

Curriculum Vitae

PERSONAL INFORMATION	Ioan ŞERBAN
	Vork address: 1 Politehnicii, 500024, Brasov, Romania
	🔀 ioan.serban@unitbv.ro
	<u>https://www.brainmap.ro/ioan-serban</u>
POSITION	Professor
WORK EXPERIENCE	
Oct. 2019 – present Oct. 2014 – Sept. 2019 March 2009 - Sept. 2014	 Professor (Habilitated) Associate Professor Lecturer Transilvania University of Brasov, <u>www.unitbv.ro</u> Teaching: Power Electronics; Microgrids and distributed generation systems, Energy Sources, Matlab/Scilab programming; Research: power electronic converters for grid and microgrid integration of renewable energy sources and energy storage systems. Business or sector Academic
EDUCATION AND TRAINING	
2010 - 2013	 Post-doctoral researcher Transilvania University of Brasov Research theme: Frequency control in microgrids with renewable energy sources;
2004 - 2008	 PhD in Electrical Engineering Transilvania University of Brasov Hybrid power systems with renewable energy sources; Modelling and control of renewable energy generators; Power electronics converters for renewable energy sources.
1999 - 2004	MsC in Electrical Engineering <i>Transilvania</i> University of Brasov • Electrical engineering, automation, power electronics, electrical machines.
2007 - 2011	 Trainings 2011 – Aalborg University, 4-month internship within the post-doctoral research programme; 2009 – National Technical University of Athens, short study visit about microgrids and renewable energy sources; 2008 – Aalborg University, 2-month study visit with the research topic "Holistic Modelling of Integrated Power Systems connected to the Grid"; 2007 – Aalborg University, attending the course "Power Electronics for Renewable Energy System";



PERSONAL SKILLS						
Mother tongue	Romanian					
Other language(s)	UNDERSTANDING		SPEAKING		WRITING	
	Listening	Reading	Spoken interaction	Spoken production		
English	C1	C1	B2	B2	C1	
	Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user Common European Framework of Reference for Languages					
Communication skills	 Good communication skills acquired through experience of teaching and supervisor of bachelor/dissertation projects, coordinator of research teams in projects, participant with oral presentations in international conferences. 					
Organisational / managerial skills	 Abilities to organize activities within a team, acquired in research projects. Coordinator of the master's study program "Advanced Electrical Systems (in English)" 					
Job-related skills	 Expertise in power electronics systems, electrical generators for renewable energy sources, digital control systems for power electronics, thermal management of power converters; Highly experienced in modelling and analysis of power electronics in Matlab/Simulink and PLECS; Deep knowledge of rapid control prototyping (RCP) for power electronics converters (experienced with dSPACE control platforms); Excellent laboratory practical abilities; 					
Digital competence	SELF-ASSESSMENT					
	Information processing	Communication	Content creation	Safety	Problem solving	
	INDEPENDENT USER	INDEPENDENT USER	INDEPENDENT USER	INDEPENDENT USER	INDEPENDENT USER	
	Levels: Basic user - Independent user - Proficient user Digital competences - Self-assessment grid					
	Other computer skills:					
	 good command of office suite (word processor, spread sheet, presentation software, drawing software) and Latex. 					
	 good command of 	Matlab/Simulink, PLI	ECS, Python, LabVie	ew, LTSPice.		
ADDITIONAL INFORMATION						
Scientific papers	 ORCID: <u>http://orcid.org/0000-0002-8515-6439</u> Google Scholar: <u>https://scholar.google.ro/citations?user=F_yaERoAAAAJ&hl=ro</u> Scopus: <u>https://www.scopus.com/authid/detail.uri?authorId=22434123300</u> Web of Science: <u>https://www.webofscience.com/wos/author/record/898272</u> 					
	Selection of repres R. Musona, I. Ser Control Enhancer <i>Open Journal of t</i> <u>https://doi.org/10.</u>	entative papers: rban, "Control of a S d With Power Limitat the Industrial Electron 1109/OJIES.2024.35	ngle-Phase Islanded ion and Robust Distr <i>hics Society</i> , vol. 6, p i <u>19809</u>	d Microgrid Based or ibuted Secondary Co p. 25-42, 2025,	n Virtual Oscillator ontrol," in <i>IEEE</i>	

 J. Sora, I. Serban and D. Petreus, "Enhancing Microgrid Operation Through Electric Vehicle Integration: A Survey," in *IEEE Access*, vol. 12, pp. 64897-64912, 2024,



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https://doi.org/10.1109/ACCESS.2024.3397587

