







PERSONAL INFORMATION VLASE Sorin

-  University Transilvania of Brasov
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  -  [State personal website\(s\)](#)
  -  [Replace with type of IM service](#) [Replace with messaging account\(s\)](#)
- Sex Male | Date of birth 10/07/1952 | Nationality Romanian

POSITION WITHIN THE PROJECT

Researcher and tester in the field of mechanics

WORK EXPERIENCE

[Add separate entries for each experience. Start from the most recent.]

1996-present

**Professor**

Transilvania University of Brasov, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: Mechanics, Vibrations, Stability, Dynamics, Composite materials, Computational Mechanics;
- Research activities: Dinamical Systems, Dynamics of the Multibody Systems, Composite materials mechanics;
- Management activities: students tutoring, undergraduate diploma/master dissertation papers advising, monitoring and coordinating.

Business or sector Academic

1980-1996

**Assistant Professor, Associate Professor**

Transilvania University of Brasov, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: Mechanics, Vibrations, Stability, Dynamics, Composite materials, Computational Mechanics;
- Research activities: Dinamical Systems, Dynamics of the Multibody Systems, Composite materials mechanics;
- Management activities: students tutoring, undergraduate diploma/master dissertation papers advising, monitoring and coordinating.

Business or sector Academic

1976-1980

**Engineer, Research engineer**

Factory for trucks, Brasov, Romania and Research Institute for Automotive Engineering Braşov

- Research activities: Dinamical Systems, Dynamics of the Multibody Systems, Composite materials mechanics;
- Industrial activities

Business or sector Industry, research

EDUCATION AND TRAINING

[Add separate entries for each course. Start from the most recent.]

2015

**Habilitation degree**

Replace with EQF (or other) level if relevant

University of Piteşti, Interdisciplinary Doctoral School, Romania

- Aerspatial, Automotive and Transportation

|           |   |   |
|-----------|---|---|
| 1981-1989 | Ph.D.   | Replace with EQF<br>(or other) level if<br>relevant |
|           | <p>“Transilvania” University of Brasov, Romania</p> <p>Contributions to the elastodynamic analysis of the mechanisms using <i>FEM</i>. Ph.D. father: prof. Florea Duditzza</p>  |   |
| 1977-1982 | Licence diploma in mathematics  | Replace with EQF<br>(or other) level if<br>relevant |
|           | <p>University of Bucharest, Faculty of Mathematics, Romania</p> <p>Mathematics</p>  |   |
| 1971-1976 | Replace with qualification awarded  | Replace with EQF<br>(or other) level if<br>relevant |
|           | <p>Licence+master diploma in engineering/ specialization: Mechanical Engineering/Automotive Engineering</p> <p>Mechanical engineering, automotive engineering, computer aided design, manufacturing technologies, vibrations, modelling and simulation of mechanical devices.</p> |   |

## PERSONAL SKILLS

|                   |  |                  |                    |                   |                  |
|-------------------|--|------------------|--------------------|-------------------|------------------|
|                   | [Remove any headings left empty.]                                |                  |                    |                   |                  |
| Mother tongue(s)  | Romanian   |                  |                    |                   |                  |
| Other language(s) | UNDERSTANDING  | SPEAKING         |                    | WRITING           |                  |
|                   | Listening  | Reading          | Spoken interaction | Spoken production |                  |
| English           | Proficient user  | Independent user | Proficient user    | Independent user  | Independent user |
|                   | Replace with name of language certificate. Enter level if known. |                  |                    |                   |                  |
| French            | Proficient user  | Proficient user  | Proficient         | Proficient user   | Independent user |
|                   | Replace with name of language certificate. Enter level if known. |                  |                    |                   |                  |

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

**Communication skills** Team spirit and good communication skills acquired through experience as manager or member of more as 50 research projects (manager – 15 research grants).  
 Communication skills and competences concerning the knowledge transmission and continuing education gained through experience in the teaching activities within the “Transilvania” University of Brasov, since 1980.

**Organisational / managerial skills** Finite Element Method for the use to the dynamic analysis of Multibody Systems.  
 Experimental characterization/identification/evaluation of the behaviour/(mechanical, thermal, electrical) properties/aging of mechanical structures and advanced materials  
 Optical methods for advanced materials characterization (stress/strain states evaluation; mechanical properties identification based laser ultrasonic; surface parameter identification) – set-up, monitoring, use and tailoring  
 Mechanical and dynamic mechanical methods for advanced/multi-layered polymer based composite materials characterization

**Job-related skills** Composite materials (particle/fibre) manufacturing based on self-developed/known technologies  
▪ Industrial abilities in mechanical and automotive engineering

**Digital competence**

**SELF-ASSESSMENT**

Information processing

Communication

Content creation

Safety

Problem solving

Proficient

Proficient

Proficient

Independent user

Proficient

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

Replace with name of ICT-certificate(s)

Replace with your other computer skills. Specify in what context they were acquired.

