



Curriculum vitae Europass



Personal information

Name / surname

ALEXANDRU CATALIN

E-mail(s)

calex@unitbv.ro; [REDACTED]

Professional experience

Period

2016-present

Occupation or position held

Director, Council for Doctoral University Studies (CSUD) - IOSUD Transilvania University of Braşov

Period

2009-present

Occupation or position held

PhD supervisor in Mechanical Engineering

Main activities and responsibilities

Doctoral & postdoctoral program coordination

Name and address of employer

Transilvania University of Braşov, Bd. Eroilor 29, 500036 Braşov

Type of business or sector

Education, higher education

Period

1992-present

Occupation or position held

Assistant (1992), Lecturer (1998), Associate Professor (2001), Professor (2004)

Main activities and responsibilities

Teaching and research activities in mechanical engineering & industrial engineering

Name and address of employer

Transilvania University of Braşov, Bd. Eroilor 29, 500036 Braşov

Type of business or sector

Education, higher education

Education and Training

Period

2002

Qualification / diploma obtained

Certificate of completion

The main subjects studied /
professional skills acquired

Informatics applied in engineering

Name and type of educational
institution / training provider

Transilvania University of Braşov, Bd. Eroilor 29, 500036 Braşov

Level in national or international
classification

Postgraduate course

Period

1994-1998

Qualification / diploma obtained

PhD diploma in Mechanical Engineering

The main subjects studied /
professional skills acquired

Kinematic and dynamic optimization of the guiding mechanisms used for the rear axles of the motor vehicles

Name and type of educational
institution

Transilvania University of Braşov, Bd. Eroilor 29, 500036 Braşov

Level in national or international
classification

Postgraduate training through doctorate

Period 1986-1991

Qualification / diploma obtained Engineer Diploma in Mechanical Engineering – Motor Vehicles

The main subjects studied / professional skills acquired Diversified skills in the field of mechanical engineering

Name and type of educational institution / training provider Transilvania University of Braşov, Bd. Eroilor 29, 500036 Braşov

Level in national or international classification University - Bachelor of Science

Foreign language(s) known

SELF

English

| Understanding | | | | Speaking | | | | Writing | |
|---------------|------------------|---------|------------------|--------------------|------------------|-------------------|------------------|--------------------|------------------|
| Listening | | Reading | | Spoken interaction | | Spoken production | | Written expression | |
| B2 | independent user | C1 | experienced user | B2 | independent user | B2 | independent user | C1 | experienced user |

Other specializations / qualifications

- TEMPUS scholarship in robotics, INSTN - CEA Saclay, Paris, France (Oct. 1994 - Feb. 1995)
- TEMPUS scholarship in the field of continuing education tools, DAFCO - Académie de Strasbourg, France (May - June 1999)
- Specialization in virtual prototyping software solutions, Mechanical Dynamics, Pruhonice, Czech Republic (Dec. 2000)
- Specialization in experimental testing of hydraulic equipment, MTS Berlin, Germany (March 2001)
- Specialization in renewable energy systems, Viessmann Academy, Battenberg - Allendorf, Germany (October 2004)
- Visiting professor, Technological Educational Institute of Crete, Heraklion, Greece (June 2005)

Scientific activity (see selection in Appendix 1)

- Articles published in Web of Science/Clarivate Analytics rated journals: 21 (cumulative impact factor: 47.109, according to OMEN no. 6129/2016 - Annex 17)
- Articles published in Web of Science/Clarivate Analytics indexed journals and conference volumes (without impact factor) : 30
- Articles published in BDI indexed journals and conference volumes: over 150
- Books/monographs published in national publishers: 11
- Chapters in books published in foreign publishing houses (e.g. Springer, Cambridge Publishing): 9
- National research grants & contracts (project manager / administrative manager / financial manager): 7 (5 / 1 / 1)
- National / international grants & contracts - team member: 23 (20 / 3)
- Patents granted / patent proposals: 5 / 2
- Citations in Web of Science/Clarivate Analytics rated / indexed publications: 288, of which 189 in journals with an impact factor (cumulative impact factor: 673.535)
- Citations in BDI indexed journals/volumes (SCOPUS, SpringerLink, EBSCO, IEEE Xplore, etc.): over 400
- Editor of the Bulletin of the Transilvania University of Braşov, Series I: Engineering Sciences, ISSN 2065-2119 (indexed BDI)
- Guest Editor & Topic Editor at the journals Energies (ISSN 1996-1073, FI/2022= 3.2) and Mathematics (ISSN 2227-7390, FI/2022=2.4)
- Editor of books published abroad: 2
- Reviewer for Web of Science/Clarivate Analytics rated journals: 45 journals (published by prestigious publishers, mostly from abroad, e.g. Elsevier, Springer, Sage, IEEE, Taylor & Francis, American Institute of Physics)
- Member of the scientific committee at dozens of conferences in the country and abroad
- Member of the scientific committee of the Renewable Energy & Power Quality Journal, ISSN 2172-038X, published under the auspices of the European Association for the Development of Renewable Energy, Environment and Power Quality, Spain (indexed BDI - SCOPUS)
- Member of the scientific committee of the journal Annals of the Oradea University - Fascicle of Management and Technological Engineering, ISSN 1583-0691 (indexed BDI)
- Member of the scientific committee of the Journal of Research and Innovation for Sustainable Society, ISSN 2668-0416, THOT Publishing House (indexed BDI)

