

## PERSONAL INFORMATION



## Loránd SZABÓ

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Sex Male | Date of birth 12/06/1960 | Nationality Romanian

## WORK EXPERIENCE

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- 2009- **Director of Centre of Applied Researches in Electrical Engineering and Sustainable Development (CAREESD)**  
Technical University of Cluj-Napoca (Romania)  
▪ Research management  
**Business or sector** Research
- 2010-2011 **Head of the Department of Electrical Machines**  
Technical University of Cluj-Napoca (Romania)  
▪ Higher education management  
**Business or sector** Higher education
- 2006- **Professor**  
Technical University of Cluj-Napoca (Romania), Department of Electrical Machines  
▪ Teaching and research  
**Business or sector** Higher education
- 2003-2006 **Associated professor**  
Technical University of Cluj-Napoca (Romania), Department of Electrical Machines  
▪ Teaching and research  
**Business or sector** Higher education
- 1999-2003 **Lecturer**  
Technical University of Cluj-Napoca (Romania), Department of Electrical Machines  
▪ Teaching and research  
**Business or sector** Higher education
- 1990-1999 **Electrical engineer**  
Technical University of Cluj-Napoca (Romania), Practical Training Department  
▪ Teaching and research  
▪ Design in electrical engineering  
**Business or sector** Higher education
- 1985-1990 **Electrical engineer**  
CLA Cement Factory, Aleșd (Romania)  
▪ Maintenance engineer for power electronics devices  
**Business or sector** Industry

EDUCATION AND TRAINING

- 1991-1995
Ph.D. in Electrical Engineering
Doctoral studies (level 8)

Technical University of Cluj-Napoca (Romania)
 
  - Electrical engineering (electrical machines and drives)
- 1980-1985
B.Sc. in Electrical Engineering
Higher education (level 7)

Polytechnic Institute of Cluj-Napoca (Romania)
 
  - Electrical drives
- 2012-2013
Modern educational instruments and the use of IT&C in education
Training (level 4)

Technical University of Cluj-Napoca (Romania)
 
  - Lifelong learning and training for higher education teachers in the technical sciences and engineering fields (DidaTec Project)
- 2010
Project manager
Training (level 4)

S.C. RoMarketing S.R.L. (Romania)

PERSONAL SKILLS

Mother tongue(s) Hungarian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Romanian	C2-Proficient user	C2-Proficient user	C2-Proficient user	C2-Proficient user	C2-Proficient user
English	C1-Advanced	C1-Advanced	C1-Advanced	C1-Advanced	C1-Advanced

Communication skills

- Listening, confidence and empathy
- Clarity and concision
- Open-mindedness

Organisational / managerial skills

- Focus oriented – building a focus on a certain goal to achieve.
- Prioritization – prioritizing activities in a way that synergize the effect in a fruitful manner.
- Timelines driven – marking time-lines to achieve/ complete certain tasks.

Job-related skills

- Organized person
- Good abilities for synthetic and global views over concrete situations
- End-oriented work capacity
- Problem-solving attitude
- Responsibility, self-respect and self-reliance

Computer skills

- General purpose: MS Office (Word, Excel and PowerPoint)
- Internet browser: Internet Explore, Mozilla Firefox, Chrome, Opera
- Programming environments: Matlab, LabVIEW
- Electromagnetic CAD: MagNet, Flux 2D, AnSYS
- Simulation environments: SIMULINK, CASPOC, Simplerer
- Programming languages: Turbo PASCAL, BASIC
- CAD: AutoCAD, OrCAD, Protel
- Graphics, image processing: Visio, Inkscape, CorelDraw, Corel Photo Paint, IrfanView, SmartDraw
- WEB design: Dreamweaver

Other skills

- Painting

Driving licence

- B Category

## ADDITIONAL INFORMATION

## Positions held

- Academic:
  - Head of the Department of Electrical Machines, Marketing and Management (Technical University of Cluj-Napoca): 2010-2011
  - Member of the Technical University of Cluj-Napoca Senate: 2010-2012, 2015-2016
  - Member of the Electrical Engineering Faculty Council (Technical University of Cluj-Napoca): 2008-2012, 2014-
- Research:
  - Director of the Centre of Applied Researches in Electrical Engineering and Sustainable Development (CAREESD): 2009-
- At national education and research councils:
  - Member of the Engineering Committee of the National Research Council (CNCS): 2017
  - Member of the Electrical Engineering Committee of the National Council for Attesting Titles, Diplomas and University Certificates (CNATDCU): 2016-

## Publications

- 270 publications:
  - 5 books and 3 book chapters;
  - 10 papers in Web of Science indexed journals;
  - 54 papers in other refereed journals;
  - 106 papers in proceedings of international conferences;
  - 57 papers in proceedings of national and not refereed conferences;
  - 26 papers in university annals;
  - 9 other publications.

