

Instituția de învățământ superior: **U.T. Cluj-Napoca**

Facultatea: . **Inginerie Electrică**

Domeniul de licență: Inginerie electrica

Programul de studii de licență: ET, IAD,EPAE,EM,MEE, IEcEE.

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. Rusu Calin Gh. 63 / 38	Teoria Sistemelor si reglarea Automata, curs, seminar Microcontrolere si sisteme Integrate, curs laborator și proiect	Universitatea Tehnică din Cluj / Facultatea de Electrotehnică / Electromecanică	Doctorat în automatizări industrial/in ginerie electrica	teza (A); 5 cărți (B1, B3); 2 lucrări indexate ISI/BDI (C1, C12); teza (A); 2 cărți (B2, B4, - B9; 21 lucrări indexate ISI/BDI (C2-C11, C13-C23); 12 lucrări în rev. și vol. conf. (D1-12);	Îndeplinit
2						
3						
4						
6						

* 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: **RUSU Călin Gheorghe**

Gradul didactic: **Prof.dr.ing.**

Instituția unde este titular: **U.T. Cluj-Napoca**

Facultatea: **Inginerie Electrică**

Departamentul: **Mașini și Acționări Electrice**

LISTA**lucrărilor științifice în domeniul disciplinelor din postul didactic****A – Teza de doctorat**

„Sisteme de control al axelor unui minirobot actionat cu motoare pas cu pas implementate pe microprocesoare DSP”, 196 pagini, 1996

conducător științific : Prof.Dr.-Ing. Arpad Kelemen

Universitatea Tehnică din Cluj-Napoca

Susținere publică: 19.12.1996.

B – Cărți și capitole în cărți publicate în ultimii 20 ani**B1. CĂRȚI**

1. **Rusu, C.**, Szöke-Benk E., Radian Kreszer Melinda, *Matlab în modelarea, simularea si controlul sistemelor. Ghid practic pentru studenți*, , Editura UT Press, Cluj-Napoca, 170 pagini, ISBN 978-973-662-346-6, 2008.

2. **Rusu, C.**, *Digital control system design*, Editura Casa Cărții de Știință, Cluj-Napoca, 190 pagini, ISBN 973-686-092-2, 2000.

3. **Rusu, C.**, *Ingineria roboților. Cinematică, dinamică și control*. Editura Mediamira, Cluj-Napoca, 224 pagini, ISBN 973-9358-36-5, 2001.

4. **Rusu, C.**, Szöke-Benk E., *Aplicații Matlab în controlul sistemelor. Ghid practic pentru studenți*, Editura Mediamira, Cluj-Napoca, 160 pagini, ISBN 973-713-101-0, 2006.

5. **Rusu, C.**, Szöke-Benk E., Mureșan M., *Matlab în controlul sistemelor. Ghid practic pentru studenți și ingineri*, Editura Mediamira, Cluj-Napoca, 132 pagini, ISBN 973-713-019-7, 2005.

6. **Rusu, C.**, *Sisteme adaptive și robuste în controlul miniroboților acționați cu motoare pas cu pas*, Editura Melenti Victor, Cluj-Napoca, 168 pagini, ISBN 973-99539-4-8, 2001.

7. **Rusu, C.**, *Programarea in Matlab a Aplicatiilor cu Arduino*, Editura UT Press, 163 pagini, ISBN

8. **Călin Gh. RUSU**, *Microcontrolere și Sisteme Integrate programate cu Matlab/Simulink*, Editura UT Press, 2022, ISBN 978-606-737-575-6 (188 pag.), <http://biblioteca.utcluj.ro/editura>

B2. Cursuri, îndrumătoare de laborator, monografii, publicate pe plan local
(2 din care 2 unic autor)

9. **Rusu, C.**, *Dinamica și controlul roboților - curs*, Atelierul de Multiplicare al Universității Tehnice din Cluj-Napoca, C.Z.U. 621.865.8(075.8), 152 pagini, 1997.

10. **Rusu, C.**, *Simularea și comanda roboților - curs*, Atelierul de Multiplicare al Universității Tehnice din Cluj-Napoca, 172 pagini, 1996.

CAPITOLE DE CARTE

1. **Autor**, Coautori. *Titlu*, Editura, An, paginile, ISBN
- 2.