| | |
|--|--|
| Hirsch factor | <ul style="list-style-type: none"> ▪ Web of Science – 10 (https://www.webofscience.com/wos/author/record/A-9895-2012) ▪ SCOPUS – 15 (https://www.scopus.com/authid/detail.uri?authorId=24801921400) ▪ Scholar – 22 (https://scholar.google.ro/citations?user=9yh75rQAAAAJ) |
| Representation in national / international commissions | <ul style="list-style-type: none"> ▪ Member in the CNATDCU commission of <i>Mechanical Engineering, Mechatronics and Robotics</i> (2016 - 2020) ▪ Member of national doctoral commissions: 32 (+ 3 commissions as doctoral supervisor) ▪ Member of national habilitation commissions: 10 ▪ Member of international commissions (abroad): 6 |
| Organizational competences and skills / University management | <ul style="list-style-type: none"> ▪ Director of the Council for Doctoral University Studies (CSUD) - IOSUD Transilvania University of Braşov (2016 - 2020, 2020 - 2024) ▪ Member of university management structures: Executive board of the Transilvania University in Braşov (2016 - 2020, 2020 - 2024); Senate of the Transilvania University in Braşov (2020 - 2024, 2024 -) ; Council of the Faculty of Technological Engineering (2004 - 2010); Council of the Faculty of Product Design and Environment (2010 - 2012, 2016 - 2020, 2020 - 2024); Council of the Department of Product Design, Mechatronics and Environment (2016 - 2020) ▪ Coordinator of research teams & project administration obtained through competition, as project director, administrative director and financial manager ▪ Administrative manager of the research platform <i>Product Design for Sustainable Development (DPDD)</i> ▪ <i>Virtual Prototyping</i> Coordinator within the research centers <i>Renewable Energy Systems & Recycling</i> (2005 - 2014) and <i>Design of Mechanical Systems & Elements</i> (2014 -) ▪ Member of the executive board of the Romanian Association for the Mechanisms and Machines Science (2005 - 2013) ▪ President of the Braşov branch of the Romanian Association for the Mechanisms and Machines Science (2013 - 2014) ▪ Member of the management board of the Technological and Business Incubator ITA Pro-Energ (2005 - 2016) |
| Membership in scientific / professional organizations | <ul style="list-style-type: none"> ▪ Romanian Association for the Mechanisms and Machines Science - ARoTMM ▪ International Federation for the Promotion of Mechanism and Machine Science - IFToMM ▪ International University Association for Science and Technology of Romania - UASTRO ▪ European Association for the Development of the Renewable Energy and Power Quality - EA4EPQ |

Books / chapters (selection):

1. Alexandru, C., Pozna, C. Dynamics of mechanical systems based on virtual prototyping, with application to vehicle suspension mechanisms. Ed. Transilvania University of Braşov, 2003, ISBN 973-635-225-0.
2. Alexandru, C., Buta, AC Windshield wiper mechanisms. Modeling and virtual prototyping. Ed. Transilvania University of Braşov, 2006, ISBN 973-635-635-3.
3. Alexandru, C., Pozna, C. The analysis and optimization in virtual environment of the mechatronic tracking systems used for improving the photovoltaic conversion. Motion Control, ch. 29, IntechOpen, 2009, ISBN 978-953-7619-55-8.
4. Alexandru, C., Comşit, M. Optimal design in virtual prototyping environment of a dual-axis pseudo-equatorial solar tracker. Renewable Energy, vol II, part VI: Solar Technologies, ch. 33, Cambridge Publishing, ISBN 978-1-4438-8377-1.
5. Alexandru, C. Modeling and simulation in engineering (Editor). IntechOpen, 2012, ISBN 978-953-51-0012-6.

