

## LISTA lucrărilor științifice publicate

### A. Teza de doctorat

Contribuții privind metodele numerice de calcul al câmpului electromagnetic în mașinile electrice.

### B. Cărți și capitole în cărți publicate

B1. Tudorache T., Craiu O., *Electrical Machines. Laboratory Works and Problems*, Editura Politehnica Press, 2013, ISBN 978-606-515-523-7, 126 pag.

B2. Craiu O., *Mașini Tructoare*, Editura Politehnica Press, 2014, ISBN 978-606-515-578-7, 173 pag.

B3. Craiu O., Tudorache T., *Mașini și acționări electrice*, Editura POLITEHNICA PRESS, 2015, București, 210 pagini, ISBN 978-606-515-614-2.

B4. Melcescu L. Craiu O., *Modelarea numerică a mașinilor sincrone cu magneți permanenți*, Editura Politehnica PRESS, București 2016, ISBN 978-606-515-684-5, 229 pagini.

B5. Melcescu L., Craiu O., *Mașini Electrice. Îndrumar de laborator*. Editura Politehnica Pres, București, 2016, ISBN 978-606-515-680-7, 199 pagini.

B6. Craiu O., *Designing electrical machines with COMSOL*. Editura Politehnica Press, București, 2024, ISBN 978-606-9608-69-2, 172 pagini.

B7. Craiu O., *Proiectarea transformatorului electric. Îndrumar*. Editura Politehnica Press, București, 2024, ISBN 978-606-9608-68-5, 109 pagini.

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

C1. Popescu, L., Crăciunescu, A., Craiu, O., "Analysis of the Wheel Steering Influence on Energy Consumption of an EV PMSM In-Wheel Propulsion System. In: Moldovan, L., Gligor, A. (eds) The 17th International Conference Interdisciplinarity in Engineering. Inter-ENG 2023. Lecture Notes in Networks and Systems, vol 929. Springer, Cham. [https://doi.org/10.1007/978-3-031-54674-7\\_19](https://doi.org/10.1007/978-3-031-54674-7_19).

C2. T.I. Ichim, O. Craiu, L.C. Popescu, "Analyzing a Three Hundred Teeth Bi-Phase Hybrid Stepper Motor with Different Numbers of Pole Pairs", 2023 Rev. Roum. Sci. Techn.–Électrotechn. et Énerg. Vol.68, 3, pp, 283-288. WOS:001087001200006.

D3. L. Popescu, O. Craiu, "Energy Consumption Analysis for an EV Powertrain Using Three Brushless DC Identical Motors", Rev. Roum. Sci. Techn.–Électrotechn. et Énerg. Vol.68, 2, pp. 152–157, Bucharest, 2023, WOS:001026628400006.

C4. O. Craiu, T. -I. Ichim and P. M. Craiu, "Analysis of Iterative Solvers used for Computing a 3D FEM Hybrid Stepper Model," 2023 13th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, 2023, pp. 1-6. doi: 10.1109/ATEE58038.2023.10108337, IEEE Xplore: 28 April 2023.