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

c1) Articole / studii publicate în reviste de specialitate de circulație internațională recunoscute (cotate ISI)

1. Birou, Iulian; Maier, Virgil; Pavel, Sorin; Rusu Calin. “*Indirect Vector Control of an Induction Motor with Fuzzy-Logic based Speed Controller*”. ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING Volume: 10, Issue: 1 Pages: 116-120 Published: 2010, ISSN: 1582-7445, e-ISSN: 1844-7600
2. Rusu , Calin, *Sliding Mode Fuzzy Control for Step Motors*, Journal of Control Engineering, Volume 4, No.3, pp19-24, ISSN 1454-8658, ISI Impact Factor of our journal is 0.973

c2) Studii publicate la conferințe indexate în baze de date internaționale de referință în domeniul (DBLP, ACM, IEEE, SCOPUS)¹

1. Model Based Design Controller for Stand-Alone Conversion System with MPPT; **Rusu, Calin G.**; Birou, Iulian M. T.; Salcu, Sorin Published 2022 AQTR, IEEE INTERNATIONAL CONFERENCE ON AUTOMATION QUALITY AND TESTING ROBOTICS, WoS, SCOPUS, IEEEExplore, Google Scholar
2. Power factor compensation for a single-phase AC-DC Hybrid Micro-Grid; Iuoras, Adrian Mihai ; Salcu, Sorin Ionut; **Rusu, Calin G**; Petre Dorel Published 2020 PEDG, IEEE 11TH INTERNATIONAL SYMPOSIUM ON POWER ELECTRONICS FOR DISTRIBUTED GENERATION SYSTEMS (PEDG), WoS, SCOPUS, IEEEExplore, Google Scholar
3. Active Power Factor Compensation Based on a Geometric Phase Control Scheme; Salcu, Sorin Ionut ; Iuoras, Adrian Mihai; **Rusu, Calin G**; Fasola, Gheorghe Ioan Published 2020 PEDG, IEEE 11TH INTERNATIONAL SYMPOSIUM ON POWER ELECTRONICS FOR DISTRIBUTED GENERATION SYSTEMS (PEDG), WoS, SCOPUS, IEEEExplore, Google Scholar
4. Design Optimization and Prototyping of a Double-Rotor Axial-Flux Spoke-Type Ferrite-Magnet Micro-Wind Generator; Radulescu Mircea; **Rusu, Calin G**; Chirca M., Published 2021, OPTIM, INTERNATIONAL AEGEAN CONFERENCE ON ELECTRICAL MACHINES AND POWER ELECTRONICS (ACEMP) & 2021 INTERNATIONAL CONFERENCE ON OPTIMIZATION OF ELECTRICAL AND ELECTRONIC EQUIPMENT (OPTIM), SCOPUS, IEEEExplore, Google Scholar
5. FPGA based Real-Time simulation of FlyBack converter using graphical programming tools; Lucian-Nicolae Pintilie; Horia-Cornel Hedeșiu; **Rusu, Calin G**; Ioana-Cornelia Gros; Vasile-

¹ indexate în:

[IEEE] - IEEE Xplore (<http://ieeexplore.ieee.org/Xplore/guesthome.jsp>)

[ACM] - ACM portal (<http://portal.acm.org>)

[DBLP] - (<http://www.informatik.uni-trier.de>)

[SCOPUS] - (<http://www.scopus.com>)

