

PERSONAL INFORMATION

Simona LACHE✉ slache@unitbv.roPOSITION
IOSUD UTBVPhD Coordinator
Doctoral studies field: Mechanical Engineering
Since 2007EXPERTISE FIELD AND
RESEARCH INTEREST AREAS

Structural Dynamics, Human Body Vibrations, Lightweight Structures

WORK EXPERIENCE

2007 – present **University Professor – Ph.D. supervisor**
2006 – 2007 **University Professor**
2002 – 2006 **University Associate Professor**
1998 – 2002 **University Lecturer**
1994 – 1998 **University Assistant**
1992 – 1994 **University Junior Assistant**

Transilvania University of Brasov, 29 Eroilor Blvd., 500283 Brasov, Romania, www.unitbv.ro, Faculty of Mechanical Engineering, Department of Mechanical Engineering/ Chair of Precision Mechanics and Mechatronics (until 2011).

- Teaching lectures, laboratory and project activities, scientific research.

Business or sector: education and scientific research.

2012 – present **Vice-Rector for University Internationalization and Quality Evaluation**

Transilvania University of Brasov, 29 Eroilor Blvd., 500283 Brasov, Romania, www.unitbv.ro

- Development of the university internationalization strategy, development and implementation of the internationalization tools, coordination of the internationalization process at university level;
- Elaboration of policies on quality evaluation and quality assurance in the university, providing the framework for conducting activities of quality evaluation of processes and coordination of these activities: annual internal evaluations / internal evaluations in the view of periodical external evaluations (at national and international level).
- Coordinator of the self-evaluation process and contact person for the institutional external evaluation by ARACIS (2013) and international evaluation by IEP-EUA (2012-2013).
- Institutional coordinator of the Erasmus+ Programme.

Business or sector: university management, education, quality assurance and evaluation in higher education, international relations.

2008 – 2012 **Vice-Rector for Quality Assurance and International Evaluation**

Transilvania University of Brasov, 29 Eroilor Blvd., 500283 Brasov, Romania, www.unitbv.ro

- Elaboration of policies on quality evaluation and quality assurance in the university, providing the framework for conducting activities of quality evaluation of processes and coordination of these activities: annual internal evaluations / internal evaluations in the view of periodical external evaluations (at national and international level).
- Coordinator of the self-evaluation process and contact person for the international evaluation by IEP-EUA (2010-2011).

Business or sector: university management, education, quality assurance and evaluation in higher education .

EDUCATION AND TRAINING

1995 – 2000 **Ph.D. in Engineering Sciences, field of Mechanical Engineering** level 8 EQF
 Transilvania University of Brasov, Romania
 ▪ Competences and skills acquired in the field of scientific research

1993 – 1995 **European Master in Energy Management and Mechanical Engineering** level 7 EQF
 Technical University of Cluj-Napoca, School for post-university studies/ international master programme within the framework of TEMPUS Programme JEP 3503.
 ▪ Robotics, Computer Aided Design, Energy production and management, Advanced finite element method for mechanical engineers, Management principles, Financial management.

1986 – 1991 **Engineer** level 6 EQF
 Transilvania University of Brasov, Faculty of Mechanics
 ▪ Competences and skills acquired in the field of Mechanical Engineering, Precision Mechanics programme, Automation specialization.

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user
French	B2 Independent user	B2 Independent user	B2 Independent user	B2 Independent user	B2 Independent user

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Communication skills ▪ good communication skills gained through personal experience as university professor, management experience and that of participant in many project teams at national and international level;

Organisational / managerial skills ▪ good organizational / managerial skills formed on the basis of experience in various management positions held and the coordination of scientific research and education projects at national and international level;