Articles published in Web of Science/Clarivate Analytics journals (selection):

1. Alexandru, C., Pozna, C. Simulation of a dual-axis solar tracker for improving the performance of a photovoltaic panel. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy, vol. 224, no. 6/2010, p. 797-811, ISSN 0957-6509, DOI 10.1243/09576509JPE871, Accession Number WOS:000281794700006.
2. Alexandru, C., Tatu, IN Optimal design of the solar tracker used for a photovoltaic string. Journal of Renewable and Sustainable Energy, vol. 5, no. 2, 2013, p. 023133(1-16), ISSN 1941-7012, DOI 10.1063/1.4801452, Accession Number WOS:000318242100055.
3. Alexandru, C. A mechanical integral steering system for increasing the stability and handling of motor vehicles. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, vol. 231, no. 8, 2017, pp. 1465-1480, ISSN 0954-4062, DOI 10.1177/0954406215624465, Accession Number WOS:000399692000006.
4. Alexandru, C. Method for the quasi-static analysis of beam axle suspension systems used for road vehicles. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, vol. 233, no. 7, 2019, p. 1818-1833, ISSN 0954-4070, DOI 10.1177/0954407018790159, Accession Number WOS:000474052400012.
5. Alexandru, C. Optimal design of the dual-axis tracking system used for a PV string platform. Journal of Renewable and Sustainable Energy, vol. 11, no. 4, 2019, p. 043501(1-14), ISSN 1941-7012, DOI 10.1063/1.5109390, Accession Number WOS:000482886400008.
6. Alexandru, C. A method for finding the static equilibrium of the non-steered wheel suspension systems used in passenger cars. Applied Sciences, vol. 12, no. 14, 2022, p. 7122(1-17), ISSN 2076-3417, DOI 10.3390/app12147122, Accession Number WOS:000833818100001.
7. Alexandru, P., Macaveiu, D., Alexandru, C. A gear with translational wheel for a variable transmission ratio and applications to steering box. Mechanism and Machine Theory, vol. 52, 2012, pp. 267-276, ISSN 0094-114X, DOI 10.1016/j.mechmachtheory.2012.02.005, Accession Number WOS:000302783300019.
8. Alexandru, P., Vişa, I., Alexandru, C. Modeling the angular capability of the ball joints in a complex mechanism with two degrees of mobility. Applied Mathematical Modelling, vol. 38, no. 23, 2014, pp. 5456-5470, ISSN 0307-904X, DOI 10.1016/j.apm.2014.04.032, Accession Number WOS:000345721900009.
9. Enescu, M., Alexandru, C. Optimal algorithm for spray pyrolysis deposition of TiO₂ films by using an industrial robot. Journal of Renewable and Sustainable Energy, vol. 4, no. 5, 2012, p. 053126 (1-11), ISSN 1941-7012, DOI 10.1063/1.4763565, Accession Number WOS:000314153400029.
10. Ioniţă, M., Alexandru, C. Dynamic optimization of the tracking system for a pseudo-azimuthal photovoltaic platform. Journal of Renewable and Sustainable Energy, vol. 4, no. 5, 2012, p. 053117(1-15), ISSN 1941-7012, DOI 10.1063/1.4757630, Accession Number WOS:000314153400020.

Research projects/contracts (selection):

1. Functional design of mechanisms with multiple guidance of non-steering wheels of automobiles. CNCSIS research grant, code 122/2000 & 66/2001 (project manager).
2. Virtual prototyping of the mechanical systems, with applicability to the guiding & suspension systems of the motor vehicles. CNCSIS research grant, code 311/2002 & 150/2003 (project manager).
3. Research, design and testing of windshield wiper mechanisms based on modern technologies (digital modeling, virtual prototyping). CNCSIS research grant, code 1321/2004-2006 (project manager).
4. Analysis and optimization in a virtual environment, on digital prototyping platforms, of the mechatronic systems used for improving the solar radiation conversion in electricity. CNCSIS research grant, code 892/2007-2008 (project manager).
5. Product design for sustainable development. CNCSIS research platform, code 79/2006-2007, contract no. 14/2006 (administrative manager).
6. Development of the business incubator Products and Technologies for Sustainable Energy (PRO-ENERG). INFRATECH program, contract no. 404/2006-2007 (financial manager).
7. Modeling and simulation of the behavior of an electrical voltage reduction system. Beneficiary AUTOLIV Romania, 2016-2017, contract no. 16244/2016 (contract manager).
8. The study of new structures of linkages and gears for vehicle suspension and steering system, in a mechatronic context. CNCS PNII-ID-PCE research grant, code 607, 2009-2011 (team member & coordinator of the phase II/2010: Semi-active suspension system design).
9. Theoretical and experimental research of guiding linkages used to road and agricultural vehicles. Major research program, CNCSIS code 5/1998, 1999-2001 (team member).

Patents granted (selection):

1. Alexandru, C., Macaveiu, MD, Alexandru, P. Steering device. Patent no. 127279, 2016.
2. Tatu, IN, Alexandru, C. Tracking mechanism for a string of photovoltaic modules. Patent no. 128543, 2019.
3. Ţoţu, V., Alexandru, C. Suspension mechanism for light vehicles and single-seaters. Patent no. 130228, 2022.