- C5. L. Popescu, O. Craiu and L. Melcescu, "Analyzing the Torque Transfer between Two In-Wheel Motors of an Electric Vehicle," 2023 13th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, 2023, pp. 1-6. doi: 10.1109/ATEE58038.2023.10108365, IEEE Xplore: 28 April 2023.
- C6. O. Craiu, T. -I. Ichim and L. C. Popescu, "3D FEM Model of a Hybrid Stepper Using Scalar-Vector Potential Formulations," 2023 13th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, 2023, pp. 1-5. doi: 10.1109/ATEE58038.2023.10108283, IEEE Xplore: 28 April 2023.
- C7. Craiu O. Ichim T.I., Popescu L., FEM Study of a Synchronous Motor with Different Permanent Magnet Topologies, U.P.B. Sci. Bull., Series C, Vol. 85, Iss. 1, 2023, ISSN 2286-3540, pp. 261-274. WOS:000983211300012.
- C8. Craiu, O., and T. -. Ichim. "FEM-ANALYSIS OF EDDY CURRENTS IN A BLDC STATOR LINER." UPB Scientific Bulletin, Series C: Electrical Engineering and Computer Science, vol. 84, no. 1, 2022, pp. 155-164, WOS:000809277600012.
- C9. L. Popescu, L. Melcescu and O. Craiu, "Energy Efficiency Improvement for an Electric Vehicle PM BLDC Propulsion System Using Phase Advance and Dwell Control," 2022 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME), Maldives, Maldives, 2022, pp. 1-6. doi: 10.1109/ICECCME55909.2022.9988388, IEEE Xplore: 30 December 2022.
- C10. O. Craiu, T. I. Ichim, L. M. Melcescu and L. Popescu, "Optimization of a High Torque Density Small Hybrid Stepper using 3D FEM Model," 2022 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Sorrento, Italy, 2022, pp. 610-615. doi: 10.1109/SPEEDAM53979.2022.9842105, IEEE Xplore: 02 August 2022.
- C11. L. Popescu, L. Melcescu, O. Craiu, A. Craciunescu and V. Bostan, "Phase Advance and Dwell Control Applied to a PM BLDC Motor for Increasing the Maximum Speed of an Electric Vehicle," 2022 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Sorrento, Italy, 2022, pp. 850-855. doi: 10.1109/SPEEDAM53979.2022.9841974, IEEE Xplore: 02 August 2022.
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- C13. Craiu, O., L. M. Melcescu, and C. Boboc. "Brushless DC Permanent Magnet Motors State of the Art." EEA - Electrotehnica, Electronica, Automatica, vol. 69, no. 4, 2021, pp. 05-16., doi:10.46904/eea.21.69.4.1108001, SCOPUS.
- C.14. O. Craiu and T. I. Ichim, "FEM-PWM Circuit Model of a Brushless DC Motor Using COMSOL," 2020 International Symposium on Fundamentals of Electrical Engineering (ISFEE), Bucharest, Romania, 2020, pp. 1-7. doi: 10.1109/ISFEE51261.2020.9756145, WOS:000812321500015.
- C15. Semon, L. Melcescu, O. Craiu and A. Crăciunescu, "Design Optimization of the Rotor of a V-type Interior Permanent Magnet Synchronous Motor using Response Surface Methodology," 2019



11th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, Romania, 2019, pp. 1-4. doi: 10.1109/ATEE.2019.8724856, WOS:000475904500014.

C16. Craiu, O., and T. Tudorache. "Heat Transfer Analysis of an Axial Flux Synchronous Wind Generator using 3D Finite Element Models." *Revue Roumaine Des Sciences Techniques Serie Electrotechnique Et Energetique*, vol. 62, no. 4, 2017, pp. 352-357, WOS:000423499900003.

C17. L. Melcescu, T. Tudorache, O. Craiu and M. Popescu, "Finite element analysis of a wind generator with two counter-rotating rotors," 2017 International Conference on Optimization of Electrical and Electronic Equipment (OPTIM) & 2017 Intl Aegean Conference on Electrical Machines and Power Electronics (ACEMP), Brasov, Romania, 2017, pp. 408-413. doi: 10.1109/OPTIM.2017.7975004, WOS:000426909600062.

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C19. Melcescu L., Cistelean M.V., Craiu O., Popescu M., "Numerical Analysis of Claw Pole Synchronous Machine with Hybrid Contactless Excitation." *Przeglad Elektrotechniczny*, vol. 88, no. 7 B, 2012, pp. 106-109, WOS:000306011400027.

C20. S. Uncuta, L. Melcescu, M. Covrig, O. Craiu and T. Ursu, "Numerical analysis of a PM synchronous motor used in electrical vehicles," 2011 7TH INTERNATIONAL SYMPOSIUM ON ADVANCED TOPICS IN ELECTRICAL ENGINEERING (ATEE), Bucharest, Romania, 2011, pp. 1-6, WOS:000310701200014.

