “*On the carbon and tungsten sputtering rate in a magnetron discharge*”, Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 267(2) (2009) 434-437.

**IF = 0.999, AIS = 0.362**

5. C. Costin, **V. Tiron**, J. Faustin, and G. Popa, “*Fast Imaging Investigation on Pulsed Magnetron Discharge*”, IEEE Transactions on Plasma Science, 39(11) (2011) 2482 – 2483.

**IF = 1.174, AIS = 0.423**

6. **Vasile Tiron**, Marius Dobromir, Valentin Pohoata and Gheorghe Popa, “*Ion energy distribution in thermionic vacuum arc*”, IEEE Transaction on Plasma Science 39(6) (2011) 1403-1407.

**IF = 1.174, AIS = 0.423**

7. **V. Tiron**, L. Mihaescu, C.P. Lungu, G. Popa, “*Strong double layer structure in thermionic vacuum arc*”, Romanian Journal of Physics 56 (2011) 41–46.

**IF = 0.414, AIS = 0.095**

8. Catalin Vitelaru, Valentin Pohoata, Constantin Aniculaesei, **Vasile Tiron** and Gheorghe Popa, “*The break-down of hyperfine structure coupling induced by the Zeeman effect on aluminum  $^2S_{1/2} - ^2P_{1/2}$  transition, measured by tunable diode-laser induced fluorescence*”, Journal of Applied Physics 109 (2011) 084911.

**IF = 2.168, AIS = 0.834**

9. Ioana-Laura Velicu, Maria Neagu, Horia Chiriac, **Vasile Tiron** and Marius Dobromir, “*Structural and Magnetic Properties of FeCuNbSiB Thin Films Deposited by HiPIMS*”, IEEE Transactions on Magnetics. 4(48) (2012) 1336 – 1339.

**IF = 1.363, AIS = 0.368**

10. **V. Tiron**, L. Sirghi, G. Popa, “*Control of aluminum doping of ZnO:Al thin films obtained by high-power impulse magnetron sputtering*”, Thin Solid Films 520 4305–4309 (2012).

**IF = 1.89, AIS = 0.551**

11. **V. TIRON**, T. COMAN, L. SIRGHI, G. POPA, “*Atomic force microscopy investigation of piezoelectric response of ZnO thin films deposited by HIPIMS*”, Journal of Optoelectronics and Advanced Materials 15 (2013) 77-81.

**IF = 0.563, AIS = 0.111**

**12.** A.P. Rambu, **V. Tiron**, V. Nica, N. Iftimie, “*Functional properties of ZnO films prepared by thermal oxidation of metallic films*”, Journal of Applied Physics 113 (2013) 234506.

**IF = 2.185, AIS = 0.721**

**13.** Ioana-Laura Velicu, Maciej Kowalczyk, Maria Neagu, **Vasile Tiron**, Horia Chiriac, Jaroslaw Ferec, “*FINEMET-type thin films deposited by HiPIMS: Influence of growth and annealing conditions on the magnetic behaviour*”, Materials Science and Engineering B 178 (2013) 1329 – 1333.

**IF = 2.122, AIS = 0.463**

**14.** S. Dobrea, I. Mihaila, **V. Tiron**, G. Popa, “*Optical and mass spectrometry diagnosis of a CO<sub>2</sub> microwave plasma discharge*”, Romanian Reports in Physics 66(41) (2014) 1147-1154.

**IF = 1.517, AIS = 0.202**

**15.** M. Osiac, **V. Tiron**, G.E. Iacobescu, G. Popa, “*A comparative study of Ge<sub>1</sub>Sb<sub>2</sub>Te<sub>4</sub> films deposited by radiofrequency and pulsed direct current magnetron sputtering and high power impulse magnetron sputtering*”, Digest Journal of Nanomaterials and Biostructures 9(2) 451-457 (2014).

**IF = 0.945, AIS = 0.202**

**16.** Tudor Coman, Elena Laura Ursu, Valentin Nica, **Vasile Tiron**, Mihaela Olaru, Corneliu Cotofana, Marius Dobromir, Adina Coroaba, Oana-Georgiana Dragos, Nicoleta Lupu, Ovidiu Florin Caltun, Cristian Ursu, „*Improving the uncommon (110) growing orientation of Al-doped ZnO thin films through sequential pulsed laser deposition*”, Thin Solid Films 571 (2014) 198–205.

**IF = 1.759, AIS = 0.455**

**17.** L. Sirghi, D. Ciurac and **V. Tiron**, „*Mechanical properties of atomic force microscopy probes with deposited thin films*”. Thin Solid Films 565 (2014) 267-270.

**IF = 1.759, AIS = 0.455**

**18.** Ioana-Laura Velicu, **Vasile Tiron**, Gheorghe Popa, “*Dynamics of the fast - HiPIMS discharge during FINEMET – type films deposition*”, Surface & Coatings Technology, 250 (2014) 57-64.

**IF = 1.998, AIS = 0.515**

**19.** I.-L. Velicu, **V. Tiron**, “*On the transport phenomena in highly ionized pulsed plasma during FeCuNbSiB thin film deposition process*”, Digest Journal of Nanomaterials and Biostructures 9(4) (2014) 1513 – 1522.

**IF = 0.945, AIS = 0.202**

**20.** **V. Tiron**, I.-L. Velicu, F. Ghiorghiu and G. Popa, „*The effect of the additional magnetic field and gas pressure on the sheath region of a high power impulse magnetron sputtering discharge*”, Romanian Reports in Physics 67 (2015) 1004-1017.

**IF = 1.367, AIS = 0.184**

**21.** I.-L. Velicu, M. Neagu, **V. Tiron**, Fe<sub>73.5</sub>Cu<sub>1</sub>Nb<sub>3</sub>Si<sub>15.5</sub>B<sub>7</sub> “*Thin Films Deposited by HiPIMS: Magnetic and Magnetostrictive Behaviour*”, Journal of Superconductivity and Novel Magnetism 28 (2015) 1035.

**IF = 1.1, AIS = 0.204**

**22.** L. Sirghi, **V. Tiron**, M. Dobromir, “*Friction at single-asperity contacts between hydrogen-free diamond-like carbon thin film surfaces*”, Diamonds and related materials 52 (2015) 38–42.

**IF = 2.125, AIS = 0.482**

**23.** O. Antonin, **V. Tiron**, C. Costin, G. Popa, T.M. Minea, “*On the HiPIMS benefits of multi-pulse operating mode*”, Journal of Physics D: Applied Physics 48 (2015) 015202.

**IF = 2.772, AIS = 0.834**

**24.** I.-L. Velicu, **V. Tiron**, M. Neagu, „*Nanomechanical characterization of amorphous and nanocrystalline FeCuNbSiB thin films*”, Applied Surface Science 352 (2015) 5-9.

**IF = 3.15, AIS = 0.548**

**25.** **V. Tiron**, L. Sirghi „*Tuning the band gap and nitrogen content of ZnO<sub>x</sub>N<sub>y</sub> thin films*”, Surface & Coatings Technology, 282

(2015) 103-106.

**IF = 2.139, AIS = 0.526**

**26. V. Tiron**, I-LVelicu, O Vasilovici, G Popa, "Optimization of deposition rate in HiPIMS by controlling the peak target current", Journal of Physics D: Applied Physics 48 (2015) 495204.

**IF = 2.772, AIS = 0.834**

**27. S. CONDURACHE-BOTA, V. TIRON**, M. PRAISLER, "Highly transparent bismuth oxide thin films deposition: morphology - optical properties correlation studies", Journal of Optoelectronics and Advanced Materials 17 (2015) 1296 – 1301.

