

Technical University of Cluj-Napoca
Faculty of Electrical Engineering
Department of Electrical Machines and Drives
Application for position of Associate Professor, no. 14

Candidate: **Claudiu Alexandru Oprea**
Current position: Lecturer

LIST OF PAPERS

- A. List of the most relevant 10 papers**
- B. Ph.D. Thesis**
- C. Patents**
- D. Books and chapters in books**
- E. Scientific papers in journals or proceedings of conferences**
 - I. Papers in ISI journals and ISI proceedings***
 - ISI Journals (reviste cotate ISI):*
 - ISI Proceedings (volume ale unor manifestări indexate ISI):*
 - II. Papers in IDB journals and IDB proceedings***
 - III. Papers in non-indexed proceedings or journal***
- F. Grants obtained in competition**
 - I. Project manager in national grants obtained in competition***
 - II. Member of the research team in international grants***
 - III. Member of the research team in national grants***
- G. Research grants with third parties**
- H. Postdoctoral research grants**

A. List of the most relevant 10 papers

1. Martis, Claudia S; Hedesiu, Horia C; Szabó, Loránd; Tataranu, Bogdan; Jurca, Florin; **Oprea, Claudiu**; „Electrical machines virtual laboratory: Grid connection of a synchronous generator,2006 12th International Power Electronics and Motion Control Conference,,1709-
2. Szabo, Lorand; **Oprea, Claudiu**; Viorel, Ioan-Adrian; Biró, Károly Ágoston; „Novel permanent magnet tubular linear generator for wave energy converters,2007 IEEE International Electric Machines & Drives Conference,2,,983-987,2007,IEEE
3. **Oprea, C**; Martis, Claudia; „Fault tolerant permanent magnet synchronous machine for electric power steering systems,"2008 International Symposium on Power Electronics, Electrical Drives, Automation and Motion" ,,256-261,2008,IEEE
4. Chirca, M; Breban, S; **Oprea, CA**; Radulescu, MM; „Analysis of innovative design variations for double-sided coreless-stator axial-flux permanent-magnet generators in micro-wind power applications,2014 International Conference on Electrical Machines (ICEM),,385-389,2014,IEEE
5. **Oprea, Claudiu**; Dziechciarz, Arkadiusz; Martis, Claudia; „Comparative analysis of different synchronous reluctance motor topologies,2015 IEEE 15th International Conference on Environment and Electrical Engineering (EEEIC),,1904-1909,2015,IEEE
6. Chirca, Mihai; **Oprea, Claudiu**; Teodosescu, Petre-Dorel; Breban, Stefan; „Optimal design of a radial flux spoke-type interior rotor permanent magnet generator for micro-wind turbine applications,2016 International Conference on Applied and Theoretical Electricity (ICATE),,1-5,2016,IEEE
7. Dziechciarz, Arkadiusz; **Oprea, Claudiu**; Martis, Claudia; „Multi-physics design of synchronous reluctance machine for high speed applications",IECON 2016-42nd Annual Conference of the IEEE Industrial Electronics Society,,1704-1709,2016,IEEE
8. Mîndruț, Bogdan M; **Oprea, Claudiu A**; „Experiential Learning Through Controlling and Monitoring a Real-Time 3D House Using LabVIEW in a Virtual Laboratory,"Innovative Technologies and Learning: Third International Conference, ICITL 2020, Porto, Portugal, November 23–25, 2020, Proceedings 3" ,,119-127,2020,Springer International Publishing
9. Breban, Stefan; Dranca, Marius; Chirca, Mihai; Pacuraru, Alexandru-Madalín; Teodosescu, Petre-Dorel; **Oprea, Claudiu-Alexandru**; „Experimental Tests on a Spoke-Type Permanent Magnets Synchronous Machine for Light Electric Vehicle Application,Applied Sciences,12,6,3019,2022,MDPI
10. Breban, Stefan, Mester, Victor, **Oprea, Claudiu Alexandru**: Axial flux permanent magnet electrical machine for use with e.g. wind turbine, has stator or rotor including discrete windings that are mounted radially at equal distance, with hollow spaces and on inner windings support, Application number: 13465505.9, EP 2 869 433 A1