## Patents

- 1 patent

## Projects

- Project manager for 10 research grants (among them 4 in international cooperation);
- Partner team leader of 1 international project;
- Project manager for 1 research project for industry;
- Member in 5 research teams working on international projects;
- Member in research teams of 30 national research projects;
- Member in 17 research teams working on research projects for industry.

## Awards

- IET Electric Power Applications Premium Award (Best Paper) 2015
- 8 awards in technical exhibitions:
  - Diploma of excellence and Gold medal at the PRO INVENT International Invention Show, Cluj (Romania), 2013;
  - Diploma of excellence from Technical University of Chişinău (Republic of Moldova) obtained at the International Specialized Exhibition INFOINVENT '2013, Chişinău (Republic of Moldova), 2013;
  - Diploma of excellence and Bronze medal at the PRO INVENT International Invention Show, Cluj (Romania), 2012;
  - Silver medal from the European Exhibition of Creativity and Innovation EUROINVENT '2011, Iaşi (Romania), 2011;
  - Diploma of honour from the XV<sup>th</sup> International Exhibition of Research, Innovation and Technological Transfer INVENTICA '2001, Iaşi (Romania), 2011;
  - Bronze medal at the INVENTIKA International Fair of Inventions, Bucharest (Romania), 2010;
  - Silver medal at the International Warsaw Inventions Show IWIS '2010, Warsaw (Poland), 2010;
  - Gold medal at the PRO INVENT International Invention Show, Cluj (Romania), 2010.

## Journal editorial board member

- International Journal of Engineering & Technology - IJET (Science Publishing Corporation, ISSN: 2227-524X)
- Advances in Electrical and Electronic Engineering - AEEE (VŠB-Technical University of Ostrava, Czech Republic, ISSN: 1336-1376)
- International Review of Applied Sciences and Engineering (Akadémiai Kiadó, Budapest, Hungary, ISSN: 2062-0810)
- Journal of Computer Science and Control Systems - JCSCS (Oradea University, Romania, ISSN: 1844-6043)
- Journal of Electrical and Electronics Engineering - JEEE (Oradea University, Romania, ISSN: 1844-6035)
- Electrical and Power Engineering Frontier - EPEF (World Academic Publishing, ISSN: 2306-9368)
- Journal of Energy Optimization and Engineering - IJEOE (IGI Global, ISSN: 2160-9500), 2012-2016
- International Journal of Practical Electronics - IJPE (Science Publishing Corporation), 2013-2014

## Performed assessments and evaluations

- European Commission - Horizon 2020 - The EU Framework Programme, "Societal Challenges" section, "Secure, Clean and Efficient Energy" work programme, "Competitive Low Carbon Energy" Call (H2020-LCE-2015), Ocean Energy Panel: 2014, 2015
- European Commission - Education, Audiovisual and Culture Executive Agency (EACEA) – Youth in Action Programme: 2010, 2011, 2013
- European Institute of Innovation and Technology (body of the European Union) – EIT RawMaterials, Regional Innovation Scheme (RIS) and Internationalization Panel: 2018
- National Fund for Scientific Research (NFSR), Belgium: 2012, 2013, 2014, 2015, 2016
- ERA-NET Smart Cities & Communities, Joint Programming Initiative (JPI) Urban Europe: 2015
- ERANETMED - Euro-Mediterranean Cooperation Through ERANET Joint Activities and Beyond. Renewable energies, water resources and their connections for the Mediterranean Region: 2015
- Ministry of Education, Youth and Sports, Operational Programme Research and Development for Innovation Management Section, Check Republic: 2015, 2016, 2017
- Norwegian Centre for International Cooperation in Education (SIU): 2016, 2017, 2018
- German-Egyptian Research Fund (GERF), German Federal Ministry of Education and Research (BMBF) and Egyptian Ministry of Scientific Research (MoSR): 2015
- Shota Rustaveli National Science Foundation (SRNSF) former Georgian National Science Foundation (GNSF), Georgia: 2006, 2007, 2011, 2012, 2013, 2014, 2015
- Romanian Agency for Quality Assurance in Higher Education (ARACIS): 2007, 2009, 2013
- Technical University of Cluj, Romania - Master Studies Accreditation Program: 2009, 2011
- Technical University of Cluj, Romania - Research Activity Evaluation Program: 2008, 2009, 2011, 2014
- International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union (INTAS), European Community: 2005, 2006
- Romanian National University Research Council (CNCSIS): 2004, 2005, 2006, 2008
- Romanian National Authority for Scientific Research (ANCS): 2005, 2006
- Research Programme Institute of "Sapientia" Foundation, Cluj (Romania): 2004

