

Personal Data	
Surname, First name	TÎRNOVAN, Radu-Adrian
Address (work)	28. Memorandumului, Cluj-Napoca, 400114, Cluj, ROMÂNIA
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E-mail / website personal	radu.tirnovan@enm.utcluj.ro; https://enm.utcluj.ro/ ; https://www.researchgate.net/profile/R_Tirnovan
Birth day / Sex / Nationality	30 June 1962 / B / Romanian
Position	<b>Professor</b> at Electric Power Systems and Management Department (EPSMD), Electrical Engineering Faculty (EEF), Technical University of Cluj-Napoca (TUCN)
Education, diploma	
May 1997	PhD in Electrical Engineering, delivered by TUCN, thesis title: "Contributions to the electrical vibrators analysis and vibrations monitoring")
1981 - 1986	Engineer, Electric profile, Polytechnic Institute of Cluj, Romania
<b>Professional Experience</b>	
2004-present	Professor at TUCN, EPSMD Educational/ Power systems, Renewable, Fuel cells, Automation and Protection of Power Systems, Digital protection in power system
2009-present	PhD Theses Supervisor
1998 - 2004	Associate professor at TUCN, EPSMD Educational / Electrical equipment, Testing, Power systems, Unconventional technologies, Fuel cells, Vibrations
1994 - 1998	Lecturer at TUCN, EPSMD Educational / Electrical equipment, Testing, Power systems, Unconventional technologies, Vibrations
1991 - 1994	Assistant at TUCN, EPSMD Educational / Electrical equipment, Testing, Vibrations
1990 – September 1991	Scientific researcher, The Institute for Computers (ITC) Cluj, 109 Republicii, Cluj-Napoca, Romania Research and development / Control systems, electrical drives, data acquisition, PLCs
1986 – 1990	Engineer, The Institute for Computers (ITC) Cluj, 109 Republicii, Cluj-Napoca, Romania Research and development / Control systems, electrical drives, data acquisition, PLCs
Visiting Professor/Researcher	(periodical)
Between 2001 and 2010	University of Technology of Belfort-Montbéliard, France, Department of Electrical Engineering and Control Systems (GESC) and Transportation Systems Laboratory (SET), Institute FC Lab.
Competences	
Languages	Romanian (native language) English (independent user in listening, reading, speaking, writing) French (independent user in listening, reading, speaking, writing)
Organizational skills	<ul> <li>Member in the management bureau of the EPSMD, at EEF-TUCN since 2015;</li> <li>Member of the Board of Faculty of Electrical Engineering (2003 – 2016, since 2020 - present);</li> <li>Member of the Senate of Technical University of Cluj-Napoca (2012 – 2016);</li> <li>Member of the Coordinating Council for Doctoral Programs in Electrical Engineering at UTCN (2015 - 2018).</li> </ul>
Editorial activity	<ul> <li>Member of the editorial staff: Acta Electrotehnica</li> <li>Reviewer: Applied Energy, International Journal of Hydrogen Energy, IET Power Electronics, Cleaner Engineering and Technology, Electric Power Systems Research, Energy Science &amp; Engineering, Sustainable Energy Technologies and Assessments, Heliyon, Journal of Energy Storage, Nonlinear Dynamics, International Journal of Electrical Power and Energy Systems, Journal of Building Engineering, Journal of the International Measurement Confederation, Transportation Research Interdisciplinary Perspectives, Energy and Built Environment, Energy Science &amp; Engineering, Ionics, etc.</li> </ul>

Professional competences	Technical skills and competences: Design, modelling, simulation, analysis: Power systems, Fuel cells systems, Renewable, Energy conversion, Electric Energy Transmission and Distribution, Protection and automation in power systems.
Published scientific papers	(14 books in national edition, 13 journal ISI-WoS articles, over 90 conference/journal articles in WoS- Proc and IDB) – selective list:
Articles indexed in WoS	<ol> <li>R. Tirnovan, S. Giurgea, A. Miraoui, M. Cirrincione, <i>Surrogate modelling of compressor characteristics for fuel-cell applications</i>, Applied Energy 85 (2008) 394-403.</li> <li>R. Tirnovan, S. Giurgea, A. Miraoui, M. Cirrincione, <i>Surrogate model for proton exchange membrane fuel cell (PEMFC)</i>, Journal of Power Sources 175 (2008) 773–778.</li> <li>R. Tirnovan, S. Giurgea, A. Miraoui, M. Cirrincione, <i>Proton exchange membrane fuel cell modelling</i></li> </ol>
	based on a mixed moving least squares technique, international journal of Hydrogen Energy 33 (2008)
	4. <b>R. Tirnovan</b> , S. Giurgea, A. Miraoui, M. Cirrincione, <i>Modeling the Characteristics of Turbocompressor for Fuel Cell Systems using Hybrid Method based on Moving Least Squares</i> , Applied Energy 86 (2009) 1283–1289.
	<ol> <li>R. Tirnovan, S. Giurgea, A. Miraoui, Strategies for optimizing the opening of the outlet air circuit's nozzle to improve the efficiency of the PEMFC generator, Applied Energy 88 (2011) 1197–1204.</li> <li>Tirnovan R, Giurgea S, Efficiency improvement of a PEMFC power source by optimization of the air management, International Journal of Hydrogen Energy 37 (2012), 7745–7756.</li> </ol>
	7. S. Giurgea, <b>R. Tirnovan</b> , D. Hissel, R. Outbib, <i>An analysis of fluidic voltage statistical correlation for a diagnosis of PEM fuel cell flooding</i> , International Journal of Hydrogen Energy, Volume 38, Issue 11, 15 April 2013, Pages 4689–4696.
	<ol> <li>Farcas, P. Dobra, R. Tirnovan, A proposed hardware design and control technique for solid polymer electrolyte water electrolyzer directly coupled with photovoltaic panels, in 2012 IEEE International Conference on Automation, Quality and Testing, Robotics, AQTR 2012 - Proceedings, pp. 56-61, 2012.</li> <li>E. Breaz, F. Gao, D. Paire, R. Tirnovan, Fuel cell modeling with dSPACE and OPAL-RT real time platforms, Transportation Electrification Conference and Expo (ITEC), 2014 IEEE , 15-18 June 2014 , Page(s):1 – 6. Dearborn MI</li> </ol>
	10. A.C. Farcas, V. Sita, P. Dobra, <b>R. Tirnovan</b> , <i>Energy efficient design and control for PEM water electrolyzer and hydrogen storage system</i> , in IFAC Proceedings Volumes (IFAC-PapersOnline), vol. 2, no. PART 1, pp. 32-36, 2013.
	11. E. Breaz, F. Gao, B. Blunier, <b>R. Tirnovan</b> , <i>Mathematical modeling of proton exchange membrane fuel cell with integrated humidifier for mobile applications</i> , in 2012 IEEE Transportation Electrification Conference and Expo, ITEC 2012, 2012.
	12. Elena Breaz, Fei Gao, Abdellatif Miraoui, <b>Radu Tirnovan</b> , <i>A Short review Of Aging Mechanism Modeling Of Proton Exchange Membrane Fuel Cell in transportation applications</i> , Industrial Electronics Society, IECON 2014 - 40th Annual Conference of the IEEE, Oct. 29 2014-Nov. 1 2014, Page(s):3941 - 3947, Dallas, TX. WoS H-index: 11 Scopus H index: 11 Web of Science ResearcherID: <u>0-7676-2019</u>
	https://orcid.org/0000-0002-4970-1647
Jury member in international PhD thesis	<ol> <li>Member of the PhD jury (thesis reporter) for the PhD thesis : "Contribution à la modélisation et au contrôle de compresseurs – Application à la gestion de l'air dans les systèmes piles à combustible de type PEM", Jérémie M'BOUA, 24th of November 2010 at l'Université de Technologie de Belfort-Montbéliard (France).</li> <li>Member of the PhD jury (thesis reporter) for the PhD thesis : "Modélisation, optimisation et conception d'un capteur hybride pour la détection des deux-roues-motorisés dans le trafic", Hamza KERBOUAI, 2nd of September 2015 at l'Université de Technologie de Belfort-Montbéliard (France).</li> <li>President of the PhD jury for the PhD thesis : "Solid Oxide Fuel Cell Modeling and Lifetime Prediction for Real-time Simulations", Rui MA, 20th of September 2018 at l'Université Bourgogne Franche-Comté (France).</li> </ol>

Manager in Research projects	(over 30 as project member / responsible) – selective list:
	<ol> <li>Cross-border Network of Energy Sustainable Universities, Acronym: Net4Senergy, HUSKROUA/1702/6.1/0075, 2019 – 2021, member, TUCN 70910 Euro.</li> <li>Holistics of the Renewable Energy Sources on Environment and Climate, Acronym: HORESEC, PN-III-P1-1.2-PCCDI-2017-0404, Nr. 31PCCDI/2017, 2018 – 2020, member, TUCN 318120 RON.</li> <li>Electromechanically Systems and Power Electronics for Sustainable Applications Acronym: ESPESA, 2015 -2018, Twinning project, Horizon 2020, Contract No. 692224/2015, member/leader Research Topic: R2. "Optimized and systematic energy management on EV/HEV". TUCN 451247 Euro. (member)</li> <li>Research centre for testing, diagnosis and monitoring of the electrical equipments in high efficient power systems, type of project PNII, 2007-2009. (project member).</li> <li>Continuous voltage micro-networks for optimal integration of the energy distribution sources (DCIDER), Excellency research program, mode 1, type of project P-CD, 2005-2008. (project member).</li> </ol>
Prizes	<ol> <li>Awarding research results:         <ul> <li>PN-II-RU-PRECISI-2012-6-0183, Strategies for optimizing the opening of the outlet air circuit's nozzle to improve the efficiency of the PEMFC generator, Applied Energy Volume 88, Issue 4, April 2011;</li> <li>PN-II-RU-PRECISI-2012-6-0752, Efficiency improvement of a PEMFC power source by optimization of the air management, International Journal of Hydrogen Energy 37 (2012);</li> <li>PN-II-RU-PRECISI-2013-7-3936, An analysis of fluidic voltage statistical correlation for a diagnosis of PEM fuel cell flooding, International Journal of Hydrogen Energy, Volume 38, Issue 11, 15 April 2013;</li> <li>PN-II-RU-PRECISI2014-8-7245, Commutation technique in the supply of electromagnetic actuators, IET POWER ELECTRONICS Volume: 7 Issue: 1 Pages: 132-140, Published: JAN 2014.</li> </ul> </li> <li>Best paper prize: Breaz, E., Fei Gao, Blunier, B., <b>Tirnovan, R.</b>, Mathematical modeling of proton exchange membrane fuel cell with integrated humidifier for mobile applications, Transportation Electrification Conference and Expo (ITEC), 2012.</li> </ol>
Professional organization	<ul> <li>IEEE/PES Member;</li> <li>Founding member and vice president of the Cluj Branch of "Romanian Association for Hydrogen Energy" – AEHR;</li> <li>Member of "Romanian National Institute for the Study of Planning and Use of Energy Sources" – IRE.</li> </ul>

Date: 27/09/2024

Prof. Eng. Radu-Adrian TÎRNOVAN, PhD