

LISTA DE LUCRĂRI ȘTIINȚIFICE

Viorel IONESCU

A. Articole publicate în reviste cotate ISI:

1. D. Rasleanu, **V. Ionescu**, G. Prodan, V. Ciupina, C. P. Lungu, C. Surdu-Bob, M. Osiac, O. Pompilian, M. Badulescu, A. M. Lungu, C. Ticos, V. Zaroschi, L. Trupina and C. Miclea, “Nanostructured PZT type thin films prepared by thermionic vacuum arc method”, *J. Opto.Adv.Mat.* 10(11), 3041-3047, (2008).
2. C.P. Lungu, **V. Ionescu**, M. Osiac, C. Cotarlan, O. Pompilian, A.M. Lungu and V. Ciupina, “Thermionic vacuum arc deposited Al - doped amorphous carbon nanocomposite coatings”, *Journal of Non-Oxide Glasses* 1(2), 175-182(2009).
3. **V. Ionescu**, C.P. Lungu, M. Osiac and V. Ciupina, “Silver containing carbon amorphous nanocomposite films deposited by thermionic vacuum arc technique”, *V Rom. Journ. Phys.* 55, (1-2), 119 -126 (2010).
4. **V. Ionescu**, M. Osiac, C.P. Lungu, O.G. Pompilian, I. Jepu, I. Mustata and G.E. Iacobescu, „Morphological and structural investigations of Co-MgF₂ granular thin films grown by thermionic vacuum arc”, *Thin Solid Films* 518(14), 3945-3948, (2010).
5. I. Carazeanu Popovici, S. Birghila, G. Voicu, **V. Ionescu**, V. Ciupina and G. Prodan, „Morphological and microstructural characterization of some petroleum cokes as potential anode materials in lithium ion batteries”, *J. Opto.Adv.Mat.* 12(9), 1903 – 1908 (2010).
6. D. Ilie, D. Rasleanu, V. Ionescu, V. Mocanu, M. G. Mureșan, I. M. Oancea-Stănescu, V. Ciupină, G. Prodan, E. Vasile, I. Mustață, V. Zaroschi and C. P. Lungu, “Preparation and characterization of Copper/Nickel nanostructured multilayers using thermionic vacuum arc method”, *J. Opto.Adv.Mat.* 12(4), 839 – 843(2010).
7. D. Ilie, **V. Ionescu**, V. Mocanu, M. G. Mureșan, I. M. Oancea – Stănescu, V. Ciupina, G. Prodan, E. Vasile, I. Mustata, V. Zaroschi and C. P. Lungu, “Thermionic vacuum arc deposited Cu and Co nanostructured multilayers: synthesis and characterization”, *D. Rasleanu, J. Opto.Adv.Mat.* 12(4), 834 – 838(2010).
8. D. Savastru, D. Tenciu, C. P. Lungu, C. Viespe, C. Grigoriu, R. Iordanescu, I. D. Feraru, **V. Ionescu**, O. Monnereau, L. Tortet, R. Notonier and C. E. A. Grigorescu, “PZT films prepared by TVA and PLD from PbO₂ :TiO₂ : ZrO₂ (1:1:1) nanoceramic targets” *Digest Journal of Nanomaterials and Biostructures* 6(1), 207 – 212(2011).