- good command of office suite (word processor, spread sheet, presentation software)
- good command of photo editing software gained as an amateur photographer

Programming in Matlab, MathCAD);

Linear and non-linear multi-scale material modelling;

Structural analysis and simulation in FEM based environments;

Statistical data processing;

**Other skills**

**Driving licence** Replace with driving licence category/-ies.  
B & C

**ADDITIONAL INFORMATION**

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Publications In Annexes  
Presentations  
Projects  
Conferences  
Seminars  
Fellowship

April-May 1992, Technische Gesamthochschule Wuppertal, Germany, DAAD;  
May-August 1993, Technische Universität, München, Germany, Tempus;  
July-August 1994, University of Athens, Tempus  
October-December, 1994, Technische Universität, Stuttgart, Germany, TEMPUS,  
IMG-94-RO-1102/1994.  
June 1999, Technische Universität, Stuttgart, Socrates  
June 1999, Universität Gesamthochschule Wuppertal, Tempus  
June, 2001, Technische Universität Karlsruhe, Germany

Honours and awards Member of the Romanian Academy of Technical Sciences

Memberships American Society of Mechanical Engineers – since 1990  
EUROMECH – 2006  
ARTENS - 1995  
SMRTA – 2014  
ARMSM-2007  
SIAR-2008

Reviewer UEFISCDI – since 2006  
Evaluator in The Romanian Agency for Quality Assurance in Higher Education. More than  
10 evaluations

Post-graduate courses and other training **1990**, September CISM courses, Szombathely, Ungaria;  
**2002**, June, NATO –ASI Workshop, Virtual Nonlinear Multibody System, Praga;  
**2006**, October, CISM, Udine, Italy;  
**2006**, December, Hottinger Academy, Darmstadt, Germany;  
**2007**, May, ZACEcourses in, Nonlinear Finite Element Method, Berlin, Germany;  
**2007**, October, Bruel&Kjaer courses, Munchen, Germany.  
**2008**, June, CISM, Udine, Italy.

References  
Citations  
Courses  
Certification

Chairman of the International Conferences:  
COMAT2006, COMAT2008, CONAT2010, COMAT2012, COMAT 2014, COMAT2016,  
COMEC2005, COMEC2007, COMEC2009, COMEC2011, COMEC2013, COMEC2015,  
INTERNATIONAL WORKSHOP ON COMPUTATIONAL MECHANICS, Braşov,  
octomber,2006, MODERN TRENDS IN MECHANICS, 2005,

In the Scientific or Organising Committee:  
OPTIMED 2006, June, Braşov;  
5th BALKAN SCHOOL IN NUCLEAR PHYSICS, Braşov, 2006, september;  
The XXXI-th National Conferenc in Mechanics of Solid, Chişinău, 2007;  
CONFERENCE on MULTIBODY SYSTEMS' DYNAMICS , Piteşti, octomber, 2007;  
NATIONAL CONFERENCE on MECHANICS OF SOLIDS, CNMS –XXXII, Piteşti, 2008;  
The 3rd INTERNATIONAL CONFERENCE ON TEORETICAL AND APPLIED  
MECHANICS(MECHANICS 07), Tenerife, Spain, December 14-16, 2007;  
3rd Int. Conf. on DYNAMICAL SYSTEMS and CONTROL (CONTROL '07), Arcachon,  
France, 13-15 October 2007;  
6th Int. Conf. on NON-LINEAR ANALYSIS, NON-LINEAR SYSTEMS AND CHAOS  
(NOLASC '07);  
The 3rd IASME International Conference on EDUCATIONAL TECHNOLOGIES  
(EDUTE'07), 2007;  
The 9th International Conference on MATHEMATICAL METHODS AND  
COMPUTATIONAL TECHNIQUES IN ELECTRICAL ENGINEERING (MMACTEE '07),  
2007;  
The 7th International Conference on WAVELET ANALYSIS & MULTIRATE SYSTEMS  
(WAMUS'07), 2007; OPTIMED 2008,  
FRAM 2008 – FRACTURE MECHANICS, 10-11 octombrie 2008, Brasov,

**Books** (selected)

- Vlase, S., **Elastodynamic of Finite Elements**. Ed. LUX LIBRIS, 1996. 134pg  
Vlase, S., **Mechanics. Statics**. Ed. INFOMARKET, 2003,2008. ISBN 973-8204-52-6, 229 pg.  
Vlase, S., **Computational Mechanics**. Ed. INFOMARKET, 2006. ISBN 973-8204-75-5.  
Deliu, Gh., Vlase, S., **Mechanics. Statics. Problems**. Ed. Alabastră, Cluj, 2004. ISBN 973-650-139-6.  
Vlase, S., **Mechanics. Dynamics**. Ed. Infomarket, 2005. 973-8204-74-7. 265 pg.  
Vlase, S., s.a., **Composite Materials. Calculus Methods**. Editura Universităţii TRANSILVANIA, 2007. ISBN 978-973-635-890-6. 200 pg.  
Vlase, S., **Mechanics. Kinematics**. Ed. Infomarket, 2007. ISBN 978-973-8204-96-6.

