

Instituția de învățământ superior: Universitatea Tehnică din Cluj-Napoca

Facultatea: Inginerie Electrică

Domeniul de licență: Inginerie Energetică

Programul de studii de licență: Managementul Sistemelor Electroenergetice Moderne.

Perioada evaluării:

TABEL PRIVIND INDEPLINIREA INDICATORULUI
Activitatea științifică în domeniul disciplinelor

„Cadrele didactice titulare* au pregătirea inițială, sunt doctori / doctoranzi și cercetează în domeniul în care se includ disciplinele din postul ocupat.”

Nr. crt.	Gradul didactic, numele și prenumele titularului vârsta / vechimea în învățământul superior	Disciplinele din cadrul programului de studii incluse în postul didactic și tipul activității desfășurate (curs, seminar, lucrări, proiect)	Competența cadrului didactic titular în disciplinele din postul didactic			Constatări privind îndeplinirea indicatorului conform Anexei 4.1
			Universitatea/facultatea/specializarea absolvită	Specializarea la masterat/doctorat	Numărul de cărți, numărul de lucrări științifice, numărul de brevete în domeniul disciplinelor din postul didactic (conform Anexelor 4.1.)	
0	1	2	3	4	5	6
1.	Prof. dr. ing. Sorin Pavel 66 / 35	Modelarea și Simularea Sistemelor Electroenergetice Securitatea CNE	Universitatea Tehnică din Cluj / Facultatea de Inginerie Electrică / Electromecanică	Doctorat în Inginerie electrică	teza (A – 1 parte); 4 cărți (B2 - B5); 16 lucrări indexate ISI/BDI (C1-C7, C13, C14-C16, C20, C22, C26, C35, C36.	Îndeplinit
2						
3						
4						

* Din statul de funcții cumulativ al tuturor disciplinelor și tuturor activităților didactice desfășurate în cadrul programului de studii evaluat.

Rector

Persoana de contact

A N E X A 4 . 1

Nume Prenume: Pavel Sorin Gheorghe

Gradul didactic: profesor

Instituția unde este titular: UTCN

Facultatea: Inginerie Electrică

Departamentul: Electroenergetică și Management

L I S T A**lucrărilor științifice în domeniul disciplinelor din postul didactic****A. Teza de doctorat**

„Contribuții la monitorizarea prin instrumentație virtuală a procesului de compensare-simetrizare a cuptoarelor de inducție cu creuzet”.

conducător științific: Prof.dr.ing Radu Munteanu

Universitatea Tehnică din Cluj-Napoca

Susținere publică: 20.12.1999.

B. Cărți și capitole în cărți publicate în ultimii 10 ani**CĂRȚI**

1. Maier, V., **Pavel, S.G.**, Beleiu, H.G. *Ghid pentru proiectarea instalațiilor electrice la consumatori* Editura UTPRESS, Cluj-Napoca 2013, ISBN 978-973-662-819-1, 159 pag.
2. Maier, V., **Pavel, S.G.**, Beleiu, H.G. *Calitatea Energiei Electrice*, Editura UTPRESS, Cluj-Napoca, 2012, ISBN 978-973-662-784-2, 197 pag.
3. **Pavel, S.G.**, Maier, V., Beleiu, H.G. *Aplicații privind Calitatea Energiei Electrice*, Editura UTPRESS, Cluj-Napoca 2012, ISBN 978-973-662-785-9, 102 pag.
4. **Pavel, S. G.**, Maier, V. *Introducere în inginerie electrică*, U.T.PRESS, Cluj-Napoca, 2008, ISBN 978-973-662-379-0, 217 pag.
5. Maier, V, **Pavel, S. G.**, Maier, C. D. *Ingineria calității și protecția mediului*. U.T.PRESS, Cluj-Napoca, 2007, ISBN 978-973-662-283-0, 140 pag.

C. Lucrări indexate ISI/BDI publicate în ultimii 10 ani

1. D. F. Niste, S. G. Pavel, H. G. Beleiu and A. C. Cziker, "Anomaly Detection In Electrical Consumption Data With Clustering Algorithms," 2025 12th International Conference on ENERGY and ENVIRONMENT (CIEM), Bucharest, Romania, **2025**, pp. 1-7, doi: 10.1109/CIEM67454.2025.11284571.
2. D. F. Niste, S. Gh. Pavel, R. A. Tîrnovan, C. G. Martineac and H. G. Beleiu, "Analyzing The Impact Of Harmonics In Industrial Networks Using FFT In Matlab," 2025 12th International Conference on ENERGY and ENVIRONMENT (CIEM), Bucharest, Romania, 2025, pp. 1-6, doi: 10.1109/CIEM67454.2025.11284582.
3. D. F. NISTE, S. G. PAVEL, A. C. CZIKER, H. G. BELEIU, A. MIRON and C. G. MARTINEAC, "Data-Driven Regression for Load Current Prediction in Industrial Systems," 2025 International