## Evaluation board member or expert

- Interreg CENTRAL EUROPE Programme, 2016-
- FFG - Austrian Research Promotion Agency, 2015-
- COST - European Cooperation in Science and Technology, 2014-
- MARTEC ERA-NET - Maritime Technologies, 2014-
- European Institute of Innovation and Technology (EIT) 2013-
- European Commission Experts Database , 2012-
- ERAfrica project (European Union), 2013-
- Evaluators database for International Cooperation (EVAL-INCO), 2009-
- SEE-ERA.NET PLUS - Integrating and Straightening European Research Area in South East Europe Coordination and Support Action (European Community), 2009-
- Interregional Cooperation Programme INTERREG IVC (European Union's Regional Development Fund), 2008-
- Community Research and Development Information Service - CORDIS (European Commission), 2006-2012

## Memberships

- Institute of Electrical and Electronics Engineers (IEEE);
- Transylvanian Hungarian Technical Scientific Society (EMT).

## ANNEXES

- A1 - Main publications;
- A2 - Main research projects.



## Annexes

### A1 - Main publications (selection)

#### Books

- Szabó L. - Fodorean D.: **Simularea ansamblului convertor - mașină utilizat în sisteme electromecanice** (*Simulation of the converter-machine assembly used in electromechanical systems*). U.T. Press Publisher, Cluj-Napoca (Romania), 2009. ISBN: 978-973-662-480-3. 210 pages.
- Bíró K.Á. - Viorel I.A. - Szabó L. - Henneberger G.: **Mașini electrice speciale** (*Special Electrical Machines*), Mediamira Publisher, Cluj-Napoca (Romania), 2005. ISBN: 973-713-055-3. 258 pages.
- Szabó L.: **Medii de programare uzuale în ingineria electrică - MATLAB** (*Wide Used Programming Environments in Electrical Engineering - MATLAB*), Mediamira Publisher, Cluj-Napoca (Romania), 2003. ISBN: 973-9357-23-7. 191 pages.
- Viorel I.A. - Ivan D.M. - Szabó L.: **Metode numerice cu aplicații în ingineria electrică** (*Applications of Numerical Methods in Electrical Engineering*), Publishing House of the Oradea University, Oradea (Romania), 2000. ISBN: 973-8083-29-X. 202 pages.
- Viorel I.A. - Szabó L.: **Hybrid Linear Stepper Motors**, Mediamira Publisher, Cluj-Napoca (Romania), 1998. ISBN: 973-9358-12-8. 85 pages.

#### Book chapters

- Chindriș V. - Terec R. - Ruba M. - Szabó L.: **Software Environment for Online Simulation of Switched Reluctance Machines**, in: *Advances in Intelligent Modelling and Simulation* (eds.: Byrski, A.; Oplatková, Z.; Carvalho, M.; Kisiel-Dorohinicki, M.), Simulation Tools and Applications Series: Studies in Computational Intelligence, vol. 416, pp. 85-109, Springer, Berlin (Germany), 2012. ISBN: 978-3-642-28887-6.
- Szabó L. - Dobai B.J. - Bíró K.Á.: **Discrete Wavelet Transform Based Rotor Faults Detection Method for Induction Machines**, in: *Intelligent Systems at the Service of Mankind*, vol. 2., (eds: Elmenreich, W., Machado, J.T., Rudas, I.J.), Ubooks, Augsburg (Germany), 2005, pp. 63-74. ISBN: 3-86608-052-2.

