

LISTA

lucrărilor științifice

A. Teza de doctorat

„Studiul sistemului de conversie electromecanică din structura unei microcentrale hidroelectrice cu viteză variabilă”

Conducători științifici : Prof.dr.ing. Mircea M. Rădulescu, Prof.dr.ing. Benoît Robyns

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Susținere publică: 12.12.2008.

B. Cărți și capitole în cărți

CĂRȚI

1. **Stefan Breban** - *Les microcentrales hydroélectriques: Etude du système de conversion électromécanique d'une microcentrale hydroélectrique a vitesse variable*, Editions Universitaires Europeennes, 2010, AV Akademikerverlag GmbH & Co. KG, Germany, ISBN 978-613-1-53003-6, 180 pagini.
2. **Stefan Breban**, Mircea M. Rădulescu - *Tracțiune Electrică. Aplicații*, UTPress, 2013, Cluj-Napoca, Romania, ISBN 978-973-662-817-7, 65 pagini.

CAPITOLE ÎN CĂRȚI

3. **Stefan Breban**, *Genetic Algorithm Optimization of an Energy Storage System Design and Fuzzy Logic Supervision for Battery Electric Vehicles*, InTech, 2016, Chapter from book: "Optimization Algorithms- Methods and Applications" Edited by Ozgur Baskan, ISBN 978-953-51-2593-8.
4. **Stefan Breban**, Ioana Gros, Calin Marginean, Petre Teodosescu, "Fuzzy Logic Energy Management for a Residential Power System Using Renewable Energy Sources", InTech, 2017, Chapter from book: "Modern Fuzzy Control Systems and Its Applications" edited by S. Ramakrishnan, ISBN 978-953-51-3390-2, Print ISBN 978-953-51-3389-6, August 8, 2017.

C. Lucrări indexate ISI/BDI

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

1. S. Breban, M. Nasser, A. Ansel, C. Saudemont, B. Robyns, M.M. Radulescu, Variable-speed small hydro power plant connected to AC grid or isolated loads, *EPE Journal*, Vol. 17, No.4, 2007, pp. 29-36. (ISI).
2. G. Cimuca S. Breban, M.M. Radulescu, C. Saudemont, B. Robyns, „Design and control strategies of an induction machine-based flywheel energy-storage system associated to a variable-speed wind generator”, *IEEE Transaction on Energy Conversion*, Vol. 25, No. 2, June 2010, pp. 526-534.
3. S. Breban, C. Saudemont, S. Vieillard, B. Robyns, „Experimental design and genetic algorithm optimization of a fuzzy-logic supervisor for embedded electrical power systems”, *Mathematics and Computers in Simulation*, Vol. 91, 2013, pp. 91-107.
4. S. Breban, M.M. Radulescu, „Fuzzy logic supervision strategy for battery-powered electric vehicles”, *University "Politehnica" Bucharest, Scientific Bulletin Series C*, Vol. 76, Iss. 2, 2014, ISSN: 2286-3540, pp. 185-196.
5. M. Chirca, M. Dranca, C.A. Oprea, P.D. Teodosescu, A.M. Pacuraru, C. Neamtu, S. Breban, Electronically Controlled Actuators for a Micro Wind Turbine Furling Mechanism, *Energies*, Vol. 13 Iss. 16, Aug. 2020, eISSN: 1996-1073.
6. S. Breban, M. Drancă, M. Chirca, A.M. Pacuraru, P.D. Teodosescu, C.A. Oprea, „Experimental Tests on a Spoke-Type Permanent Magnets Synchronous Machine for Light Electric Vehicle Application” *Appl. Sci.* 2022, 12 (6), 3019.