- Conference on Electromechanical and Energy Systems (SIELMEN), Iasi, Romania, 2025, pp. 1-6, doi: 10.1109/SIELMEN67352.2025.11260842.
4. Horia Gheorghe Beleiu; Anca Miron; Sorin Gheorghe Pavel; Andrei Cristinel Cziker; Daniela Florentina Niste; Pompei Cosmin Darab. Impact of Voltage Unbalance and Harmonics on Induction Motor Efficiency, in 2024 IEEE International Conference and Exposition on Electric and Power Engineering (EPE 2024), DOI: 10.1109/EPEi63510.2024.10758105.
 5. Daniela F. Niste; Silviu Ștefănescu; Aurel Botezan; Sorin G. Pavel; Anca Miron; Horia G. Beleiu. Research on the implementation of voltage control on MV busbars due to the influence of PV connection, in 2024 International Conference on Development and Application Systems (DAS), 23-25 May 2024, Romania, DOI: 10.1109/DAS61944.2024.10541174.
 6. Daniela F. Niste, Radu. Țîrnovan, Sorin G. Pavel, Horia G. Beleiu, Andrei Cziker, Marius Misaroș. Electricity Losses in Focus: Detection and Reduction Strategies-State of the Art, 2024 International Conference on Development and Application Systems (DAS)
 7. Tudor S. Pavel; Daniela F. Niste; Sorin G. Pavel; Silviu Ștefănescu; Aurel Botezan; Antoniu Turcu; Constantin Sorin Pică. Optimization of the connection conditions of a 2.4 MW Photovoltaic Power Plant on a quasi-charged medium voltage distributor, in: 2023 10th International Conference on Modern Power Systems (MPS), 21-23 June 2023, Cluj-Napoca, Romania, DOI: 10.1109/MPS58874.2023.10187485.
 8. Virgil Maier; Sorin Pavel; Horia Beleiu; Daniela Niste; Cosmin Darab. Dimensioning Aspects of Horizontal Earth Grounding, With Pipe Type Electrodes, in: 2023 13th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 23-25 March 2023, Bucharest, Romania, DOI: 10.1109/ATEE58038.2023.10108263.
 9. Virgil Maier; Sorin Gheorghe Pavel; Horia Gheorghe Beleiu; Daniela Florentina Niste. Optimal Solutions Identification for Horizontal Earth Grounding, with Pipe Type Electrodes, in Proceedings of 2023 10th International Conference on Modern Power Systems, MPS 2023, DOI: 10.1109/MPS58874.2023.10187440.
 10. Horia G. Beleiu, Sorin G. Pavel, Iulian M. T. Birou, Anca Miron, Pompei C. Darab & Mohammed Sallah (2022) Effects of voltage unbalance and harmonics on drive systems with induction motor, Journal of Taibah University for Science, 16:1, 381-391, DOI: 10.1080/16583655.2022.2064670.
 11. V. Maier, S. G. Pavel, H. G. Beleiu and T. S. Pavel, "Harmonics of the Component Formed by Pairs of Alternative Unitary Step, Symmetrical Regarding the Central Step of the PWM Inverter Output Voltage," 2022 International Conference on Development and Application Systems (DAS), Suceava, Romania, 2022, pp. 57-61, doi: 10.1109/DAS54948.2022.9786199 [IEEE].
 12. Mihaela Hedeșiu, Dan George Pavel, Oana Almășan, Sorin Gheorghe Pavel, Horia Hedeșiu and Dan Rafiroiu. Three-Dimensional Finite Element Analysis on Mandibular Biomechanics Simulation under Normal and Traumatic Conditions, MDPI 2022, 221-237; doi.org/10.3390/oral2030021.
 13. Pavel, D. Micu, S. Pavel, H. Beleiu and S. Ungureanu, "Contributions to the optimization of the Electrical Power Distribution in the Station Centru From Cluj, in the Context of Updating Its Medium Voltage Network," 2022 International Conference and Exposition on Electrical And Power Engineering (EPE), Iasi, Romania, 2022, pp. 545-549, doi: 10.1109/EPE56121.2022.9959802 [IEEE].
 14. V. Maier, S. G. Pavel and H. G. Beleiu, "Harmonics of the Central Component of the PWM Inverter Output Voltage," 2021 International Conference on Electromechanical and Energy Systems (SIELMEN), Iasi, Romania, 2021, pp. 527-533, doi: 10.1109/SIELMEN53755.2021.9600356 [IEEE].
 15. Darab, C.; Antoniu, T.; Beleiu, H.G.; **Pavel, S.**; Birou, I.; Micu, D.D.; Ungureanu, S.; Cirstea, S.D. Hybrid Load Forecasting Using Gaussian Process Regression and Novel Residual Prediction. *Appl. Sci.* 2020, 10, 4588, WOS:000552300000001, <https://doi.org/10.3390/app10134588>.
 16. Constantin S. Pică, Sorin G. Pavel, Horia G. Beleiu, Virgil Maier and Antoniu C. Turcu. *Effects of Connecting Photovoltaic Power Plants on a Long Electrical Line*, **Published in:** 2020 International Conference and Exposition on Electrical And Power Engineering (EPE), 22-23 oct 2020, **Date Added to IEEE Xplore:** 18 February 2021, **DOI:** 10.1109/EPE50722.2020.9305591.
 17. H.G. Beleiu, V. Maier, **S.G. Pavel**, I. Birou, C.S. Pică, P.C. Dărab, Harmonics Consequences on Drive Systems with Induction Motor. *Applied Sciences* 2020, vol. 10, Issue 4, pp. 1528, eISSN: 2076-3417, DOI:org/10.3390/app10041528, WOS:000525287900335, <https://doi.org/10.3390/app10041528>.