B. Ph.D. Thesis

Claudiu Alexandru Oprea – Ph.D. – *Study on the Permanent Magnet Linear Generators Suitable for Wave Energy* Tzã defended at Technical University of Cluj-Napoca on 29th of January 2010. Ph.D. supervisor Prof. dr. ing. Agoston Karoly Biro; reviewers: Prof.dr.ing. Radu CIUPA (president), Prof.dr.ing. Ion BOLDEA (Universitatea Politehnica Timisoara), Prof.dr.ing. Alexandru SIMION (Universitatea Gheorghe Asachi, Iasi), Prof.dr.ing. Vasile IANCU (Universitatea Tehnică din Cluj-Napoca), Prof. dr. ing. Johan GYSELICK (Universitatea Libera, Bruxelles, Belgia)

C. Patents

1. Breban, Stefan, Mester, Victor, **Oprea, Claudiu Alexandru**: Axial flux permanent magnet electrical machine for use with e.g. wind turbine, has stator or rotor including discrete windings that are mounted radially at equal distance, with hollow spaces and on inner windings support, Application number: 13465505.9, EP 2 869 433 A1

D. Books and chapter in books

1. C.Martiş, H.Hedeşiu, F.N. JURCA, **C. Oprea**, M. Ruba - **Introducere în sisteme electromecanice**, Editura Alma Mater 2012, ISBN: 978-606-504-136-3.
2. **Claudiu Oprea**, Horia Hedeşiu - **Aplicații ale automatizărilor discrete în medii de programare grafică**, UTPress

E. Scientific papers in journals or proceedings of conferences

I. Scientific papers in ISI Web of Knowledge indexed journals or proceedings of conferences

ISI Journals (reviste cotate ISI):

1. Chirca, M; Dranca, M; **Oprea, CA**; Teodosescu, PD; Pacuraru, AM; Neamtu, C; Breban, S: "Electronically Controlled Actuators for a Micro Wind Turbine Furling Mechanism", Journal Paper, Energies, Volume13, Issue16, Article Number4207, Published AUG 2020, <https://doi.org/10.3390/en13164207>
2. Breban, S; Dranca, M; Chirca, M; Pacuraru, AM; Teodosescu, PD; **Oprea, CA**: "Experimental Tests on a Spoke-Type Permanent Magnets Synchronous Machine for Light Electric Vehicle Application", Journal Paper, APPLIED SCIENCES-BASEL, Volume12, Issue6, Article Number3019, PublishedMAR 2022, <https://doi.org/10.3390/app12063019>

ISI Proceedings (volume ale unor manifestări indexate ISI):

3. Claudia Martis, Hedeşiu H.C., Szabo L., Tataranu B., Jurca F., **Claudiu Oprea**.: "Electrical Machines Virtual Laboratory: Grid Connection of a Synchronous Generator", Proceedings of the 12th International Power Electronics and Motion Control Conference (EPE PEMC '2006), Portoroz (Slovenia), 2006.
4. Lorand Szabo, **Claudiu Oprea**, Ioan-Adrian Viorel, Karoly Biro: "Novel permanent magnet tubular linear generator for wave energy converters", in IEEE IEMDC 2007: Proceedings of the International Electric Machines and Drives Conference, Vols 1 and 2, pp. 983-987, 2007.
5. **Claudiu Oprea**, Claudia Martis, K. Biro: "Six-Phase Brushless DC Motor for Fault Tolerant Electric Power Steering Systems", ACEMP'07 and ELECTROMOTION'07 Joint meeting, 10-12 September 2007 Bodrum Turkey
6. **Claudiu Oprea**, Claudia Martis: "Fault tolerant permanent magnet synchronous machine for electric power steering systems", International Symposium on Power Electronics, Electrical Drives,

