

LISTA DE LUCRĂRI

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Facultatea de Inginerie Electrică

Departamentul de Electrotehnică

I. TEZA DE DOCTORAT / ABILITARE

- Td1. **L. Petrescu** – *Modelarea și soluții de caracterizare a materialelor magnetice* – Universitatea "Politehnica" din București, Catedra de Electrotehnică, 140 pagini, Ianuarie 2010. (Conducător științific Prof. emerit dr. ing. Horia GAVRILĂ).
- Ab1. **L. Petrescu** – Modelarea și analiza dispozitivelor electromagnetice cu materiale magnetice neliniare (*Modeling and analyzing of the electromagnetic devices with nonlinear magnetic materials*), Teză de abilitare, 2021, București, Universitatea Politehnica din București, 113 pagini.

II. CĂRȚI PUBLICATE

Ca. Cărți/cursuri (manuale) pentru uzul studenților, publicate în edituri recunoscute (4).

- Ca1. **L. Petrescu**, E. Cazacu, M.C. Petrescu, *Elemente de Analiză a Circuitelor Electrice* Editura Matrix Rom, 2023, ISBN 978-606-25-0837-1, 138 pagini (Cod CNC SIS Editura 39).
- Ca2. **L. Petrescu**, M.C. Petrescu, E. Cazacu, *Bazele Electrotehnicii – Elemente de teoria circuitelor electrice*, Editura Matrix Rom, 2020, ISBN 978-606-25-0543-1, 142 pagini (Cod CNC SIS Editura 39).
- Ca3. **L. Petrescu**, *Bazele electrotehnicii - Elemente de teorie a câmpului electromagnetic*, Editura Politehnica Press, 2015, ISBN 978-606-515-625-8, 220 pagini (Cod CNC SIS Editura 19).
- Ca4. E. Cazacu (coordonator), O. Drosu, G. Epureanu, **L. Petrescu**, V. Mănescu, G. Păltânea, R. Costea, V. Bucată, *Chestiuni speciale de teoria circuitelor electrice; Elemente de teorie și aplicații*, vol 1, Editura Matrix Rom, 2005, ISBN 973-685-925-8, 145 pagini (Cod CNC SIS Editura 39).

Cb. Cărți de specialitate publicate în edituri recunoscute (4).

- Cb1. **L. Petrescu**, V. Ioniță, E. Cazacu, *Materiale magnetice pentru sisteme electromagnetice*, Editura Matrix Rom, 2020, ISBN 978-606-25-0584-4, 180 pagini (Cod CNC SIS Editura 39).
- Cb2. E. Cazacu, **L. Petrescu**, V. Ioniță, *Elemente de calitate și eficiență a energiei în instalațiile electrice moderne*, Editura Matrix Rom, 2020, ISBN 978-606-25-0564-6, 225 pagini (Cod CNC SIS Editura 39).

- Cb3. E. Cazacu, **L. Petrescu**, *Expertiza sistemelor electrice industriale*, Editura Printech, București, 2014, ISBN 978-606-23-0231-3, 300 pagini (Cod CNCISIS Editura 54).
- Cb4. V. Ioniță, V. Păltânea, Gh. Păltânea, **L. Petrescu**, G. Epureanu, A.D. Ioniță, *Caracterizarea avansată a materialelor magnetice*, Editura Politehnica Press, ISBN 978-606-515-023-2, 2009, 266 pagini (Cod CNCISIS Editura 19).

III. ALTE MATERIALE PUBLICATE

I. Culegeri și îndrumare publicate (2) / suport de curs în format electronic (7).

- I1. G. Epureanu, **L. Petrescu**, C. Popescu, *Teoria Circuitelor Electrice - Aplicații*, Editura MatrixRom, ISBN 978-973-755-660-8, 2010, 330 pagini (Cod CNCISIS Editura 39).
- I2. **L. Petrescu**, G. Epureanu, *Probleme de Bazele Electrotehnicii (Partea I)*, Editura Printech, ISBN 978-973-718-841-0, 2007, 147 pagini (Cod CNCISIS Editura 54).
- N1. **L. Petrescu**, *Electrotehnică - note de curs și aplicații pentru uzul studenților Facultății de Transporturi, Secția Material Rulant, U.P.B., 2025 (76 pagini).*
<https://curs.upb.ro/2024/course/view.php?id=250>
- N2. **L. Petrescu**, *Bazele Electrotehnicii - note de curs și aplicații pentru uzul studenților Facultății de Inginerie Electrică - IA, U.P.B., 2025 (140 pagini).*
<https://curs.upb.ro/2024/course/view.php?id=2828>
- N3. **L. Petrescu**, *Bazele Electrotehnicii I- note de curs*, pentru uzul studenților Facultății de Energetică, U.P.B., 2024 (137 pagini).
<https://curs.upb.ro/2024/course/view.php?id=3824>
- N4. **L. Petrescu**, *Bazele Electrotehnicii II - note de curs*, pentru uzul studenților Facultății de Energetică – Departamentul de Electrotehnică, Universitatea POLITEHNICA din București, 2025 (86 pagini).
<https://curs.upb.ro/2024/course/view.php?id=7922>
- N5. **L. Petrescu**, *Prelucrarea asistată de calculator a datelor experimentale*, pentru uzul studenților Facultății de Inginerie Electrică – Departamentul de Electrotehnică, Universitatea POLITEHNICA din București, 2025 (110 pagini).
<https://curs.upb.ro/2024/course/view.php?id=2195>
- N6. **L. Petrescu**, *Security and Functional Safety of Vehicle Electrical Systems (S.F.S.V.E.S.)*, pentru uzul studenților Facultății de Inginerie Electrică, Master ISEIA – Departamentul de Electrotehnică, Universitatea POLITEHNICA din București, 2025 (79 pagini).
<https://curs.upb.ro/2024/course/view.php?id=2652>