#### Papers in Web of Science indexed journals

- Dubravka P. – Rafajdus P. – Makys P. – Szabó L.: **Control of Switched Reluctance Motor by Current Profiling under Normal and Open Phase Operating Condition**, *IET Electric Power Applications*, vol. 11, no. 4, pp. 548-556, 2017. ISSN: 1751-8660, impact factor 1.358 (2015).
- Frosini L. – Harlișca C. – Szabó L.: **Induction machine bearing faults detection by means of statistical processing of the stray flux measurement**, *IEEE Transactions on Industrial Electronics*, vol. 62, no. 3, pp. 1846-1854, 2015. ISSN: 0278-0046, impact factor 6.5 (2013).
- Szabó L. - Ruba M. - Szász Cs. - Chindriș V. - Husi G.: **Fault Tolerant Bio-Inspired System Controlled Modular Switched Reluctance Machine**, *Automatika - Journal for Control, Measurement, Electronics, Computing and Communications*, vol. 55, no. 1, pp. 53-63, 2014. ISSN: 0005-1144, impact factor 0.208 (2012).
- Popa D.C. - Micu D.D. - Miron O.R. - Szabó L.: **Optimized Design of a Novel Modular Tubular Transverse Flux Reluctance Machine**, *IEEE Transactions on Magnetics*, vol. 49, no. 11 (November 2013), pp. 5533-5542, 2013. ISSN: 0018-9464, impact factor 1.363 (2012).
- Hrabovcová V. - Rafajdus P. - Lipták M. - Szabó L.: **Performance of Converters Suitable for Switched Reluctance Generator (SRG) Operation**, *Journal of Electrical Engineering*, vol. 64, no. 3, pp. 201-211, 2013. ISSN: 1335-3632, impact factor 0.37 (2012).
- Ruba M. - Viorel I.A. - Szabó L.: **Modular stator switched reluctance motor for fault tolerant drive systems**, *IET Electric Power Applications*, vol. 7, no. 3 (March 2013), pp. 159-169, 2013, ISSN: 1751-8660, impact factor 1.173 (2012).
- Popa D.C. - Gliga V.I. - Szabó L.: **Theoretical and Experimental Study of a Modular Tubular Transverse Flux Reluctance Machine**, *Progress In Electromagnetics Research (PIER)*, vol. 139, pp. 41-55, 2013. E-ISSN: 1559-8985, impact factor 5.298 (2012).
- Fodorean D. - Idoumghar L. - Szabó L.: **Motorization for Electric Scooter by Using Permanent Magnet Machines Optimized Based on Hybrid Metaheuristic Algorithm**, *IEEE Transactions on Vehicular Technology*, vol. 62, no. 1 (January 2013), pp. 39-49, 2013. ISSN: 0018-9545, impact factor 1.921 (2012).

- Szabó L. - Ruba M.: **Segmental Stator Switched Reluctance Machine for Safety-Critical Applications**, *IEEE Transactions on Industry Applications*, vol. 48, no. 6 (November-December 2012), pp. 2223-2229, 2012, ISSN: 0093-9994, impact factor 1.657 (2012).
- Gaeid K.F. - Ping H.W. - Masood M.K. - Szabó L.: **Survey of Wavelet Fault Diagnosis and Tolerant of Induction Machines with Case Study**, *International Review of Electrical Engineering (I.R.E.E.)*, vol. 7, no. 3 (May-June 2012), pp. 4437-4457. ISSN: 1827-6660, impact factor 0.57 (2012).