18. **S.G. Pavel**, V. Maier, C. Ciorca, H.G. Beleiu, I. Birou, Optimal Design of the Vertical Earthing with Electrodes Arranged in Line Applied Sciences 2020, Vol. 10, Issue 3, pp. 1177, eISSN: 2076-3417, DOI:org/10.3390/app10031177, WOS:000525305900446.
19. H. G. Beleiu, V. Maier, **S. G. Pavel**, I. Birou and C. Pică, "Synchronous Motor Behavior in Harmonics," 2019 54th International Universities Power Engineering Conference (UPEC), Bucharest, Romania, 2019, pp. 1-6. doi: 10.1109/UPEC.2019.8893511 [**IEEE**].
20. V. Maier, **S. G. Pavel**, H. G. Beleiu and V. Farcas, "Aspects on Harmonics Analytical Identification of a Periodic Non-Sinusoidal Wave," *2019 8th International Conference on Modern Power Systems (MPS)*, Cluj Napoca, Romania, 2019, pp. 1-6. doi: 10.1109/MPS.2019.8759685 [**IEEE**].
21. V. MAIER, **S. G. PAVEL**, C. CIORCA, H. G. BELEIU and I. BIROU, "Dissipation Surface Minimization of Vertical Earth Grounding, with Rectangular Contour," *2019 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE)*, Bucharest, Romania, 2019, pp. 1-6. doi: 10.1109/ATEE.2019.8724882 [**IEEE – ISI proceedings**].
22. Beleiu, H.G., Beleiu, I.N., **Pavel, S.G.**: Management of Power Quality Issues from an Economic Point of View, in *SUSTAINABILITY*, Volume: 10, Issue: 7, 2018, DOI: 10.3390/su10072326 [**ISI**].
23. Beleiu, H.G., Darab, P.C., Pica, C., **Pavel, S.G.**, Coldea, T.: Impact of Different Materials Electrodes in Earth Grounding Systems, in *ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING*, Volume: 61, Issue: 1, 2018, Pp: 65-68 [**ISI**].
24. Darab, P.C., Turcu, A., Pica, C., **Pavel, S.G.**, Beleiu, H.G.: Reducing Earth Grounding Electrical Resistance by Using Metallurgy Industrial Waste as Backfill Materials, in *ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING*, Volume: 61, Issue: 1, 2018, Pp: 69-72 [**ISI**].
25. Ciorca, C., Maier, V., Pavel, S.G. and Beleiu, H. G., Dimensioning of the Vertical Earth Grounding with Rectangular Contour through Minimizing the Investments Costs, *2018 International Conference and Exposition on Electrical And Power Engineering (EPE)*, Iasi, 2018, pp. 0154-0158. doi: 10.1109/ICEPE.2018.8559651. [**IEEE – ISI proceedings**]
26. Pica, C., Munteanu, R., Pavel S.G. and Beleiu, H.G., Modeling of Photovoltaic Panels, *2018 International Conference and Exposition on Electrical And Power Engineering (EPE)*, Iasi, 2018, pp. 0769-0773. doi: 10.1109/ICEPE.2018.8559884. [**IEEE – ISI proceedings**]
27. Maier, V., Ciorca, C., Pavel, S.G., Beleiu, H. G. and Birou, I., Design of vertical earth grounding with rectangular outline by minimizing its total metal mass, *2018 International Conference on Development and Application Systems (DAS)*, Suceava, 2018, pp. 57-62. doi: 10.1109/DAAS.2018.8396071. [**IEEE – ISI proceedings**]
28. Virgil Maier, Sorin G. Pavel, Horia G. Beleiu, Constantin S. Pica, *Vertical Earth Grounding Design Using Optimal Criteria*, The 10th International Symposium on Advanced Topics in Electrical Engineering, Page(s):539 – 544, ATEE 2017, 23 – 25 martie, Universitatea Politehnica din București, Romania, DOI: 10.1109/ATEE.2017.7905162, Electronic ISBN: 978-1-5090-5160-1, USB ISBN: 978-1-5090-5159-5, PoD ISBN: 978-1-5090-5161-8 [**IEEE – ISI proceedings**].
29. Virgil Maier, Sorin G. Pavel, Horia G. Beleiu and Constantin S. Pică, *Optimal Design of Vertical Earth Grounding, with Rectangular Perimeter*. International Conference on Modern Power Systems, MPS 2017, pages: 1-5, 6 – 9 iunie, Universitatea Tehnică din Cluj-Napoca, DOI: 10.1109/MPS.2017.7974458, Electronic ISBN: 978-1-5090-6565-3, Print on Demand(PoD) ISBN: 978-1-5090-6566-0 [**IEEE**].
30. Constantin Sorin Pică, Virgil Maier, Sorin Gh. Pavel, Horia Gh. Beleiu. Synthesis and Analysis of PWM Inverter Output Voltages. In: Proceedings of the International Conference on Electromechanical and Power Systems (SIELMEN), Chișinău, 11 – 13 octombrie, 2017 [**IEEE**].
31. Virgil Maier, Sorin Gh. Pavel, Iulian Birou, Horia Gh. Beleiu and Claudiu Ciorca, Methodologies Regarding the Application of Optimum Criteria to the Vertical Earth Grounding Design, with Rectangular Outline. In: Proceedings of the International Conference on Electromechanical and Power Systems (SIELMEN), Chișinău, 11 – 13 octombrie, 2017, [**IEEE**].
32. Virgil MAIER, Sorin G. Pavel, Horia G. Beleiu and Constantin Pică, *Considerations regarding the characterization and design of vertical earth grounding*, Conferința de Inginerie Electrică și Sisteme „Ștefan Gârlașu” - 1-3 noiembrie 2016, Universitatea Eftimie Murgu, Reșița [**Index Copernicus, Doaj, Ebscol**].