- Automation and Motion SPEEDAM 2008, pp. 256-261, 2008, E-ISBN: 978-1-4244-1664-6, Print ISBN: 978-1-4244-1663-9
7. Claudia Martis, **Claudiu Oprea**, I.A. Viorel, J. Gyselinck: "Design of a Fault-Tolerant 6-phase Switched Reluctance Motor for Electric Power-Assisted Steering Systems", IEEE International Conference in Electric Machines and Drives IEMDC 2009, Miami, USA, mai 2009, E-ISBN : 978-1-4244-4252-2, Print ISBN: 978-1-4244-4251-5.
 8. M. Ruba, **Claudiu Oprea**, L. Szabo: "Comparative Study on Switched Reluctance Machine Based Fault-Tolerant Electrical Drive Systems", in 2009 IEEE INTERNATIONAL ELECTRIC MACHINES & DRIVES CONFERENCE, VOLS 1-3, pp. 981-986, 2009.
 9. Lorand Szabo, **Claudiu Oprea**, Clement Festila, Eva Dulf: "Study on a Wave Energy Based Power System", in ICEM: 2008 INTERNATIONAL CONFERENCE ON ELECTRICAL MACHINES, VOLS 1- 4, pp. 1122-1127, 2009.
 10. **Claudiu Oprea**, Claudia Martis, K. Biro: "Analysis of the Pole Width Influence on a Four-Sided Linear Generator Performances", Optim 2010, Brasov, Romania, on CD RD-003794.
 11. **C. Oprea**, L. Szabó, Claudia Martis: "Linear Permanent Magnet electric generator for free piston engine applications", ICEM 2012, 0689-ff-007706.pdf, IEEE Catalog Number: CFP1290B-USB, ISBN: 978-1-4673-0141-1
 12. Chirca, M., Breban, S., **Oprea, C.**, Radulescu, M.M. "Design analysis of a novel double-sided axial-flux permanent-magnet generator for micro-wind power applications" (2014) 2014 International Conference on Optimization of Electrical and Electronic Equipment, OPTIM 2014, art. no. 6851030, pp. 472 - 476. DOI: 10.1109/OPTIM.2014.6851030
 13. Chirca, M., Breban, S., **Oprea, C.A.**, Radulescu, M.M. "Analysis of innovative design variations for double-sided coreless-stator axial-flux permanent-magnet generators in micro-wind power applications" (2014) Proceedings - 2014 International Conference on Electrical Machines, ICEM 2014, art. no. 6960209, pp. 385-389.
 14. Pop-Piglesan, F , Jurca, F, **Oprea, C** Martis, C "Permanent magnet synchronous machine design for low-noise drive systems" PROCEEDINGS OF INTERNATIONAL CONFERENCE ON NOISE AND VIBRATION ENGINEERING (ISMA2014) AND INTERNATIONAL CONFERENCE ON UNCERTAINTY IN STRUCTURAL DYNAMICS (USD2014)SEP 15-17, 2014, Leuven, BELGIUM
 15. **Oprea, C.**, Dziechciarz, A., Martis, C. Comparative analysis of different synchronous reluctance motor topologies 2015 IEEE 15th International Conference on Environment and Electrical Engineering, EEEIC 2015 - Conference Proceedings, art. no. 7165463, pp. 1904-1909. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84943181671&doi=10.1109%2fEEEIC.2015.7165463&partnerID=40&md5=7b1767080e9b74c907ed86876d9d23f8> DOI: 10.1109/EEEIC.2015.7165463
 16. Faria, C.T., Mongellaz, R., **Oprea, C.**, Boon, F., Faid, S., Thiemann, T. Design Process of Advanced Reluctance Machines for Electric Vehicle Applications: On Target Setting, Optimization of Different Reluctance Motors Technologies and Assessment of the Most Promising Propulsion Technology for Electric Vehicle Applications (2015) 2015 IEEE Vehicle Power and Propulsion Conference, VPPC 2015 - Proceedings, art. no. 7352928, . <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84962786650&doi=10.1109%2fVPPC.2015.7352928&partnerID=40&md5=e2c915852dd5df171d80ea16c3de228b>, DOI: 10.1109/VPPC.2015.7352928
 17. **Oprea, Claudiu**, Martis, Claudia Steluta; Irimia, P.C, Husar, C, Grovu, M: "Electromagnetic and Structural Analysis of a Synchronous Reluctance Machine", Conference: Int Aegean Conference on Electrical Machines and Power Electronics (ACEMP) / Int Conference on Optimization of Electrical and Electronic Equipment (OPTIM) / Int Symposium on Advanced Electromechanical Motion Systems (ELECTROMOTION) Location: Side, TURKEY Date: SEP 02-04, 2015, Pages: 564-569
 18. Mihai Chirca, Stefan Breban, **Claudiu Oprea**, Mircea Radulescu: "Comparative Design Analysis of Ferrite-Permanent-Magnet Micro-Wind Turbine Generators", Int Aegean Conference on Electrical

- Machines and Power Electronics (ACEMP) / Int Conference on Optimization of Electrical and Electronic Equipment (OPTIM) / Int Symposium on Advanced Electromechanical Motion Systems (ELECTROMOTION), Location: Side, TURKEY, Date: SEP 02-04, 2015, Pages: 687-692
19. Chirca, M, **Oprea, C**, Teodosescu, PD, Breban, S: "Optimal Design of a Radial Flux Spoke-Type Interior Rotor Permanent Magnet Generator for Micro-Wind Turbine Applications", International Conference on Applied and Theoretical Electricity (ICATE), Location: Craiova, ROMANIA, Date: OCT 06-08, 2016
 20. Dziechciarz, A, **Oprea, C**, Martis, C : " Multi-Physics Design of Synchronous Reluctance Machine for High Speed Applications ", 42nd Annual Conference of the IEEE-Industrial-Electronics-Society (IECON), Location: Florence, ITALY, Date: OCT 24-27, 2016, Pages: 1704-1709
 21. Cosman, SI ; Boanca, VI ; **Oprea, C**; Martis, CS : "Design, Building and Testing of a Low Voltage - High Current Drive for SRMs Used for HVAC Applications", 10th International Conference and Expositions on Electrical and Power Engineering (EPE), OCT 18-19, 2018, Iasi, ROMANIA pages: 58-62
 22. Nicorici, AM; **Oprea, C**; Martis, C: "Performance Evaluation of a 7.5 kW Permanent Magnet Assisted Synchronous Reluctance Machine for Light Electric Vehicles", 10th International Conference and Expositions on Electrical and Power Engineering (EPE), OCT 18-19, 2018, Iasi, ROMANIA, pages 129-132
 23. **Oprea, CA**; Iclodean, C; Chirca, M; Dranca, M; Ghita, F; Breban, S: "Initial Evaluation of Permanent Magnet Synchronous Motor Structures for Light Electric Vehicle Applications", 28th IEEE International Symposium on Industrial Electronics (IEEE-ISIE), JUN 12-14, 2019, Vancouver, CANADA, Pages: 342-347
 24. Cosman, SI; Moldovan, CA; Iusan, RA; **Oprea, C**; Martis, CS: "Development of an automated system to optimize greenhouse resource consumption", 8th International Conference on Modern Power Systems (MPS), MAY 21-23, 2019, Cluj-Napoca, ROMANIA