### Papers in other refereed journals

- Ruba M. – Jurca F. – Szabó L.: **Efficiency Improvement of Switched Reluctance Motors by Means of Using Higher Quality Laminations**, *Acta Electrotehnica*, vol. 56, no. 4, pp. 148-151, 2015. ISSN: 1841-3323.
- Szabó L. – Ruba M. – Fodorean D. – Rafajdus P. – Dúbravka P.: **Torque Smoothing of a Fault Tolerant Segmental Stator Switched Reluctance Motor**, *COMMUNICATIONS*, Scientific Letters of the University of Žilina (Slovakia), vol. 1a, pp. 95-101, 2015. ISSN: 1335-4205.
- Răcășan, A. – Munteanu, C. – Păcurar, C. – Țopa, V. – Hebedean, C. – Szabó L.: **Numerical Modeling of Planar Electromagnetic Devices at High Frequency Using 3D CAD Programs**, *Acta Electrotehnica*, vol. 55, no. 3-4, pp. 158-163, 2014. ISSN: 1841-3323.
- Szabó L. - Terec R. - Ruba M. - Rafajdus P.: **Detecting and Tolerating Faults in Switched Reluctance Motors**, *Universal Journal of Electrical and Electronic Engineering*, vol. 1, no. 2, pp. 16-25, 2013. ISSN: 2332-3280.
- Dúbravka P. - Rafajdus, P. - Makys, P. - Hrabovcova, Valeria - Szabó L.: **Analysis of Switched Reluctance Motor Behavior under Electrical Fault Conditions**, *COMMUNICATIONS*, Scientific Letters of the University of Žilina (Slovakia), vol. 2a, pp. 60-66, 2013, ISSN: 1335-4205.
- Szabó L. - Ruba M.: **Fault Tolerant Switched Reluctance Motor for Safety-Critical Automotive Applications**, *International Journal of Electrical Engineering and Transportation (IJEET)*, vol. 5, no 1, 2009, pp. 23-27, ISSN: 1773-9357.
- Ruba M. - Szabó L.: **Fault Tolerance Study of Switched Reluctance Machines by Means of Advanced Simulation Techniques**, *Pollack Periodica*, Academic Publisher, Budapest (Hungary), vol. 4, no. 2 (August 2009), pp. 107-116. ISSN: 1788-1994.
- Viorel I.A. - Szabó L. - Löwenstein L. - Șteț C.: **Integrated Starter-Generators for Automotive Applications**, *Acta Electrotehnica*, Cluj (Romania), vol. 44, no. 3, 2004, pp. 255-260. ISSN: 1224-2487.
- Viorel I.A. - Szabó L. - Ciorba R.C. - Barz V.: **Intelligent Compact Drive System with a Synchronous Variable Reluctance Motor**, *Advances in Electrical and Electronic Engineering*, Zilina (Slovakia), no. 2, vol. 3, 2004, pp. 47-50. ISSN: 1336-1376.
- Viorel I.A. - Szabó L.: **Permanent-magnet variable-reluctance linear motor control**, *Electromotion*, Cluj (Romania), vol. 1, nr. 1 (1994), pp. 31-38. ISSN: 1223-057X.

### Papers in proceedings of international conferences

- Szabó L. – Fodorean D. – Vasilache A.: **Bearing Fault Detection of Electrical Machines Used in Automotive Applications**, *Proceedings of the 22<sup>nd</sup> International Conference on Electrical Machines (ICEM '2016)*, Lausanne (Switzerland), pp. 2186-2192, 2016. ISBN: 978-1-5090-2537-4.
- Dúbravka P. – Rafajdus P. – Makys P. – Szabó L.: **Control Techniques for Torque Ripple Minimization in Switched Reluctance Drives under Faults**, *Proceedings of the 2016 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM '2016)*, Capri (Italy), pp. 625-632, 2016. ISBN: 978-1-5090-4181-7.
- Ruba M. – Martiș C.S. – Jurca F. – Szabó L.: **Analysis of a Switched Reluctance Machine for EV Application with Torque Smoothing Strategy**, *Proceedings of the 2015 International Conference on Electrical Drives and Power Electronics (EDPE '2015)*, Tatranská Lomnica (Slovakia), pp. 266-271, 2015. ISBN: 978-1-4673-9661-5.
- Birte O. – Szabó L. – Van der Auweraer, H. – Faria, C. – Popp, Á. – Martiș, C.: **Study of Torque Ripple and Noise for Different Rotor Topologies of a Synchronous Reluctance Machine**, *Proceedings of the 9<sup>th</sup> International Symposium on Advanced Topics in Electrical Engineering (ATEE '2015)*, București (Romania), pp. 933-938, 2015. ISBN: 978-1-4673-8093-5.