**Chapters in international books**

- Vlase, S., Finite Element Analysis of the Planar Mechanisms: Numerical Aspects. In Applied Mechanics - 4. Elsevier, 1992, p.90-100.  
Vlase, S., Munteanu, V., Scutaru, L., Kinematical Analysis of the Multibody Systems using Topological Description, DAAAM 2008, **DAAAM International Scientific Book 2008**, Vol. 7, ISSN 1726-9687, ISBN 3-901509-69-0, Editor: B. Katalinic, hard cover, Publisher DAAAM International Vienna, Vienna.  
Teodorescu H., Vlase, S., Rosu, D., Ulea, M., Residual Internal Stresses determined Experimentally in Hollow Composite Laminates, in E. E. Gdoutos (Editor), Experimental Analysis of Nano and Engineering Materials and Structures. Springer. Alexandroupolis, Greece, July 1-6, 2007, Springer, Dordrecht, The Netherlands, ISBN 978-1-4020-6.  
Szava & all – Selected Chapters of Mechanics of Composite Materials-III, Ed. Univ. TRANSILVANIA din Brasov, ISBN 978-606-19-0224-8, 2013 (Vlase 53pg).  
Szava & all – Selected Chapters of Mechanics of Composite Materials-II, Slovakia, 2012 (Vlase, 62pg).

**Editor** (selection)

- S. Vlase, I. Curtu, The 1st International Conference ADVANCED COMPOSITES MATERIALS ENGINEERING, Ed. Universităţii TRANSILVANIA din Braşov, 2006.  
S. Vlase, S. Lache, Gh. Radu, The 2nd International Conference ADVANCED COMPOSITES MATERIALS ENGINEERING, Ed. Universităţii TRANSILVANIA din Braşov, 2008.  
S. Vlase, A. Chiru, The 2nd International Conference COMPUTATIONAL MECHANICS and VIRTUAL ENGINEERING, COMEC2007. Ed. Universităţii TRANSILVANIA, Braşov, 2007.  
S. Vlase, A. Chiru, Yasushi Niitsu, The 3rd International Conference COMPUTATIONAL MECHANICS and VIRTUAL ENGINEERING, COMEC2009. Ed. Universităţii TRANSILVANIA, Braşov, 2009.  
D. Bigoni, S. Vlase, A. Chiru, The 3rd International Conference COMAT2010 - ADVANCED COMPOSITES MATERIALS ENGINEERING, Ed. Infomarket, 2010.  
S. Vlase, C. Papalettere, The 3rd International Conference COMPUTATIONAL MECHANICS and VIRTUAL ENGINEERING, COMEC2011. Ed. Lux Libris, Braşov, 2011.

**Papers** (selected)

**Articles in ISI journals**

M. Marin, S. Vlase, M. Paun, Considerations on double porosity structure for micropolar bodies. AIP Advances **5**, 037113; <http://dx.doi.org/10.1063/1.4914912>, 2015.

M. L. Scutaru, H. Teodorescu-Draghicescu, S. Vlase, M. Marin, Advanced HDPE with increased stiffness used for water supply networks. Journal of Optoelectronics and Advanced Materials, Vol. 17, No. 3-4, 2015, p. 484 – 488, 2015.

Száva I., Vlase S., Gálfi P.B., Munteanu R.I., Ionescu D.R., Evaluation of the clean softwood components' longitudinal Young's moduli by means of overall measurements. WOOD RESEARCH **60** (4): 555-566, 2015.

H. Teodorescu-Draghicescu, S. Vlase, M.D. Stanciu, I. Curtu, M. Mihalca, Advanced Pultruded Glass Fibers-Reinforced Isophthalic Polyester Resin. Materiale Plastice, **52**, No. 1, 62-54, 2015.

Vlase, S., Eigenvalues and Eigenmodes of an Inclined Homogeneous Truss in a Rotational Field. Rom. Journ. Phys., 59, 699-714 (2014a).

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 Matrics, VL 16,IS 5-6,p568-573,MAY-JUN 2014.

Radu, I. S., Vlase, S., Calin, M. R., Developing shape-memory materials using fast acting cyclic stresses for memory stabilizing. Optoelectronics and Advanced Matrics- Rapid Communications, VL 8,IS 3-4, p.251-254, MAR-APR 2014.

Vlase, S., Danasel, C., Scutaru, M. L., Mihalcica, M., Finite Element Analysis of a Two-Dimensional Linear Elastic Systems with a Plane "RIGID MOTION", Romanian Journal of Physics, VL 59,IS 5-6,p.476-487,2014.

Vlase, S., Purcarea, R., Teodorescu-Draghicescu, H., Calin, M. R., Szava, I., Mihalcica, M., Behavior of a new Heliopol/Stratimat300 composite laminate. Optoelectronics and Advanced Matrics- Rapid Communications, VL 7,IS 7-8,p.569-572, JUL-AUG 2013.

Modrea, A., Vlase, S., Teodorescu-Draghicescu, H., Mihalcica, M., Calin, M. R., Astalos, C., