

Instituția de învățământ superior: Universitatea Tehnică din Cluj-Napoca

Facultatea: Inginerie

Domeniul de licență:

Programul de studii de licență:.....

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. Radu-Adrian Tîrnovan 62 / 33	Producerea, transportul și distribuția energiei electrice Protecții și automatizări în sistemele electroenergetice	Universitatea Tehnică din Cluj / Facultatea de Electrotehnică / Electrotehnică	Doctorat în inginerie electrică	6 cărți (B1, B2, B3, B7, B8, B9); 23 lucrări indexate ISI/BDI (C1, C4, C5, C6, C9, C13, C14, C15, C16, C17, C18, C21, C22, C26, C27, C29, C30, C36, C37, C38, C39, C42, C43); 3 cărți (B3, B4, B5); 9 lucrări indexate ISI/BDI (C10, C11, C12, C21, C23, C24, C25, C40, C44);	Îndeplinit
2						

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

Rector
Prof.dr.ing Vasile ȚOPA

Persoana de contact

A N E X A 4 . 1

Nume Prenume: Țîrnovan Radu-Adrian

Gradul didactic: Profesor universitar

Instituția unde este titular: Universitatea Tehnică din Cluj-Napoca

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 privind analiza vibratoarelor electrice și monitorizarea vibrațiilor”

conducător științific: Prof.dr.ing. Radu Ioan Munteanu

Universitatea Tehnică din Cluj-Napoca

Susținere publică: 10 mai 1997

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

1. Dan Călin Peter, **Radu-Adrian Țîrnovan**, *Transportul și Distribuția Energiei Electrice*, Ed. UT. PRESS, Cluj-Napoca 2014, ISBN 978-973-662-960-0, pag. 548
2. Dan Călin Peter, **Radu-Adrian Țîrnovan**, Cristian Barz, *Instalații electrice*, Ed. UT. PRESS, Cluj-Napoca, 2017, ISBN 978-606-737-262-5, pag. 342
3. **Radu-Adrian Țîrnovan**, *Producerea, Transportul și Distribuția Energiei Electrice. Note de curs*, Ed. UT. PRESS, Cluj-Napoca, 2017, ISBN 978-606-737-273-1, pag. 305 (A4)
4. **Radu-Adrian Țîrnovan**, *Protecții Digitale în Sistemele Electroenergetice*, Editura U.T.Press, Cluj-Napoca - 2019, ISBN 978-606-737-370-7, 198/297
5. Silviu Ștefănescu, **Radu-Adrian Țîrnovan**, *Automatizări în Sistemele Electroenergetice - Curs*, Editura U.T.Press, Cluj-Napoca - 2019, ISBN 978-606-737-367-7, 112/168
6. Aurel Botezan, Ioan Vadan, **Radu Țîrnovan**, Horia Balan, *Producerea energiei electrice, Lucrări de laborator*, Editura UT. PRESS, ISBN 978-973-662-826, pag.150
7. **Radu-Adrian Țîrnovan**, Aurel Botezan, Elena Breaz, *Producerea, Transportul și Distribuția Energiei Electrice. Îndrumător de laborator*, Ed. UT. PRESS, Cluj-Napoca, 2017 ISBN 978-606-737-272-4 pag.132 (A4)
8. Dan Călin Peter, **Radu-Adrian Țîrnovan**, Cristian Barz, *Instalații electrice*, Ed. UT. PRESS, Cluj-Napoca, 2020, ISBN 978-606-737-443-8, pag. 344
9. Cristea M., **Țîrnovan R.-A.**, Botezan A., Cristea C., “Transportul și distribuția energiei electrice – îndrumător de laborator”, Editura UTPRESS, Cluj-Napoca, 2023, ISBN 978-606-737-668-5.

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

1. S. Giurgea, **R. Țîrnovan**, D. Hissel, R. Outbib, An analysis of fluidic voltage statistical correlation for a diagnosis of PEM fuel cell flooding, International Journal of Hydrogen Energy, Volume 38, Issue 11, 15 April 2013, 4689–4696, ISSN: 0360-3199, <https://doi.org/10.1016/j.ijhydene.2013.01.060>
2. Balan, Horia; **Țîrnovan, Radu**; Buzdugan, Mircea I, Commutation technique in the supply of electromagnetic actuators, IET POWER ELECTRONICS Volume: 7 Issue: 1 Pages: 132-140, Published: JAN 2014, DOI: 10.1049/iet-pel.2013.0172

3. Aurel Botezan, **Radu Tîrnovan**, Radu Munteanu, Adrian Graur, Dan Rafiroiu, Hysteresis Current Control of the Single-Phase Voltage Source Inverter Using eMegaSim Real Time Simulator, *Advances in Electrical and Computer Engineering*, august 2015, Page(s): 99 – 104, ISSN: 1582-7445, e-ISSN: 1844-7600, doi: 10.4316/aece, www.aece.ro, www.aece.eu
4. Cristea, Ciprian; Cristea, Maria ; Birou, Iulian ; Pica, Constantin-Sorin ; **Tîrnovan, Radu-Adrian**; Serban, Florica Mioara; Stoenoiu, Carmen-Elena, Techno-Economic Analysis of a Grid-Connected Residential Photovoltaic System: A Romanian Case Study, *Acta Technica Napocensis Series-Applied Mathematics Mechanics And Engineering*, Volume 62, Issue 4, Page 543-550, Published DEC 2019, Indexed 2019-12-24
5. Ciprian Cristea, Maria Cristea, Iulian Birou, **Radu-Adrian Tîrnovan**, Economic assessment of grid-connected residential solar photovoltaic systems introduced under Romania's new regulation, *Renewable Energy* Volume 162, December 2020, Pages 13-29, <https://doi.org/10.1016/j.renene.2020.07.130>
6. Maria Cristea, **Radu-Adrian Tîrnovan**, Ciprian Cristea, Cristian Făgărășan, Levelized cost of storage (LCOS) analysis of BESSs in Romania, *Sustainable Energy Technologies and Assessments*, Volume 53, Part C, October 2022, 102633, <https://doi.org/10.1016/j.seta.2022.102633>
7. Ciprian Cristea, Maria Cristea, Dan Doru Micu, Andrei Ceclan, **Radu-Adrian Tîrnovan**, Florica Mioara Șerban, Tridimensional Sustainability and Feasibility Assessment of Grid-Connected Solar Photovoltaic Systems Applied for the Technical University of Cluj-Napoca, *Sustainability* 2022, 14(17), 10892; <https://doi.org/10.3390/su141710892>
