Universitatea Tehnică din Cluj-Napoca
Facultatea de Inginerie Electrică
Departamentul de Maşini şi Acţionări Electrice
Concurs pentru ocuparea postului de **Conferenţiar**, poziţia 12

Candidat: Ştefan BREBAN
Funcţia actuală: **Şef de lucrări / Lector, Dr. ing.**

LISTA DE LUCRĂRI

A. Lista celor 10 lucrări, în extras, considerate de candidat a fi cele mai relevante pentru realizările profesionale proprii

B. Teza de doctorat

C. Cărţi şi capitole în cărţi

D. Lucrări ştiinţifice publicate în reviste de prestigiu sau volume ale manifestărilor naţionale sau internaţionale

I. Articole in reviste cotate si in volumele unor manifestari stiintifice indexate WOS proceedings

ISI Journals (reviste cotate WOS):

ISI Proceedings (volume ale unor manifestări indexate WOS):

II. Articole in reviste si volumele unor manifestari stiintifice indexate in alte baze de date internationale (BDI)

III. Articole ştiinţifice publicate la manifestări internaţionale (neindexate)

A. Lista celor 10 lucrări considerate de candidat a fi cele mai relevante pentru realizările profesionale proprii:

1. **Stefan Breban**, Victor Mester, Claudiu Oprea - EP2869433: Axial flux permanent magnet electrical machine with magnetic flux concentration - European Patent Office.
2. **Stefan Breban**, Petre-Dorel Teodosescu, Adriana-Voica Neag si Mihai Chirca - RO131166: Actuator electromecanic cu dispozitiv electronic de comanda – Oficiul de Stat pentru Inventii si Marci.
3. 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.
4. **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.

5. **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.

6. **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.

7. 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.

8. **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.

9. **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.

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.

B. Teza de doctorat

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

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

Universitatea Tehnică din Cluj-Napoca, Ecole Nationale Supérieure d'Arts et Métiers de Lille

Susţinere publică: 12.12.2008.

C. Cărţi şi capitole în cărţi

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, 172 pagini.

2. **Stefan Breban**, Mircea M. Rădulescu - Tracţiune Electrică. Aplicaţii, UTPress, 2013, Cluj-Napoca, Romania, ISBN 978-973-662-817-7, 64 pagini.

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.

D. Lucrări ştiinţifice publicate în reviste de prestigiu sau volume ale manifestărilor naţionale sau internaţionale

I. Articole in reviste cotate si in volumele unor manifestări ştiinţifice indexate în baza de date WOS Web of Science

WOS Journals (reviste cotate WOS):

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.
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.

WOS Proceedings (volume ale unor manifestări indexate WOS):

4. G. Cimuca **S. Breban**, M.M. Radulescu, C. Saudemont, B. Robyns „Control strategy for an induction machine-based flywheel energy storage system associated to a variable-speed wind generator", Proc. 10th Int. Conf. Optimiz. Electr. Electron. Equipm. - OPTIM 2006, Braşov, Romania.
5. **S. Breban**, A. Ansel, M. Nasser, B. Robyns, M.M. Radulescu, Experimental results on a variable-speed small hydro power station feeding isolated loads or connected to power grid, Proceedings of the ACEMP'07-ELECTROMOTION'07 Joint Symposium, Bodrum, Turkey, 2007, pp. 760-765.
6. **S. Breban**, M. Nasser, V. Courtecuisse, A. Vergnol , B. Robyns, M.M. Radulescu, Study of a grid-connected hybrid wind/micro-hydro power system, Proc. 11th Int. Conf. Optimiz. Electr. Electron. Equipm. - OPTIM 2008, Braşov, Romania, pp. 363-368.
7. M. Nasser, **S. Breban**, V. Courtecuisse, A. Vergnol , B. Robyns, M.M. Radulescu, Experimental results of a hybrid wind/hydro power system connected to isolated loads, Proc. 13th Int. Power Electron. Motion Contr. Conf. - EPE-PEMC 2008, Poznan, Poland.
8. **S. Breban**, M. Nasser, A. Vergnol, V. Courtecuisse, B. Robyns, M.M. Radulescu, Hybrid wind/microhydro power system associated with a supercapacitor energy storage device – Experimental results, Proc. 18th Int. Conf. Electr. Mach. - ICEM 2008, Algarve, Portugal.
9. **S. Breban**, B. Robyns, M.M. Radulescu, Islanding Detection Methods for a Micro-Hydro Power Station – Simulation and Experimental Results, ELECTROMOTION 2009 – EPE Chapter 'Electric Drives' Joint Symposium, 1-3 July 2009, Lille, France.
10. **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.
11. 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.
12. **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.