33. Virgil Maier, Sorin G. Pavel, Horia G. Beleiu, Vasile Fărcaș. *Additional Indicators for Short Time Overvoltages and Voltage Impulses*, 2016 International Conference and Exposition on Electrical and Power Engineering (EPE 2016), 20-22 October, Iasi, Romania, ISBN:978-1-5090-6128-0 / ISSN: 2471-6855, WOS:000390706300162 [ISI Proceeding].
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36. Sorin Gh. Pavel, Horia Gh. Beleiu, Iulian Birou, Constantin Pică, Constantin Buda, *DMS steady state function validation by comparative study*, 13th International Conference on Development and Application Systems, May 19-21, 2016 - Suceava, Romania, ISBN:978-1-5090-1993-9, WOS:000383222200018, [ISI Proceeding].
37. Virgil Maier, Sorin G. Pavel, Horia G. Beleiu, Vasile Fărcaș and Claudiu Ciorca, *Actual Aspects of Flicker Phenomenon*, Proceedings of the 9th International Symposium on Advanced Topics in Electrical Engineering, May 7-9, 2015, ISBN:978-1-4799-7514-3, WOS:000368159800139, [ISI Proceeding].
38. Sorin G. Pavel. Virgil Maier, Horia G. Beleiu, Vasile Fărcaș, *Updating in Open Loop Electrical Networks*, In: Acta Electrotehnica, Volume 56, Number 3, 2015, Editura Mediamira, Cluj-Napoca, ISSN 1841-3323, pp. 252 – 256, [BDI].
39. Mutu, A., Ceclan, A., Pavel, S., Micu, D.D., Vadan, I. On the implementation of a micro hydropower plant on Gersa river, Bistrita, Romania, [SCOPUS].

D.

E. Brevete obținute în întreaga activitate

Data: iunie 2025

Semnătura:

Prof. dr. ing. Sorin Gheorghe PAVEL