8. Pop, D.; Neamt, L.; **Tîrnovan, R.**; Sabou, D., 3D finite element analysis of a miniature circuit breaker, *Advanced Topics in Electrical Engineering (ATEE)*, 2013 8th International Symposium on, 23-25 May 2013, Bucharest, Page(s): 1 – 4, DOI: 10.1109/ATEE.2013.6563371
9. Dorin, Sabou; Dan, Pop Dumitru; **Tîrnovan, Radu**, Method for Determining the Effective Capacity Variation Depending on the Discharge Current for Lead-Acid Calcium Batteries, *Advanced Topics in Electrical Engineering (ATEE)*, 2013 8th International Symposium on, 23-25 May 2013, Bucharest, Page(s): 1 – 6, DOI: 10.1109/ATEE.2013.6563500 [IEEE]
10. Damian, Claudiu; **Tîrnovan, Radu**; Dumitru, Popandron; Osan, Marian, Protection of Encapsulated Medium Voltage Cells Against Electric Arc, 9th International Conference Interdisciplinarity In Engineering, INTER-ENG 2015 Book Series: Procedia Technology Volume: 22 Pages: 816-820 Published: 2016, ISSN: 2212-0173, <https://doi.org/10.1016/j.protcy.2016.01.054>
11. Botezan, **R. Tîrnovan**, I. Boiciuc, S. Stefanescu, D. Rafiroiu, Automatic transfer switch using IEC 61850 protocol in smart grids, in *EPE 2014 - Proceedings of the 2014 International Conference and Exposition on Electrical and Power Engineering*, pp. 1071-1076, 2014, Electronic ISBN: 978-1-4799-5849-8, DOI: 10.1109/ICEPE.2014.6970073 [IEEE]
12. Claudiu Damian, **Radu Adrian Tîrnovan**, Alexandru Hotea, Sorin Sava, The Direct Dependence of SCADA Systems on Communications Infrastructure and Electric Power Supply, *Procedia Technology*, Volume 19, 2015, Pages 681–688, 8th International Conference Interdisciplinarity in Engineering, INTER-ENG 2014, 9-10 October 2014, Tirgu-Mures, Romania, ISSN: 2212-0173, <https://doi.org/10.1016/j.protcy.2015.02.096>
13. Elena Breaz, Fei Gao, Abdellatif Miraoui, **Radu Tîrnovan**, A Short Review of Aging Mechanism Modeling Of Proton Exchange Membrane Fuel Cell In Transportation Applications, *Industrial Electronics Society, IECON 2014 - 40th Annual Conference of the IEEE*, Oct. 29, 2014-Nov. 1 2014, Page(s): 3941 - 3947, Dallas, TX, Electronic ISBN: 978-1-4799-4032-5, Print ISSN: 1553-572X, DOI: 10.1109/IEEC.2014.6861813
14. Breaz, F. Gao, D. Paire, **R. Tîrnovan**, Fuel cell modeling with dSPACE and OPAL-RT real time platforms, *Transportation Electrification Conference and Expo (ITEC)*, 2014 IEEE, 15-18 June 2014, Page(s): 1 – 6, Dearborn, MI, Electronic ISBN: 978-1-4799-2262-8, DOI: 10.1109/ITEC.2014.6861813

