

Alexandru Dorca

Email address: alexandru.dorca@upt.ro | **Address:** Timisoara, Romania (Work)

WORK EXPERIENCE

ASSISTANT LECTURER IN UNIVERSITY – POLYTECHNIC UNIVERSITY OF TIMISOARA – 02/2022 – Current – TIMISOARA, ROMANIA

Management of activities in the disciplines:

- Thermotechnics 1 - laboratory, year 2 ICT
- Thermotechnics 2 - laboratory, year 2 ICT
- Heating installations 1 - project, year 3 ICT
- Thermal installations 2 - project, year 3 ICT
- Ventilation installations 1 - laboratory, year 3 ICT
- Ventilation installations 2 - project, year 4 ICT
- Information systems in installations - seminar, OMSI master, year 1

DESIGN ENGINEER – S.C. AGASI S.R.L. – 02/2015 – 10/2022 – TIMISOARA, ROMANIA

Design of Sanitary and HVAC Installations

EDUCATION AND TRAINING

10/2016 – 10/2023 Timisoara, Romania

DOCTOR'S DEGREE Polytehnica University of Timisoara, Faculty of Construction

Doctoral student - Department of Civil Constructions and Installations
Topic: Ensuring the energy efficiency of thermal systems and comfort in civil buildings using the ground-coupled heat pump

Website https://www.upt.ro/

10/10/2023 Timisoara, Romania

PROJECT CHECKER Ministry of Development, Public Works and Administration

Field of technical-professional attestation: **Is - Sanitary Installations, Level I**

Website https://www.mdlpa.ro/ | **Valid until** 10/10/2028

22/11/2022 Timisoara, Romania

PROJECT CHECKER Ministry of Development, Public Works and Administration

Field of technical-professional attestation: **It - Thermal installations related to buildings - Level I**

Website https://www.mdlpa.ro/ | **Valid until** 22/11/2027

03/2021 – 07/2021 Timisoara, Romania

PEDAGOGICAL MODULE CERTIFICATE - LEVEL II Polytechnic University of Timisoara

Website https://www.upt.ro/

10/2020 – 02/2021 Timisoara, Romania

PEDAGOGICAL MODULE CERTIFICATE - LEVEL I Polytechnic University of Timisoara

Website https://www.upt.ro/

2019
CONSTRUCTION SITE SUPERVISOR State Inspectorate of Construction

Domain 8.2 - Sanitary installations, thermal ventilation

Website https://isc.gov.ro/

2019
TECHNICAL RESPONSIBLE FOR EXECUTION State Inspectorate of Construction

Domain 6.2 - Thermal, sanitary and ventilation-air conditioning installations

Website https://isc.gov.ro/

2014 – 2016 Timisoara, Romania
MASTER'S DEGREE Polytechnic University of Timisoara

Optimization and modernization of installation systems (OMSI)

Website https://www.ct.upt.ro/

2010 – 2014 Timişoara, Romania
BACHELOR'S DEGREE Polytehnica University of Timisoara, Faculty of Construction

Specialization: Building Services

Website https://www.ct.upt.ro/

2008 – 2012 Timişoara, Romania
BACHELOR'S DEGREE Polytehnica University of Timisoara, Faculty of Construction

Specialization: Industrial and Agricultural Civil Constructions

Website https://www.ct.upt.ro/

LANGUAGE SKILLS

Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B1	B1	B1	B2
FRENCH	A2	A2	A2	A2	A1

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

SKILLS

Microsoft Office | Autodesk AutoCAD and Revit | simulation software (PolySun, SolarComputer, TRNSYS etc.) | Skills of remote communication via Zoom or Skype (I was interviewed, studied)

PROJECTS

Important Projects - Design Building Services

- Design coordinator of HVAC and Sanitary installations for the office building VOX Technology Park Timisoara
- Design coordinator of HVAC and sanitary installations for the office building ISHO Office Timisoara
- Design coordinator for HVAC and sanitary installations for ISHO Living Timisoara residential buildings
- Design of HVAC and Residential installations for FBR Towers Timisoara residential buildings

Important Projects - Research

Director:

- Contract AOSR, 57/08.04.2024 - Investigation of the performance of a ground-coupled heat pump system with regeneration in different configurations and operating modes

Member:

- BC 19/03.04.2023 - Experimental research to optimize geothermal water consumption and reduce energy consumption by integrating renewable energy sources, photovoltaic systems and heat pumps
- BC 40/23.05.2023 - Construction of a warehouse for confiscated materials within the building 49-237, headquarters of the Territorial Inspectorate of the Border Police Timisoara"
- BC 41/23.05.2023 - Rehabilitation and modernization of Pavilion 5E within the I.T.P.F. Timisoara, Timis County.
- BC 34/23.05.2024 - Natural Gas Network Extension and Heating Boiler Installation for the Administrative Buildings of S.T.P.F. Mehedinți.

HOBBIES AND INTERESTS

Football

Swimming

Travels

PUBLICATIONS:

Web of Science publications

- Sarbu, I. **Dorca, A.** "A comprehensive review of solar thermoelectric cooling systems", **International Journal of Energy Research**, 2018, vol. 42, no. 2, pp. 395-415.
- Sarbu, I. **Dorca, A.**, "Review on heat transfer analysis in thermal energy storage using heat storage systems and phase change materials", **International Journal of Energy Research**, 2019, vol. 43, no. 1, pp. 29-64.
- Sarbu, I. **Dorca, A.**, "Experimentally investigating and numerically simulating the performances of various low-temperature hydronic heating/cooling systems connected to a vertical closed-loop ground-coupled heat pump", **Energy and Buildings**, 2023, vol. 300, 1 December 2023, no. 113661
- Sarbu, I.; **Dorca, A.**Investigation by Monitoring and Numerical Simulation of the Performance of a Ground-Source Heat Pump System with and without Regeneration in Different Configurations and Operating Modes. **Applied Thermal Engineering**, 2024.
- Sarbu, I.; **Dorca, A.**; Mirza, M. Exhaustive Overview of Advances in Integrating Renewable Energy Sources into District Heating Systems. **Sustainable Cities and Society**, 2024.
- **Dorca, A.**, Sarbu, I. Thermal protection impact assessment of a residential house on the energy efficiency of the air-source heat pump radiant floor heating system. **Thermal Science and Engineering Progress**, 2025, 67, 104059.
- **Dorca, A.;** Sarbu, I. Hybridisation of District Heating in Existing Office Buildings Using Air-to-Water Heat Pumps: A Case Study on Energy and Performance.**Sustainability**, 2026.
- Sarbu, I.; **Dorca, A.** Investigating the Performance of an Air-Source Heat Pump Coupled to Heating and Cooling System of a Single-Family House Located in a Hilly Area with Low Outdoor Temperatures. **Renewable Energy**, 2026.

Books

- I. Sarbu, **A. Dorca**, "Advances in District Heating Systems and Integrating Renewables" Springer, 2026, ISBN: 978-3-032-12783-9, ISSN: 1865-3529

ORGANISATIONAL SKILLS

Organizational skills

- organizer with team spirit;
- quick adaptation
- ability to make decisions under stress and to meet deadlines.
- ability to assimilate new information and skills
- capacity for self-improvement-self-taught
- attention to details