- Mihai Suci; Alexandru-Mădălin Păcuraru, Published 2023, MPS, 10th International Conference on Modern Power Systems (MPS), SCOPUS, IEEEExplore, Google Scholar
6. Energy Conversion Optimization Method in Nano-Grids Using Variable Supply Voltage Adjustment Strategy Based on a Novel Inverse Maximum Power Point Tracking Technique (iMPPT); Lucian Nicolae Pintilie, Horia Cornel Hedeşiu, **Rusu, Calin G**, Petre Dorel Teodosescu, Călin Ignat Mărginean, Sorin Ionuţ Salcu, Vasile Mihai Suci, Norbert Csaba Szekely and Alexandru Mădălin Păcuraru, <https://doi.org/10.3390/electricity4040017>, MDPI, Optimisation, Optimal Control and
 7. Nonlinear Dynamics in Electrical Power, Energy Storage and Renewable Energy Systems, 2nd Volume; Adrian Mihai Iuoraş; Sorin Ionuţ Salcu; **Rusu, Calin G**; Călin Marginean; Petre Dorel Teodosescu, *Power factor compensation for a single-phase AC-DC Hybrid Micro-Grid* 10.1109/PEDG48541.2020.9244417, 2020 IEEE 11th International Symposium on Power Electronics for Distributed Generation Systems (PEDG), 978-1-7281-6991-0
 8. Iulian M. T. Birou; **Rusu, Calin G**; Sorin Pavel; Virgil Maier, “*Comparative Evaluation of Vector Control versus Direct Torque Control for PM-SM Drives*”, 10.1109/ISEEE.2017.8170670 000428234400046, 5th International Symposium on Electrical and Electronics Engineering (ISEEE) Location: Galati, ROMANIA Date: OCT 20-22, 2017
 9. Sorin Ionuţ Salcu; Adrian Mihai Iuoraş; Norbert Csaba Szekely; Mircea Bojan; **Călin Gheroghe Rusu**; Gheorghe Ioan Fasolă, “*Active Power Factor Compensation Based on a Geometric Phase Control Scheme*”, 10.1109/PEDG48541.2020.9244319, Proceedings of 2020 IEEE 11th International Symposium on Power Electronics for Distributed Generation Systems (PEDG), 978-172816990-3
 10. Bara, A. Dale, S. **Rusu, C.**, Silaghi, H., “*DC electrical drive control with fuzzy systems*“, 2015 13th International Conference on Engineering of Modern Electric Systems, EMES 2015, 7158437
 11. Birou, I.M.T. **Rusu, C.C.**, Pavel, S.G. Maier, V., “*Real-time robust controlled driving system with permanent-magnet synchronous motor*“, EPE 2014 - Proceedings of the 2014 International Conference and Exposition on Electrical and Power Engineering 6970046, pp. 921-926
 12. **Rusu, C.** Birou, I., Radulescu, M.M. Bara, A., “*Developing embedded control system platform for testing PMSM drives*“, EPE 2014 - Proceedings of the 2014 International Conference and Exposition on Electrical and Power Engineering 6969995, pp. 677-682.
 13. **Rusu, C.** Radulescu, M.M., Eniko, S. Melinda, R.K., Jakab, Z.L., „*Embedded motor drive prototype platform for testing control algorithms*“, 2014 International Conference on Applied and Theoretical Electricity, ICATE 2014 – Proceedings 6972601
 14. **Rusu, C.G.** Birou, I.T., Szöke, E., “*Fuzzy based obstacle avoidance system for autonomous mobile robot*“, 2010 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 2010 – Proceedings 1,5520862, pp. 337-342.
 15. Birou, I. Maier, V. Pavel, S., **Rusu, C.**, „*Indirect vector control of an induction motor with fuzzy-logic based speed controller*“, Advances in Electrical and Computer Engineering 10(1), pp. 116-120
 16. Bara, A. **Rusu, C.**, Dale, S., “*DSP Application on PMSM drive control for robot axis*“, Proceedings of the 13th WSEAS International Conference on Systems - Held as part of the 13th WSEAS CSCC Multiconference pp. 381-385.
 17. **Rusu, C.**; Szoke, E., “*Embedded system design for field-oriented stepper motor control*“, Proceedings of the 13th WSEAS International Conference on Systems - Held as part of the 13th WSEAS CSCC Multiconference pp. 381-385.
 18. Birou, I. M. T.; **Rusu, C.**; Pavel, S.; “*Adaptive identification algorithms and robust control strategies used for performant electrical drives with AC machines*“, 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 2008 - THETA 16th Edition – Proceedings 2,4588832, pp. 254-257.