D. Alte lucrări publicate: capitole publicate în volume colective, capitole teoretice redactate, sisteme de laborator funcționale etc.

- D1. Sursă reglabilă de tensiune pentru obținere de semnale deformante, 2015.

IV. ARTICOLE / STUDII IN EXTENSO PUBLICATE

Ris. Reviste de specialitate de circulație internațională recunoscute - cotate / indexate Web of Science (25)

- Ris1. G. Ioana, E. Cazacu, **L. Petrescu**, M. Stănculescu, *Study over the harmonic effects in electrical distribution networks*, U.P.B. Sci. Bull., Series C, Vol. 87, Iss. 1, 2025, ISSN 1454-234x, pp. 259 – 272, (**IF: 0.3**), WOS: 001445507200018.
- Ris2. G.O. Idoko, **L. Petrescu**, E. Cazacu, M.C. Petrescu, *Lithium-ion battery behavior considering different operating parameters*, U.P.B. Sci. Bull., Series C, Vol. 86, Iss. 3, 2024, ISSN 1454-234x, pp. 289 – 300, (**IF: 0.3**), WOS: 001301345300021.
- Ris3. G.G. Lazăr, **L. Petrescu**, E. Cazacu, A. Chirilă, D. Deaconu, M.C. Petrescu, *Critical comparison of start-stop asynchronous motor used for industrial conveyor*, U.P.B. Sci. Bull., Series C, Vol. 85, Iss. 2, 2023, ISSN 1454-234x, pp. 259 – 270, (**IF: 0.3**), WOS:001015488500017.
- Ris4.** C.-D. Constantinescu, **L.-G. Petrescu**, *Magnetic Materials, Thin Films and Nanostructures (Editorial)*, Magnetochemistry 2023, 9, 133, <https://doi.org/10.3390/magnetochemistry9050133> (**IF: 2.7** - cotată Q2 - CHEMISTRY, INORGANIC & NUCLEAR, rang 19 din 42), WOS: 001011298600001.
- Ris5. E. Cazacu, L.-G. Petrescu, V. Ioniță, *Smart Predictive Maintenance Device for Critical In-Service Motors*, Energies 2022, 15, 4283, pp. 1-17, ISSN: 1996-1073, <https://doi.org/10.3390/en15124283>, (**IF: 3.2**), WOS:000815968000001.
- Ris6.** **L.G. Petrescu**, M.C. Petrescu, E. Cazacu, C.-D. Constantinescu, *Estimation of Energy Losses in Nanocrystalline FINEMET Alloys Working at High Frequency*, Materials 2021, 14, 7745, pp. 1-13, <https://doi.org/10.3390/ma14247745>, ISSN 1996-1944 (**IF: 3.4** - cotată Q2 - METALLURGY & METALLURGICAL ENGINEERING, rang 20 din 78, Q2 - PHYSICS, APPLIED, rang 56/159, Q2 - PHYSICS, CONDENSED MATTER, rang 28 din 86), WOS:000777827200001.
- Ris7. **L. Petrescu**, A. Bordianu, V. Ioniță, E. Cazacu, M.C. Petrescu, *Improved homogenization formula used for soft magnetic composite materials*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 65, no. 1-2, p. 61 - 65, Bucarest, 2020, ISSN 0035-4066 (**IF: 0.7**), WOS: 000552052900010.
- Ris8.** **L. Petrescu**, M.C. Petrescu, V. Ioniță, E. Cazacu and C. D. Constantinescu, *Magnetic Properties of Manganese-Zinc Soft Ferrite Ceramic for High Frequency Applications*, Materials 2019, 12 (19), 3173, pp. 1-12, <https://doi.org/10.3390/ma12193173>, ISSN 1996-1944 (**IF: 3.4** - cotată Q2 - METALLURGY & METALLURGICAL ENGINEERING, rang 20 din 78, Q2 - PHYSICS, APPLIED, rang 56/159, Q2 - PHYSICS, CONDENSED MATTER, rang 28 din 86), WOS: 000493308500122.
- Ris9. **L. Petrescu**, V. Ioniță, E. Cazacu, M.C. Petrescu, *Power losses estimation for FeSi sheets using algebraic models*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 64, no. 1, p. 23 - 26, Bucarest, 2019, ISSN 0035-4066 (**IF: 0.70**), WOS: 000464302300004.
- Ris10. V. Ioniță, **L. Petrescu**, E. Cazacu, *Improved estimation of iron losses for non-sinusoidal voltages*, COMPEL - The international journal for computation and mathematics in electrical and electronic engineering, vol. 37, Iss. 5 pp. 1698 - 1706, 2018, ISSN: 0332-1649 (**IF: 0.7**), 10.1108/COMPEL-12-2017-0527, WOS:000448725000014.
- Ris11. V. Ioniță, M. Codescu, E. Chițanu, **L. Petrescu**, E. Cazacu, *Hysteresis modeling accuracy for soft magnetic nanopowders*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 63, no. 1, p. 11 - 14, Bucarest, 2018, ISSN 0035-4066 (**IF: 0.7**), WOS: 000430897800002.
- Ris12. E. Cazacu, V. Ionita, **L. Petrescu**, *Thermal Aging of Power Distribution Transformers Operating under Nonlinear and Balanced Load Conditions*, Advances in Electrical and