- R. Musona, I. Serban, Differential Single-Phase Inverters With Active Power Decoupling: A Survey," in IEEE Access, vol. 11, pp. 53654-53670, 2023, <u>https://doi.org/10.1109/ACCESS.2023.3280228</u>
- I. Serban, S. Céspedes, C. Marinescu, C. A. Azurdia-Meza, J. S. Gómez and D. S. Hueichapan, "Communication Requirements in Microgrids: A Practical Survey," in IEEE Access, vol. 8, pp. 47694-47712, 2020. <u>https://doi.org/10.1109/ACCESS.2020.2977928</u>
- A. Marinescu, A.Taylor, S. Larke, I. Serban, C. Marinescu, "Optimizing Residential Electric Vehicle Charging under Renewable Energy: Multi-Agent Learning in Software Simulation and Hardwarein-the-loop Evaluation", International Journal of Energy Research, vol. 43, no. 8, June 2019, pp.3853-3868, <u>https://doi.org/10.1002/er.4559</u>
- I. Serban, "A control strategy for microgrids: Seamless transfer based on a leading inverter with supercapacitor energy storage system", Applied Energy, vol. 221, July 2018, pp. 490-507. https://doi.org/10.1016/j.apenergy.2018.03.122
- I. Serban, C.P. Ion, "Microgrid Control Based on a Grid-Forming Inverter Operating as Virtual Synchronous Generator with Enhanced Dynamic Response Capability", International Journal of Electrical Power and Energy Systems, vol. 89, July 2017, pp. 94-105. <u>https://doi.org/10.1016/j.ijepes.2017.01.009</u>
- I. Serban, "Power Decoupling Method for Single-Phase H-Bridge Inverters with no Additional Power Electronics", IEEE Transactions on Industrial Electronics, vol. 62, no. 8, Aug. 2015, pp. 4805 – 4813. <u>https://doi.org/10.1109/TIE.2015.2399274</u>
- I. Serban, C. Marinescu, "Control Strategy of Three-Phase Battery Energy Storage Systems for Frequency Support in Microgrids and with Uninterrupted Supply of Local Loads", IEEE Transactions on Power Electronics, vol. 29, no. 9, Sept. 2014, pp. 5010-5020. https://doi.org/10.1109/TPEL.2013.2283298
- I. Serban, R. Teodorescu, C. Marinescu, "Energy Storage Systems Impact on the Short-Term Frequency Stability of Distributed Autonomous Microgrids, an Analysis Using Aggregate Models", IET Renewable Power Generation, vol 7, no. 5, Sept. 2013, pp. 531-539.
 <u>https://doi.org/10.1049/iet-rpg.2011.0283</u> – Paper awarded with the 2015 Premium for Best Paper in IET Renewable Power Generation.

Projects

- Young Research Team project, PN-II-RU-TE-2014-4-0359, 2015-2017, "Solutions to enhance the dynamic stability of microgrids with renewable energy sources", – project leader;
 - PhD national competition project, CNCSIS-TD303/2007-2008: "Contributions to the development of hybrid power systems with renewable energy sources" – project leader;
 - ERANet LAC Transnational Joint Call on Research and Innovation ELAC2015/T10 0761 RETRACT, 2017-2019, "Enabling Resilient Urban Transportation Systems in Smart Cities" – project member;
 - FP6, CRISTAL 038406/DG TREN, 2007-2009, "Control of renewable integrated systems targeting advanced landmarks" – project member;
 - IDEAS national competition project, CNCSIS-134/2007-2010, "Renewable Energy Sources and their Integration in Smart Hybrid Grids" – project member;
- Partnerships national competition project, D3 21062/2007-2010, "Hybrid Hydro-Wind Energy Structure" – project member;
- Partnerships National Competition Project, D1 110004/2007-2010, "Intelligent distributed system for improving the efficiency of Hydroelectric plants" – project member;
- 2005/2006 PhD student scholarship from "World Federation of Scientists".

Patents

- I. Serban, "Method for harmonic current compensation with active load", OSIM RO-132508/29.11.2023.
- **I. Serban,** "Method for Decoupling the Oscillating Power for Single-Phase Inverters", OSIM Patent RO-130090/30.12.2020.
- I. Serban, C. Marinescu, "Sensorless control method of speed and power for permanent magnets small wind generators", OSIM patent RO-127975/30.06.2020.
- I. Serban, C. Marinescu, "Device and control method with three-phase dump load for autonomous generators with renewable energy sources", OSIM patent RO-126355/30.01.2017.

Other achievements

 Included in the TOP 2% of the best scientists in the world, 2020-2024, created by Stanford University and Elsevier: <u>https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw</u>

• 2015 Premium Award for Best Paper in IET Renewable Power Generation https://ietresearch.onlinelibrary.wiley.com/hub/journal/17521424/homepage/prizes;

- Rewarding research results by the national research agency UEFISCDI, programme ISI articles 2008, 2011-2015, 2017-2020; <u>https://uefiscdi.gov.ro/premierea-rezultatelor-cercetarii-articole</u>
- Rewarding research results by the national research agency UEFISCDI, programme Patents 2017, 2020, 2021; <u>https://uefiscdi.gov.ro/premierea-rezultatelor-cercetarii-brevete</u>
- Best paper presentation in session "TT02 8 Power Electronics II", within the 39th Annual



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	Conference of the IEEE Industrial Electronics Society - IECON 2013; Prize for excellent research activity, within the <i>Transilvania</i> University Awards, 2007.
Memberships	 IEEE (Institute of Electrical and Electronics Engineers), IES (Industrial Electronics Society), PELS (Power Electronics Society)
Citations and Hirsch	 Google Scholar: <u>https://scholar.google.ro/citations?user=F_yaERoAAAAJ&hl=ro</u> No. of citations >1800 Hirsch = 19 Scopus: <u>https://www.scopus.com/authid/detail.uri?authorId=22434123300</u> No. of citations >1200 Hirsch = 15 Web of Science (WOS): <u>https://www.webofscience.com/wos/author/record/898272</u> No. of citations >950 Hirsch = 14

Scientific reviewer • Over 250 peer reviews for WOS journals https://www.webofscience.com/wos/author/record/898272