19. **Rusu, Calin**; Birou, Iulian; Szoke, Enikoe; “*Model based design controller for the stepper motor*”; 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 2008 - THETA 16th Edition - Proceedings 2,4588816, pp. 175-179.
20. **Rusu, C.** Radulescu, M., Balan, H., “*Embedded toolbox for F24X DSK target microcontroller*”, International Aegean Conference on Electrical Machines and Power Electronics and Electromotion ACEMP'07 and Electromotion'07 Joint Conference 4510564, pp. 556-559.
21. **Rusu, C.**; Birou, I., “*Matlab graphical interface for the DSK243 system used to control a BLDC motor*”, 2006 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 4022901, pp. 452-456,
22. Birou, I; Imecs, M; **Rusu, C.**, “*Robust control of field-oriented drive system with permanent magnet synchronous servomotor*”, IEEE International Electric Machines and Drives Conference, IEMDC 1999 – Proceedings 769054, pp. 144-146.
23. Kelemen Arpad, Imecs Maria, **Rusu Calin**, Kis Zoltan, “*Run-time autotuning of a robot controller using a genetics based machine learning control scheme*”, IEE Conference Publication, (414), pp. 307-312.
24. Kelemen Arpad, Imecs Maria, **Rusu Calin**, Marschalko Richard, “*Fuzzy control for micro robot servo drive with field oriented stepping motor*”, Conference: Joint Hungarian/British International Mechatronics Conference, Location: BUDAPEST, HUNGARY Date: SEP 21-23, 1994, Pages: 649-654 Published: 1994

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

- Reviste

1. **C., Rusu**; M.M., Radulescu; E., Szoke; “*Educational Platform for real-time testing of PMSM motor control algorithms*”, Publication date 2013/January-December, Journal Electromotion, Volume 20, (number 1-4), p.60-65.
2. I. Birou, **C. Rusu**, S. Pavel, V. Maier, „*Efficient Conversion of Electrical Energy Versus New Energy Resources the Role of Performant Electrical Drives*”. Journal Acta Electrotehnica, Volume 57, (number 3-4), p.349-354.
3. **C. Rusu**, I. Birou, Al. Bara, „*Local Navigation System with Stimulus Response Reaction for Mobile Robots*”, Journal Acta Electrotehnica 57 (number 3-4), 421-426
4. **C. Rusu**, MM Radulescu, I Birou, L Jakab, L Laszlo, „*Direct Torque Controller of Brushless DC Motor Drive with FSTPI for Light Electric Vehicle*”, Publication date 2016/1/2, Journal Acta Electrotehnica, Volume 57, (number 3-4), p.415-420.
5. **C., Rusu**; M.M., Radulescu; E., Szoke; „*Educational Platform for real-time testing of PMSM motor control algorithms*”, Publication date 2013/January-December, Journal Electromotion, Volume 20, (number 1-4), p.60-65.
6. **C. Rusu**, A. Bara, Enikö Benk, „*Embedded Target Toolbox for DSP Control Applications of BLDC Motor*”, Journal of Computer Science and Control Systems, Academy of Romanian Scientists, University of Oradea, Faculty of Electrical Engineering and Information Technology, Vol. 2, Nr. 2, 2009, p115-119, ISSN: 1844-6043, (ISI web of Knowledge, ACM digital Library).
7. **C. Rusu**, Enikö Benk, A. Bara, „*DSP Based Controller of PMSM Drive for Robot Axis Applications*”, Journal of Computer Science and Control Systems, Academy of Romanian Scientists,

University of Oradea, Faculty of Electrical Engineering and Information Technology, Vol. 2, Nr. 1, 2009, p.118-123, ISSN: 1844-6043, (ISI web of Knowledge, ACM digital Library).

8. Iulian BIROU, Virgil MAIER, Sorin PAVEL, Călin RUSU, “Indirect Vector Control of an Induction Motor with Fuzzy-Logic based Speed Controller”, AECE - Advances in Electrical and Computer Engineering, Volume 10, Number 1, 2010, pp.116-120, AECE | Advances in Electrical and Computer Engineering - ISSN 1582-7445 - e-ISSN 1844-7600 (ISI Thomson)

9. I. BIROU, V. MAIER, S. PAVEL, Călin RUSU, “Control of AC Drives; A Balance Between Dynamic Performance, Energy Efficiency”, CNAE 2010 – The 15th National Conference on Electric Drives, 7 – 8 Octombrie 2010, Craiova, Romania, pp. 42-47, Annals of the University of Craiova, Ed. Universitaria, Seria: Inginerie Electrică, Anul 34, No. 34, 2010, Vol. II, ISSN 1842-4805

9. Rusu, C., Birou I., „Fuzzy sliding mode control of the bldc motor”, EPE SELIS 2006, Publicat in BULETINUL INSTITUTULUI POLITEHNIC DIN IASI, Editat de Universitatea Tehnica “Gh. Asachi” Iasi, tomul LII (LVI), FASC. 5, 2006, Electrotehnică, Energetică, Electronică, pp. 53-60, , ISSN 0258-9109.