- Electronic Engineering, vol. 16, no.1, pp. 92 - 100, 2018, DOI **10.15598/aece.v16i1.2701**, ISSN: 1336-1376 (Print), 1804-3119 (Online), (IF: 0.6), WOS: 000429160100009.
- Ris13. V. Ioniță, **L. Petrescu**, E. Cazacu, *Effect of current harmonics on the hysteresis losses in soft magnetic materials*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 60, no. 4, p. 366 - 375, Bucarest, 2015, ISSN 0035-4066 (IF: 0.7), WOS: 000365935800003.
- Ris14. **L. Petrescu**, E. Cazacu, V. Ioniță, *High Frequencies Losses Prediction in Soft Magnetic Materials*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 60, no. 1, p. 49 - 58, Bucarest, 2015, ISSN 0035-4066 (IF: 0.7), WOS: 000350923900006.
- Ris15. E. Cazacu, **L. Petrescu**, *On-site derating of in-service power distribution transformers supplying nolinear loads*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 59, no. 3, p. 259–268, Bucarest, 2014, ISSN 0035-4066 (IF: 0.7), WOS: 000341801300004.
- Ris16. E. Cazacu, V. Ioniță, **L. Petrescu**, *Transformer inrush current predetermination for distorted waveform voltage supply*, Revue Roumaine des Sciences Techniques – Série Electrotechnique et Energétique, Ed. Academiei Române, tome 58, no. 3, pp. 342-351, Bucarest, 2013, ISSN 0035-4066 (IF: 0.7), WOS:000324447900002.
- Ris17. **L. Petrescu**, A. Bordianu, V. Ioniță, *Homogenization efficiency for composite materials in 2D magntostatic exterior problems*, Rev. Roum. Sci. Techn. – Électrotech. et. Énerg., Ed. Academiei Române, tome 58, no. 2, Bucarest 2013, ISSN 0035-4066, pp. 135 – 144 (IF: 0.7), WOS: 000320488100004.
- Ris18. V. Ioniță, **L. Petrescu**, A. Bordianu, O. Tabara, *Efficient Use of Preisach Hysteresis Model in Computer Aided Design*, Advanced in Electrical and Computer Engineering, volume 13, no. 2, 2013, ISSN 1582-7445, pp. 121 – 126, DOI: **10.4316/AECE.2013.02019** (IF: 0.8), WOS: 000322179400019.
- Ris19. V. Ioniță, I. Covaliu, **L. Petrescu**, A. Bordianu, O. Tabara, *Magnetic Characterization of the Fe₃O₄ nanoparticles used in biomaterials*, Rev. Roum. Sci. Techn. – Électrotech. et. Énerg., Ed. Academiei Române, tome 57, no. 2, Bucarest 2012, ISSN 0035-4066, pp. 154 – 161 (IF: 0.7), WOS: 000305202600005.
- Ris20. A. Bordianu, V. Ioniță, **L. Petrescu**, *Micro-scale Numerical Simulation of the Magnetic Recording*, Rev. Roum. Sci. Techn. – Électrotech. et. Énerg., Ed. Academiei Române, tome 57, no. 1, Bucarest 2012, ISSN 0035-4066, pp. 3 – 9 (IF: 0.7), WOS: 000303096800001.
- Ris21. V. Ioniță, **L. Petrescu**, *Magnetic Material Characterization by Open Sample Measurements*, Rev. Roum. Sci. Techn. – Électrotech. et. Énerg., Ed. Academiei Române, tome 54, no. 1, Bucarets 2009, ISSN 0035-4066, pp. 87 – 94 (IF: 0.7), WOS: 000264503000009.
- Ris22.** C. Constantinescu, N. Scarisoreanu, A. Moldovan, M. Dinescu, **L. Petrescu**, G. Epureanu, *Thin films of NdFeB deposited by PLD technique*, Applied Surface Science, Vol. 253, no. 19, pp. 8192-8196, ISSN: 0169-4332, 2007, DOI: **10.1016/j.apsusc.2007.02.165** (IF: 6.7 - cotată Q1 - MATERIALS SCIENCE, COATINGS & FILMS, rang 1 din 21, Q1 - PHYSICS, APPLIED, rang 27 din 459, Q1 - PHYSICS, CONDENSED MATTER, rang 14 din 66), WOS: 000249020500109.

- Ris23. **L. Petrescu**, *Comparison between frequently used Hysteresis Models*, Rev. Roum. Sci. Techn. – Électrotech. et. Énerg., Ed. Academiei Române, tome 52, no. 3, Bucarest 2007, ISSN 0035-4066, pp. 311 – 320 (**IF: 0.7**), WOS: 000255783700005.
- Ris24. V. Ioniță, **L. Petrescu**, A. Razicaneanu, *Adjustable device for magnetic material investigation by Kerr microscopy*, Int. Journal of Appl. Electromagnetics and Mechanics, Vol. 25, no. 1-4, ISSN 1383-5416, 2007, pp. 199 – 203. (**IF: 0.6**), WOS: 000248151100033.
- Ris25. V. Ioniță, **L. Petrescu**, *Numerical Advanced Characterization of Recording Magnetic Media*, JOAM, vol. 8, No. 3, June 2006, ROMSC 2005 (Iași, ROU), ISSN 1454-4164, pp. 998-1000. (**IF: 0.5**), WOS: 000238506500020.

Ris. Reviste de specialitate de circulație internațională recunoscute - indexate în alte Baze de Date Internaționale – BDI (14)

- Ris26. G.O. Idoko, **L. Petrescu**, E. Cazacu, M.C. Petrescu, *Modelling Improved Solutions to Reduce the Temperature in Lithium-Ion Batteries*, Journal of Electrical Systems, Vol. 20 No. 10s (2024), pp. 7537 – 7547, (**IF: 0.5**), DOI: <https://doi.org/10.52783/jes.6914> (Scopus).
- Ris27. A. D. Engheș, E. Cazacu, **L. Petrescu**, *A Comparative Analysis of European and American Reglementations Used in Power Quality Investigations*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 24, No. 1 (50), pp. 1 – 7, 2024, ISSN 2286-2455, DOI: **10.2478/sbeef-2024-0001**. (Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris28. I.C. Munteanu, E. Cazacu, **L. Petrescu**, *Predictive-Adaptive Maintenance Applied for Optimizing the Performance of Industrial Electrical Systems and Equipment*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 24, No. 1 (50), pp. 8 – 14, 2024, ISSN 2286-2455, DOI: **10.2478/sbeef-2024-0002**. (Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris29. M.C. Petrescu, **L. Petrescu**, *Numerical Analysis of Inductive Proximity Sensors for Non-Ferrous Targets*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 23, No. 1 (48), pp. 72 – 77, 2023, ISSN 2286-2455, DOI: **10.2478/sbeef-2023-0012**. (Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris30. **L. Petrescu**, B.C. Cheșca, V. Ioniță, E. Cazacu, M.C. Petrescu, *3D Analysis of Pipeline with Cathodic Corrosion Protection*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 22, No. 2 (47), pp. 10 – 17, 2022, ISSN 2286-2455, DOI: **10.2478/sbeef-2022-0014**. (Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris31. E. Cazacu, D. Groșanu, **L. Petrescu**, *Reactive power management in a grid-connected photovoltaic power station: A case-study*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 21, No. 2 (45), pp. 53 – 58, 2021, ISSN 2286-2455, DOI: **DOI: 10.2478/sbeef-2021-0023**. (Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris32. **L. Petrescu**, E. Cazacu, M.C. Petrescu, *Failure Mode and Effect Analysis in Automotive Industry: A Case Study*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 19, No. 2 (40), pp. 10 – 15, 2019, ISSN 2286-2455, DOI: <https://doi.org/10.1515/sbeef-2019-0014>. (Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris33. **L. Petrescu**, E. Cazacu, V. Ioniță, M.C. Petrescu, *An Experimental Device for Measuring the Single-Phase Transformers Inrush Current*, The Scientific Bulletin of

Electrical Engineering Faculty, vol. 19, No. 1 (40), pp. 18 – 22, 2019, ISSN 2286-2455, DOI: <https://doi.org/10.1515/sbeef-2019-0004>.
(Compendex, ProQuest, EBSCO, Index Copernicus).