Other skills ▪ good knowledge of internal and external quality evaluation of universities, study programmes and quality agencies, at national and international level;
 ▪ experience in Project Management (participation in: 35 grants and research contracts, of which 7 - as director of contract / grant; 25 education/ quality assurance projects (10 - as the team leader / director), of which 10 international (5 - as team leader);
 ▪ coordination of the Centre of Competence in Engineering Analysis and Simulation System - developed by UTBV in collaboration with LMS International (now part of Siemens);
 ▪ coordination of the training and research programs within the interdisciplinary platform - Advanced systems for motor vehicles and road transport - SAVAT.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Levels: Basic user - Independent user - Proficient user
[Digital competences - Self-assessment grid](#)

- good command of e-office tools (MsOffice - Word, Excel, Access, Powerpoint, Adobe), internet;
- good command of specific CAD/CAE tools (AutoCAD, CATIA, ANSYS, Matlab, Mathcad, Visual Basic).

ADDITIONAL INFORMATION

- Publications** 10 books and book chapters, over 80 articles and scientific papers published in international journals and conference proceedings.
- Projects** Participation in 24 research grants (at 5 of them as director/ responsible) and 11 research contracts (at two of them as director)
- Journals - reviewer** Materials and Design (Elsevier), Polymers Testing (Elsevier), Mechanics Based Design of Structures and Machines (Taylor & Francis)
- Memberships**
- SRMTA (Romanian Society of Theoretic and Applied Mechanics)
 - AGIR (General Association of Romanian Engineers)
 - SROMECA (Romanian Association of Mechatronics),
 - SRR (Romanian Society of Robotics)
- H Indexes** H Index WoS = 5; H Index Scopus = 6; H Index Google Scholar = 7

ANNEXES

List of publications - selection

LIST OF PUBLICATIONS (selection)