10. Rusu, C., Szöke-Benk E., Birou, I., „Permanent Magnet Synchronous Motor Controller with load torque observer”, CNAE 2006, The 13th National Conference on Electrical Drives held at Petroleum and Gas University of Ploiesti, 5-6 October, 2006, Ploiesti, Romania, BULETINUL UNIVERSITATII PETROL SI GAZE DIN PLOIESTI, Sectia TEHNICA, Vol. LVIII, Nr 2bis/2006, ISSN 1224-8495, pp223-232.

11. C. G. Rusu, I. T. Birou, “Obstacle Avoidance Fuzzy System for Mobile Robot with IR Sensors”, The 10th International Conference on Development and Application Systems DAS 2010, Abstracts Book, ISSN 1844-5020, pp.22, May 27-29, 2010 Suceava, Romania (IEEEExplore si ISI Web of Knowledge)

12. C. G. Rusu, I. T. Birou, E. Szöke, „Fuzzy Based Obstacle Avoidance System for an Autonomous Mobile Robot”, IEEE International Conference on Automation, Quality and Testing, Robotics (IEEE AQTR 2010), TOME 1 - Robotics, p337-342, THETA 17th edition, May 28-30, 2010, Cluj-Napoca, Romania (IEEEExplore)

13. A. Bara, C. Rusu, Sanda Dale, „DSP Application on PMSM Drive Control For Robot Axis”, ICS 2009, Proceedings of the 13th WSEAS International Conference on SYSTEMS, [Rhodos Island, Greece, July 22-24, 2009](#), ISSN: 1790-2769, ISBN: 978-960-474-097-0, pp381-385, (ISI web of Knowledge, ACM digital Library).

14. Rusu, C., Szöke, E., “Embedded System Design for Field-Oriented Stepper Motor Control”, Proceedings of the 11th International Conference on Optimization of Electrical and Electronic Equipment, OPTIM 2008, Brasov, May 22-23, 2008, Romania, vol. 4, pp.63-68, ISBN 978-973-131-028-2. (IEEE Xplore 08EX1996, Library of Congress 2007905111).

15. Rusu, C. Birou, I., Model Based design Controller for the Stepper Motor, Proceedings of 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 2008, May 22-25, 2008, Cluj-Napoca, Romania, Tome II, pp.175-179, IEEE Catalog Number: CFP08AQT-PRT, ISBN 978-1-4244-2576-1, Library of Congress 2008904446. (IEEE Xplore, Engineering Village).

16. Birou, I., Rusu, C., Pavel, S. Adaptive Identification Algorithms and Robust Control Strategies used for Permanent Electrical Drives with AC Machines, Proceedings of 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 2008, May 22-25, 2008, Cluj-Napoca, Romania, Tome II, pp.254-257, IEEE Catalog Number: CFP08AQT-PRT, ISBN 978-1-4244-2576-1, Library of Congress 2008904446. (IEEE Xplore, Engineering Village).

17. Rusu, C., Radulescu, M., M., Balan, H., Embedded Toolbox for F24X DSK Target Microcontroller, Proceedings of 2007 IEEE International Aegean Conference on Electrical Machines and Power

Electronics, ACEMP 2007, EM2007, Joint Conference, 10-12 Sept., Bodrum, Turkey, pp.556-559, ISBN 978-975-93410-2-2. (IEEE Xplore, Engineering Village).

18. Rusu, C., Birou, I., *Matlab graphical interface for the DSK243 system used to control a BLDC Motor*, Proceedings of 2006 IEEE_TTTC International Conference on Automation, Quality and Testing, Robotics, AQTR 2006, May 25-28, 2006, Cluj-Napoca, Romania, Tome I, pp.452-456, IEEE Catalog Number: 06EX1370, ISBN 1-4244-3060-X, Library of Congress 2006924077. (IEEE Xplore, Engineering Village).

- Selecție cu maximum 20 lucrări în volume de conferințe

1.

E – Brevete obținute pentru întreaga activitate

1.

2.

Data:

10.11.2024

Semnătura:

prof.dr.ing. RUSU Călin Gh.

E – Brevete (pentru întreaga activitate)