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

1. **S. Breban, M.M.Radulescu, B. Robyns,** „Direct active and reactive power control of variable-speed doubly-fed induction generator on micro-hydro energy conversion system” *19th International Conference on Electrical Machines - ICEM 2010*, 6-8 September 2010, Rome, Italy, CD-ROM, (SCOPUS).
2. **Breban, S.,** Robyns, B., Radulescu, M.M., „Study of a grid-connected hybrid wind/micro-hydro power system associated with a supercapacitor energy storage device”, *Proceedings of the International Conference on Optimisation of Electrical and Electronic Equipment, OPTIM 2010*, 20-22 May 2010, Brasov, Romania, CD-ROM (SCOPUS).
3. F. Mollet, **S. Breban, C. Saudemont, R. Meuret, B. Robyns,** „Design and supervision strategies for embedded electric power systems equipped with energy storage devices” *Proceedings of the 2011 14th European Conference on Power Electronics and Applications - EPE 2011*, 30 August – 1 September, Birmingham, United Kingdom, CD-ROM (SCOPUS).
4. **S. Breban, F. Mollet, C. Saudemont, B. Robyns, M.M. Radulescu,** “Embedded electric power system with fuzzy-logic supervision for vehicular applications”, *Proceedings of the 13th International Conference on Optimisation of Electrical and Electronic Equipment, OPTIM 2012*, 24-26 May 2012, Brasov, Romania, pp. 1575-1579 (SCOPUS).
5. A. A. Pop, F. Jurca, C. Oprea, M. Chirca, **S. Breban, M. M. Radulescu,** “Axial-flux vs. radial-flux permanent-magnet synchronous generators for micro-wind turbine application” *EPE'13 ECCE Europe – 15th European Conference on Power Electronics and Applications*, Lille, France, 3 – 5 September 2013, ISBN: 978-147990116-6 (SCOPUS).
6. M. Chirca, **S. Breban, C. Oprea, M. M. Radulescu,** “Design Analysis of a Novel Double-Sided Axial-Flux Permanent-Magnet Generator for Micro-Wind Power Applications”, *14th International Conference on Optimisation of Electrical and Electronic Equipment, OPTIM 2014*, 22-24 May 2014, Brasov, Romania, ISBN: 978-147995183-3 (SCOPUS).
7. M. Chirca, **S. Breban, C.A. Oprea, M.M. Radulescu,** “Analysis of Innovative Design Variations for Double-Sided Coreless-Stator Axial-Flux Permanent-Magnet Generators in Micro-Wind Power Applications”, *XXIst International Conference on Electrical Machines (ICEM 2014)*, 2-5 September 2014, Berlin, Germany (SCOPUS).
8. M. Chirca, **S. Breban, C.A. Oprea, M.M. Radulescu,**”Comparative Design Analysis of Ferrite-Permanent Magnet Micro-Wind Turbine Generators”, *ACEMP - OPTIM - ELECTROMOTION Joint Conference*, Side, Turkey, 2-4 September 2015, ISBN 978-1-4763-7239-8, pp. 687-692 (IEEEExplore).
9. M. Chirca, C.A. Oprea, P.D. Teodosescu, **S. Breban,** „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 2016*, 6-8 Octombrie 2016, Craiova, Romania, ISBN 978-1-4673-8562-6 (IEEEExplore).
10. M. Drancă, M. Chirca, S. Cosman, F. Jurca, **S. Breban,** “Experimental validation of a permanent-magnet micro-wind turbine generator with counter rotating rotors”, *2017 International Conference on ENERGY and ENVIRONMENT (CIEM)*, 19-20 Oct. 2017, Bucharest, Romania (IEEEExplore).
11. M. Dranca, M. Chirca, V. Zaharia, Andreea Zaharia, **S. Breban,** „Permanent magnet generator for counter-rotating vertical axis micro-wind turbine”, *2017 52nd International Universities Power Engineering Conference (UPEC)*, 28-31 Aug. 2017, Heraklion, Greece (IEEEExplore).
12. M. Dranca, M. Chirca, **S. Breban,** „Design evaluation of several electric machines topologies for propulsion of a railway vehicle”, *2018 International Conference on Applied and Theoretical Electricity ICATE 2018*, 4-6 Octombrie 2018, Craiova, Romania, 978-1-5386-3805-7.
13. M. Dranca, M. Chirca, S.Cosman, **S. Breban,** „Design Analysis of a Permanent Magnet Brushless Generator with Two Counter Rotating Rotors for Small-Wind Turbine”, *2018 International Conference on Applied and Theoretical Electricity ICATE 2018*, 4-6 Octombrie 2018, Craiova, Romania, 978-1-5386-3805-7.

14. M. Chirca, M. Dranca, P.D. Teodosescu, **S. Breban**, „Limited-Angle Electromechanical Actuator for Micro Wind Turbines Overspeed Protection”, 11th International Symposium on Advanced Topics in Electrical Engineering – ATEE 2019, 28-30 Martie 2019, București, Romania, ISBN 978-1-4799-7514-3, ISSN 1843-8571 (IEEEExplore - ISI).
15. M. Dranca, M. Chirca, **S. Breban**, „Comparative Design Analysis of Axial Flux Permanent Magnet Direct-Drive Wind Generators”, 11th International Symposium on Advanced Topics in Electrical Engineering – ATEE 2019, 28-30 Martie 2019, București, Romania, ISBN 978-1-4799-7514-3, ISSN 1843-8571 (IEEEExplore - ISI).
16. M. Dranca, M. Chirca, **S. Breban**, M. Fartan, „Design and Optimization of an Axial-Flux Permanent Magnet Synchronous Machine for Railway Traction Application”, 8th International Conference on Modern Power Systems (MPS 2019), 21-23 Mai 2019, Cluj-Napoca, Romania, ISBN 978-1-7281-0750-9, (IEEEExplore).
17. M. Chirca, M. Dranca, D.C. Popa, **S. Breban**, M. Iusep, „Design Analysis of a Toroidal Transformer for Traction Application”, 8th International Conference on Modern Power Systems (MPS 2019), 21-23 Mai 2019, Cluj-Napoca, Romania, ISBN 978-1-7281-0750-9, (IEEEExplore).
18. C.A. Oprea, C. Iclodean, M. Chirca, M. Dranca, F. Ghita, **S. Breban**, „Initial Evaluation of Permanent Magnet Synchronous Motor Structures for Light Electric Vehicle Applications”, IEEE 28th International Symposium on Industrial Electronics (ISIE), 12-14 Iunie 2019, Vancouver, Canada, ISBN 978-1-7281-3666-0, Electronic ISSN: 2163-5145 (IEEEExplore).
19. M. Chirca, M. A. Drancă, **S. Breban**, C.A. Oprea, „PMSM Evaluation for Electric Drive Train for L6e Light Electric Vehicles”, 2020 International Conference and Exposition on Electrical And Power Engineering (EPE), 22-23 Oct. 2020, Iași, România, (IEEEExplore).
20. M. A. Drancă, M. Chirca, **S. Breban**, M. Fărtan, „Thermal and Demagnetization Analysis of an Axial-Flux Permanent Magnet Synchronous Machine”, 2020 International Conference and Exposition on Electrical And Power Engineering (EPE), 22-23 Oct. 2020, Iași, România, (IEEEExplore).
21. M. A. Drancă, M. Chirca, **S. Breban**, D. Fodorean, „Comparative Design Analysis of Two Modular Permanent Magnet Synchronous Generators”, 2021 7th International Symposium on Electrical and Electronics Engineering (ISEEE), 28-30 October 2021, Galati, Romania, (IEEEExplore).
22. A.M. Păcuraru, S.I. Salcu, M.I. Iuoraș, **S. Breban**, Z. Mathe, P.D. Teodosescu, „Practical Implementation of an Electronic Controlled Actuator for Micro Wind Turbine Overspeed Protection”, 2022 International Conference and Exposition on Electrical And Power Engineering (EPE), 20 – 22 October 2022, (IEEEExplore).
23. M. Chirca, M. A. Drancă, **S. Breban**, S. Lorand, “In-wheel Slotless Permanent Magnet Synchronous Motor for Light Electric Vehicle Propulsion”, Proceedings of 2023 10th International Conference on Modern Power Systems, MPS 2023, 21-23 June 2023, Cluj-Napoca, Romania, (IEEEExplore).
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25. V. Dury, L. S. G. Kouontchou, M. Chirca, **S. Breban**, “In-wheel Slotless Permanent Magnet Electrical Machines for Solar Vehicle Propulsion”, Proceedings of the 2023 International Conference on Electromechanical and Energy Systems, SIELMEN 2023, 11-13 October, Chișinău, R. Moldova, (IEEEExplore).
26. M. Chirca, M. A. Drancă, **S. Breban**, “Low Speed Direct Drive Electrical Generator for Multi-Blade Wind Turbine Application”, Proceedings of the 2023 International Conference on Electromechanical and Energy Systems, SIELMEN 2023, 11-13 October, Chișinău, R. Moldova, (IEEEExplore).

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1. G. Cimuca **S. Breban**, M.M. Radulescu, C. Saudemont, B. Robyns „Energy-Optimized Direct Torque Control of an Induction Machine-based Flywheel Energy Storage System Associated to a Variable-Speed Wind Generator”, *ELECTROMOTION*, Vol. 13 (2006), No. 1.
2. **S. Breban**, M.M. Radulescu, „Hybrid Electrical Energy Storage for Embedded Vehicular Power Systems”, Bulletin of the Polytechnic Institute of Iasi, Tome LVII (LXI), Fasc. 6, 2011, pp. 327-334.

3. S. Breban, M. Chirca, F. Maes, F. Boutoille, „Conversion of single phase induction motor to single-phase induction generator”, A 18-a Conferință Națională de Acționări Electrice, CNAE 2016, 13-14 Octombrie 2016, Cluj-Napoca, România, Acta Electrotehnica, nr. 3-4, 2016 pp. 506 - 510.
4. F. Boutoille, F. Maes, M. Chirca, S. Breban, „Thermal Analysis for a Permanent Magnet Synchronous Generator”, A 18-a Conferință Națională de Acționări Electrice, CNAE 2016, 13-14 Octombrie 2016, Cluj-Napoca, România, Acta Electrotehnica, nr. 3-4, 2016 pp. 501 - 505.
5. S. Breban, F. Maes, F. Boutoille, D. Fodorean, „Experimental Analysis of a Hybrid Energy Source Used in Vehicular Applications”, A 18-a Conferință Națională de Acționări Electrice, CNAE 2016, 13-14 Octombrie 2016, Cluj-Napoca, România, Acta Electrotehnica, nr. 3-4, 2016 pp. 355 - 358.
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7. Chloe Leicht, S. Breban, „Fuzzy logic energy management for electric vehicles battery charging using renewable energy sources”, Acta Electrotehnica, vol. 61, nr. 4, 2020 pp. 302 – 306.
8. S. Breban, M. Dranca, I. Malael, „Airborne Ultra-Light Micro-Wind Turbine System”, Acta Electrotehnica, vol. 61, nr. 4, 2020 pp. 275 – 278).

D. Brevete obținute în întreaga activitate

1. EP2869433: Stefan Breban (SC BMEnergy SRL), Victor Meșter (SC BMEnergy SRL), Claudiu Oprea (UTCN) - Axial flux permanent magnet electrical machine with magnetic flux concentration - European Patent Office, acordat 2016.
2. RO131166: Stefan Breban (SC BMEnergy SRL), Petre-Dorel Teodosescu (UTCN), Adriana-Voica Neag (UTCN) si Mihai Chirca (UTCN) - Actuator electromecanic cu dispozitiv electronic de comanda – Oficiul de Stat pentru Inventii si Marci (OSIM), acordat 2018.
3. RO133886: Stefan Breban (UTCN), Marius-Alexandru Drancă (UTCN), Ion Mălăel (COMOTI București) – Sistem eolian aeropurtat de producere a energiei electrice – Oficiul de Stat pentru Inventii si Marci (OSIM), acordat 2022.
4. RO134496: Stefan Breban (UTCN), Marius-Alexandru Drancă (UTCN), Marius Fărtan (REMARUL 16 Februarie) – Mașină electrică de propulsie cu acționare directă a roții motoare pentru vehiculele de transport pe cale de rulare ghidată – Oficiul de Stat pentru Inventii si Marci (OSIM), acordat 2022.

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Semnătura:
Conf.dr.ing. Ștefan Breban