C21. T. Tudorache, O. Craiu, A. Machedon, M. Morega and M. Popescu, "Uncertainty analysis in the evaluation of PMSM end-winding inductance," 2011 7TH INTERNATIONAL SYMPOSIUM ON ADVANCED TOPICS IN ELECTRICAL ENGINEERING (ATEE), Bucharest, Romania, 2011, pp. 1-6, WOS:000310701200030.

C22. L. M. Melcescu, M. V. Cistelean, M. Popescu and O. Craiu, "Design and development of a hybrid excited claw pole synchronous machine," International Aegean Conference on Electrical Machines and Power Electronics and Electromotion, Joint Conference, Istanbul, Turkey, 2011, pp. 799-804. doi: 10.1109/ACEMP.2011.6490703, WOS:000397196200139.

C23. L. M. Melcescu, M. V. Cistelean, O. Craiu and H. B. Cosan, "A new 4/6 pole-changing double layer winding for three phase electrical machines," The XIX International Conference on Electrical Machines - ICEM 2010, Rome, Italy, 2010, pp. 1-6. doi: 10.1109/ICELMACH.2010.5608041, IEEE Xplore: October 2010.

C24. O. Craiu, A. Machedon, T. Tudorache, M. Morega and M. Modreanu, "3D Finite Element thermal analysis of a small power PM DC motor," 2010 12th International Conference on Optimization of Electrical and Electronic Equipment, Brasov, Romania, 2010, pp. 389-394. doi: 10.1109/OPTIM.2010.5510335, WOS:000291967300054.

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on Advanced Electromechanical Motion Systems & Electric Drives Joint Symposium, Lillie, France, 2009, pp. 1-5. doi: 10.1109/ELECTROMOTION.2009.5259156, WOS:000278587400003.

C26. L. Melcescu, M. Popescu, M. Covrig, M. Cistelecan and O. Craiu, "Numerical and experimental analysis of two permanent magnet claw poles wind generators," 2008 18th International Conference on Electrical Machines, Vilamoura, Portugal, 2008, pp. 1-5. doi: 10.1109/ICELMACH.2008.4800098, WOS:000269315000280.

C27. E. A. Badea and O. Craiu, "Eddy current effects in MRI superconducting magnets," in IEEE Transactions on Magnetics, vol. 33, no. 2, pp. 1330-1333, March 1997. doi: 10.1109/20.582501, WOS:A1997WN99100046.

C28. Dan, N., G. A. Ledezma, and O. Craiu. An Improved Algorithm for Coupled Thermal and Magnetic Problems in Electromagnetic Devices, National Heat Transfer Conference, American Society of Mechanical Engineers, Heat Transfer Division, (Publication) HTDV, olume 348, Pages 119 – 127, 1997, SCOPUS, www.scopus.com.

C29. V. Fireteanu, O. Craiu and R. Curiac, "Evaluation of local and integral magnitudes in metal sheets inductive levitation device by FEM electromagnetic field modeling," in IEEE Transactions on Magnetics, vol. 32, no. 3, pp. 1629-1632, May 1996. doi: 10.1109/20.497566, WOS:A1996UL32000250.

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#### D. Lucrări publicate în reviste și volume de conferințe cu referenți (neindexate)

D1. C. Bălă, O. Craiu, Mihaela Morega, *FEM for the Computation of Eddy-Current Losses in Ferromagnetic Shields with Low Magnetic Field reaction*, 8th Conference on the Computation of Electromagnetic Fields, COMPUMAG '91, Sorrento, Italy, July 1991, cod. PC30, p.471-474.

D2. C. Bălă, O. Craiu, Mihaela Morega, *Finite Element Analysis of Magnetic Field Distribution in Ferromagnetic shields*, Proceedings of the 7th Annual Review of Progress in Applied Computational Electromagnetics, ACES' 91 the Naval Postgraduate School, Monterey, California, USA, martie 1991, p. 534 - 539.