II. Scientific papers in IDB indexed journals and proceedings

1. Nemes R., Ruba M., Raia R., Martis C., **Oprea C.**: "X-in the Loop based high accuracy test facility for industrial development of electric vehicles", IEEE Transactions on Transportation Electrification, pp. 1-1, 2022, DOI: 10.1109/TTE.2022.3224518
2. Daniel Lates, **Claudiu Oprea**, : ""Analysis of the Cylindrical Gear Wheels in the Gear of the Central Drum of the Cableway"", ACTA TECHNICA CORVINIENSIS – Bulletin of Engineering, TOME XVI, Fascicule I, e-ISSN: 2067-3809, Edited by: UNIVERSITY POLITEHNICA TIMISOARA, FACULTY of ENGINEERING HUNEDOARA"
3. **Oprea, C.**, Szabo, L., & Martis, C.: ~Multi-Phase Linear Generator for Electric Vehicle Applications~, Advanced Engineering Forum, 2013, (Vols. 8–9, pp. 461–468). Trans Tech Publications, Ltd. <https://doi.org/10.4028/www.scientific.net/aef.8-9.461>
4. Mîndruț B.M., **Oprea C.A.**: "Experiential Learning Through Controlling and Monitoring a Real-Time 3D House Using LabVIEW in a Virtual Laboratory", Lecture Notes in Computer Science, 2020, 12555 LNCS, pp. 119 - 127, DOI: 10.1007/978-3-030-63885-6_14
5. **CLAUDIU OPREA**, C.S. MARȚIȘ and L. SZABÓ: "Free Piston Engine Driven Linear Generator for Hybrid Electric Vehicles", BULETINUL INSTITUTULUI POLITEHNIC DIN IAȘI, Publicat de Universitatea Tehnică „Gheorghe Asachi” din Iași, Tomul LVII (LXI), Fasc. 6, 2011 Secția ELECTROTEHNICĂ. ENERGETICĂ. ELECTRONICĂ, pp 127-134, DOI 10.2478"
6. Jurca, F., Martis, C., **Oprea, C.** and Biro, K., 2006. Claw-Poles Machines in the Power Systems based on Renewable Resources. In Internationale Conference on Power Electronics, Drives and Motion (PCIM), Nürnberg (Germany), 2006, CD 123_PP_64_Jurca. pdf.

7. Martis, C., Jurca, F., **Oprea, C.**, Nicula, C. and Biro, K., 2006. Harmonics analysis in renewable energy sources based on induction and synchronous generators. In International Conference MicroCAD, 2006, Miskolc (Hungary) Section J: Electrotechnics and Electronics (pp. 41-47).
8. Szabo, L., **Oprea, C.**: "Linear generators for wave power plants to be set up near the Romanian coasts of the Black Sea" in Oradea University Annals, pp. 120-125-2006.
9. Szabo, L., **Oprea, C.**: "Wave energy plants for the black sea - Possible energy converter structures", in 2007 International Conference on Clean Electrical Power, ICCEP '07, pp. 306-311, 2007.
10. **C. Oprea**, C. Martis, K. Biro, Florin-Nicolae-Jurca - „Design and testing of a four-sided permanent magnet linear generator prototype”, Proceedings of the 19th International Conference on Electrical Machines (ICEM '2010), Roma (Italia), ISBN 978-1-4244-4175-4.
11. Florin-Nicolae-Jurca, C. Martis, K. Biro, **C. Oprea**.- “Design and development of a three-phase permanent magnet claw-pole synchronous”, Proceedings of the 19th International Conference on Electrical Machines (ICEM '2010), Roma (Italia), ISBN 978-1-4244-4175-4.
12. Florin-Nicolae-Jurca, Claudia Martis, **Oprea C.**, D. Fodorean: “Claw-Pole Machine Design and Tests for Small Scale Direct Driven Applications”, International Conference on Clean Electrical Power (ICCEP), 2011, pg. 237-242, ISBN: 978-1-4244-8929-9.
13. D. Fodorean, Florin-Nicolae-Jurca, **C. Oprea**, L. Szabo –“Permanent magnet synchronous machines with improved energetic performances and reduced torque ripples, used for electric vehicles”, International Conference on Clean Electrical Power: Renewable Energy Resources Impact, ICCEP, Ischia, 2011, pp. 289-292, ISBN: 978-1-4244-8929-9.
14. **C. Oprea**, Claudia Martis, Florin-Nicolae-Jurca, D. Fodorean, L. Szabo: “Permanent magnet linear generator for renewable energy applications: Tubular vs. four-sided structures”, International Conference on Clean Electrical Power (ICCEP), 2011, pp: 588 – 592. ISBN: 978-1-4244-8929-9.
15. A.A Pop, Florin-Nicolae-Jurca, **C. Oprea**, S. Breban, M. Chirca, M.M. Radulescu, "Axial-flux vs. radial-flux permanent magnet synchronous generators for micro-wind turbine application" 15th European Conference on Power Electronics and Applications, EPE, Lille 2013, ISBN: 978-147990116-6,
16. Chirca M., Dranca M.A., Breban S., **Oprea C.A.**: "PMSM Evaluation for Electric Drive Train for L6e Light Electric Vehicles", EPE 2020 - Proceedings of the 2020 11th International Conference and Exposition on Electrical And Power Engineering, art. no. 9305630, pp. 211 - 216, DOI: 10.1109/EPE50722.2020.9305630
17. Lates D., Inte R.A., Chirca M., Dranca M., **Oprea C.**; "Initial Evaluation of the Performances of a Sled-Type Forest Cableway", 16th International Conference on Interdisciplinarity in Engineering, INTER-ENG 2022Târgu Mureş6 October 2022through 7 October 2022Code 287969, Lecture Notes in Networks and Systems, 605 LNNS, pp. 183 - 196, 2023, DOI: 10.1007/978-3-031-22375-4_16

1. **III. Papers in non-indexed proceedings or journal:**

2. F. N. Jurca, C. Martis, **C. Oprea**, K. Biro - *Claw-Poles Machines in the Power Systems based on Renewable Resources,*” Internationale Conference on Power Electronics, Drives and Motion (PCIM), Nürnberg (Germany), 2006, CD 123_PP_64_Jurca.pdf.
3. C. Martiş, F.N. Jurca, **C. Oprea**, C. Nicula, K. Biro - *Harmonics analysis in renewable energy sources based on induction and synchronous generators*, MICROCAD 2006, Miskolc, Hungary, pp 41-47.
4. **C. Oprea**, C. Martiş, K. Biro, F.N. Jurca - *Comparative study of two topologies of linear electrical generator suitable for wave energy conversion*, Buletinul Universitatii Petrol-Gaze Din Ploiesti Seria Technica, ISSN 1224-8495, pp169-175, 2006.

5. **C. Oprea**, F. N. Jurca, B. Tătăranu, C. Marțiș, H. Hedeșiu - *Parameter estimation of a transformer in a electrical machines virtual laboratory using LabVIEW*, publicată în Acta ELECTROTEHNICA 2005, ISSN: 1223-2106, pp 158-161.
6. C. Marțiș, H. Hedeșiu, B. Tătăranu, **C. Oprea**, F.N. Jurca - *Electrical machines virtual laboratory-using LabVIEW for parameter estimation of a transformer*, publicată în volumul conferinței E_COMM_LINE, București, Octombrie 21-21, 2004, pe CD, 59-C5-63-2004, ISBN 973-0-03671-3

F. Grants obtained in competition

I. Project manager in national grants obtained in competition

1. "Studiul generatoarelor electrice speciale", Contract de cercetare tip TD castigat prin competitie, Finanțator: Ministerul Educației și Cercetării, Consiliul Național al Cercetării Științifice în Învățământul Superior. Grant TD, nr.529/2007, cod CNCISIS 285.
2. "Funicular forestier cu acționare hibridă și recuperare de energie ", în cadrul competiției POC/163/1/3 din POC, AP1: CDI în sprijinul competitivității economice și dezvoltării afacerilor, Actiunea 1.2.1, Tip de proiect – Proiect tehnologic inovativ.
3. "Sistem vibrator inovativ destinat plugurilor cu trupițe aflate în exploatare și în fabricație", cod SMIS 156531 finanțat în <POC/1033/1/3>.. din POC, AP1: CDI în sprijinul competitivității economice și dezvoltării afacerilor, Actiunea 1.2.1, Tip de proiect – Proiect tehnologic inovativ

II. Member of the research team in international grants

1. ***Design, Modelling and Testing Tools for Electrical Vehicles - DeMoTest***. Proiect european tip FP7, 2013 - 2016. Director de proiect: Claudia MARTIS.
2. ***Advanced reluctance motors for electric vehicle applications - ARMEVA***, collaborative project – small or medium-scale focused, 2013-2016, research project (CP-FP), 2013-2016, Responsabil proiect UTCN: Prof.dr.ing Claudia Martis.
3. ***Strengthening the research potential of CAREESD in the field of electromechanical systems and power electronics for sustainable applications -ESPESA***. Proiect european de tip Twinning coordination and suport actions, 2016-2018. Director de proiect: Prof.dr.ing. Claudia MARȚIȘ.
4. ***Masini cu reluctanta variabila de performante imbunatatite destinate aplicatiilor din procese industriale critice***, Contract de colaborare stiintifica si tehnologica bilaterala româno-slovaca dintre Universitatea din Zilina (Republica Slovaca) si Universitatea Tehnica din Cluj-Napoca (România). Finanțatori: Ministerul Educației din România si Republica Slovaca, 2011-2012, contract integrat în programul CAPACITATI modulul III (contract nr. 472 / 07.03.11)
5. **DITARTIS – Network of Excellence in Digital Technologies and AI Solutions for Electromechanical and Power Systems Applications** | Grant Agreement number: 101079242 – HORIZON-WIDERA-2021-ACCESS-03. Director de proiect: Prof.dr.ing. Claudia MARȚIȘ.

III. Member of the research team in national grants

1. Analiza cuplata interferente electromagnetice/vibratii pentru dezvoltarea de actuatore electrice dedicate aplicatiilor auto cu emisii reduse - CEMIVA, Beneficiar : Ministerul Educației Nationale, Programul National PN II, Parteneriate, contract nr. PCCA 252/2014, director de program prof. dr.ing. Calin MUNTEANU.
2. Serie de servo-motoare electrice fără perii cu armaturi realizate din materiale magnetice moi compozite - SMC4SERVO. PTE 10/2016, Responsabil proiect UTCN: Prof.dr.ing Claudia Marțiș.
3. Testări experimentale privind validarea conceptului de VAWT cu rotoare contra rotative. PED 64/2017, Responsabil UTCN: Conf.dr.ing Stefan Breban.
4. ADVANCED RELUCTANCE MOTORS FOR ELECTRIC VEHICLE APPLICATIONS, Beneficiar: UEFISCDI, contract nr. 261EU/2014, Capacitati modul III, 2014-2016. Director de proiect: Prof.dr.ing. Claudia MARTIȘ.
5. Innovative wind energy conversion micro-system with direct-driven electric generator for residential uses, Beneficiar : Ministerul Educatiei si Cercetarii, UEFISCDI, contract nr. 29/2012, PCCA 2012-2015. Director de proiect: Prof.dr.ing Mircea M. Rădulescu.
6. Automotive low-noise electrical machines and drives optimal design and development - ALNEMAD. Beneficiar : Ministerul Educatiei si Cercetarii, UEFISCDI, contract nr. 181/2012, PCCA 2012-2015. Director de proiect: Prof.dr.ing Claudia Marțiș.
7. Sisteme mobile de instrumentație virtuală, distribuția pentru monitorizare și diagnostic de timp real în arhitecturi de cellule electromecanice.Finanțator: Ministerul Educației, Cercetării și Tineretului, Consiliul Național al Cercetării Științifice în Învățământul Superior, contract nr. 1263/2005 Grant A, Director de program: Prof.dr.ing Horea Hedesiu.
8. Cresterea impactului si eficientei platformei de rapid-prototyping, testare si diagnoza masini aparate si actionari electrice. Beneficiar : Ministerul Educatiei si Cercetarii, Agentia Națională de Cercetare Științifică, contract nr. 110/2007, tema 121 Capacități Modul II, 2007-2009. Director de proiect: Prof.dr.ing Claudia Marțiș.
9. Platformă de rapid-prototyping, testare si diagnoza masini aparate si actionari electrice. Beneficiar : Ministerul Educatiei si Cercetarii, Agentia Națională de Cercetare Științifică, contract nr. 109/2007, tema 118 Capacități Modul I, 2007-2009. Director de proiect: Prof.dr.ing Claudia Marțiș.
10. Sisteme moderne de actionare electrica pentru sisteme de directie asistate electric tolerante la defect. Beneficiar : Ministerul Educatiei si Cercetarii, Consiliul National al Cercetarii Stiintifice Universitare, contract nr. 24/2007, tema 11 A, cod CNCSIS 1577, 2006-2008, Director de proiect: Prof.dr.ing Claudia Marțiș.
11. Cercetări complexe privind dezvoltarea de sisteme de conversie a energiei eoliene cu posibilități de conectare la rețea. Finanțator: Ministerul Educației și Cercetării, Consiliul Național al Cercetării Științifice în Învățământul Superior. Grant CEX , Durata 2006-2008.
12. Testări experimentale privind validarea conceptului de VAWT cu rotoare contra rotative. PED 64/2017, Responsabil UTCN: Conf.dr.ing Stefan Breban.
13. Tehnologii avansate pentru vehicule electrice urbane inteligente – URBIVEL, Date de identificare proiect: ID: P_40_333, MySMIS: 105565, Acțiunea: POC-A1-A1.2.3-G-2-15 Parteneriate pentru transfer de cunoștințe, Nr. contract de finanțare: 11/01.09.2016

14. Micro-invertoare cu densitate mare de putere și eficiență ridicată pentru surse regenerabile de energie” – MICROINV, ID P_40_391, contractul de finanțare nr. 16 din 01.09.2016 încheiat cu Autoritatea Națională pentru Cercetare Științifică și Inovare (ANCSI)

G. Research grants with third parties

I. Member of the research team in international grants

II. Member of the research team in national grants

1. *Studiu cu privire la curenții vagabonzi care trec prin rulmenții motorului electric care acționează cajele laminorului continuu*, Beneficiar: Tenaris Silcotub SA Zalău, contract nr. 275/19.12.2007. Director de proiect: Vasile IANCU

III. head of research project in national grants

1. *Contract prestari servicii de cercetare nr 25/02.03.2017*, încheiat cu Advanced Mechatronik Technologies, perioada 02.03.2017-24.04.2017, valoare 30.544,9 lei, director de proiect Claudi Oprea;
2. *Acord cadru de cooperare Nr 66 / 31.7.2017*, încheiat cu Advanced Mechatronik Technologies, perioada 31.07.2017-31.12.2018, valoare 20.000 lei, director de proiect Claudi Oprea

H. Postdoctoral and other research grants

1. Titlul proiectului: “Dezvoltarea și susținerea de programe postdoctorale multidisciplinare în domeniul tehnic prioritare ale strategiei naționale de cercetare - dezvoltare - inovare” 4D-POSTDOC, Cod Contract: POSDRU/89/1.5/S/52603 Beneficiar: Universitatea Tehnică din Cluj-Napoca/ **Claudiu Oprea**. Intervalul de derulare al contractului: Iulie 2010 – Mai 2013.
2. Bursă ERASMUS la Universite de Liege, perioada Aprilie – Iunie 2004