



Dan-Cornel Hulea

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EDUCATION AND TRAINING

OCT 2016 – DEC 2020 Timisoara, Romania

PHD IN ELECTRICAL ENGINEERING Politehnica University of Timisoara

Research focused on energy control, storage, and conversion systems for renewable and automotive applications. Developed novel bidirectional DC-DC converter topologies for supercapacitor energy storage, addressing high voltage conversion ratios and enhancing energy efficiency.

Author/Coauthor of 9 ISI papers (7 conferences and 2 journal)

Expertise in power converter modeling, simulation, control strategies, and energy management.

Collaborated with academic and industry partners to advance energy storage solutions for sustainable energy.

Address Timisoara, Timisoara, Romania |

Thesis Wide Ratio Bidirectional DC-DC Converters For Supercapacitor Storage Applications

Link <https://youtu.be/FWu7Mbb4I3k>

OCT 2017 – JUL 2018 Timisoara, Romania

CERTIFICATE OF GRADUATION OF PSYCHO-PEDAGOGICAL STUDIES Politehnica University of Timisoara

2014 – 2016 Timisoara, Romania

MASTER'S DEGREE Politehnica University of Timisoara

Advance motor drives, Advance control systems, Power electronics for Electrotechnology, Embedded Systems, Finite element design

2010 – 2014 Timisoara, Romania

BACHELOR'S DEGREE Politehnica University of Timisoara

Electronics, Electrical Machines, Electric Drives, Control Systems, Power Electronics, etc.

Field of study Electrical Engineering

WORK EXPERIENCE

UNIVERSITATEA POLITEHNICA TIMIȘOARA – TIMIȘOARA, ROMANIA

LECTURER / ASSISTANT PROFESSOR – OCT 2022 – CURRENT

Teaching Power Electronics and Embedded Software to bachelor's and master's students.

Conducting research in Power Electronics focusing on Power Electronics Topologies, Energy Management Strategies, and Control.

ZF GROUP – DIWRE (E-MOBILITY DIVISION) CORPORATE RESEARCH & DEVELOPMENT – TIMIȘOARA, ROMANIA

HARDWARE ENGINEER – OCT 2022 – JUL 2025

Research, design, modeling, and development of power converters for automotive On-Board Chargers (OBCs).

Working on: optimal design, novel topologies analysis, control, modulation, magnetic design, EMC filters.

Mentoring junior engineers in power electronics design.

THE UNIVERSITY OF TEXAS AT DALLAS – RICHARDSON, UNITED STATES

Department Renewable Energy and Vehicular Technology Lab (REVT)

VISITING SCHOLAR – 4 DEC 2024 – 25 FEB 2025

Researched, analyzed, designed, and developed a new power converter topology.
Collaborated with the REVT lab team on sustainable energy solutions and knowledge exchange in the field of power electronics.
Presented research findings at UTD.

ROMANIAN ACADEMY - TIMIȘOARA BRANCH – TIMISOARA, ROMANIA

RESEARCH ASSISTANT – DEC 2020 – SEP 2023

Conducted research in the conversion, storage, and processing of electrical energy, with a primary focus on power electronics.

POLITEHNICA UNIVERSITY OF TIMISOARA – TIMISOARA, ROMANIA

UNIVERSITY ASSISTANT – SEP 2019 – OCT 2022

Led lab sessions for bachelor's students in power converters, microcontrollers, and microgrids.
Assisted with hands-on learning and practical applications in power electronics and energy systems.

UNIVERSITATEA POLITEHNICA TIMIȘOARA – TIMISOARA, ROMANIA

UNIVERSITY RESEARCH ASSISTANT – JAN 2014 – SEP 2022

Designed, modeled, simulated, and built power electronics equipment for research in renewable energy, automotive and industrial applications.
Worked on projects including EV energy conversion, climate-adaptive buildings, microgrid charging stations, and HIL emulators.
Contributed to national and European research contracts, supporting innovation in energy systems and sustainability.

TEXAS UNIVERSITY AT DALLAS - UTD – RICHARDSON, UNITED STATES

VISITING SCHOLAR – JAN 2017 – MAY 2017

Designed a novel bi-directional power electronics converter for supercapacitor energy storage in wind turbine applications, supporting voltage conversion from 400V to 70V with power levels up to 5kW.
Attended a semester-long course and seminars on Power Electronics Modeling and Control.
Participated in teaching seminars for UTD Teaching Assistants, enhancing educational skills.

● HONOURS AND AWARDS

NOV 2022

"Ștefan Grosu" Award - Electrical and Power Engineering – Technical Sciences Academy of Romania

Award received for the book "Convertoare de curent continuu hibride"

7 DEC 2021

"Aurel Vlaicu" award – Romanian Academy

9 JUN 2021

"Martin Bercovici" / 2019 award for technical sciences – Academy of Romanian Scientists

2019

EPE Young Author Best Paper Award – European Power Electronics and Drives Association

2015

IEEE IES Student Paper Travel Award – IEEE Industrial Electronics Society

● LANGUAGE SKILLS

Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● TECHNICAL SKILLS

Summary

Power Electronics: Design, modeling, analysis, circuit simulations, stability, control, EMC, analog & digital electronics, schematic & PCB design, applied to renewable energy, EVs, and energy storage.

Digital & Control: Energy management and control in microgrid systems, proficient in C/C++ and Assembly for embedded systems, and experienced with CPLDs.

Teaching & Mentoring: Experienced in teaching and mentoring students in power electronics and embedded systems.

Collaboration: Proven ability to work cross-functionally with experts in various fields.

Research & Presentation: Strong research skills with experience in disseminating technical knowledge through presentations and publications.

● PUBLICATIONS

Summary

3 books

5 ISI journal papers

14 ISI conference papers

Links <https://scholar.google.com/citations?hl=ro&user=z1cva-0AAAAJ> | <https://publons.com/researcher/2017211/dan-hulea/> | <https://www.scopus.com/authid/detail.uri?authorId=56340231000> | <https://orcid.org/0000-0002-7220-055X>

● COMMUNICATION AND INTERPERSONAL SKILLS

Summary

Strong communication skills developed in diverse and multicultural environments, cultivated through scientific conferences, mobility projects, and international events, such as:

- Projet de l'Agence Universitaire de Francophonie, l'Ecole Centrale de Lille, Lille, France, 6-18 Nov. 2017
- Learning and mobility project "Technological Upcycling", supported by Erasmus+, Pompei, Italy, 1-8 Sept. 2017
- Teaching workshops at The Texas University at Dallas, Richardson, USA, Jan - May 2017

Experience presenting complex technical topics to a global audience, facilitating collaboration, and sharing knowledge in academic settings.