- Rusu, T. – Pop A.-C. – Szabó L. – Marțiș, C.: **Study of Winding Arrangement and Material Quality Effects on the Core Losses in High Speed Switched Reluctance Machines**, *Proceedings of the 13<sup>th</sup> International Conference on Engineering of Modern Electric Systems (EMES '2015)*, Oradea (Romania), pp. 243-246, 2015. ISBN: 978-1-4799-7648-5.
- Ruba M. – Szabó L.: **Study of Light Electric Vehicles Propulsion Solutions by Means of Finite Element Method Based Co-Simulations**, *Proceedings of the 15<sup>th</sup> IEEE International Symposium on Computational Intelligence and Informatics (CINTI '2014)*, Budapest (Hungary), pp. 415-420, 2014. ISBN: 978-1-4799-5338-7.
- Rafajdus P. – Dúbravka P. – Peniak A. – Saitz J. – Szabó L.: **Design Procedure of Switched Reluctance Motor Used for Electric Car Drive**, *Proceedings of the 22<sup>nd</sup> International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM '2014)*, Ischia (Italy), pp. 112-117, 2014. ISSN: 978-1-4799-4749-2.
- Dúbravka P. – Rafajdus P. – Makyš P. – Peniak A. – Hrabovcová V. – Szabó L. – Ruba M: **Design of Fault Tolerant Control Technique for SRM Drive**, *Proceedings of the 16<sup>th</sup> European Conference on Power Electronics and Applications (EPE '14-ECCE Europe)*, Lappeenranta (Finland), 2014. ISBN: 978-1-4799-3014-2.
- Fodorean D. – Popa D.C. – Minciunescu P. – Irimia C. – Szabó L.: **Study of a High-Speed Motorization for Electric Vehicle based on PMSM, IM and VRSM**, *Proceedings of the 21<sup>th</sup> International Conference on Electrical Machines (ICEM '2014)*, Berlin (Germany), pp. 2577-2582, 2014. ISBN: 978-1-4799-4775-1.
- Ruba M. – Szabó L.: **Study of Light Electric Vehicles Propulsion Solutions by Means of Finite Element Method Based Co-Simulations**, *Proceedings of the 15<sup>th</sup> IEEE International Symposium on Computational Intelligence and Informatics (CINTI '2014)*, Budapest (Hungary), pp. 415-420, 2014. ISBN: 978-1-4799-5338-7.
- Rafajdus P. – Peniak A. – Dúbravka P. – Makyš P. – Szabó L.: **Optimization of Switched Reluctance Motor Design Procedure for Electrical Vehicles**, *Proceedings of the 14<sup>th</sup> International Conference on Optimization of Electrical and Electronic Equipment (OPTIM '2014)*, Brașov (Romania), pp. 397-404, 2014. ISBN: 978-1-4799-5183-3.
- Harlișca C. – Bouchareb I. – Frosini L. – Szabó L.: **Induction Machine Bearing Faults Detection Based on Artificial Neural Network**, *Proceedings of the 14<sup>th</sup> IEEE International Symposium on Computational Intelligence and Informatics (CINTI '2013)*, Budapest (Hungary), pp. 297-302, 2013. ISBN: 978-1-4799-0197-5.
- Dúbravka P. – Rafajdus, P. – Makys, P. – Hrabovcova, V. – Musak M – Szabó L.: **Analysis and Investigation of SRM as Traction Drive Used in Electric Car**, *Proceedings of the 10<sup>th</sup> Jubilee International Symposium on Advanced Electromechanical Motion Systems – ELECTROMOTION 2013* in Electromotion, vol. 20, no. 1-4 (January-December 2013), pp. 84-89, 2013. ISSN: 1223-057X.
- Harlișca C. - Szabó L. - Frosini L. - Albini A.: **Bearing Faults Detection in Induction Machines Based on Statistical Processing of the Stray Fluxes Measurements**, *Proceedings of the 9th IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED '2013)*, Valencia (Spain), pp. 470-475, 2013. ISBN: 978-1-4799-0023-7.
- Szabó L. - Benția Ioana - Ruba M.: **A Rotary-Linear Switched Reluctance Motor for Automotive Applications**, *Proceedings of the 20th International Conference on Electrical Machines (ICEM '2012)*, Marseille (France), pp. 2613-2619, 2012, ISBN: 97-1-4673-0141-1 download )
- Fodorean D. - Szabó L.: **Control of a Permanent Magnet Synchronous Motor for Electric Scooter Application**, *Proceedings of the 2012 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM '2012)*, Sorrento (Italy), pp. 507-510, 2012. ISBN: 978-1-4673-1300-1.
- Terec R. - Benția Ioana - Ruba M. - Szabó L. - Rafajdus P.: **On the Usefulness of Numeric Field Computations in the Study of the Switched Reluctance Motor's Winding Faults**, *Proceedings of the 5th International Symposium on Computational Intelligence and Intelligent Informatics (ISCIII '2011)*, Floriana (Malta), 2011, pp. 117-120. ISBN: 978-1-4577-1859-5.
- Popa D.C. - Szabó L. - Gliga I.V. - Iancu V.: **Design of a Novel Tubular Transverse Flux Reluctance Machine**, *Proceedings of the Eighth International Symposium on Linear Drives for Industry Applications (LDIA '2011)*, Eindhoven (The Netherlands), on CD: 183.pdf. ISBN: 978-90-386-2524-9.
- Oprea C. - Marțiș C. - Fodorean D. - Jurca F. - Szabó L.: **Permanent Magnet Linear Generator for Renewable Energy Applications: Tubular vs. Four-Sided Structures**, *Proceedings of the International Conference on Clean Electrical Power (ICCEP '2011)*, Ischia (Italy), 2011, pp. 588-592. ISBN: 978-1-4244-8927-5X.

- Chindriş V. - Terec R. - Ruba M. - Szabó L. - Rafajdus, P.: **Useful Software Tool for Simulating Switched Reluctance Motors**, *Proceedings of the 25th European Conference on Modelling and Simulation (ECMS '2011)*, Krakow (Poland), 2011, pp. 216-221. ISBN: 978-0-9564944-2-9.
- Ruba M. - Benţia I. - Szabó L.: **Novel Modular Switched Reluctance Machine for Safety-Critical Applications**, *Proceedings of the 19th International Conference on Electrical Machines (ICEM '2010)*, Rome (Italy), on CD: RF-011029.pdf. ISBN: 978-1-4244-4175-4.
- Szabó L. - Ruba M. - Jurca F.: **Fault Tolerant Switched Reluctance Machine for Wind Turbine Blade Pitch Control**, *Proceedings of the International Conference on Clean Electrical Power (ICCEP '2009)*, Capri (Italy), 2009, pp. 721-726. ISBN: 1-4244-0632-3.
- Szabó L. - Ruba M.: **Using Co Simulations In Fault Tolerant Machine's Study**, *Proceedings of the 23rd European Conference on Modelling and Simulation (ECMS '2009)*, Madrid (Spain), 2009, pp. 756-762, ISBN: 978-0-9553018-8-9.
- Ruba M. - Oprea C. - Szabó L.: **Comparative Study on Switched Reluctance Machine Based Fault-Tolerant Electrical Drive Systems**, *Proceedings of the IEEE International Conference on Electrical Machines and Drives (IEMDC '2009)*, Miami (USA), 2009, pp. 1199-1204. ISBN: 978-1-4244-4252-2.
- Szabó L. - Ruba M.: **On Fault Tolerance Increase of Switched Reluctance Machines**, *Proceedings of the IEEE Region 8 EUROCON Conference (EUROCON '2009)*, St. Petersburg (Russia), 2009, pp. 734-739. ISBN: 978-1-4244-3860-0.
- Szabó L. - Oprea C. - Feştilă C. - Dulf Éva: **Study on a Wave Energy Based Power System**, *Proceedings of the 18th International Conference on Electrical Machines (ICEM '2008)*, Vilamoura (Portugal), on CD: Fullpaper\_comm\_id01199.pdf. ISBN: 978-1-4244-1736-0.
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## A2 - Main research projects

### Director of international projects

- **Swithed Reluctance Machines for Advanced Automotive Applications (SRMAA)**, Joint Research Project between the Zilina University (Slovak Republic) and Technical University of Cluj-Napoca in the framework of the Bilateral Scientific and Technological Cooperation Romania-Slovak Republic integrated in the "Capacity-Module III" programme in the frame of the National Plan for Research, Development and Innovation (PN II). Funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), 2013-2014.
- **Improved performance variable reluctance machines for safety-critical industrial process applications**, Joint Research Project between the Zilina University (Slovak Republic) and Technical University of Cluj-Napoca in the framework of the Bilateral Scientific and Technological Cooperation Romania-Slovak Republic integrated in the "Capacity-Module III" programme in the frame of the National Plan for Research, Development and Innovation (PN II). Funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), 2011-2012.
- **Advanced remote control, condition monitoring and diagnosis of rotational and linear electromechanical actuators used in automated industrial systems**, Joint Research Project between the University of Miskolc (Hungary) and Technical University of Cluj-Napoca in the framework of the Bilateral Scientific and Technological Cooperation Romania-Hungary integrated in the "Capacity-Module III" programme in the frame of the National Plan for Research, Development and Innovation (PN II). Funder: National Agency for Scientific (ANCS), 2008-2009.
- **Condition monitoring of linear and rotational electrical machine drives by means of advanced data processing instruments**, Joint Research Project between the University of Miskolc (Hungary) and Technical University of Cluj-Napoca (Romania) within the framework of the Bilateral Scientific and Technological Cooperation Romania – Hungary, 2006-2007.

### Director of national projects

- **Linear generators for wave power converters**, grant type A. Funder: Ministry of Education, Research and Youth, National University Research Council (CNCSIS), 2006-2008.
- **Modular planar motor for flexible manufacturing lines**, grant type A. Funder: Ministry of Education, Research and Youth, National University Research Council (CNCSIS), 2003-2005.
- **Design, modeling and optimization of a surface motor**, grant type AT. Funder: Ministry of Education, Research and Youth, National University Research Council (CNCSIS), 2001.

### Partner team leader of international projects

- **Small Wind Turbines Optimization and Market Promotion (SWTOMP)**, joint research program in the frame of the 2<sup>nd</sup> ERANet-LAC (Network of the European Union, Latin America and the Caribbean Countries). Local funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI). 2017-2020.

### Team member in international projects (in the last 5 years)

- **Strengthening the Research Potential of CAREESD in the Field of Electromechanical Systems and Power Electronics for Sustainable Applications (ESPESA)**, H2020-TWINN-2015 - Twinning Coordination and support actions, Funder: European Commission, Partners: Technical University of Cluj-Napoca (Romania), Technical University of Eindhoven (the Netherlands), École Nationale Supérieure des Arts et Métiers, Lille (France), Rheinisch-Westfälische Technische Hochschule, Aachen (Germany), German Aerospace Center (DLR) - Institute of Vehicle Concepts, Stuttgart (Germany), Siemens Industry Software NV, Leuven (Belgium), Université de Technologie de Belfort-Montbéliard (France), Project manager: Claudia MARȚIȘ, 2016-2018.
- **Design, Modelling and Testing Tools for Electrical Vehicles Powertrain Drives (DeMoTest-EV)**, FP7-PEOPLE-2012-IAPP (Industry Academia Partnerships and Pathways) Program, Funder: European Commission, Partners: Technical University of Cluj-Napoca (Romania), LMS International NV (Belgium), Université Libre de Bruxelles (Belgium) and ICPE-Research Institute for Electrical Engineering (Romania), Project manager: Claudia MARȚIȘ, 2013-2016.

- **Optimal Low-Noise Energy-Efficient Electrical Machines and Drives for Automotive Applications (EMDA\_LoOp)**, FP7-PEOPLE-2012-IAPP (Industry Academia Partnerships and Pathways) Program, Funder: European Commission, Partners: Technical University of Cluj-Napoca (Romania) and Brose Fahrzeugteile GmbH & Co. (Germany), Project manager: Claudia MARȚIȘ, 2013-2016.

#### Team member in national projects (in the last 5 years)

- **Efficient Lightweight Electro-Magnetic Propulsion System for Electric Vehicles (ELIMPUS)**, "Young Team - TE" project no. 30/2015 in the frame of the National Plan for Research, Development and Innovation (PN II). Funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), project manager: Daniel FODOREAN, 2015-2017.
- **Coupled Electromagnetic Interferences and Vibration Analysis for Safe Automotive Electrical Actuators (CEMIVA)**, Partnerships Programme - Joint Applied Research Projects in the frame of the National Plan for Research, Development and Innovation (PN II). Funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), project manager: Călin MUNTEANU, 2012-2015.
- **Automotive Low-Noise Electrical Machines and Drives Optimal Design and Development (ALNEMAD)**, Partnerships Programme - Joint Applied Research Projects in the frame of the National Plan for Research, Development and Innovation (PN II), funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), project manager: Claudia MARȚIȘ, 2012-2015.
- **Hardware-in-the-Loop Modular Platform for Testing the Energy Management of Competitive & Highly-Efficient Hybrid-Electric Vehicles (HiTECH-HEV)**, Partnerships Programme - Joint Applied Research Projects in the frame of the National Plan for Research, Development and Innovation (PN II). Funder: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), project manager: Daniel FODOREAN, 2012-2015.