9. I. Jepu, C. Porosnicu, I. Mustata, C. P. Lungu, V. Kunkser, M. Osiac, G. Iacobescu, **V. Ionescu** and T. Tudor, “Simultaneously thermionic vacuum arc discharges in obtaining ferromagnetic thin films”, *Romanian Reports in Physics*, 63(3). 804-816(2011).
10. **V. Ionescu**, C.P. Lungu, M.Osiac, “Deposition of tin containing carbon amorphous composite films by thermionic vacuum arc technique”, *OAM-RC*, Vol. 6, No. 5-6, 2012, p. 592 – 596.
11. **V. Ionescu**, C.P. Lungu, I. Jepu, M. Osiac, G.E. Iacobescu, “Characterization of thermionic vacuum arc deposited Co - MgF₂ granular thin films using X-ray diffraction and microscopy techniques”, *Romanian Reports in Physics*, 65(4), 2013, p.1390-1397.
12. **V. Ionescu**, Finite element method modelling of a High Temperature PEM Fuel Cell, *Romanian Journal of Physics*, 59 (3-4), 2014, p. 285-294.
13. **V. Ionescu**, “Design and analysis of a Rayleigh Saw Resonator for gas detecting applications”, *Romanian Journal of Physics*, 60 (3-4) 2015, p. 502-511
14. **V. Ionescu**, “Gas diffusion layer and reactant gas channel influence on the performance of a HT-PEM fuel cell, *Romanian Journal of Physics* 61 (7-8) 2016, p. 1235-1244
15. Andronie A. , Stamatin I. , Girleanu V. , **Ionescu V.**, Buzbuchi N., Experimental Study of a PEMFC System with Different Dimensions of the Serpentine Type Channels from Bipolar Plate Flow Fields, *ISSN 1392–1207, MECHANIKA*, 2019, 25(1), p.11-16
16. **V. Ionescu**, FEM Modeling of Delamination in AS4/PEEK Thermoplastic Composites Under Mixed – Mode Bending Test, *MECHANIKA*. 2020 Volume 26(2): 120–125
17. **V. Ionescu**, Water and hydrogen transport modelling through the membrane-electrode assembly of a PEM fuel cell, *Phys. Scr.* 95 (2020) 034006 (10pp)
18. A. Ciocanea, E. Vasile, **V. Ionescu**, F.I. Maxim, C. Diac, C. Miron and S.N. Stamatin, Second Life Application of Automotive Catalysts: Hydrodynamic Cavitation Recovery and Photo Water Splitting, *Metals* 2020, 10(10), 1307; <https://doi.org/10.3390/met10101307>

19. E. Vasile, A. Ciocanea, **V. Ionescu**, I. Lepadatu, C. Diac, S.N. Stamatina, Making precious metals cheap: A sonoelectrochemical – Hydrodynamic cavitation method to recycle platinum group metals from spent automotive catalysts, *Ultrasonics Sonochemistry* 72 (2021), 10540 – 10549
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21. **V. Ionescu**, Performance analysis of thermoelectric power-generation system with natural convection cooling, Energy Reports, Volume 9, Supplement 3, 2023, 123-130, <https://doi.org/10.1016/j.egy.2022.12.105>.

B. Articole publicate în reviste indexate BDI

1. V. Ciupină, G. Prodan, V. Ionescu, C. Casapu, D. Manole, D. Tudoran, E. Vasile and I. M. Oancea, “Structural properties and composition analysis of Cu–Ni–Co alloy thin film”, Rom. Journ. Phys. 53(7–8), 829–832, (2008).
2. C.P. Lungu, M. Osiac, A. M. Lungu, C. Porosnicu, I. Jepu, I. Mustata, V. Zaroschi, O. Pompilian, P. Chiru, M. Burada, V. Soare, V. Ionescu, R. Vladoiu, V. Ciupina, “Ni based alloy preparation on flexible substrates by the TVA method”, 19th International Symposium on Plasma Chemistry, Bochum, 26-31 July, 2009, ISPC-Proceedings. <http://www.ispc-conference.org/ispcproc/papers/610.pdf>
3. C. P. Lungu, I. Jepu, I. Mustata, V. Kuncser, V. Ionescu, V. Ciupina, M. Osiac, G.E. Iacobescu, “Nanostructured, functional films prepared using thermionic vacuum arc”, A 9-a editie a Seminarului National de Nanostiinta si Nanotehnologie, 6 martie 2010, Bucharest, Series in Micro and Nanoengineering, Vol. 19: "Nanomaterials and nanostructures for various applications", p. 163-171.
4. O. G. Pompilian, V. Ionescu, M. Osiac and C. P. Lungu, “Metal - Carbon amorphous layers obtained by TVA method”, Physics AUC 18(I) 54-58(2008).
5. “Carbon-copper amorphous composite coatings grown by thermionic vacuum arc method”, V. Ionescu, C. P. Lungu, M. Osiac, C. Cotarlan, O. Pompilian, A. M. Lungu and V. Ciupina, Ovidius University Annals of Chemistry 20(2), 193-198, (2009).
6. C. Oprea and V. Ionescu, “TEM and XRD investigation of Fe₂O₃-Al₂O₃ system”, Ovidius University Annals of Chemistry 20(4), 222-226(2009).
7. V. Ionescu, C.P. Lungu, M. Osiac and V. Ciupina, “C-Sn low friction coatings for tribological applications”, Ovidius University Annals of Mechanical, Industrial and Maritime engineering XII(I), 203-206(2010).
8. V. Ionescu, G. Prodan, I. Jepu, I. Mustata, C. P. Lungu, E. Vasile, “Morphology, microstructure and magnetic properties of thermionic vacuum arc deposited NiFeCu ferromagnetic thin films, Ovidius University Annals of Chemistry, 23(1), 21-26, (2012)
9. V. Ionescu, “High temperature PEM fuel cell steady-state transport modeling”, Ovidius University Annals of Chemistry 24(1), 55-60, (2013).
10. V. Ionescu, Comsol Multiphysics modelling and analysis of a high temperature PEM fuel cell, International Journal of Mechanical Engineering and Computer Applications, 4(2), 2016, 218-222.
11. V. Ionescu, Numerical investigation of a micro-heat exchanger with various channel geometries, International Journal of Energy and Environment, 8(2), p.189-194, 2017.
12. V. Ionescu, T. Chis, Numerical analysis of a steam reformer tube for stationary fuel cell applications, SGEM 2017 Conference Proceedings, 29 June - 5 July, 2017, vol. 17, issue 14, 763-770. DOI:10.5593/sgem2017/14/s06.096 (indexat SCOPUS).
13. V. Ionescu, Single serpentine flow fields design and sub-rib convection analysis for a PEM fuel cell, Journal of Physics: Conference Series, 1297(1), 2019, 012017 (indexat SCOPUS).
14. Ionescu, V. (2023). Numerical Modeling of a Desalination Process Through the Ion-Exchange Membranes of a Electrodialysis Cell. In: Moldovan, L., Gligor, A. (eds) The 16th International Conference Interdisciplinarity in Engineering. Inter-Eng 2022. Lecture Notes in Networks and Systems, vol 605. Springer, Cham. https://doi.org/10.1007/978-3-031-22375-4_65 (indexat SCOPUS).
15. Ionescu, V., A Simple One-Dimensional Model for the Analysis of a Bipolar Membrane Used in Electrodialysis Desalination, Proceedings of SPIE - The International Society for Optical Engineering, 2023, 12493, 1249322 (indexat SCOPUS).
16. V. Ionescu, "Techno-Economic Analysis of a Standalone Hybrid Energy System: a Case Study in Dobrogea," 2023 13th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, 2023, pp. 1-6, doi: 10.1109/ATEE58038.2023.10108209 (indexat SCOPUS).

17. V. Ionescu and A. A. Neagu, "Investigation of the Energy Conversion Efficiency for a Thermoelectric Generator System with Forced Convection Cooling," 2023 17th International Conference on Engineering of Modern Electric Systems (EMES), Oradea, Romania, 2023, pp. 1-4, doi: 10.1109/EMES58375.2023.10171737 (indexat SCOPUS).

C. Articole publicate in extenso la conferinte internationale recunoscute ISI (indexate Web of Science)

1. V. Ionescu, Finite element method design and analysis of a MEMS comb drive, 7th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), 25-27 June 2015, Bucharest, Romania, p.5-8, IEEE Xplore, Database, DOI: 10.1109/ECAI.2015.7301233
2. V. Ionescu, M. Hnatiuc, Fetal heart rate detection and monitoring from noninvasive abdominal ECG recordings, E-Health and Bioengineering Conference (EHB) 2015, 19-21 November 2015, Iasi, Romania, p.1-4, IEEE Xplore Database, DOI: 10.1109/EHB.2015.7391357
3. V. Ionescu, M. Hnatiuc, A. Topala, Optimal design of mushroom-like EBG structures for antenna mutual coupling reduction in 2.4 GHz ISM band, E-Health and Bioengineering Conference (EHB) 2015, 19-21 November 2015, Iasi, Romania, p.1-4, IEEE Xplore Database, DOI: 10.1109/ECAI.2015.7301233
4. V. Ionescu, Simulating the Effect of Gas Channel Geometry on PEM Fuel Cell Performance by Finite Element Method, Procedia Technology, 22(2016), 713-719.
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8. V. Ionescu, N. Buzbuchi, PEMFC Two-dimensional FEM Model to Study the Effects of Gas Flow Channels Geometry on Reactant Species Transport, Energy Procedia 112, p.390-397, 2017.
9. V. Ionescu, PEMFC two-dimensional modelling of reactant species transport through membrane-GDL system, Procedia Engineering, 181, p. 596-603, 2017.
10. V. Ionescu, Numerical modelling of a microstrip patch antenna for wireless applications, 10th International Symposium on Advanced topics in Electrical Engineering(ATEE), March 23-25, 2017 Bucharest, Romania p.340-345, 2017, IEEE Xplore Database, DOI: 10.1109/ATEE.2017.7905144
11. V. Ionescu, M. Hnatiuc, FEM modelling of split ring resonator based metamaterials for UWB notch filter applications, 2017 IEEE 23rd International Symposium for Design and Technology in Electronic Packaging (SIITME), October 26–29, 2017, Constanta, Romania, p. 29 – 32, IEEE Xplore Database, DOI: 10.1109/SIITME.2017.8259851
12. V. Ionescu and A.A. Neagu, Numerical investigation of channel dimension effects on the performance of a cross flow micro heat exchanger for chip cooling applications, 2017 IEEE 23rd International Symposium for Design and Technology in Electronic Packaging (SIITME) October 26–29, 2017, Constanta, Romania, p. 141 – 144, IEEE Xplore Database, DOI: 10.1109/SIITME.2017.8259877
13. V. Ionescu, Geometry optimization of a thermophotovoltaic system using the finite element method, 2018 IOP Conf. Ser.: Mater. Sci. Eng. 400 042033.
14. V. Ionescu and A. A. Neagu, Numerical simulation of Al₂O₃ – water nanofluid effects on the performance of a cross flow micro heat exchanger, 2018 IOP Conf. Ser.: Mater. Sci. Eng. 400 042032.
15. V. Ionescu, Evaluation of sub-rib convection in PEM fuel cell flow fields with different geometrical characteristics, Procedia Manufacturing 22, pp. 642-650, 2018.
16. V. Ionescu and A. A. Neagu, Numerical modelling of fluid flow and heat transfer in a corrugated channel for heat exchanger applications, Procedia Manufacturing 22 (2018), 634–641.
17. Andronie A., Stamatina I., Girleanu V., Ionescu V., Experimental Investigation of Cathode Backpressure Effect on Voltage Oscillations in a PEM Fuel Cell System, Proc. SPIE 10977, Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies IX, 1097713 (2018); doi: 10.1117/12.2323345
18. V. Ionescu and A. A. Neagu, Thermal-hydraulic performance modelling of a sine-shaped wavy channel for electronics cooling applications, Proc. SPIE 10977, Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies IX, 1097713 (2018); DOI: 10.1117/12.2323339
19. Ionescu V., Buzbuchi N., Andronie A., Stamatina I., Girleanu V., Current - Voltage Variation and Voltage Stability at Constant Load for a PEMFC System with Different Bipolar Plate Flow Fields, 2019 11th International

- Symposium on Advanced Topics in Electrical Engineering (ATEE), 28-30 March 2019, Bucharest, Romania, p. 1-6, IEEE Xplore Database, DOI: 10.1109/ATEE.2019.8724737.
20. **Ionescu V.**, Buzbuchi N., Andronie A. , Stamatina I. , Girleanu V. , Exergy Analysis of a PEM Fuel Cell System with Different Bipolar Plate Flow Fields, 2019 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 28-30 March 2019, Bucharest, Romania, p. 1-6, IEEE Xplore Database, DOI: 10.1109/ATEE.2019.8724737.
21. **Ionescu V.**, Numerical Investigation of a MEMS Thermal Actuator Performance by Modifying its Geometric Dimensions, *Procedia Manufacturing*, 32, 820 – 830, 2019.
22. Andronie A. , Stamatina I. , Girleanu V. , **Ionescu V.**, Buzbuchi N., Simplified Mathematical Model for Polarization Curve Validation and Experimental Performance Evaluation of a PEM Fuel Cell System, *Procedia Manufacturing*, 32, 810 – 819, 2019.
23. **V. Ionescu**, "Development of a Two-Phase PEM Fuel Cell Model for the Electrical Performance Prediction of PEMFC Systems with Nafion 117 Membrane," *2020 International Symposium on Fundamentals of Electrical Engineering (ISFEE)*, 2020, pp. 1-6, doi: 10.1109/ISFEE51261.2020.9756164.
24. **Ionescu V.**, "Numerical modeling of mixed-mode delamination fracture in unidirectional AS4/PEEK composites", *Proc. SPIE 11718, Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies X*, 117180H (31 December 2020); <https://doi.org/10.1117/12.2570466>
25. **Ionescu V.**, "Numerical analysis of fluid flow and mixing performance for a SAR-based passive micromixer", *Proc. SPIE 11718, Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies X*, 117180I (31 December 2020); <https://doi.org/10.1117/12.2570467>
26. **Ionescu V.**, "Numerical modeling of centrifugal microfluidic flow in rectangular channels for Lab-on-a-CD platform applications", *Proc. SPIE 11718, Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies X*, 1171816 (31 December 2020); <https://doi.org/10.1117/12.2571182>
27. **Ionescu V.**, A FEM Model for the Cathodic Corrosion Protection of Reinforcing Steel in Concrete Structures Exposed to Chloride Contamination, 2021 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 25-27 March 2021, Bucharest, Romania, p. 1-6, IEEE Xplore Database
28. **V. Ionescu**, "Numerical Simulation of Fluid Flow on Rotating Microchannels for Centrifugal Micromixer Applications," *IEEE EUROCON 2021 - 19th International Conference on Smart Technologies*, 2021, pp. 363-368
29. **V. Ionescu**, "Numerical Investigation of the Mixing Efficiency in Square-Wave Passive Micromixers for Microfluidic Device Applications," *IEEE EUROCON 2021 - 19th International Conference on Smart Technologies*, 2021, pp. 369-374, doi: 10.1109/EUROCON52738.2021.9535570.
30. **V. Ionescu**, "Numerical Modelling of 180° Hybrid Ring Couplers Operating in the GSM 1800 Band," *2021 International Semiconductor Conference (CAS)*, 2021, pp. 53-56, doi: 10.1109/CAS52836.2021.9604117.
31. **V. Ionescu** and A. A. Neagu, "Performance Analysis of Thermoelectric Cooler — Thermoelectric Generator System for Heat Recovery Applications," *2022 IEEE 28th International Symposium for Design and Technology in Electronic Packaging (SIITME)*, Bucharest, Romania, 2022, pp. 31-35, doi: 10.1109/SIITME56728.2022.9987959.

D. Cărți

1. "Dispozitive și Circuite Electronice – Îndrumar de laborator", V.Ionescu, A. Dănișor și P. Petculescu, Ovidius University Press Constanța, 2005 (ISBN 973-614-254-X).
2. „Grafică Asistată de Calculator – Îndrumar de laborator”, V. Ionescu, Ovidius University Press Constanța ,2006, (ISBN(10) 973-614-313-9; ISBN(13) 978-973-614-313-4).
3. „Fizică – Lucrări practice”, C. Oprea și V. Ionescu, Ovidius University Press Constanța , 2007, (ISBN 978-973-614-394-6)
4. „ Circuite Integrate Analogice – Lucrări practice”, V. Ionescu, A. Danisor, Ovidius University Press Constanța , 2007, (ISBN 978-973-614-394-6).
5. “Componente și circuite pasive”, V. Ionescu, Ovidius University Press Constanța 2011, (ISBN-978-973-614-646-6).
6. “Dispozitive electronice: teorie, probleme rezolvate și probleme propuse”, V. Ionescu, Ovidius University Press Constanța, 2011, ISBN-978-973-614-645-9.
7. *Grafică asistată de calculator : îndrumar de lucrări practice*, Viorel Ionescu, Anișoara-Arleziana Neagu. - Iași : PIM, 2020. ISBN 978-606-13-5446-7

E. Teze de doctorat:

1. *“Obținerea și caracterizarea unor straturi subțiri nanostructurate cu proprietăți electrice, magnetice și mecanice speciale”*, V. Ionescu, Universitatea din București, România, 2010.

2. *Studii de optimizare a câmpurilor de curgere reactanți din cadrul pilelor de combustie cu membrană schimbătoare de protoni (PEMFC)*, Universitatea Maritimă Constanța, România, 2019.

Data completării:

18.11.2023

Semnat,

Viorel IONESCU