**IF = 0.383, AIS = 0.078**

**28. M. OSIAC, V. TIRON**, G.-E. IACOBESCU, "The effect of nitrogen doping on the structure of Ge<sub>1</sub>Sb<sub>2</sub>Te<sub>4</sub> film", Journal of Optoelectronics and Advanced Materials 17 (2015) 1471 – 1475.

**IF = 0.383, AIS = 0.078**

**29. Diana Mardare, Nicoleta Cornei, Carmen Mita, Daniel Florea, Alexandru Stancu, Vasile Tiron, Alina Manole, Catalin Adomnitei**, "Low Temperature TiO<sub>2</sub> Based Gas Sensors for CO<sub>2</sub>", Ceramics International 42 (2016) 7353–7359.

**IF = 2.986, AIS = 0.459**

**30. V. Tiron**, I.-L. Velicu, A. Demeter, M. Dobromir, F. Samoila, C. Ursu and L. Sirghi, "Reactive multi-pulse HiPIMS deposition of oxygen-deficient TiO<sub>x</sub> thin film", Thin Solid Films, 603 (2016) 255-26.

**IF = 1.879, AIS = 0.383**

**31. R. Danac, A. Carlescu, L. Leontie, S. Shova, V. Tiron**, G. Rusu, F. Iacomi, S. Gurlui, O. Susu, G.I. Rusu, „Electric conduction mechanism of some heterocyclic compounds, 4,4'-bipyridine and indolizine derivatives in thin films", Thin Solid Films 612 (2016) 358-368.

**IF = 1.879, AIS = 0.383**

**32. Ioana-Laura Velicu, Vasile Tiron**, Bogdan-George Rusu, Gheorghe Popa, "Copper thin films deposited under different power delivery modes and magnetron configurations: A comparative study", Surface & Coatings Technology 327 (2017) 192-199.

**IF = 2.906, AIS = 0.517**

**33. Alexandra Demeter, Florentina Samoila, Vasile Tiron**, Dana Stanescu, Helene Magnan, Mihai Straticiu, Ion Burducea and Lucel Sirghi, "Visible-light photocatalytic activity of TiO<sub>x</sub>N<sub>y</sub> thin films obtained by reactive multi-pulse High Power Impulse Magnetron Sputtering", Surface & Coatings Technology 324 (2017) 614–619.

**IF = 2.906, AIS = 0.517**

**34. Vasile Tiron**, Ioana-Laura Velicu, Dana Stanescu, Helene Magnan and Lucel Sirghi, "High Visible Light Photocatalytic Activity of Nitrogen-Doped ZnO Thin Films Deposited by HiPIMS", Surface & Coatings Technology 324 (2017) 594–600.

**IF = 2.906, AIS = 0.517**

**35. Ioana-Laura Velicu, Vasile Tiron**, Corneliu Porosnicu, Ion Burducea, Nicoleta Lupu, George Stoian, Gheorghe Popa, Daniel Munteanu, "Enhanced properties of tungsten thin films deposited with a novel HiPIMS approach", Applied Surface Science 424 (2017) 397-406.

**IF = 4.439, AIS = 0.627**

**36. C. Tugui, A. Bele, V. Tiron**, E. Hamciuc, C. D. Varganici and M. Cazacu, "Dielectric elastomers with voltage-switchable dual functionality built through chemical design", Journal of Materials Chemistry C 5 (2017) 824 – 834.

**IF = 5.976, AIS = 1.133**

**37. R. Mateus, A. Hakola, V. Tiron**, C. Porosnicu, C.P. Lungu, E. Alves, "Study of deuterium retention in Be-W coatings with distinct roughness profiles", Fusion Engineering and Design 124 (2017) 464-467.

**IF = 1.437, AIS = 0.281**

**38. Vasile Tiron**, Ioana-Laura Velicu, Corneliu Porosnicu, Ion Burducea, Paul Dinca, Petr Malinský, "Tungsten Nitride Coatings Obtained by HiPIMS as Plasma Facing Materials for Fusion Applications", Applied Surface Science 416 (2017) 878–884.

**IF = 4.439, AIS = 0.627**

**39.** P. Dinca, C. Porosnicu, B. Butoi, I. Jecu, **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.

**IF = 2.906, AIS = 0.517**

**40.** Alexandra Demeter, **Vasile Tiron**, Nicoleta Lupu, George Stoian and Lucel Sirghi, "Plasma sputtering depositions with colloidal masks for fabrication of nanostructured surfaces with photocatalytic activity", Nanotechnology 28 (2017) 255302.

**IF = 3.404, AIS = 0.791**

**41.** M. Rudolph, A. Demeter, E. Foy, **V. Tiron**, L. Sirghi, T. Minea, B. Bouchet-Fabre, M.-C. Hugon, "Improving the crystallinity of  $Ta_3N_5$  thin films by DC magnetron sputtering using an additional in-axis magnetic field on a balanced magnetron", Thin Solid Films 636 (2017) 48–53.

**IF = 1.939, AIS = 0.356**

**42.** C. Racles, M. Dascalu, A. Bele, **V. Tiron**, M. Asandulesa, C. Tugui, A. Vasiliu and M. Cazacu, All-silicone elastic composites with counter-intuitive piezoelectric response, designed for electromechanical applications, Journal of Materials Chemistry C 5 (2017) 6997 – 7010.

**IF = 5.976, AIS = 1.133**

**43.** Jan Willem Coenen et al. "Plasma-wall interaction studies within the EUROfusion Consortium: progress on plasmafacing components development and qualification", Nuclear Fusion 57(11) (2017) 116041.

**IF = 4.057, AIS = 0.836**

**44.** M. Iacob, C. Tugui, **V. Tiron**, Vasile, A. Bele, V. Stelian, T. Vasiliu, M. Cazacu, A.-L. Vasiliu, C. Racles, "Iron oxide nanoparticles as dielectric and piezoelectric enhancers for silicone elastomers", Smart Materials and Structures 26 (2017) 105046.

**IF = 2.963, AIS = 0.772**

**45.** N. Becherescu, I. Mihailescu, **V. Tiron**, C. Luculescu, "Preparation and characterization of ZnO thin films by PLD and HiPIMS", UPB Scientific Bulletin, Series A: Applied Mathematics and Physics, 79(2) (2017) 297-306

**IF = 0.461, AIS = 0.094**

**46.** N. Becherescu, I. Mihailescu, **V. Tiron**, C. Luculescu, "Preparation and characterization of TiO<sub>2</sub> thin films by PLD and HiPIMS", UPB Scientific Bulletin, Series A: Applied Mathematics and Physics 79(3) (2017) 203-212.

**IF = 0.461, AIS = 0.094**

**47.** **Vasile Tiron**, Ioana-Laura Velicu, Daniel Cristea, Nicoleta Lupu, George Stoian, Daniel 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.

**IF = 3.192, AIS = 0.511**

**48.** A. DEMETER, **V. TIRON**, L. SIRGHI, "TiO<sub>2</sub> 2D nanopatterns obtained by high power impulse magnetron sputtering depositions with colloidal masks", Romanian Reports in Physics 70 (4) (2018).

**IF = 1.94, AIS = 0.296**

**49.** **V Tiron**, I-L Velicu, I Mihăilă and G Popa, "Deposition rate enhancement in HiPIMS through the control of magnetic field and pulsing configuration" Surface & Coatings Technology 337 (2018) 484–491.

**IF = 3.192, AIS = 0.511**

**50.** L. Leontie, R. Danac, A. Carlescu C. Doroftei, G. G. Rusu, **V. Tiron**, S. Gurlui, O. Susu, „Electric and optical properties of some new functional lower-rim substituted calixarene derivatives in thin films", Applied Physics A 124(355) (2018) 1-12.

**IF = 1.784, AIS = 0.308**

**51.** **Vasile TIRON**, Ioana-Laura VELICU, Iulian PANA, Daniel CRISTEA, Bogdan George RUSU, Paul DINCA, Corneliu POROSNICU, Eduard GRIGORE, Daniel MUNTEANU, Sorin TASCU, "HiPIMS deposition of silicon nitride for solar cell application", Surface & Coatings Technology 344 (2018) 197–203.

**IF = 3.192, AIS = 0.511**

52. Dan Macovei, **Vasile Tiron**, Catalin Adomnitei, Dumitru Luca, Marius Dobromir, Stefan Antohe, Diana Mardare, „On the hydrophilicity of Ni-doped TiO<sub>2</sub> thin films. EXAFS studies”, Thin Solid Films 657 (2018) 42 - 49.

IF = 1.888, AIS = 0.324

53. **Vasile Tiron**, Ioana-Laura Velicu, Andrei Nastuta, Claudiu Costin, Gheorghe Popa, Ziane Kechidi, Codrina Ionita, Roman Schrittwieser, "Enhanced extraction efficiency of the sputtered material from a magnetically assisted high power impulse hollow cathode", Plasma Source Science and Technology 27 (2018) 085005.

IF = 4.128, AIS = 0.804

54. Ioana-Laura VELICU, Gabriela-Theodora IANOS, Corneliu POROSNICU, Ilarion 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 259 (2019) 97–107.

IF = 3.192, AIS = 0.511

55. P. Dinca, **V. Tiron**, I. Mihaila, 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 co-deposited in dual-HiPIMS”, Surface & Coatings Technology 363 (2019) 273-281.

IF = 3.192, AIS = 0.511

56. Georgiana-Oana Turcan-Trofin, Mihai Asandulesa, Mihaela Balan-Porcarasu, Cristian-Dragos Varganici, **Vasile Tiron**, Carmen Racles, Maria Cazacu, „Linear and cyclic siloxanes sulfur-bridged functionalized with polar groups by thiol-ene addition: synthesis, characterization and exploring some material behaviour”, Journal of Molecular Liquids 282 (2019) 87-196.

IF = 4.561, AIS = 0.580

57. **V. Tiron**, C. Porosnicu, P. Dinca, I.-L. Velicu, 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.

IF = 5.155, AIS = 0.671

58. **V. Tiron**, E.-L. Ursu, D. Cristea, D. Munteanu, G. Bulai, A. Ceban, I.-L. Velicu, “Overcoming the insulating materials limitation in HiPIMS: ion-assisted deposition of DLC coatings using bipolar HiPIMS”, Applied Surface Science 494 (2019) 871–879.

IF = 5.155, AIS = 0.671

59. Georgiana-Oana Turcan-Trofin, Mirela-Fernanda Zaltariov, Mihail Iacob, **Vasile Tiron**, Florin Branza, Carmen Racles, Maria Cazacu, “Copper complexes with spherical morphology generated in one step by amphiphilic ligands: in situ view of the self-assembling, characterization, catalytic activity”, Colloids and Surfaces A: Physicochemical and Engineering Aspects 580 (2019) 123756.

IF = 3.131, AIS = 0.53

60. Codrin Tugui, **Vasile Tiron**, Mihaela Dascalu, Liviu Sacarescu, Maria Cazacu, „From an ultra-high molecular weight polydimethylsiloxane to the super-soft elastomer”, European Polymer Journal 120 (2019) 109243.

IF = 3.621, AIS = 0.697

61. Alicia Rambu, Alin Apetrei, Florent Dautre, Hervé Tronche, **Vasile Tiron**, Marc Micheli, and Sorin Tascu „Lithium niobate waveguides with high-index contrast and preserved nonlinearity fabricated by High Vacuum Vapor-phase Proton Exchange”, Photonics Research 8 (2020) 8-16.

IF = 5.522, AIS = 1.235

62. **V. Tiron**, I.-L. Velicu, “Understanding the ion acceleration mechanism in bipolar HiPIMS: the role of the double layer structure developed in the after-glow plasma”, Plasma Source Science and Technology (2020) doi: 10.1088/1361-6595/ab6156

IF = 4.128, AIS = 0.804

63. F. Gheorghiu, R. Stanculescu, L. Curecheriu, E. Brunengo, P. Stagnaro, **V. Tiron**, P. Postolache, M. T. Buscaglia, L. Mitoseriu, "PVDF-ferrite composites with dual magneto-piezoelectric response for flexible electronics applications: synthesis and functional properties", Journal of Materials Science (2020) doi: 10.1007/s10853-019-04279-w

IF = 3.442, AIS = 0.588

## 2. Articole științifice publicate in extenso în reviste internaționale fără factor de impact

1. **V. Tiron** and G. Popa, *“Control of the thermionic vacuum arc plasma”*, 24<sup>th</sup> International Symposium on Discharges and Electrical Insulation in Vacuum, Book Series: International Symposium on Discharges and Electrical Insulation in a Vacuum, (2010) pp. 390- 393.
2. S. Condurache-Bota, C. Constantinescu, M. Praisler, **V. Tiron**, N. Tigau, C. Gheorghies, *“The influence of laser wavelength and pulses number on the structure and the optical properties of pulsed laser-deposited bismuth oxide thin films”*, Proceedings of the International Semiconductor Conference – CAS, 6966400 (2014) 87-90.
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1. **V. Tiron**, C. Vitelaru, G. Popa, *“Analysys of the reactive magnetron discharge by optical emission spectroscopy and mass spectrometry”*, 18<sup>th</sup> Europhysics Conference on the Atomic and Molecular Physics of Ionised Gases, Conference Abstracts, vol. 30G, pg. 477- 478, 2006.
2. **V. Tiron**, C. Vitelaru, C. Costin, G. Popa, F. Tufescu, *“Correlation Between Emission Spectra, Mass Spectrometry and Surface Processes in Ar/N<sub>2</sub> Reactive Magnetron Discharge with Titanium Target”*, 2<sup>nd</sup> International Congress on Radiation Physics, High Current Electronics and Modification of Materials, Conference Abstract, pg. 11- 14, 2006.
3. **V. Tiron**, C. Vitelaru, C. Costin, G. Popa, *Electrical and optical diagnostic of pulsed Ar/N<sub>2</sub> reactive magnetron*, “The 5<sup>th</sup> annual International Conference on Global Research and Education (Inter-Academia)”, Conference proceedings, Volume II, p. 641-651, 2006.
4. A. V. Nastuta, G. B. Rusu, **V. Tiron**, G. Popa, *“Studiul depunerilor metalice cu ajutorul microscopiei de forta atomica”*, Revista Stiintifica “V. Adamachi”, Vol. XVI, nr 1, p. 127-130, 2007.
5. **V. Tiron**, C. Vitelaru, C. Costin and G. Popa - *Spatial characterization of Ar-Ti plasma in a reactive magnetron system*

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**15. V. Tiron, C. Vitelaru, I-L. Velicu, F. Ghiorghiu and G. Popa**, “*On transport phenomena in high power pulse unbalanced magnetron discharge with additional external magnetic field*”, Proceeding of 31<sup>st</sup> International Conference on Phenomena in Ionized Gases, 14-19 Iulie 2013, Granada, Spain.

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**17. Mariana OSIAC, Vasile TIRON, Gabriela – Eugenia IACOBESCU**, „*The Ge<sub>1</sub>Sb<sub>2</sub>Te<sub>4</sub> doped nitrogen film deposited by high power impulse magnetron sputtering*”, Proceeding ESCAMPIG XXII pp.483-484.

**18. V. Tiron, A. V. Nastuta, S. Irimiciuc, C. Costin, G. Popa, C. Ionita, R. Schrittwieser**, “*Dynamics of High Power Impulse Hollow Cathode Discharge*”, Proceeding 41st EPS Conference on Plasma Physics, P2.141

**19. V. Tiron, I-L. Velicu, O. Vasilovici, G. Popa**, “*Optimization of deposition rate in High Power Impulse Magnetron Sputtering*”, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania.

**20. M. Osiac, V. Tiron, G.E. Iacobescu**, “*Phase change behaviour in nitrogen-doped Ge<sub>1</sub>Sb<sub>2</sub>Te<sub>4</sub>*” The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania.

**21. V. Tiron, I-L. Velicu, O. Vasilovici, M. Dobromir, C. Costin, G. Popa, C. Porosnicu, I. Jepu, P. Dinca, C. P. Lungu, M. Straticiuc, I. Burducea**, “*HiPIMS method used for fusion related mixed material studies*”, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania.

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**23. M. Rudolph, T. Degousée, T. Minea, V. Tiron, C. Costin, L. Sirghi, M.-C. Hugon, B. Bouchet-Fabre**, “*Measuring the*

ionized flux fraction from high-power impulse magnetron discharges using a miniaturized passive ion energy spectrometer”, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania.

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26. Ioana-Laura Velicu, **Vasile Tiron**, Ilarion Mihaila, Claudiu Costin, “Pulsed Magnetron Sputtering: The Role of the Applied Power on W Coatings Properties”, Recent Global Research and Education: Technological Challenges, Book Series: Advances in Intelligent Systems and Computing, 660 (2018) 183 – 190.

## 6. Contracte de cercetare științifică (director, coordonator, manager proiect)

**Contract, titlul, număr, an, suma finanțare (de precizat dacă este internațional sau național)**

Proiect PN-II-PT-PCCA- 2011-3.2-1340, no. 174/2012 „Procese și instalație pentru depunerea de straturi subțiri în plasmă pulsate cu grad ridicat de ionizare”. Valoare: 3 000 000 lei.

## 7. Brevete

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4. “Installation and process for energetic metal ion beam with application in space propulsion”. **V. Tiron**, I.-L. Velicu, G. Popa, cerere înregistrată la OSIM, Patent: A/00304/2018.

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10. Cristian P. LUNGU, Aurelian MARCU, Constantin GRIGORIU, Ionut JEPU, Corneliu POROSNICU, **Vasile TIRON**, Gheorghe POPA, “*Langmuir probe diagnostics and deposition modelling of a carbon-tungsten thermionic vacuum arc system*”, Twelfth International Conference on Plasma Surface Engineering, September 13 - 17, 2010, Garmisch-Partenkirchen, Germany, (poster).
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13. V. Pohoata, **V. Tiron**, L. Velicu, C. Vitelaru, I. Mihaila, G. Popa, “*Absorption and LIF techniques applied for high density plasma diagnostic*” , 5<sup>th</sup> International Workshop and Summer School on Plasma Physics, 25-30 June 2012, Kiten, Bulgaria (lectie invitata)
14. **V. TIRON**, I. MIHAILA, L. SIRGHI, G. POPA, “*Enhanced photocatalytic activities under visible light of C-doped TiO<sub>2</sub> thin films deposited by HIPIMS-PLD*”, 3<sup>rd</sup> International Conference on Fundamentals and Industrial Applications on HIPIMS, 11-13 June 2012, Sheffield, England, (oral presentation).
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28. I. L. Velicu, M. Neagu, L. Costinescu, E. Hristoforou, **V. Tiron**, D. Munteanu, *"Nanoindentation measurement of hardness and Young's modulus of amorphous and nanocrystalline FeCuNbSiB thin films"*, 10<sup>th</sup> European Conference on Magnetic Sensors and Actuators – EMSA 2014, July 6-9, 2014, Viena, Austria (poster).
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33. A. Demeter, F. Samoila, **V. Tiron**, C. Costin, L. Sirghi, *"TiO<sub>2</sub> nano-patterns obtained by reactive high power magnetron sputtering and colloidal lithography"*, 4<sup>th</sup> Magnetron, Ion processing & Arc Technologies European Conference (MIATEC), 14<sup>th</sup> International Symposium on Reactive Sputter Deposition, 8-11 December 2015, Paris, France (poster).
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**40.** Ioana-Laura Velicu, **Vasile Tiron**, Bogdan-George Rusu, Gheorghe Popa, *“Copper thin films deposited under different power delivery modes and magnetron configurations: A comparative study”* The 7<sup>th</sup> International Conference on HiPIMS, 29-30 June 2016, Sheffield, UK (oral presentation).

**41.** Alexandra Demeter, Florentina Samoila, Ilarion Mihaila, **Vasile Tiron**, Dana Stanescu, Helene Magnan, Lucel Sirghi, *„Photocatalytic activity of ZnON thin films deposited by HiPIMS on substrates with controlled roughness”*, European Materials Research Society E-MRS, Mai 2-6, 2016, Lille, Franta (poster).

**42.** Florentina Samoila, **Vasile Tiron**, Alexandra Demeter, Dana Stanescu, Helene Magnan and Lucel Sirghi, *“Visible light photocatalytic activity of TiO<sub>x</sub>N<sub>y</sub> thin films obtained by reactive multi-pulse High Power Impulse Sputtering deposition”*, European Materials Research Society E-MRS, May 2-6, 2016, Lille, Franta (poster).

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**44.** C. Costin, V. Anita, I. Mihaila, **V. Tiron**, G. Popa, *Considerations on new developments achieved in electrical probe technique used for plasma diagnosis*, 7th International Workshop & Summer School on Plasma Physics, 26 June - 2 July, 2016, Kiten, Bulgaria (prezentare orală).

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**46.** **V. Tiron**, I.-L. Velicu, 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”*, The 8th International Conference on Fundamentals and Industrial Applications of HiPIMS, June 13-14, 2017, Braunschweig, Germany (poster).

**47.** I.-L. Velicu, C. Porosnicu, I. Mihăilă, I. Burducea, A. Velea, D. Cristea, D. Munteanu, **V. Tiron**, *“Bipolar High Power Impulse Magnetron Sputtering: a new approach to control the metal ion flux”*, The 9<sup>th</sup> International Conference on HiPIMS, 25-28 June 2018, Sheffield, UK (oral presentation).

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49. C. Porosnicu, P. Dinca, O.G. Pompilian, B. Butoi, **V. Tiron**, I. Burducea, I.-L. Velicu and 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 HiPIMS, 25-28 June 2018, Sheffield, UK (oral presentation).
50. **V. Tiron**, C. Porosnicu, I.-L. Velicu, D. Cristea, D. Munteanu, Á. Révész, B. Butoi, C.P. Lungu, “*Beryllium Thin Films Deposited by Thermionic Vacuum Arc for Nuclear Applications*”, 12<sup>th</sup> International Conference on Physics of Advanced Materials, 22-28 September 2018, Heraklion, Greece (poster presentation).
51. M. Toma, M. Dobromir, D. Timpu, G. Rusu, F. Tudorache, **V. Tiron**, L. Punga, A. Popa, G. Calin, F. Iacomì, „*Ni and Co doped ZnO thin films grown by spin coating*”, 12<sup>th</sup> International Conference on Physics of Advanced Materials, 22-28 September 2018, Heraklion, Greece (oral presentation).