1. Velea, M.N., **Lache, S.**, *Energy absorption of all-PET 2nd order hierarchical sandwich structures under quasi-static loading conditions*, Thin-Walled Structures, ISSN: 0263-8231, Volume: 138 (2019), Pages: 117-123, DOI: 10.1016/j.tws.2019.01.039. FI=2.881 (2018), SRI=1.831 (2018), <https://www.sciencedirect.com/science/article/pii/S0263823118308383> .
2. Velea, M.N., Schneider, C., **Lache, S.**, *Second order hierarchical sandwich structure made of self-reinforced polymers by means of a continuous folding process*, Materials & Design, ISSN: 0261-3069, Volume: 102 (2016), Pages: 313-320, DOI: 10.1016/j.matdes.2016.04.049. FI=3.997 (2016), SRI=2.065 (2016), <https://www.sciencedirect.com/science/article/pii/S026412751630524X> .
3. Velea, M.N., **Lache, S.**, Roșca, I.C., *Damping characteristics identification of self-reinforced poly-ethylene terephthalate*, Proceedings of the Romanian Academy series A, ISSN 1454-9069, Volume: 17 Nr. 4 (2016), Pages: 336-343. FI=1.735 (2016), SRI=0.369 (2015), <https://acad.ro/sectii2002/proceedings/doc2016-4/08ProcRoAcad-4-2016.pdf> .
4. **Lache, S.**, David, L.T., *How is open innovation addressed in universities today? An overview on existing curricula in Europe*, chapter in Anne-Laure Mention, Arie P. Nagel, Joachim Hafkesbrink, Justyna Dabrowska (editori), Innovation Education Reloaded. Nurturing Skills for the Future, LUT Scientific and Expertise Publications, Lappeenranta, Finland 2016, ISBN # 978-952-335-032-8, ISBN #978-952-335-033-5 (PDF), <https://oi-net.eu/m-oinet-network/m-oinet-key-topics/m-wp5-common-curricula-framework/982-coming-soon-innovation-education-reloaded-nurturing-skills-for-the-future>.
5. Heitz, T., Teodorescu-Draghicescu H., **Lache, S.**, Chiru A., Vlase, S., Calin, M. R., *Advanced T700/XB3585 UD carbon fibers-reinforced composite*, Journal of Optoelectronics and Advanced Materials, ISSN 1454-4164, Vol. 16, No. 5-6, May-June 2014, p. 568-573. FI=0.563 (2014), SRI=0.295 (2014).
6. Velea, M.N., Wenhage, P., **Lache, S.**, *Out-of-plane effective shear elastic properties of a novel cellular core for sandwich structures*, Materials & Design, ISSN: 0261-3069, Volume: 36 (2012), Pages: 679-686 DOI: doi:10.1016/j.matdes.2011.12.017, FI=3.997 (2016), SRI=2.065 (2015); 1.1290 (2012), <https://www.sciencedirect.com/science/article/pii/S0261306911008466> .
7. Velea, M.N., **Lache, S.**, *In-plane effective elastic properties of a novel cellular core for sandwich structures*, Mechanics of Materials, ISSN: 0167-6636, Volume: 43 (2011) Issue: 7 Pages: 377-388 DOI: 0.1016/j.mechmat.2011.04.006. FI=2.636 (2016); SRI=2.255 (2015); 2.49134 (2011), <https://www.sciencedirect.com/science/article/pii/S0167663611000688> .
8. Ciolan, M.A., **Lache, S.**, Velea, M., *Topologic Study of a Novel Periodic Cellular Core for Sandwich Panels*, 7th International Conference on Advanced Materials and Structures - AMS 2018, 28-31 March 2018, Timisoara, IOP Conf. Series: Materials Science and Engineering 416 (2018) 012087 doi:10.1088/1757-899X/416/1/012087, <https://iopscience.iop.org/article/10.1088/1757-899X/416/1/012087> .
9. Velea, M., **Lache, S.**, *Failure mode maps of a hierarchical sandwich structure made of self-reinforced PET*, International Conference on Structural Analysis of Advanced Materials: ICSAAM 2017, 19-22 September 2017, Bucharest, ISBN 978-0-7354-1624-6, vol. 1932, Issue 1, AIP Conference Proceedings 1932, 030022 (2018); <https://doi.org/10.1063/1.5024172>, <https://aip.scitation.org/doi/abs/10.1063/1.5024172?journalCode=apc> .
10. Ciolan, M.A., **Lache, S.**, Velea, M., *The Auxetic Behavior of an Expanded Periodic Cellular Structure*, International Conference on Structural Analysis of Advanced Materials: ICSAAM 2017, 19-22 September 2017, Bucharest, ISBN 978-0-7354-1624-6, vol. 1932, Issue 1, AIP Conference Proceedings 1932, 030022 (2018); <https://doi.org/10.1063/1.5024172>, <https://aip.scitation.org/doi/abs/10.1063/1.5024171> .
11. Shalaby K., **Lache, S.**, Plamadeala R. (2018), *Dynamic Analysis of the Inverted Tooth Chain Plates Moving Towards Sprocket*. In: Herisanu N., Marinca V. (eds) Acoustics and Vibration of Mechanical Structures, AVMS-2017. Springer Proceedings in Physics, vol 198. Springer, Cham, pp 341-348. DOI: https://doi.org/10.1007/978-3-319-69823-6_40, Print ISBN: 978-3-319-69822-9, Online ISBN: 978-3-319-69823-6, https://link.springer.com/chapter/10.1007/978-3-319-69823-6_40 .
12. Shalaby, K., Corciova, F., **Lache, S.**, *Validation of Kinematic Simulation of Sprocket Contacts of Chain Links by Experiments*, Chapter in "CONAT 2016 International Congress of Automotive and Transport Engineering", pp. 144-151, Springer 2016 Conference: 12th International Congress of Automotive and Transport Engineering (CONAT) Location: Brasov, ROMANIA Date: OCT 26-29, 2016, https://link.springer.com/chapter/10.1007/978-3-319-45447-4_16 .

13. Pirnă, C.G., **Lache, S.**, *The design and architecture of a field management instrument within precision agriculture*, INMATEH - Agricultural Engineering, Volume 36, Issue 2, 2012, Pages 29-34.
14. Pirnă, C.G., **Lache, S.**, *The development of a new soil sampling method in precision horticulture*, INMATEH - Agricultural Engineering, Volume 36, Issue 1, 2012, Pages 27-32.
15. Pirna, C.G., **Lache, S.**, *Integration of Soil Specific Parameters in Designing a Decision Support System in Precision Agriculture*, Proceedings of the 10th Int. Conf. of Engineering for Rural Development 2011, 26-27 May 2011, Jelgava, Latvia, vol. 10, pp. 132-136, ISSN 1691-3043.
16. Velea, M.N., **Lache, S.**, *Numerical simulations of the mechanical behavior of various periodic cellular cores for sandwich panels*, Procedia Engineering (Elsevier), Vol. 10 (2011), ISSN 1877-7058, DOI: 10.1016/j.proeng.2011.04.050, pp. 287-292, ISI Journal. Location: Como, ITALY Date: 2011, Source: 11th International Conference On The Mechanical Behavior Of Materials (ICM11), <https://www.sciencedirect.com/science/article/pii/S1877705811002384>.
17. **Lache, S.**, Velea, M.N., Roșca, I.C., *Dynamic Analysis of Lightweight Structures with Cellular Core Fabricated by Expanding Sheet Materials*, Proc. of the Int. Conf. Modern Technologies, Quality and Innovation ModTech 2011, 25-27 May 2011, Vadul lui Vodă-Chișinău, Republic of Moldavia, vol. I, pp. 565-568, ISSN 2069-6736.
18. Velea, M.N., **Lache, S.**, *Fabrication of Cellular Cores by Expanding Sheet Materials*, Proc. of the Int. Conf. Modern Technologies, Quality and Innovation ModTech 2011, 25-27 May 2011, Vadul lui Vodă-Chișinău, Republic of Moldavia, vol. II, pp. 1137-1140, ISSN 2069-6736.
19. **Lache, S.**, Luculescu, M.C., *Developing reliable hand-arm models for reducing vibration exposure levels*, Proc. of 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, 22-24 mai 2008, Cluj-Napoca, tome I, pp. 168-173, IEEE Catalog Nr.: CFP08AQT-PRT, ISBN: 978-1-4244-2576-1, Library of Congress: 2008904446.
20. Luculescu, M.C., **Lache, S.**, *Using Artificial Neural Networks in a Computer Aided Diagnosis System for Macular Diseases*, Proc. of 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, 22-24 mai 2008, Cluj-Napoca, tome III, pp. 143-148, IEEE Catalog Nr.: CFP08AQT-PRT, ISBN: 978-1-4244-2576-1, Library of Congress: 2008904446.

LIST OF PATENTS

1. Barbu, D.M., **Lache, S.**, Luculescu, M.C., Barbu, I., *Sistem mecatronic de recuperare locomotorie a membrului inferior*, BI - Hotărârea nr. 6/81 din 28.06.2019.
2. Velea, M.N., **Lache, S.**, Frîncu, D., *Structură sandwich cu miez primar prismatic triunghiular și procedeu de obținere al acesteia*, BI - Hotărârea nr. 3/97 din 29.06.2018.
3. Velea, M.N., **Lache, S.**, *Structură celulară stratificată formată pe baza unei structuri celulare expandate mecanic și procedeu de realizare a acesteia*, BI nr. 127038/ 2015.

LIST OF DOCTORAL THESES COORDINATED, DEFENDED AND CONFIRMED

1. Velea, M.N., *Structuri celulare avansate pentru proiectarea multifuncțională și construcția panourilor de tip sandwich/ Advanced cellular structures for multifunctional design and construction of sandwich panels*, Transilvania University of Brasov, 2011.
2. Pirna, C.G., *Sistem mecatronic avansat pentru fundamentarea proceselor decizionale în agricultura de precizie/ Advanced mechatronic system for underlying decisional processes in precision agriculture*, Transilvania University of Brasov, 2012.
3. Shalaby, K., *Kinematics and Dynamics of Inverted Tooth Chain Drives based on Analogous Huygens Pendulum Model/ Cinematica și dinamica transmisiilor cu lanț dințat pe baza modelului pendulului analogic al lui Huygens*, Transilvania University of Brasov, 2018.