- Ris34. M.C. Petrescu, **L. Petrescu**, E. Cazacu, *Influence of planar transformer windings interleaving on parasitic parameters*, Electrotehnică, Electronică, Automatică, EEA, vol. 66, no. 2, 2018, ISSN: 1582-5175, pp. 45 – 50.
(Elsevier, Engineering Village, Scopus, Compendex, ProQuest, ProQuest-Ulrich's Periodical Directory, EBSCO, Index Copernicus).
- Ris35. E. Cazacu, V. Ioniță, **L. Petrescu**, *Transient State Characterization of Asynchronous Motors in Modern Low-Voltage Electric Installations*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 18 (1), pp. 19 – 25, 2017, ISSN 2286-2455, DOI: **10.1515/SBEEF-2017-0017**.
(Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris36. E. Cazacu, **L. Petrescu**, M.C. Petrescu, *The Major Predictive Maintenance Actions of the Electric Equipments in the Industrial Facilities*, The Scientific Bulletin of Electrical Engineering Faculty, vol. 18 (1), pp. 26 – 33, 2017, ISSN 2286-2455, DOI: **10.1515/SBEEF-2017-0018**.
(Compendex, ProQuest, EBSCO, Index Copernicus).
- Ris37. M.C. Petrescu, **L. Petrescu**, *Electrodynamic forces between two DC busbars distribution systems conductors*, U.P.B. Sci. Bull., Series C, Vol. 78, Iss. 2, 2016, ISSN 1454-234x, pp. 223 – 234.
(Ulrichs International Periodicals Directory, Inspec, Scopus, Elsevier, Engineering Village, Cambridge Scientific Abstracts, Engineered Materials Abstracts).
- Ris38. E. Cazacu, **L. Petrescu**, *Inrush Current Investigation for Single Phase Transformers by Means of Magnetic Material Core Characterisation*, U.P.B. Sci. Bull., Series C, Vol. 77, Iss. 2, 2015, ISSN 1454-234x, pp. 193 – 204.
(Ulrichs International Periodicals Directory, Inspec, Scopus, Elsevier, Engineering Village, Cambridge Scientific Abstracts, Engineered Materials Abstracts).
- Ris39. **L. Petrescu**, E. Cazacu, M.C. Petrescu, *The Nonlinear and Unbalanced Loads Quantative Impact on the Neutral Conductor Current*, Electrotehnică, Electronică, Automatică, EEA, vol. 64, no. 1, 2016, ISSN: 1582-5175, pp. 48 – 54.
(Elsevier, Engineering Village, Scopus, Compendex, ProQuest, ProQuest-Ulrich's Periodical Directory, EBSCO, Index Copernicus).
- Ris40. **L. Petrescu**, H. Gavrilă, *Modeling the soft magnetic materials with high permeability in a large range of frequencies*, U.P.B. Sci. Bull., Series C, Vol. 72, Iss. 2, 2010, ISSN 1454-234x, pp. 189 – 196.
(Ulrichs International Periodicals Directory, Inspec, Scopus, Elsevier, Engineering Village, Cambridge Scientific Abstracts, Engineered Materials Abstracts).

Rno. Alte reviste de specialitate de circulație națională (3)

- Rno1. **L. Petrescu**, *Modified Ossart model for magnetic characterization*, Journal of Advanced Research in Physics 1(2), 021003 (2010), ISSN (on-line): 2069-7201, pp. 1-3.
- Rno2. **L. Petrescu**, *Magnetic Model for High Frequency Experimental Data*, Journal of Advanced Research in Physics 1(2), 021004 (2010), ISSN (on-line): 2069-7201, pp. 1-3.
- Rno3. **L. Petrescu**, *The Jiles-Atherton Hysteresis Model in Electrical Engineering*, JOAM – Symposia, Vol. 1 (5), 2009, ISSN: Print: 2066 - 057X, On-line: 2066 – 0596, pp. 843 – 847.

Vis. Volumele unor manifestări științifice internaționale recunoscute, organizate în țară și străinătate, indexate Web of Science (34)