## 10. Lucrări prezentate la conferințe din țară

**Autori, Titlu lucrare, Conferinta, loc, data, de precizat tipul prezentarii (invited, oral, poster)**

1. **V. Tiron**, C. Vitelaru, M. Solomon, F. M. Tufescu, G. Popa, “*Transitory phenomena in pulsed reactive magnetron discharge*”, 6<sup>th</sup> International Balkan Workshop on Applied Physics”, 5-7 iulie 2005, Constanța, Romania; (poster).
2. **V. Tiron**, C. Vitelaru, M. Solomon, G. Popa, *Transitory Phenomena in Pulsed Reactive Magnetron Discharge*, „Conferința Națională de Fizică”, 13-16 septembrie 2005, București, Romaia; (poster).
3. **V. Tiron**, C. Vitelaru, G. Popa, “*Mass Spectrometry and Optical Emission Spectroscopy Data versus Hysteresis Behavior of the Reactive Magnetron Discharge*”, 7<sup>th</sup> International Balkan Workshop on Applied Physics, 5-7 iulie 2006, Constanța, Romania; (poster).
4. **V. Tiron**, C. Vitelaru, C. Costin, G. Popa, „*Electrical and optical diagnostic of pulsed Ar/N<sub>2</sub> reactive magnetron*”, The 5<sup>th</sup> annual International Conference on Global Research and Education (Inter-Academia)”, 25-28 septembrie 2006, Iași, Romania; (poster).
5. **V. Tiron**, C. Vitelaru, C. Costin, G. Popa, “*Modelling of reactive sputtering process in magnetron discharge*”, National Conference of Applied Physics, 8-9 decembrie 2006, Iași, Romania; (poster).
6. Radu Cazan, Catalin Vitelaru, Vasile Tiron, and Gheorghe POPA – “*Spatial distribution of argon metastables in a cylindrical magnetron discharge*”, 8<sup>th</sup> International Balkan Workshop on Applied Physics, 5-7 Iulie 2007, Constanta, Romania; (oral).
7. R. CAZAN, C. VIȚELARU, **V. TIRON**, A. CATARAMA and G. POPA – “*On the density of the argon metastable in a cylindrical magnetron discharge*”, 14<sup>th</sup> International Conference on Plasma Physics and Applications, 14 – 18 Septembrie, Brasov, Romania; (oral).
8. M. L. SOLOMON, **V. TIRON**, C. COSTIN, C. ANDREI and G. POPA, “*Diagnostic of high density plasma by self-emissive probe*”, 14<sup>th</sup> International Conference on Plasma Physics and Applications, 14 – 18 Septembrie, Brasov, Romania; (poster).
9. **Vasile Tiron**, Andrei Vasile Nastuta, Bogdan George Rusu and Gheorghe Popa „*Characterization of carbon and tungsten thin films deposited by magnetron sputtering*”, 7<sup>th</sup> International Conference on Physics of Advanced Materials, , 04 -07 iunie 2008, Iasi, Romania; (poster).
10. **V. Tiron**, S. Dobrea, C. Costin and G. Popa, „*On the carbon and tungsten sputtering rate in a magnetron discharge*”, 4th Conference on Elementary Processes in Atomic Systems, 18-20 iunie 2008, Cluj-Napoca, Romania; (poster).
11. **V. Tiron**, C. Costin and G. Popa, “*Study of target-poisoning mechanisms and reactive phenomena in magnetron discharge*”, 9<sup>th</sup> International Balkan Workshop on Applied Physics, 7 -9 iulie 2008, Constanta, Romania; (poster).

12. **V. Tiron**, C. Andrei, A. V. Nastuta, G. B. Rusu, C. Vitelar and G. Popa, "*Carbon and Tungsten Sputtering in a Helium Magnetron Discharge*" 23<sup>rd</sup> International Symposium on Discharges and Electrical Insulation in Vacuum, 15 – 19 Septembrie 2008, Bucuresti, Romania; (poster).
13. S. Dobrea, **V. Tiron** and G. Popa, "*Optical emission diagnostic of magnetron discharge*" International PhD Students Workshop on Fundamental and Applied Research in Physics, 23 – 26 octombrie 2008, Iasi, Romania; (poster).
14. C. Aniculaesei, A. Nastuta, **V. Tiron**, G. Popa, "*Electrical and optical diagnostic of the thermionic vacuum arc*", Fizica si Tehnologiiile Educationale Moderne, 8 -10 Mai 2009, Iasi, Romania; (oral).
15. A. V. Nastuta, C. Aniculaesei, **V. Tiron**, G. Popa, "*Thermionic vacuum arc – plasma and deposited thin films characterisation*", "Fizica si Tehnologiiile Educationale Moderne, 8 -10 Mai 2009, Iasi, Romaia; (poster).
16. C. Vitelar, **V. Tiron**, C. Costin and G. Popa, "*LIF technique used for plasma diagnostic of the magnetron discharge*", 10<sup>th</sup> International Balkan Workshop on Applied Physics, 6 -8 iulie 2009, Constanta, Romania; (invited).
17. **V. Tiron**, C. Aniculaesei, C. Vitelar and G. Popa, "*Investigation of Zeeman transition of metastable argon atoms by tunable diode-laser spectroscopy*", 10<sup>th</sup> International Balkan Workshop on Applied Physics, 6 -8 iulie 2009, Constanta, Romania; (poster).
18. **V. Tiron**, J. Faustin, C. Costin, G. Popa, M. Ganciu, "*Fast imaging investigations on pulsed magnetron discharge*", Conferința Națională de Fizică", 23-25 septembrie 2010 Iasi, Romania; (poster).
19. **V. Tiron**, V. Pohoata and G. Popa, "*Electrical diagnostic of Thermioic Vacuum Arc plasma*", The 15<sup>th</sup> International Conference on Plasma Physics and Applications, July 1 -4, 2010, Iasi, Romania; (oral presentation)."
20. **V. Tiron**, A. V. Nastuta, V. Pohoata L. Sirghi and G. Popa, „*Characterisation of ZnO and ZnO:Al films deposited by reactive pulsed magnetron discharge*”, The “15<sup>th</sup> International Conference on Plasma Physics and Applications, July 1 -4, 2010 Iasi, Romania; (poster).
21. **V. Tiron**, C. Costin, L. Sirghi, G. Popa, "*Doping control of ZnO:Al deposited by reactive HIPIMS*", 10<sup>th</sup> International Conference on Global Research and Education (inter-Academia), 25 -29 septembrie 2011, Sucevita, Romania; (oral presentation).
22. Ioana-Laura Velicu, Maria Neagu, Horia Chiriac, **Vasile Tiron**, and Marius Dobromir, „*Structural and Magnetic Properties of FeCuNbSiB Thin Films Deposited by HiPIMS*”, 20th Soft Magnetic Materials Conference, 18-22 September 2011, Kos Island, Greece; (poster).
23. C. Vitelar, A.S. Chiper, **V. Tiron**, C. Ursu, G. Popa, "*On transitory phenomena in pulsed discharge*", 10<sup>th</sup> International Conference on Global Research and Education (inter-Academia), 25 -29 septembrie 2011, Sucevita, Romania; (invited).
24. **V. Tiron**, C. Vitelar, C. Porosnicu, I. Jepu, C.P. Lungu, G. Popa, „*Electrical diagnosis of Thermionic Vacuum Arc plasma ignited in beryllium vapours*”, 10<sup>th</sup> International Conference on Global Research and Education (inter-Academia), 25 -29 septembrie 2011, Sucevita, Romania; (poster).
25. L. Velicu, M. Neagu, H. Chiriac, **V. Tiron**, „*Effect of preparation condition on the magnetic properties of FeCuNbSiB thin films*”, 10<sup>th</sup> International Conference on Global Research and Education (inter-Academia), 25 -29 septembrie 2011, Sucevita, Romania; (oral presentation).
26. Cristian P. LUNGU, Rodica VLADOIU, **Vasile TIRON**, "*Combinatorial film depositions and characterization*", 12<sup>th</sup> International Balkan Workshop on Applied Physics, 6-8 iulie 2011, Constanța, Romania; (invited).
27. **V. Tiron**, C. Vitelar, V. Pohoata, G. Popa, "*On tungsten thin films properties and their relation with transport process of the sputtered atoms in a DC high power pulse magnetron discharge*", 9th International Conference On Physics Of Advanced Materials - ICPAM-9, 20-23 September 2012, Iasi, Romania; (poster).
28. I.L. Velicu, M. Kowalczyk, M. Neagu, **V. Tiron**, H. Chiriac, J. Ferenc, "*FINEMET-type thin films deposited by HiPIMS: influence of growth and annealing conditions on the magnetic behaviour*", The 9th International Conference on Physics

of Advanced Materials – ICPAM-9, 20-23 September 2012, Iasi, Romania; (poster).