15. Ciprian CRISTEA; Maria CRISTEA; Iulian BIROU; **Radu-Adrian TÎRNOVAN**, "Techno-economic evaluation of a grid-connected residential rooftop photovoltaic system with battery energy storage system: a Romanian case study, 2020 International Conference on Development and Application Systems (DAS), 21-23 May 2020, Suceava, Romania, DOI: 10.1109/DAS49615.2020.9108954"
16. Andrei Ioaneș, **Radu Tîrnovan**, Optimum reconfiguration of power networks to reduce losses using genetic algorithm, Modern Power Systems (MPS), 2017 International Conference on, 6-9 June 2017, Cluj-Napoca, Romania, ISBN: 978-1-5090-6566-0, DOI: 10.1109/MPS.2017.7974398
17. Andrei Ioaneș, **Radu Tîrnovan**, Optimum location and size of capacitor banks to reduce losses in power distribution networks using genetic algorithm, 8th International Conference on Energy and Environment 19 - 20 October 2017, Bucharest, Romania, Electronic ISBN: 978-1-5386-3943-6, PoD ISBN: 978-1-5386-3944-3 DOI: 10.1109/CIEM.2017.8120793
18. Ioaneș and **R. Tîrnovan**, "Energy Demand Curve Modeling with Machine Learning Algorithms," 2019 8th International Conference on Modern Power Systems (MPS), Cluj Napoca, Romania, 2019, pp. 1-5, doi: 10.1109/MPS.2019.8759660.
19. Iuga and **R. A. Tîrnovan**, "Variable High Frequency Power Inverter used in Wireless Power Transfer," 2019 8th International Conference on Modern Power Systems (MPS), Cluj-Napoca, Cluj, Romania, 2019, pp. 1-3, doi: 10.1109/MPS.2019.8759760.
20. Iuga and **R. A. Tîrnovan**, "Step by step Limiting for Capacitors Inrush Current Used in Voltage Power Supplies," 2019 8th International Conference on Modern Power Systems (MPS), Cluj-Napoca, Cluj, Romania, 2019, pp. 1-4, doi: 10.1109/MPS.2019.8759664.
21. Alexandru Vasile Hotea; **Radu Adrian Tîrnovan**; Liviu Neamt, "The Effects of Short Circuits at Medium Voltage Transformers," 2019 54th International Universities Power Engineering Conference (UPEC), Bucharest, Romania, 2019, pp. 1-3, doi: 10.1109/UPEC.2019.8893574.
22. Ioaneș and **R. Tîrnovan**, "Energy Price Prediction on the Romanian Market using Long Short-Term Memory Networks," 2019 54th International Universities Power Engineering Conference (UPEC), Bucharest, Romania, 2019, pp. 1-5, doi: 10.1109/UPEC.2019.8893550.
23. **R. Tîrnovan** and M. Cristea, "Advanced techniques for fault detection and classification in electrical power transmission systems: An overview," 2019 8th International Conference on Modern Power Systems (MPS), Cluj-Napoca, Cluj, Romania, 2019, pp. 1-10, doi: 10.1109/MPS.2019.8759695.
24. Cosmin Darab; **Radu Tarnovan**; Antoniu Turcu; Corina Martineac, Artificial Intelligence Techniques for Fault Location and Detection in Distributed Generation Power Systems, 2019 8th International Conference on Modern Power Systems (MPS), 21-23 May 2019, DOI: 10.1109/MPS.2019.8759662
25. Ioaneș, Andrei; **Tîrnovan, Radu**, "Power Grid Health Assessment Using Machine Learning Algorithms", 2019 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, DOI: 10.1109/ATEE.2019.8724920
26. V. Vlad, **R. -A. Tîrnovan**, D. Sabou, I. Maris, O. -C. Blidar and A. Muresan, "A review of residential micro-Combined Heat and Power systems based on renewable energy," 2021 9th International Conference on Modern Power Systems (MPS), 2021, pp. 1-7, doi: 10.1109/MPS52805.2021.9492580

