

## Lista publicațiilor științifice - Conf. univ. dr. habil. Claudiu COSTIN

### Articole științifice publicate *in extenso* în reviste cotate Web of Science cu factor de impact

1. V. Tiron, M. A. Ciolan, G. Bulai, I. Burducea, D. Iancu, J. Julin, M. Kivekäs, **C. Costin**, “Deuterium retention in tungsten co-deposits with neon and argon inclusions”, *Nuclear Materials and Energy* **39** (2024) 101656 (9 p)  
<https://doi.org/10.1016/j.nme.2024.101656>
2. **C. Costin**, T. M. Minea, “Two-dimensional analytical description of the plasma potential in a magnetron discharge”, *Scientific Reports* **13** (2023) 15883 (10 p)  
<https://doi.org/10.1038/s41598-023-42949-7>
3. **C. Costin**, I. Mihaila, H.J. van der Meiden, H. Tanaka, J. Scholten, H.J.N. van Eck, “Plasma rotation and axial flow velocities in Magnum-PSI from cross-correlation measurements”, *Plasma Sources Sci. Technol.* **32** (2023) 075010 (13 p)  
<https://doi.org/10.1088/1361-6595/ace5d2>
4. **C. Costin**, I. Mihaila, H.J. van der Meiden, J. Scholten, H.J.N. van Eck, J.W.M. Vernimmen, “Advances in Magnum-PSI probe diagnosis in support of plasma-surface interaction studies”, *Plasma Physics and Controlled Fusion* **64** (2022) 125008 (15 p)  
<https://doi.org/10.1088/1361-6587/ac9927>
5. **C. Costin**, Comment on “Effects of an Oblique Magnetic Field on Sheath Formation in the Presence of Electron Emission”, *Contrib. Plasma Phys.* **62**(3) (2022) e202100137 (3 p) <https://doi.org/10.1002/ctpp.202100137>
6. V. Tiron, G. Bulai, **C. Costin**, I.-L. Velicu, P. Dinca, 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 (9 p)  
<https://doi.org/10.1016/j.nme.2021.101091>
7. **C. Costin**, “Secondary electron emission under magnetic constraint: from Monte Carlo simulations to analytical solution”, *Scientific Reports* **11** (2021) 1874 (11 p)  
<https://doi.org/10.1038/s41598-021-81345-x>
8. **C. Costin**, “Particle distribution functions at plasma-surface interface”, *AIP Advances* **10** (2020) 115308 (7 p) <https://doi.org/10.1063/5.0030781>
9. 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 co-deposited in dual-HiPIMS”, *Surf. Coat. Technol.* **363** (2019) 273-281  
<https://doi.org/10.1016/j.surfcoat.2019.02.019>
10. Revel, T. Minea, **C. Costin**, “2D PIC-MCC simulations of magnetron plasma in HiPIMS regime with external circuit”, *Plasma Sources Sci. Technol.* **27** (2018) 105009 (21 p) <https://doi.org/10.1088/1361-6595/aadebe>
11. V. Tiron, I.-L. Velicu, A. V. Nastuta, **C. Costin**, G. Popa, Z. Kechidi, C. Ionita and R. Schrittwieser, “Enhanced extraction efficiency of the sputtered material from a

- magnetically assisted high power impulse hollow cathode”, *Plasma Sources Sci. Technol.* **27** (2018) 085005 (11 p) <https://doi.org/10.1088/1361-6595/aad3ff>
12. S. Brezinsek et al., “Plasma-wall interaction studies within the EUROfusion consortium: progress on plasma-facing components development and qualification”, *Nuclear Fusion* **57**(11) (2017) 116041 (9 p) <https://doi.org/10.1088/1741-4326/aa796e>
  13. **C. Costin**, G. Popa, V. Anita, “Electrical probe characteristic recovery by measuring only one time-dependent parameter”, *Rev. Sci. Instrum.* **87** (2016) 033506 (7 p) <https://doi.org/10.1063/1.4943669>
  14. **C. Costin**, V. Anita, G. Popa, J. Scholten, G. De Temmerman, “Tailoring the charged particle fluxes across the target surface of Magnum-PSI”, *Plasma Sources Sci. Technol.* **25** (2016) 025023 (10 p) <https://doi.org/10.1088/0963-0252/25/2/025023>
  15. C. Lazarou, D. Koukounis, A. S. Chiper, **C. Costin**, I. Topala, G. E. Georghiou, “Numerical modeling of the effect of the level of nitrogen impurities in a helium parallel plate dielectric barrier discharge”, *Plasma Sources Sci. Technol.* **24** (2015) 035012 (13 p) <https://doi.org/10.1088/0963-0252/24/3/035012>
  16. **C. Costin**, V. Anita, F. Ghiorghiu, G. Popa, G. De Temmerman, M A van den Berg, J Scholten, S Brons, “Cross-section analysis of Magnum-PSI plasma beam using 2D multi-probe system”, *Plasma Sources Sci. Technol.* **24** (2015) 015014 (10 p) <https://doi.org/10.1088/0963-0252/24/1/015014>
  17. O. Antonin, V. Tiron, **C. Costin**, G. Popa, T.M. Minea, “On the HiPIMS benefits of multi-pulse operating mode”, *J. Phys. D: Appl. Phys.* **48** (2015) 015202 (10 p) <https://doi.org/10.1088/0022-3727/48/1/015202>
  18. I. Mihaila, S. Costea, **C. Costin**, and G. Popa, “On Negative Slope of Probe Characteristics in Magnetized Plasmas”, *Contrib. Plasma Phys.* **54**(3) (2014) 291-297 <https://doi.org/10.1002/ctpp.201410075>
  19. T.M. Minea, **C. Costin**, A. Revel, D. Lundin, L. Caillault, “Kinetics of plasma species and their ionization in short pulsed HiPIMS by particle modeling”, *Surf. Coat. Technol.* **255** (2014) 52-61 <https://doi.org/10.1016/j.surfcoat.2013.11.050>
  20. **C. Costin**, T. M. Minea, and G. Popa, “Electron transport in magnetrons by a posteriori Monte Carlo simulations”, *Plasma Sources Sci. Technol.* **23** (2014) 015012 (11 p) <https://doi.org/10.1088/0963-0252/23/1/015012>
  21. N. Brenning, D. Lundin, T. Minea, **C. Costin** and C. Vitelaru, “Spokes and charged particle transport in HiPIMS magnetrons”, *J. Phys. D: Appl. Phys.* **46** (2013) 084005 (10 p) <https://doi.org/10.1088/0022-3727/46/8/084005>
  22. I. Mihaila, M. L. Solomon, **C. Costin**, and G. Popa, “On Electrical Probes Used in Magnetized Plasma Diagnostics”, *Contrib. Plasma Phys.* **53**(1) (2013) 96 – 101 <https://doi.org/10.1002/ctpp.201310017>
  23. **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 <https://doi.org/10.1109/TPS.2011.2145005>

24. M. L. Solomon, V. Anita, **C. Costin**, I. Mihaila, G. Popa, H. van der Meiden, R. Al, M. van de Pol, G. van Rooij, and J. Rapp, "Multi-Channel Analyzer Investigations of Ion Flux at the Target Surface in Pilot-PSI", *Contributions to Plasma Physics* **50**(9) (2010) 898-902 <https://doi.org/10.1002/ctpp.201010152>
25. **C. Costin**, T. M. Minea, G. Popa, and G. Gousset, "Plasma kinetics of Ar/O<sub>2</sub> magnetron discharge by 2D multi-fluid modeling", *J. Vac. Sci. Technol. A* **28**(2) (2010) 322-328 <https://doi.org/10.1116/1.3332583>
26. V. Tiron, S. Dobrea, **C. Costin**, and G. Popa, "On the carbon and tungsten sputtering rate in a magnetron discharge", *Nucl. Instrum. Meth. B* **267**(2) (2009) 434-437 <https://doi.org/10.1016/j.nimb.2008.10.058>
27. J. Brotankova, E. Martines, J. Adamek, J. Stockel, G. Popa, **C. Costin**, C. Ionita, R. Schrittwieser, and G. Van Oost, "Novel Technique for Direct Measurement of the Plasma Diffusion Coefficient in Magnetized Plasma", *Contributions to Plasma Physics* **48**(5-7) (2008) 418-423 <https://doi.org/10.1002/ctpp.200810067>
28. J. Adamek, M. Kocan, R. Panek, J. P. Gunn, E. Martines, J. Stöckel, C. Ionita, G. Popa, **C. Costin**, J. Brotankova, R. Schrittwieser, and G. Van Oost, "Simultaneous Measurements of Ion Temperature by Segmented Tunnel and Katsumata Probe", *Contributions to Plasma Physics* **48**(5-7) (2008) 395-399 <https://doi.org/10.1002/ctpp.200810063>
29. **C. Costin**, T. M. Minea, G. Popa, and G. Gousset, "Fluid Modelling of DC Magnetrons - Low Pressure Extension and Experimental Validation", *Plasma Process. & Polym.* **4**(S1) (2007) S960-S964 <https://doi.org/10.1002/ppap.200732307>
30. J. Brotankova, J. Adamek, J. Stockel, E. Martines, G. Popa, **C. Costin**, R. Schrittwieser, C. Ionita, G. van Oost, and L. van de Peppel, "A probe-based method for measuring the transport coefficient in the tokamak edge region", *Czechoslovak Journal of Physics* **56** (2006) 1321-1328 <https://doi.org/10.1007/s10582-006-0444-4>
31. R. Schrittwieser, C. Ionita, J. Adamek, J. Stockel, J. Brotankova, E. Martines, G. Popa, **C. Costin**, L. van de Peppel, and G. van Oost, "Direct measurements of the plasma potential by katsumata-type probes", *Czechoslovak Journal of Physics* **56** (2006) Suppl. B, B145-B150 <https://doi.org/10.1007/s10582-006-0190-7>
32. **C. Costin**, G. Popa, and G. Gousset, "On the secondary electron emission in DC magnetron discharge", *Journal of Optoelectronics and Advanced Materials* **7** (2005) 2465-2469 [https://old.joam.inoe.ro/arhiva/pdf7\\_5/Costin.pdf](https://old.joam.inoe.ro/arhiva/pdf7_5/Costin.pdf)
33. **C. Costin**, L. Marques, G. Popa, and G. Gousset, "Two-dimensional fluid approach to the dc magnetron discharge", *Plasma Sources Sci. Technol.* **14** (2005) 168-176 <https://doi.org/10.1088/0963-0252/14/1/018>
34. **C. Costin**, G. Gousset, and G. Popa, "Modélisation d'une décharge magnétron dc dans l'Argon par un modèle fluide", *Le Vide* **304**(2/4) (2002) 308-315
35. I. Mihaila, G. Popa, V. Anita, **C. Costin**, L. Sirghi, and I. Turcu, "La fonction de distribution des électrons dans une décharge magnétron dans l'Argon avec une cible en Aluminium", *Le Vide* **304**(2/4) (2002) 316-325

36. L. Sirghi, K. Ohe, **C. Costin**, and G. Popa, "Electron Kinetics in the Hot-Cathode Negative Glow of a Helium Discharge", *Jpn. J. Appl. Phys.* **39** (2000) 1338-1342  
<https://doi.org/10.1143/JJAP.39.1338>

**Articole științifice publicate *in extenso* în reviste necotate Web of Science fără factor de impact**

1. I.-L. Velicu, V. Tiron, I. Mihaila, **C. Costin**, "Pulsed magnetron sputtering: the role of the applied power on tungsten coatings properties", *Recent advances in technology research and education*, Proceedings of the 16th International Conference on Global Research and Education Inter-Academia 2017, in the series: *Advances in Intelligent Systems and Computing*, vol. **660**, Springer (2018) 183-190
2. G. Popa, **C. Costin**, "Eveniment științific – A 32-a ediție a Conferinței Internaționale de Fenomene în Gaze Ionizate (ICPIG) – 25-31 iulie 2015, Universitatea „Alexandru Ioan Cuza” din Iași", *Revista de politica științei și scientometrie – Serie nouă* **5**(1) (2016) 40 – 49
3. **C. Costin**, I. Topala, "Potentialul aplicativ al plasmei pentru viitorul omenirii", *Analele Colegiului „Costache Negruzzi” Iași*, Anul I, Seria I, Nr. 1 (2012) 225-231
4. Vasile Tiron, **Claudiu Costin**, Lucel Sirghi and Gheorghe Popa, "Reactive HIPIMS with auxiliary Al electrode for ZnO:Al thin film deposition", *IOP Conf. Series: Materials Science and Engineering* **39** (2012) 012010
5. C. Vitelaru, V. Pohoata, V. Tiron, **C. Costin**, G. Popa, "On both spatial and velocity distribution of sputtered particles in magnetron discharge", *Analele Universității de Vest din Timișoara, Seria Fizică* **LVI** (2012) 43-57
6. Marius Lucian Solomon, Ilarion Mihaila, Viorel Anita, **Claudiu Costin**, Gheorghe Popa, Hennie van der Meiden, Richard Al, Gerard van Rooij, Niek Lopes Cardozo, Jürgen Rapp, Codrina Ionita, Ronald Stärz, and Roman Schrittwieser, "Measurements of plasma diffusion coefficient in Pilot-PSI device using Katsumata probe", *Journal of Automation, Mobile Robotics & Intelligent Systems* **3**(4) (2009) 160-162
7. I. Mihaila, V. Anita, **C. Costin**, L. Sirghi, G. Popa, I. Turcu, "Electron Distribution Function in Magnetron Discharge", *Romanian Reports in Physics* **54**(6-10) (2002) 301-308
8. **C. Costin**, L. Sirghi, G. Popa, "Monte Carlo Flux Method Used for a Radial Model of Plasma Positive Column", *Analele Științifice ale Universității "Al. I. Cuza" din Iași, Fizica Plasmei și Spectroscopie*, tom **XLVI** (2000) 119-122