D3. C. Bălă, O. Craiu, Mihaela Morega, *Time Domain Analysis of the Magnetic Field Penetration into Stratified Conductive Shields Using FEM*, Proceedings of the 8th Annual Review of Progress in Applied Computational Electromagnetics, ACES' 92, the Naval Postgraduate School, Monterey, California, USA, martie 1992, p. 344 - 351.

D4. C. Bălă, O. Craiu, V. Lupu, I. Păpălău, *Metode de calculul ventilatiei la masinile electrice*, E.E.A. Electrotehnica, 41, nr.2, 1993, p. 5-11.

D5. N. Dan, O. Craiu, *FEM for Computing the Performances of Switched Reluctance Motor*, BC7, CAD/CAM Conference, 10-11 Dec. 1993, U.P. Bucuresti.



- D6. C. Bălă, O. Craiu, N. Dan, *Space-Time Domain Analysis of the Magnetic Field into moving structures*, Rev. Roum. Tech. Electrotehn. et Enenrg., 39, 4, 1994, 431-443, ISSN 0035-4066.
- D7. N. Dan, O. Craiu, *2D Finite Element Analysis of the Magnetic Field Coupled with Heat Transfer Analysis in Permanent Magnet Brushless Motors*, ICEM Paris 1994, Proceedings Vol. 2, p. 39-4.3
- D8. O. Craiu, N. Dan, *Calculul parametrilor de camp ai motoarelor cu reluctanta variabila prin metoda elementului finit*, E.E.A. Electrotehnica, 42 (1994), nr.1, p.34-37.
- D9. O. Craiu, N. Dan, *Consideratii privind erorile calculului numeric al campului electromagnetic in masinile electrice*, E.E.A. Electrotehnica, 42 (1994), nr.1, p.5-8.
- D10. O. Craiu, C. Raduti, N. Dan, *Space-Time Analysis of the Induced Voltage in the Windings of Electrical Machines*, CEMP 1995, Kusadasi, 5-7 June 1995, Proceedings, Part I, p. 28-31.
- D11. V. Fireteanu, O. Craiu, R. Curiac, *Evaluation of Local and Integral Magnitudes in Metal Sheets Inductive Levitation Device by FEM Electromagnetic Field Modeling*, COMPUMAG, Berlin, Germany, July 10-13 1995, Conference Record, p. 532-533.
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- D25. D. Șerban, L. Melcescu., O. Craiu, M. Popescu., M. Cistelean, *Numerical 3-D No-load Performance Analysis of Hybrid Excitation Synchronous Generator*, Conferinta CEEX, iulie 2008.
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- D32. Melcescu L., Demeter E., Costea-Marcu I., Craiu O., Covrig M., *3D Numerical Model of Permanent Magnet Synchronous Motor for Metropolitan Electric Transportation Systems*, EEA - Electrotehnica, Electronica, Automatica, Vol.58 Nr.3., pp.50-57, București, 2010 / ISSN 1582-5175, INDEX Copernicus Journal Master List
- D33. Craiu O., Machedon A., Tudorache T., Morega M., Modreanu M.: *Studiu experimental și numeric al încălzirii unui motor de cc de mica putere, în condiții de funcționare variate*, Simpozionul de Masini Electrice, SME 2010 7-8 Octombrie 2010, București, ISSN 1843-5912.
- D34. Melcescu L. M., Cistelean M. V., Craiu O., Popescu M.: *Numerical Analysis of Claw Pole Synchronous Machine with Hybrid Contactless Excitation*, ISEF 2011 - XV International



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D37. T. Tudorache, Mihaela Morega, Alina Machedon, O. Craiu, M. Popescu *Evaluarea stabilității unor configurații de MSMP la solicitări magnetice și termice*, Simpozionul de Mașini Electrice SME'11, 6-7 Septembrie 2011.

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Semnătura: