

PERSONAL INFORMATION



PETREUŞ, Dorin Marius

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✉ Dorin.Petreus@ael.utcluj.ro

Sex Male | Date of birth 22.03.1962 | Nationality Romanian

PROFESSIONAL EXPERIENCE

- Since 2007
- 2006 – ongoing
- 2002 - 2006
- 1994 - 2002
- 1991 - 1994

Ph.D. Advisor

Professor in the Applied Electronics Department

Assistant professor

Lecturer

Assistant

Employer: Technical University of Cluj-Napoca Cluj-Napoca, 28 Memorandumului Street, Cluj-Napoca

Main activities and responsibilities:

- Teaching and research activities regarding power supplies, microcontroller systems, high frequency circuits, **network conditioning systems design** and complex systems for energy supply and conversion;
- Coordinating the research activity of 23 Ph.D. students, 14 of which have defended their theses.
- Participating as a member in the Applied Electronics examination committees for evaluating diploma projects, dissertations and Ph.D. research reports.
- Participating as a member and president in over 30 Ph.D. theses' evaluation committees.
- Participating as a director or responsible in 6 international contracts and 11 national contracts from 2002 to 2020.
- Participating as chairman for multiple international conferences.
- Vice Dean of the faculty of Electronics, Telecommunications and Information Technology, from 2008 to 2012 department chair, since 2012.

▪ Course responsible:

- ✓ **Power supplies** Study program: Applied Electronics, Year: IV
- ✓ **Microcontrollers** Study program: Applied Electronics, Year: III.
- ✓ **Complex systems for energy supply and conversion**; Year: I Master Electronics Engineering

EDUCATION

1992-1998

Ph.D. in Electronics and Telecommunications

Thesis title: Theoretical and Experimental Research Regarding Performance Improvements of Switch-Mode Power Supplies

Technical University of Cluj-Napoca

1982-1987

Engineer degree

Field: Electronics and Telecommunications, Study program Applied Electronics

Polytechnical Institute of Cluj-Napoca

PERSONAL ABILITIES

Native language Romanian

Other known foreign languages

	COMPREHENSION		SPEAKING		WRITING
	Listening	Reading	Conversation	Oral speech	
English	C1	C1	C2	C2	C1
French	B1	B2	B1	B1	B1

Levels: A1/A2: Elementary user - B1/B2: Independent user - C1/C2: Experienced user
[European Language Levels](#)

Communication and organizational/managerial abilities

- Coordinator abilities acquired as a result of the managerial experience at the TUCN, punctuality, seriousness, experience regarding research activities and teamwork, communication skills.

Abilities acquired at the workplace

- Electronic circuits design and simulation using specialized software (OrCad PSpice, LTSpice, MathCad, Matlab, Simulink, PSIM, Proteus).

Digital abilities

- Advanced computer use;
- Advanced user of the Internet, Email, Microsoft Office software, simulation software, etc..

Member in journal scientific committees

- Member in international ISI-indexed editorial and scientific boards
- Member in international BDI-indexed editorial and scientific boards
- Member in national and international unindexed editorial and scientific boards

Other information

- Elaboration of over 250 scientific papers communicated or published prestigious international journals and conferences;
- Member in over 30 national and international research contracts and responsible for 17 of them.
- Author/coauthor of 10 books;
- 1 international patent and 5 national patents, as well as 3 pending patent applications.
- 20 international awards and gold or silver medals at inventions exhibitions.
- 19 international awards.
- Advisor of 14 finalized Ph.D. theses.

Selected ISI journal paper (2011-2021):

- 1) A. Ignat-Balaci, E. Szilagyi, **D. Petreus**, "Day-Ahead Scheduling, Simulation, and Real-Time Control of an Islanded Microgrid," *Advances in Electrical and Computer Engineering*, vol.21, no.4, pp.89-98, 2021, doi:10.4316/AECE.2021.04010 Ferencz, I., & **Petreus, D.** (2021). A power electronic traction transformer model for a new medium voltage DC electric railway. *Advances in Electrical and Computer Engineering*, 21(3), 99-108. doi:http://dx.doi.org/10.4316/AECE.2021.03012. ISSN 1582-7445, WOS:000691632000012.
- 2) Angyus SB, Levei E, **Petreus D**, Etz R, Covaci E, Moldovan OT, Ponta M, Darvasi E, Frentiu T. Simultaneous Determination of As, Bi, Sb, Se, Te, Hg, Pb and Sn by Small-Sized Electrothermal Vaporization Capacitively Coupled Plasma Microtorch Optical Emission Spectrometry Using Direct Liquid Microsampling. *Molecules*. 2021; 26(9):2642. <https://doi.org/10.3390/molecules26092642>, WOS:000650668500001.
- 3) Angyus, SB; Darvasi, E; Ponta, M; **Petreus, D**; Etz, R; Senila, M; Frentiu, M; Frentiu, T, Interference-free, green microanalytical method for total mercury and methylmercury determination in biological and environmental samples using small-sized electrothermal vaporization capacitively coupled plasma microtorch optical emission spectrometry, *TALANTA*, vol. 217, 2020, ISSN: 0039-9140, DOI: 10.1016/j.talanta.2020.121067, WOS:000537880200060.
- 4) Gherman, T; **Petreus, D**; Cirstea, MN, A Real Time Simulator of a Phase Shifted Converter for High Frequency Applications, *ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING*, Vol. 20, Issue: 3, pp. 11-22, 2020, ISSN: 1582-7445, DOI: 10.4316/AECE.2020.03002,

WOS:000564453800002.

- 5) **Dorin Petreuş**, R. Etz, T. Patarau, I. Ciocan, Comprehensive Analysis of a High-Power Density Phase-Shift Full Bridge Converter Highlighting the Effects of the Parasitic Capacitances†, *Energies*, vol. 13, issue 6, 2020, eISSN: 1996-1073, DOI: 10.3390/en13061439, WOS:000528727500144.
- 6) Gherman, T; **Petreuş, D**; Cirstea, MN, A Real Time Simulator of a Phase Shifted Converter for High Frequency Applications, *ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING*, Vol. 20, Issue: 3, pp. 11-22, 2020, ISSN: 1582-7445, DOI: 10.4316/AECE.2020.03002, WOS:000564453800002.
- 7) Angyus, SB; Darvasi, E; Ponta, M; **Petreuş, D**; Etz, R; Senila, M; Frentiu, M; Frentiu, T, Interference-free, green microanalytical method for total mercury and methylmercury determination in biological and environmental samples using small-sized electrothermal vaporization capacitively coupled plasma microtorch optical emission spectrometry, *TALANTA*, vol. 217, 2020, ISSN: 0039-9140, DOI: 10.1016/j.talanta.2020.121067, WOS:000537880200060.
- 8) **Dorin Petreuş**, Radu Etz, Toma Patarau, Marcian Cirstea, An islanded microgrid energy management controller validated by using hardware-in-the-loop emulators, *International Journal of Electrical Power & Energy Systems*, vol. 106, pp. 346-357, 2019.
- 9) P.V. Unguresan, R.A. Porumb, **D. Petreuş**, A.G. Pocola, O.G. Pop, M.C. Balan, Orientation of Facades for Active Solar Energy Applications in Different Climatic Conditions, *JOURNAL OF ENERGY ENGINEERING*, vol. 143, no. 6, 2017;
- 10) T. Frentiu, S. Butaciu, E. Darvasi, M. Ponta, M. Frentiu, **D. Petreuş**, A microanalytical method based on electrothermal vaporization capacitively coupled plasma microtorch optical emission spectrometry for multielemental determination: comparison with inductively coupled plasma optical emission spectrometry, *CHEMICAL PAPERS*, vol. 71, no. 1, pp. 91–102, 2017;
- 11) **D. Petreuş**, S. Dărăban, M. Cirstea, Modular Hybrid Energy Concept Employing a Novel Control Structure Based on a Simple Analog System, *ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING*, vol. 16, no. 2, pp. 3-10, 2016.
- 12) T. Frentiu, S. Butaciu, E. Darvasi, M. Ponta, M. Senila, **D. Petreuş**, M. Frentiu, Analytical characterization of a method for mercury determination in food using cold vapour capacitively coupled plasma microtorch optical emission spectrometry - compliance with European legislation requirements, in *ANALYTICAL METHODS*, vol. 7, no. 2, pp. 747-752, 2015.
- 13) S. Dărăban, **D. Petreuş**, C. Morel, A novel MPPT (maximum power point tracking) algorithm based on a modified genetic algorithm specialized on tracking the global maximum power point in photovoltaic systems affected by partial shading, *Energy*, vol. 74, pp. 374–388, 2014.
- 14) **D. Petreuş**, S. Daraban, I. Ciocan, T. Patarau, C. Morel, M. Machmoum, Low cost single stage micro-inverter with MPPT for grid connected applications, *Solar Energy*, no. 92, pp. 241-255, 2013.
- 15) F. Hrebenciuc, D. Moga, **D. Petreuş**, Z. Barabas, R. Moga, Combined Analytical and Numerical Approach to Study Coil Arrays for Contact less Charging of Batteries in Active Transponders, in *ELEKTRONIKA IR ELEKTROTEHNIKA*, no. 7, pp. 37-42, 2012.
- 16) **D. Petreuş**, T. Patarau, S. Daraban, C. Morel, B. Morley, A novel maximum power point tracker based on analog and digital loops, *Solar Energy*, no. 85, pp. 588-600, 2011.

International patents:

- 1) **D. Petreuş**, M. Neag, B. Morley, Improved MPPT - Control for PWM - based DC-DC converters with average current control, World Intellectual Property Organization (WO 2012/010613), 2012.

National patents:

- 2) T. Frentiu, M. Ponta, E. Darvasi, A. Mihaltan, A. Mathe, S. Cadar, M. Senila, M. Frentiu, **D. Petreuş**, R. Etz, F. Puskas, D. Sulea, Analizor miniatural de mercur utilizand spectrometria de emisie optica, OSIM Bucuresti, nr. 130186, 2014, RO130186 B1, 2020.
- 3) T. Frentiu, M. Ponta, E. Darvasi, S. Butaciu, S. Cadar, M. Senila, A. Mathe, M. Frentiu, **D. Petreuş**, R. Etz, F. Puskas, D. Sulea, Analizor miniaturizat pentru determinarea simultana a elementelor din microprobe lichide prin spectrometrie de emisie optica, OSIM Bucuresti, nr. 131066, 2014, RO131066 B1, 2020.
- 4) **D. Petreuş**, E. Plaian, A. Grama, E. Cordos, S. Cadar, Generator de plasma de putere mica la presiune atmosferica (Low power plasma generator at atmospheric pressure), OSIM Bucuresti (RO128077-A2), 2016.
- 5) R. Munteanu, D. Moga, F. Neaga, **D. Petreuş**, R. Dumitrean, M. Munteanu, L. Vladareanu, Sistem de monitorizare a încărcării progressive a membrului inferior în recuperarea posttraumatica (System for monitoring the progressive loading of a lower limb in post-traumatic rehabilitation), OSIM Bucuresti (RO123261-B1 ; RO123261-B8), 2011.

- 6) R. Arsinte, **D. Petreus**, Amplificator de impulsuri bipolare de curent în punte hibrida cu comanda simetrică (Bipolar current pulse amplifier in hybrid bridge with symmetrical control), OSIM Bucuresti (RO128681-A2), 2013.

International projects with participation as responsible:

- 1) Flexible medium voltage DC electric railway systems(HVDC-ERS), H2020-S2RJU-2018.
- 2) Methods and techniques for water flow measurements, Analog Devices, Irlanda, 2002-2004.
- 3) Optimierung von Bauelementen bei Solar-Umrichter, contract between UTCN and Siemens AG Österreich (Austria), through SC SIMEA Sibiu SRL, 2007-2008.
- 4) Optimierungen an Schaltungen für Stromversorgungen, contract between UTCN and Siemens AG Österreich (Austria), through SC SIMEA Sibiu SRL, 2007-2008
- 5) Intelligent charger for batteries and supercapacitors based on solar energy, in collaboration with Anacores Limited Irlanda, 2010-2011.

Selected national projects with participation as responsible (2011-2020):

- 1) Renewable energy management system used for small isolated communities – REMSIS, project PN-II-PT-PCCA-2013-4, contract no. 53/2013, 2014-2016.
- 2) Four cells galvanic bath, No. 215CI / 05.12.2013, 2013-2014.
- 3) Miniaturized Equipment with Capacitively Coupled Plasma Microtorch and Analytical Technologies for Simultaneous Elemental Determination used in Environment and Foods control (MicroCCP), contract no. 176/2012, PN-II-PT-PCCA-2011-3.2-0219, 2012-2016.
- 4) Medical equipment for magnetic therapy with low frequency pulsed magnetic field, contr. no. 20CI/07.06.12, PN-II-IN-CI-2012-1-0042, 2012-2013.

Selected projects requested by prestigious companies:

- 1) Generic 3.6kW on board charger for electrical vehicles. Accomplished in partnership with Continental Automotive Romania SRL.
- 2) Electronic heating catalyst controller - eHCC Accomplished in partnership with Continental Automotive Romania SRL
- 3) Bidirectional Charger. Accomplished in partnership with Continental Automotive Romania SRL.
- 4) High efficiency resonant power supply for video, Accomplished in partnership with PBF Holland and Barco Germany
- 5) Power supply for a medical printer, Accomplished for Codonics (USA).
- 6) High voltage power supply for a copying machine; Accomplished for the Dutch company Océ.
- 7) Power supply with electronic balast for voting machines (Nedap Power Supplies)
- 8) Power supply for video projectors; Accomplished for Philips.