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27. M. -A. Lihet, M. Horgos and R. -A. Tîrnovan, "Monitoring the Parameters Obtained by Photovoltaic Systems," *2023 10th International Conference on Modern Power Systems (MPS)*, Cluj-Napoca, Romania, 2023, pp. 01-05, doi: 10.1109/MPS58874.2023.10187522.
28. M. Cristea, C. Cristea, R. -A. Tîrnovan, I. Birou, F. M. Șerban and E. Balog, "Feasibility of grid-connected residential photovoltaic systems under the new Romanian renewable energy law," *2023 10th*

- International Conference on Modern Power Systems (MPS)*, Cluj-Napoca, Romania, 2023, pp. 1-5, doi: 10.1109/MPS58874.2023.10187435.
29. M. Cristea, C. Cristea, **R. -A. Tirnovan** and C. Fagarasan, "Optimal Sizing of Electrical Energy Storage System for a Household with a Grid-Connected PV System using Inventory Model," 2020 International Conference and Exposition on Electrical And Power Engineering (EPE), Iasi, Romania, 2020, pp. 067-071, doi: 10.1109/EPE50722.2020.9305637.
30. C. CRISTEA, M. CRISTEA, **R. -A. TÎRNOVAN** and I. BIROU, "Economic Assessment of Grid-Connected Residential Rooftop Photovoltaics with Battery Energy Storage System under Various Electricity Tariffs: A Case Study in Romania," 2020 International Conference and Exposition on Electrical And Power Engineering (EPE), Iasi, Romania, 2020, pp. 007-011, doi: 10.1109/EPE50722.2020.9305671.
31. B Iuga and **R A Tirnovan**, Angle position influences over external magnetic field of a solenoid in wireless power transfer, 2020 IOP Conf. Ser.: Mater. Sci. Eng. 749 012032, <https://iopscience.iop.org/article/10.1088/1757-899X/749/1/012032/meta>
32. C Cristea, M Cristea and **R Tirnovan**, Comparison of heating system alternatives for a rural house employing analytic hierarchy process, 2019 IOP Conf. Ser.: Mater. Sci. Eng. 568 012094, <https://iopscience.iop.org/article/10.1088/1757-899X/568/1/012094/meta>
33. C Cristea, M Cristea, **R Tirnovan** and C Fagarasan, Comparative analysis of different heating systems based on the surface area of a household, 2019 IOP Conf. Ser.: Mater. Sci. Eng. 568 012099, <https://iopscience.iop.org/article/10.1088/1757-899X/568/1/012099/meta>
34. Maria Cristea, **RA Tirnovan**, C. Cristea, C. Pică, C. Făgărășan, A multi-criteria decision making approach for public lighting system selection, MATEC Web of Conferences 184, 04006 (2018), Annual Session of Scientific Papers IMT ORADEA, p. 1-6, <https://doi.org/10.1051/mateconf/201818404006> 2018
35. Maria Cristea, **RA Tirnovan**, C. Cristea, C. Pică, A multi-criteria decision making approach in lighting technology selection for a production hall MATEC Web of Conferences 184, 04006 (2018), Annual Session of Scientific Papers IMT ORADEA, p.1-6, <https://doi.org/10.1051/mateconf/201818404007>
36. A.C. Farcas, V. Sita, P. Dobra, **R. Tirnovan**, Energy efficient design and control for PEM water electrolyzer and hydrogen storage system, in IFAC Proceedings Volumes (IFAC-Papers Online), vol. 2, no. PART 1, pp. 32-36, 2013, <https://doi.org/10.3182/20130522-3-RO-4035.00033>

Alte baze de date

37. Cristea, M. Cristea and **R. -A. Tirnovan**, "Techno-economic assessment of grid-connected residential rooftop photovoltaic systems using various photovoltaic technologies: a case study in the Northwestern Romania," 2021 International Conference on Electromechanical and Energy Systems (SIELMEN), 2021, pp. 408-412, doi: 10.1109/SIELMEN53755.2021.9600429. [IEEE Xplore]
38. Cristea, M. Cristea, **R. -A. Tirnovan**, I. Birou, C. E. Stoenoiu and F. Mioara Șerban, "Performance analysis of grid-connected rooftop solar photovoltaic systems using different photovoltaic technologies: a case study in Romania," 2021 International Conference on Electromechanical and Energy Systems (SIELMEN), 2021, pp. 310-314, doi: 10.1109/SIELMEN53755.2021.9600338. [IEEE Xplore]
39. Dumitru Popandron, **Radu Tirnovan**, Marian Osan, Photovoltaics changing the face of the big cities-electric bicycles supplied by solar panels, Power Engineering Conference (UPEC), 2014 49th International Universities, 2-5 Sept. 2014, Page(s):1 - 4, ISBN:978-1-4799-6556-4, Cluj-Napoca, DOI: 10.1109/UPEC.2014.6934776 [IEEE Xplore]
40. Al. Hotea, S. Sava, **R. Tirnovan**, On-Line Monitoring System For Power Transformers, Carpathian Journal of Electrical Engineering, Volume 10, Number 1, 2016, p.15-19, ISSN 1843-7583, <http://cee.ubm.ro/cjee.html> [DOAJ, EBSCO]