- Vis1. O. Postelnicu, D. Bordsescu, E. Cazacu, **L. Petrescu**, *Novel Application of Hurst Exponent and Fractal Analysis for Predictive Maintenance in Electric generators*, International Symposium on Fundamentals of Electrical Engineering, ISFEE 2023, pp. 1-5, doi: **10.1109/ISFEE60884.2023.10636945**, WOS:001324614500001.
- Vis2. E. Cazacu, **L. Petrescu**, V. Ioniță, *A Simple and Low-Cost Equipment for Derating the Power Distribution Transformers Subjected to Distorted Operating Currents*, 2021 9th International Conference on Modern Power Systems (MPS), 2021, pp. 1-6, doi: **10.1109/MPS52805.2021.9492717**, WOS: 000941563300110.
- Vis3. B. Chesca, V. Ionita, **L. Petrescu**, E. Cazacu, M.-C. Petrescu, *Numerical Analysis of Electrode-Pipeline System for Reducing the Corrosion Process*, 2021 9th International Conference on Modern Power Systems (MPS), 2021, pp. 1-6, doi: **10.1109/MPS52805.2021.9492634**, WOS: 000941563300061.
- Vis4. **L. Petrescu**, M.-C. Petrescu, E. Cazacu, V. Ionita, *Risk Priority Number vs Action Priority in Electrical Systems*, 2021 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2021, pp. 1-6, doi: **10.1109/ATEE52255.2021.9425178**, WOS: 000676164800072.
- Vis5. V. Ioniță, **L. Petrescu**, E. Cazacu, *Coils-Based Measurement System for Soft Magnetic Materials*, 2021 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2021, pp. 1-5, doi: **10.1109/ATEE52255.2021.9425163**, WOS: 000676164800063.
- Vis6. E. Cazacu, **L. Petrescu**, V. Ioniță, *Ferroresonance Analysis of Particular Iron Core Transformers*, 2021 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2021, pp. 1-6, doi: **10.1109/ATEE52255.2021.9425337**, WOS: 000676164800163.
- Vis7. E. Cazacu, S. Pușcașu, A. Bordianu, **L. Petrescu**, *The ferroresonance computation of single-phase small power transformers encountered in low-voltage electric installations*, 2020 IEEE 21st International Conference on Computational Problems of Electrical Engineering (CPEE), Pińczów, Poland, 2020, pp. 1-4, doi: **10.1109/CPEE50798.2020.9238728**, WOS: 000833404500025.
- Vis8. M. Bucur, G. Rosu, A. Bordianu, **L. Petrescu**, V. Ioniță, O. Baltag, *Simplified Design of a Low Frequency Search Coil Magnetometer*, 11th International Symposium on Advanced Topics in Electrical Engineering 11th ATEE 2019, 28th - 30th March 2019, Bucharest, ISBN 978-1-7281-0101-9, Pages: 1-6, DOI: **10.1109/ATEE.2019.8724978**, WOS: 000475904500135.
- Vis9. V. Ioniță, **L. Petrescu**, E. Cazacu, *Impact of Steinmetz Coefficients Variance for FeSi Laminate Magnetic Cores*, 2018 International Symposium on Fundamentals of Electrical Engineering (ISFEE), Bucharest, Romania, 1-3 Nov. 2018, Electronic ISBN: ISBN: 978-1-5386-7212-9, USB ISBN: 978-1-5386-7211-2, Print on Demand(PoD) ISBN: 978-1-5386-7213-6, pp. 1-4, doi: **10.1109/ISFEE.2018.8742477**, WOS: 000480396400070.
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V. BREVETE DE INVENȚIE/INOVAȚII

B. Brevete de invenție (1 brevet + 5 cereri)

- B1. I. Potârniche, L.-C. Codreanu, D.A. Neagu, I. F. Jianu, C.A. Rădulescu, C.P. Voina, **L.-G. Petrescu**, I.-D. Deaconu, A.-I. Chirilă, E. Cazacu, V. Ioniță, *Modul de realizarea a protecției anticorozive active a metalelor* (OSIM A/00309 – 19.06.2023).
- B2. I. Potârniche, L.-C. Codreanu, D.A. Neagu, I. F. Jianu, C.A. Rădulescu, C.P. Voina, **L.-G. Petrescu**, I.-D. Deaconu, A.-I. Chirilă, E. Cazacu, V. Ioniță, *Modul de producere și furnizare a energiei electrice pentru un sistem de protecție anticorozivă activă a metalelor* (OSIM A/00308 – 19.06.2023).
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- B4. D.I. Manea, **L. Petrescu**, E. Cazacu, M.C. Petrescu, V. Ionita, O. Ghita, A.I. Chirila, D. Deaconu, *Sistem inteligent de evaluare, prelucrare și analiză a curenților de conectare a echipamentelor electrice* (OSIM A/00951 – 26.11.2018)

- B5. A. Bosneaga, E. Cazacu, **L. Petrescu**, V. Ionita, A.I. Chirila, M.C. Petrescu, D. Deaconu, *Sistem inteligent de mentenanță predictivă a unor echipamente electrice industriale critice* (OSIM A/00952 – 26.11.2018)
- B6. Brevet RO132277-A2/29.11.2016 - H. Gavrilă, A. Iorga, W. Kappel, E. Manta, A. Mija, G. Paltanea, V. Paltanea, D. Patroi, E.A. Patroi, I. Peter, **L. Petrescu**, G. Scutaru, *Method for estimating the effect of sheet-metal cutting manner upon iron losses (Metoda de estimare a efectului modului de taiere prin stantare a tolelor asupra pierderilor in fier a masinilor electrice)*, Derwent Primary Accession Number: 2017-820437 (OSIM A/00335 – 11.05.2016)

VI. CONTRACTE ȘI RAPOARTE ȘTIINȚIFICE

P – Proiecte de cercetare-dezvoltare – inovare obținute prin competiție, pe bază de contract/grant, în țară/străinătate (Pn – naționale, Pi - internaționale) – Director (2)

- Pn1. Proiect POC / Proiect Tehnologic Inovativ – Cercetare – Sistem Inovativ de Protecție Anticorozivă Activă a Metalelor Alimentat de la Surse Regenerabile de Energie – SIPAMASRE, cod proiect SMIS 121611 (Contractor ICPE ACTEL) – Responsabil Partner P1 – U.P.B. (iunie 2020 – iunie 2023) (sumă U.P.B. – 541.788 lei).
<http://www.poc.research.gov.ro/ro/articol/4322/evaluare-tehnico-financiara-pentru-proiectele-depuse-pe-actiunea-1-2-1-stimularea-cererii-intreprinderilor-pentru-inovare-tip-proiect-tehnologic-inovativ-coduri-apel-poc-163-1-3-i-poc-222-1-3>
- Pn2. Proiect de cercetare CEC de Inovare 203CI/25.07.2018 (PN-III-P2-2.1-CI-2018-1217) (ET.02.18.03) - *Sistem Inteligent de Evaluare, Prelucrare și Analiză a Curenților de Conectare a Echipamentelor Electrice* (SIEPACEE) autoritatea contractantă UEFISCDI, Contractor – UPB (iulie 2018 – decembrie 2018) (sumă U.P.B. – 50.000 lei).
<https://uefiscdi.ro/resource-84309?&wtok=d333aea2ae60cd5f1408583469228c983ff3e80c&wtkps=XY1BDoIwEEXvMmvFDqWUDncwJp4AadXGSG0FamK8uwUWRlfzM/nv/YYkvQIJgjcXIDaEirOuJKyDsQJgtWQUoEERSkNmulaBtdHdJP70L002XYytXQZkt3mznXUGUt/ONycOCIZXq9eBYnajJND60R2OOy5ZXuUVE9VCJPT72eSIgiNy5ItWLNT+j0FG8FtMu9EsuyndvR6dyXx/yUZztqHVNpusiVnTD7b1Dur3Bw==&wchk=cac5ac9eb12058d580d94688c374d821cfe7c7d5>

P – Proiecte de cercetare-dezvoltare – inovare obținute prin competiție, pe bază de contract/grant, în țară/străinătate (Pn – naționale, Pi - internaționale) – Membru (18)

- Pi1. *Nanostructured and amorphous magnetic alloys for high-frequency applications* – Bilateral (Italo-Romanian) (2006–2009) (Director de proiect: prof. Horia GAVRILĂ).
- Pn2. *Efectele câmpurilor magnetice tranzitorii ultra-intense, generate de laserii de mare putere, asupra celulelor canceroase leucemice și limfomatoase / HiPoCell* (ELI-RO 30/2024 – Director de proiect – prof. Valentin IONIȚĂ) (2024 – 2027)
- Pn3. *Sistem Inteligent de Mentenanță Predictivă a unor Echipamente Electrice Industriale Critice* (CEC Inovare 204CI / 25.07.2018 – Director de Proiect – prof. Emil CAZACU) (2018)
- Pn4. *Sistem Inteligent de Monitorizare Continuă și Denominare a Parametrilor Transformatoarelor de Distribuție în Regim Nesinusoidal* (CEC Inovare 187CI / 25.07.2018 – Director de Proiect – prof. Emil CAZACU) (2018)
- Pn5. *Predeterminarea pierderilor de energie pentru proiectarea îmbunătățită a miezurilor nanocompozite magnetice moi în aplicații având game extinse de frecvențe* (ELIDEF) –

Proiect Experimental Demonstrativ – PED70 (2017 – 2018) (Director de proiect: prof. Valentin IONIȚĂ).

- Pn6. *Mașini electrice cu eficiență sporită, prin utilizarea unor soluții tehnice avansate, bazate pe predeterminarea proprietăților magnetice ale tolelor* (MEF-MAG) – Parteneriate (2012 – 2016) (Director de proiect: prof. Horia GAVRILĂ).
- Pn7. *Sistem micro - electro - mecanic cu aplicații în restructurarea microchirurgicală a nervilor periferici* (RECONNECT) – Parteneriate (2008 – 2011) (Director de proiect: prof. Horia GAVRILĂ).
- Pn8. *Biochip microfluidic pentru caracterizarea reologică a fluidelor biologice ne-newtoniene cu aplicații în diagnostic și tratament medical* (MELANOCHIP) – Parteneriate (2008 – 2011) (Director de proiect: prof. Horia GAVRILĂ).
- Pn9. *Dezvoltarea unor modele experimentale și numerice de caracterizare a materialelor magnetice cu histerezis* (MATHYS) – proiect Ceex (2006 – 2008) (Director de proiect: prof. Valentin IONIȚĂ).
- Pn10. *Aprofundarea cunoștințelor de spintronică prin dezvoltarea fizicii compușilor Heusler ajustabili* (ASPIDHA) – proiect Ceex (2005 – 2008) (Director de proiect: prof. Horia GAVRILĂ).
- Pn11. *Metoda experimentală pentru studiul materialelor cu proprietăți magnetice prin efect magneto-optic KERR* (MAGNE-KERR) – proiect Ceex (2005 – 2008) (Director de proiect: prof. Valentin IONIȚĂ).
- Pn12. *Sistem microfluidic integrat pentru analiza in vitro a fluidelor biologice cu aplicații în diagnostic și tratament medical* (MICRODIAG) – proiect Ceex (2005 – 2008) (Director de proiect: prof. Horia GAVRILĂ).
- Pn13. *Cercetări fundamentale și aplicative integrate în domeniul materialelor multifuncționale nanostructurate* (NANOCONS) – grant CNCIS (2005 – 2007) (Director de proiect: prof. Horia GAVRILĂ).
- Pn14. *Analiza configurațiilor statice și dinamice de magnetizație în materiale magnetice prin efect magnetooptic* - proiect CERES (2004 – 2006) (Director de proiect: prof. Valentin IONIȚĂ).
- Pn15. *Mijloace de protecție complexă la interferența electromagnetică pe nave militare* – proiect CERES (2004 – 2006) (Director de proiect: prof. Horia GAVRILĂ).
- Pn16. *Reducerea amprentei magnetice a navei militare în scopul protecției împotriva câmpurilor de mine marine* – proiect CERES (2003 – 2005) (Director de proiect: prof. Horia GAVRILĂ).
- Pn17. *Instalații de conversie energetică neconvențională de mică putere, bazată pe integrarea unor materiale avansate și soluții tehnologice noi* – proiect RELANSIN (2003 – 2005) (Director de proiect: prof. Valentin IONIȚĂ).
- Pn18. *Soluții noi de optimizare a ecranelor de protecție pentru radiații electromagnetice neionizante în gamă extinsă de frecvență 500 kHz – 10GHz* – proiect CERES (2002 – 2004) (Director de proiect: prof. Horia GAVRILĂ).

Pa - Alte tipuri de proiecte (POSDRU, mobilități, consultanță) (2Director + 3 Membru)

- Pa1. Proiect de cercetare Mobilități Cercetători MC56/2017 (ET.02.17.10) (autoritatea contractantă UEFISCDI, Contractor – UPB), **Director proiect: Lucian Petrescu.** (sumă U.P.B. – 7.932,38 lei)

- <https://uefiscdi.ro/resource-83139?&wtok=9bd1bc40e7bed375a1e6390cd4e39a1fd315530a&wtkps=XY9bDoIwEEX3Mt+CTB+AwX6MiStAWqGhUkN5mBj3bkESo383k3PuzZSU0dOTJJiH1nooDCHjKYocC0+cwBsFIQkkEGmmUU9N6m0/J5fDw1k/u6keIkx74Q86wtZ0TjaLEHgDnwouxZYqtS0s5ZgRKHXvTuc9zxKWszyR+QKy4H4vO4YoOSJHvYbK1Tr+OZgQ/IIsvKTX3ZBuTo1Wx66v41Ffja+UiSej57jsB1M5C8XrDQ==&whk=87437ff4b8113d60235a6af5e78fc69056a5a7e5>
- Pa2. *Analiza regimului termic al dispozitivelor electromagnetice ce funcționează în regim periodic nesinusoidal* - 79 / 26.09.2016 (GEX-UPB) (autoritatea contractantă UPB – Contractor/**Director proiect: Lucian Petrescu**, tip proiect: Grant Intern de Cercetare UPB) (sumă U.P.B. – 22.000 lei)
http://www.old.upb.ro/files/evenimente/cercetare/2016/Rezultate_finale_granturi_UPB.pdf
- Pa3. *Analiza numerică a miezului nanocompozit al unui transformator planar* (proiect Gex-UPB 3/26.09.2017) (2017 – 2018) (Director de proiect: Ș.l. Maria-Cătălina PETRESCU).
http://www.old.upb.ro/files/evenimente/cercetare/2017/Rezultate_Finale_UPB-GEX2017-final.pdf
- Pa4. Bursă postdoctorală în cadrul U.P.B. în cadrul proiectului “*ExcelDOC – Exceleță în cercetare prin burse doctorale și postdoctorale*”, POSDRU/159/1.5/S/132397.
“Influența materialelor magnetice în creșterea calității și eficienței utilizării energiei electrice”
<http://cempdi.pub.ro/exceldoc/>
- Pa5. *Program strategic pentru promovarea inovării în servicii prin educație deschisă, continuă* (INSEED) - POSDRU/86/1.2/S/57748 (2011 – 2013) – Expert pe termen lung.
<http://www.inseed.cimr.pub.ro/>