13. 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.

14. 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, ISBN 978-1-4799-4389-0.

15. 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.

16. 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.

17. 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.

18. 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.

II. Articole in reviste si volumele unor manifestari stiintifice indexate in alte baze de date internationale (BDI)

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.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.

4. **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.

5. 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.

6. **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.

7. M.M. Rădulescu, **S. Breban**, M. Chirca, „Novel Topologies of Low-Speed Axial-Flux Permanent-Magnet MicroWind Generators", A 18-a Conferință Națională de Acționări Electrice, CNAE 2016, 13-14 Octombrie 2016, Cluj-Napoca, România, Acta Electrotehnica, nr. 3-4, 2016 pp. 371 - 374.

8. **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.

9. Zhang, H., Mollet, F., **Breban, S.**, Saudemont, C., Robyns, B., „Power flow management strategies for a local DC distribution system of More Electric Aircraft", 2010 IEEE Vehicle Power and Propulsion Conference, 1-3 September 2010, Lille, France.

10. 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.

III. Lucrari publicate în volumele unor manifestari naţionale sau internaţionale (neindexate):

1. G. Cimuca, **S. Breban**, M.M. Radulescu, C. Saudemont, B. Robyns, „DTC vs. FOC for an induction machine-based flywheel energy storage system associated to a variable-speed wind generator – Experimental results" Proc. 17th Int. Conf. Electr. Mach.-ICEM 2006, 2-5 September 2006, Chania, Crete, Greece.

2. 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", 10ème Symposion ELECTROMOTION, 26-29 Septembre 2005, Lausanne, Suisse.

3. V. Courtecuisse, **S. Breban**, M. Nasser, A. Vergnol, B. Robyns, M.M. Radulescu, Supervision d'une centrale multi-source basée sur l'association eolien, micro-hydraulique et stockage d'énergie, Comptes-rendus du Colloque 'Electrotechnique du Futur', 6-7 septembre 2007, Toulouse, France.

4. **S. Breban**, Mircea M. Radulescu, B. Robyns, Application of Direct Controls to a Variable-Speed Small Hydro Energy Conversion System, ELECTRIMACS 2008 Conference, 8 -11 June 2008, Québec, Canada.

5. Zhang H., Mollet F., **Breban S**, Saudemont C., Robyns B., Meuret R., "Hybrid storage and dissipation systems based power management strategies in a local DC power distribution system of more electric aircraft" 27th Congress of the International Council of the Aeronautical Sciences, ICAS 2010, 19-24 September 2010, Nice, France.

6. **S. Breban**, C. Saudemont, S. Vieillard, B. Robyns, "Optimization of fuzzy logic supervisor using experimental design and genetic algorithm for embedded electrical power systems", 10th International Conference on Modeling and Simulation of Electric Machines, Converters and Systems - ELECTRIMACS 2011.

7. M. Chirca, **S. Breban**, M. M. Radulescu, "Generator sincron cu magneţi permanenţi şi flux axial pentru microcentrale eoliene urbane rezidenţiale", Simpozionul de Maşini Electrice SME'14, 3 Octombrie 2014, Bucureşti, Romania.