41. I Bogdan, **RA Tirnovan**, Biot-Savart Law Application in Wireless Power Transfer–Dependence of Magnetic Field to Angle Position, Carpathian Journal of Electrical Engineering 11 (1), 2017, 73-78, <https://www.ingentaconnect.com/content/doi/18437583/2017/00000011/00000001/art00007> [DOAJ, EBSCO]
42. Dumitru POP, **Radu TÎRNOVAN**, Liviu NEAMȚ, Dorin SABOU, Modeling and Simulation of a Small Wind Turbine Using Matlab Simulink, Carpathian Journal of Electrical Engineering, Volume 7, Number 1, 2013, pp 31 – 39, ISSN 1843-7583, <http://cee.ubm.ro/cjee.html> [DOAJ, EBSCO]
43. Dorin SABOU, **Radu TIRNOVAN**, Dumitru Dan POP, A Method for Choosing the Optimal Power Supply for a Remote House, Carpathian Journal of Electrical Engineering, Volume 7, Number 1, 2013, 39 – 47, ISSN 1843-7583, <http://cee.ubm.ro/cjee.html> [DOAJ, EBSCO]
44. Ioaneș, Andrei; **Tîrnovan, Radu**, Power System Health Monitoring Based on Energy Losses using Genetic Algorithm, Analele Universitatii 'Eftimie Murgu' . 2018, Vol. 25 Issue 2, p77-86. 10p., [EBSCO]

D. Lucrări publicate în ultimii 10 anii în reviste și volume de conferințe cu referenți (neindexate)

- Reviste

1. Oana Onet, **Radu Tîrnovan**, Damien Paire, Arnaud Gaillard, Decentralized control for hybrid systems comprising renewable sources, batteries and fuel cell, Acta Electrotehnica, Nr. 5, 2013, pp. 340 – 346, ISSN 2344 – 5637, ISSN-L 1841 – 3323, <http://ie.utcluj.ro/files/acta>
2. Oșan Marian, **Tîrnovan Radu**, Damian Claudiu, Pop Dumitru, Optimizing the Ancillary Services of Power Station. Modern Solution for Supplying the Ancillary Service, Acta Electrotehnica Nr.5, Cluj-Napoca, 2013, pp.346 – 351, ISSN 2344 – 5637, ISSN-L 1841 – 3323, <http://ie.utcluj.ro/files/acta>
3. Claudiu Damian, **Radu Adrian Tirnovan**, Dorin Bica, Marian Osan, Solutions for updating the SCADA systems, realised in different time stages and on different programme platforms, Acta Electrotehnica Nr.5, Cluj-Napoca, 2013, pp.126 – 130, ISSN 2344 – 5637, ISSN-L 1841 – 3323, <http://ie.utcluj.ro/files/acta>
4. Sabou Dorin, Pop Dumitru Dan, **Tirnovan Radu**, Methods for Determining the Effective Capacity of Lead-acid Calcium Batteries, at Different Discharging Currents, Acta Electrotehnica Nr.5, Cluj-Napoca, 2013, pp.419 – 425, ISSN 2344 – 5637, ISSN-L 1841 – 3323, <http://ie.utcluj.ro/files/acta>
5. Pop, D.D., Neamț, L., **Tirnovan, R.**, Sabou, D., Analysis of an electrical arc in a low voltage miniature circuit breaker, Acta Electrotehnica Nr.5, Cluj-Napoca, 2013, pp.378 – 382, ISSN 2344 – 5637, ISSN-L 1841 – 3323, <http://ie.utcluj.ro/files/acta>
6. **Tirnovan Radu**, Breaz Elena, Pop Dan, Munteanu Radu, Thermal Behavior of a Proton Exchange Membrane Fuel Cell, Acta Electrotehnica Nr.5, Cluj-Napoca, 2013, pp.482 – 486, ISSN 2344 – 5637, ISSN-L 1841 – 3323, <http://ie.utcluj.ro/files/acta>
7. Aurel Botezan, **Radu Tîrnovan**, Silviu Ștefănescu, Dan Rafiroiu, Solutions for Compensating Voltage Variation and Flicker in Electricity Distribution Networks, Acta Electrotehnica, Volume 56, 2015/1/1, 57-63, ISSN 2344 – 5637, ISSN-L 1841 – 3323, http://ie.utcluj.ro/files/acta/2015/Number1-2/paper09_Botezan.pdf

- Selecție cu maximum 20 lucrări în volume de conferințe

Brevete obținute în întreaga activitate

1.

Data: 04.09.2024

Semnătura:

E – Brevete (pentru întreaga activitate)