**29. V.Tiron**, C.Vitelaru, I. Mihaila, I. Becherescu, *“The Tunable Diode Laser Techniques used in Plasma Diagnostics; Strong Points and Weaknesses”*, International Conference on Modern Laser Applications – INDLAS 2013, 20-24 Mai 2013, Bran, Romania; (oral presentation).

**30. V. Tiron**, I-L.Velicu, F. Ghiorghiu and G. Popa, *“The effect of the additional magnetic field and gas pressure on the sheath region of a high power impulse magnetron sputtering discharge”*, 16<sup>th</sup> International Conference on Plasma Physics and Applications, 20-25 Iunie 2013, Magurele, Romania; (poster).

**31. M. Osiac, V. Tiron**, G. E. Iacobescu, G. Popa, *“The  $Ge_1Sb_2Te_4$  films deposited by magnetron sputtering high power impulse magnetron sputtering”*, 16<sup>th</sup> International Conference on Plasma Physics and Applications, 20-25 Iunie 2013, Magurele, Romania; (poster).

**32. L. Sirghi, V. Tiron**, and M. Dobromir, *“High power impulse magnetron sputtering deposition of diamond-like carbon thin films on atomic force microscopy probes”*, 16<sup>th</sup> International Conference on Plasma Physics and Applications, 20-25 Iunie 2013, Magurele, Romania; (oral presentation).

**33. F. Iacomì, V. Binas, G. Zoderiu, V. Tiron**, A. Popa, D. Toloman, M. Dobromir, C. Doroftei, V. Nica, A. Zachopoulos and G. Kiriakidis, *“Functional properties of Mn doped nanostructured titanium oxide powders and thin films”*, TIM-13 Physics Conference, 21-24 Noiembrie 2013, Timisoara, Romania, (invited).

**34. Vasile Tiron**, Ioana-Laura Velicu, Claudiu Costin, Gheorghe Popa, Corneliu Porosnicu, Mihai Straticiuc, Ion Burducea, Cristian Lungu, *“Nitrogen Containing Tungsten Coatings Obtained by HiPIMS as Plasma Facing Materials for Fusion Applications”*, International Conference on Physics of Advanced Materials (ICPAM-10), September 21-26, 2014, Iasi, Romania (poster).

**35. Cristian Ursu, Vasile Tiron** and Petru-Edward Nica, *“Effect of excimer laser beam spot size on carbon laser-produced plasma dynamics”*, International Conference on Physics of Advanced Materials (ICPAM-10), September 21-26, 2014, Iasi, Romania; (poster).

**36. Nicu Becherescu, Bogdan Chiricuta, Vasile Tiron**, Ion Mihailescu, Gabriel Socol, Catalin Luculescu, *“HiPIMS versus PLD depositions for metallo composites nanomaterials”*, International Conference on Physics of Advanced Materials (ICPAM-10), September 21-26, 2014 Iasi, Romania; (prezentare orală).

**37. Ioana-Laura Velicu, Maria Neagu, Lucian Costinescu, Vasile Tiron**, Daniel Munteanu, *“Nanomechanical characterization of amorphous and nanocrystalline  $FeCuNbSiB$  thin films”*, the 10<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM-10, September 22-28 2014, Iasi, Romania (prezentare orală)

**38. Vasile Tiron**, Ioana-Laura Velicu, Nicu Becherescu, Mihai Ganciu, Gheorghe Popa, *“HiPIMS process optimization by pulsed external magnetic field”*, The 10<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM-10, September 22-28, 2014, Iasi, Romania (poster).

**39. M. Osiac, V. Tiron**, G.E. Iacobescu, *“The nitrogen doped  $Ge_1Sb_2Te_4$  films for phase change memory”*, TIM14 Physics Conference, November 20-22 2014 Timisoara, România (poster).

**40. V. Tiron**, I-L. Velicu, O. Vasilovici, G. Popa, *“Optimization of deposition rate in High Power Impulse Magnetron Sputtering”*, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania (poster presentation + lucrare in proceedingul conferintei).

**41. M. Osiac, V. Tiron**, G.E. Iacobescu, *“Phase change behaviour in nitrogen-doped  $Ge_1Sb_2Te_4$ ”* The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania (poster presentation + lucrare in proceedingul conferintei).

**42. V. Tiron**, I-L. Velicu, O. Vasilovici, M. Dobromir, C. Costin, G. Popa, C. Porosnicu, I. Jecu, P. Dinca, C. P. Lungu, M. Straticiuc, I. Burducea, *“HiPIMS method used for fusion related mixed material studies”*, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania (poster presentation + extended abstract in

conference's proceeding).

**43.** T. B. Coman, V. Tiron, M. Asandulesa, C. Ursu, *"Low temperature sequential PLD of Al-doped ZnO thin films"*, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania (poster presentation + extended abstract in conference's proceeding).

**44.** M. Rudolph, T. Degousée, T. Minea, **V. Tiron**, C. Costin, L. Sirghi, M.-C. HugonP, B. Bouchet-Fabre, *"Measuring the ionized flux fraction from high-power impulse magnetron discharges using a miniaturized passive ion energy spectrometer"*, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania (poster presentation + extended abstract in conference's proceeding).

**45.** M. Dobromir, R.P. Apetrei, C.T. Teodorescu-Soare, **V. Tiron**, and D. Luca, *"Structural, morphological and optical properties of sputtered TiO<sub>2</sub>/WO<sub>3</sub> bilayers"*, The XXXII International Conference on Phenomena in Ionized Gases, 26-31 July 2015, Iasi, Romania (poster presentation + extended abstract in conference's proceeding).

**46.** M. Toma, L.M. Cosovanu O. Vasilovici, F. Enescu, **V. Tiron**, G.G.Rusu, M. Dobromir, D. Timpu, F. Iacomi, *"Influence of annealing conditions on functional properties of ni, co doped zno thin films grown by spin coating"*, The 8<sup>th</sup> International Conference on Advanced Materials, RoCAM 2015, 7-10 July 2015, Bucharest, Romania (poster).

**47.** Felicia Iacomi, Vassilios Binas, Gheorghe Zoderiu, **Vasile Tiron**, Adriana Popa, Dana Toloman, Marius Dobromir, Cornel Doroftei, Apostolos Zachopoulos, George Kiriakidis, *"Effect of Mn doping on the structure, photocatalytic and sensing properties of nanostructured titanium oxide powders and thin films"* The 1<sup>st</sup> International Workshop "Advances on Photocatalysis" AdvPhotoCat2015, 6 – 8<sup>th</sup> of July 2015, Iasi, Romania (oral presentation).

**48.** Ramona Danac, Liviu Leontie, Aurelian Carlescu, Sergiu Shova, **Vasile Tiron**, George G. Rusu, Felicia Iacomi, Silviu Gurlui, Oana Susu, Gheorghe I. Rusu, *"Electric Conduction Mechanism of Some Heterocyclic Compounds, 4,4'-Bipyridine and Indolizine Derivatives in Thin Films"*, Third International Conference of Young Researchers "New Trends in Environmental and Materials Engineering" (TEME), 21 – 23 October 2015, Galați, Romania, work P54 (poster).

**49.** O. Vasilovici, **V. Tiron**, C. Costin, L. Sirghi, *"Tuning the band gap energy of ZnO:N thin films obtained by HiPIMS technique"*, A XLIV-a Conferinta Nationala Fizica si Tehnologiile Educationale Moderne, 16 mai 2015, Iasi, Romaia; (poster).

**50.** Ioana-Laura Velicu, **Vasile Tiron**, Corneliu Porosnicu, Ion Burducea, Gheorghe Popa, Daniel Munteanu, *"Enhanced properties of tungsten thin films deposited with a novel HiPIMS approach"*, International Conference on Physics of Advanced Materials (ICPAM-11), 08-14 Septembrie 2016, Cluj –Napoca, Romania; (poster).

**51.** Alexandra Demeter, **Vasile Tiron**, Lucel Sirghi, *Control of Polystyrene Colloidal Mask Geometry by Reactive Ion Etching*, The 6<sup>th</sup> National Conference of Applied Physics CNFA, November 26-27, 2016, Iasi, Romania (prezentare orală).

**52.** Ioana-Laura Velicu, **Vasile Tiron**, Corneliu Porosnicu, Ion Burducea, Gheorghe Popa, Daniel Munteanu, *Enhanced properties of Tungsten thin films deposited with a novel HiPIMS approach*, The 11<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM-11, September 8-14, 2016, Cluj-Napoca, Romania (poster).

**53.** **V. Tiron**, L. Punga, G. B. Rusu, I. Topala, G. Borgia, *"TiO<sub>x</sub> and ZnO<sub>x</sub> coating on polyester fabrics using HiPIMS"*, The 11<sup>th</sup> International Conference on Physics of Advanced Materials – ICPAM-11, September 8-14, 2016, Cluj-Napoca, Romania (poster).

**54.** C. Porosnicu, **V. Tiron**, P. Dinca, I. Jepu, O.G. Pompilian, I. Burducea, C. P. Lungu, *HiPIMS And Reactive Magnetron Sputtering Techniques used for Obtaining Fusion Related Materials*, 16<sup>th</sup> International Balkan Workshop on Applied Physics (IBWAP), 7-9 July 2016, Constanta, Romania, (lecție invitată)

55. L. Sirghi and **V. Tiron**, „*Stoichiometry of thin oxide films deposited by reactive high power impulse magnetron sputtering*”, 17<sup>th</sup> International Conference on Plasma Physics and Applications, CPPA 2017, June 15-20, 2017, Magurele, Bucharest, Romania (prezentare orală).
56. **V. Tiron**, C. Costin, I. Mihaila, G. Popa, *Ion energy distribution function measurements during high power impulse magnetron sputtering of W and Al targets in Ar-He and Ar-D<sub>2</sub> gas mixtures*, 17<sup>th</sup> International Conference on Plasma Physics and Applications, CPPA 2017, June 15-20, 2017, Magurele, Bucharest, Romania (poster).
57. C. Porosnicu, **V. Tiron**, P. Dinca, B. Butoi, I. Burducea, O.G. Pompilian, I. Jecu, C. P. Lungu, „*HiPIMS and Reactive Magnetron Sputtering Techniques Used for Obtaining Fusion Related Materials*”, 17<sup>th</sup> International Conference on Plasma Physics and Applications, CPPA 2017, June 15-20, 2017, Magurele, Bucharest, Romania (poster).
58. C. Costin, A. Demeter, **V. Tiron**, L. Sirghi, „*Simulation of magnetron sputtering deposition of titanium nanopatterns on substrates with colloidal masks*”, 17<sup>th</sup> International Conference on Plasma Physics and Applications, CPPA 2017, June 15-20, 2017, Magurele, Bucharest, Romania (poster).
59. P. Dinca, C. Porosnicu, **V. Tiron**, B. Butoi, I. Jecu, O.G. Pompilian, I. Burducea, C.P. Lungu, „*The influence of nitrogen gas inclusions on deuterium retention and release properties of Be-W mixed layers*”, 17<sup>th</sup> International Conference on Plasma Physics and Applications, CPPA 2017, June 15-20, 2017, Magurele, Bucharest, Romania (poster).
60. I.-L. Velicu, **V. Tiron**, I. Mihaila, C. Costin, *Pulsed magnetron sputtering: the role of the applied power on tungsten coatings properties*, 16<sup>th</sup> International Conference on Global Research and Education, Inter-Academia 2017, September 25-28, 2017, Iasi, Romania (poster).
61. L. Sirghi, A. Demeter, **V. Tiron**, C. Costin, „*Colloidal lithography by plasma material processing*”, 16<sup>th</sup> International Conference on Global Research and Education, Inter-Academia 2017, September 25-28, 2017, Iasi, Romania (lecție invitată).
62. R. Danac, L. Leontie, A. Carlescu, C. Doroftei, G.G. Rusu, **V. Tiron**, O. Susu, S. Gurlui, Mihaela Gartan, „*Synthesis and electric properties of some new lower-rim substitute calixarenes derivatives in thin films*”, 16<sup>th</sup> International Conference on Global Research and Education, Inter-Academia 2017, September 25-28, 2017, Iasi, Romania (poster).
61. A. Demeter, **V. Tiron**, L. Sirghi, „*Plasmonic behaviour of titanium 2D nanopatterns obtained by magnetron sputtering deposition with colloidal masks*”, 16<sup>th</sup> International Conference on Global Research and Education, Inter-Academia 2017, September 25-28, 2017, Iasi, Romania (prezentare orală).
63. A. Beșleagă, A. Demeter, **V. Tiron**, G. B. Rusu, P. Dincă and L. Sirghi, „*Photocatalytic activity of TiO<sub>2</sub> films deposited by reactive multi-pulse HiPIMS at different substrate temperature values*”, 16<sup>th</sup> International Conference on Global Research and Education, Inter-Academia 2017, September 25-28, 2017, Iasi, Romania (prezentare orală).
64. **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 & Engineering, Bramat 2019, Brasov, Romania, (poster presentation).
65. **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*”, XVIII<sup>th</sup> International Conference on Plasma Physics and Application - CPPA 2019, 20-22 June 2019, Iasi, Romania (poster presentation).
66. I.-L. Velicu, **V. Tiron**, D. Cristea, I. Mihaila, D. Munteanu, G. Popa, „*Bipolar HiPIMS: a step further in exploring new perspectives and horizons in coatings deposition*”, XVIII<sup>th</sup> International Conference on Plasma Physics and Application - CPPA 2019, 20-22 June 2019, Iasi, Romania (invited lecture).
64. A.V. Nastuta, M. Butnaru, V. Pohoata, **V. Tiron**, I. Topala, „*Enhanced biocompatibility properties of poly(ethyleneterephthalate) foils after AC He DBD plasma jet exposure*”, XVIII<sup>th</sup> International Conference on Plasma Physics and Application - CPPA 2019, 20-22 June 2019, Iasi, Romania (poster presentation).

## 11. Premii obținute prin selecție

**Autori, lucrare (sau competitie), cine acorda premiul (de precizat daca premiul este obtinut in tara sau in strainatate)**

1. Premiul III acordat de către organizatori la Conferința Națională de Fizică, București, 13-16 septembrie 2005, pentru prezentarea poster: „*Transitory Phenomena in Pulsed Reactive Magnetron Discharge*”, autori: **V. Tiron**, C. Vitelaru, M. Solomon, G. Popa.
2. Premiul III acordat de către organizatori la Conferința de Fizica și Tehnologiile Educationale Moderne, Iasi, 8 -10 Mai 2009, pentru prezentarea orală: “*Electrical and optical diagnostic of the thermionic vacuum arc*”, autori: C. Aniculaesei, A. Nastuta, **V. Tiron**, G. Popa.
3. Sponsor’s Prize for the most original contribution presented by a young scientist: “*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 (prezentare orală).
4. Award (3<sup>rd</sup> prize) to the Joint SHU - Fraunhofer IST HIPIMS Research Centre Award to young researcher: “*Copper thin films deposited under different power delivery modes and magnetron configurations: A comparative study*”, by Ioana-Laura Velicu, **Vasile Tiron**, Bogdan-George Rusu, Gheorghe Popa, prezentată la: The 7<sup>th</sup> International Conference on HiPIMS, 29-30 June 2016, Sheffield, UK (oral presentation).
5. Award (2<sup>nd</sup> prize) to the Joint SHU - Fraunhofer IST HIPIMS Research Centre Award to young researcher: “*Dual-HiPIMS system as source of fusion related W-Al composite layers having helium and deuterium inclusions*”. Authors: P. Dinca, **V. Tiron**, I. Mihăilă, I.-L. Velicu, C. Porosnicu, B. Butoi, A. Velea, E. Grigore, C. Costin, C.P. Lungu. Poster presentation at The 9<sup>th</sup> International Conference on HiPIMS, 25-28 June 2018, Sheffield, UK.
6. Award (3<sup>rd</sup> prize) to the Joint SHU - Fraunhofer IST HIPIMS Research Centre Award to young researcher: “*Bipolar High Power Impulse Magnetron Sputtering: a new approach to control the metal ion flux*”. Authors: I.-L. Velicu, C. Porosnicu, I. Mihăilă, I. Burducea, A. Velea, D. Cristea, D. Munteanu, **V. Tiron**. Oral presentation at The 9<sup>th</sup> International Conference on HiPIMS, 25-28 June 2018, Sheffield, UK.
7. **Medalia de Aur și Diploma de Onoare** obținută la Salonul Internațional de Inventică, **INVENTICA 2019**, cu lucrarea: “*Installation and process for energetic metal ion beam with application in space propulsion*”, autori **V. Tiron**, I.-L. Velicu, G. Popa.

## 12. Stagii in strainatate (perioade peste 6 luni)

Se va preciza tipul stagiului (cercetare – Bursa Guv. Romaniei, Proiect European, Fullbright, NATO, stagiul cercetare ERASMUS master/doctorat, ERASMUS placement, etc.; didactic – ERASMUS sau de alt tip)

## 13. Stagii in strainatate (perioade sub 6 luni)

Se va preciza tipul stagiului (cercetare – Bursa Guv. Romaniei, Proiect European, Fullbright, NATO, stagiul cercetare ERASMUS master/doctorat, ERASMUS placement, etc.; didactic – ERASMUS sau de alt tip)

1. Perioada 10 - 19 Iulie 2013, stagiul cercetare în cadrul Acțiunii COST la Institute for Ion Physics and Applied Physics, Leopold-Franzens, University of Innsbruck, Innsbruck, Austria.

## 14. Specializări și calificări:

- Absolvent al unui training de Microscopie Electronica și Microscopie de Forță Atomică, Univ. Al I. Cuza, Iasi, 2008.
- Summer School: “*OXIDE MATERIALS FOR ELECTRONIC APPLICATIONS*”, Institute of Electronic Structure and Laser Foundation for Research and Technology - Hellas (FORTH), Creta, Grecia. 15 - 17 octombrie 2010.
- Research Valorization Training organizat de Banca Mondială, Iasi, martie-decembrie 2019

**15. Experiența acumulată în alte programe/proiecte naționale/internaționale:**

Programul/Proiectul	Funcția	Perioada	Bugetul administrat
Proiect IDEI PN-II-PCE-2011-3-0270 „Funcționalizarea probelor nanoscopice în plasma”.	membru	2012-2016	1 500 000 lei
Proiect de colaborare ROMANIA-FRANTA – 2012, PN-II-ID-JRP-2012 „Oxinitruri cu aplicații în energia solară”.	membru	2014-2016	211 000 eur
Proiect PN-II-PT-PCCA-2 no. 174/2012 „Procese și instalație pentru depunerea de straturi subțiri în plasmă pulsate cu grad ridicat de ionizare”.	<b>Director</b>	2013-2016	2 212 080 lei
Proiect CEEEX, Nr. 1797/2006 „Dezvoltarea și optimizarea unor noi surse de plasmă pentru diagnoza prin ablație ionică a suprafețelor: studii și aplicații”.	membru	2006-2008	150 000 lei
Proiect CNCISIS, tip A, No. 1422/2007 „Studii experimentale și simulări numerice privind corelația dintre proprietățile de volum și cele de suprafață în descarcarea magnetron pulsată în domeniul densităților de putere medie”.	membru	2007-2008	200 000 lei
Proiect PC No. 72-223/2008, „Cercetări avansate pentru producerea de acoperiri combinatoriale de interes pentru fuziunea nucleară”.	membru	2008-2011	160 000 lei
Proiect IDEI, cod CNCISIS ID 540/2008 „Dezvoltarea de metode și tehnici de diagnoza a plasmelor magnetizate și interacțiunea lor cu suprafețele solide”.	membru	2009-2012	1 000 000 lei
PN II, CAPACITATI, Modul III, EURATOM-RO, 1EU-1. din 05.06.2014, „Participarea României la EUROfusion WPPFC și cercetări complementare”.	membru	2014-2016	403 067 lei
PN II, CAPACITATI, Modul III, RO-CERN – ELI-NP și FAIR „Extreme Light Induced Ablation Plasma Jet And Nanopatterning”	membru	2014-2016	626 557 lei
PNCID III, Program 5 / Subprogram 5.2 / Modul 5.2.1 EURATOM-RO Fuziune nr. 1EU-1/2 din 01.07.2016 „Participarea României la EUROfusion WPPFC și cercetări complementare”	membru	2016-2018	580 548 lei

**16. Alte mențiuni:**

- Membru al Acțiunii COST MP0804 *Highly Ionised Pulse Plasma Processes*, Work Group 5 “Reactive HIPP processes” 2009 – 2013.
- Membru al consorțiului EUROfusion (WP PFC).
- Membru al Societății Române de Fizică
- Membru în 6 comisii de îndrumare doctorat.

## 17. Alte informații relevante pentru competiție:

Colaborări naționale și internaționale:

- Institutul de Chimie Macromoleculară "Petru Poni", Iași, România.
- Institutul de Fizică Tehnică, Iași, România
- Institutul Național de Fizica Laserilor, Plasmei și Radiației, Măgurele, România
- Institutul Național de Fizică și Inginerii Nucleare "Horia Hulubei", Măgurele, România
- Universitatea Craiova, România
- Universitatea Transilvania, Brașov, România
- Universitatea Paris Sud, Orsay, Franța
- Universitatea "F. SKORINA", Gomel, Belarus
- Institutul pentru Materiale și Radiație (IRAMIS), Saclay, Franța
- Universitatea Leopold-Franzens, Innsbruck, Austria

**Declar pe proprie răspundere că datele prezentate sunt în conformitate cu realitatea.**

Data completării: 18.12.2019

Semnătura

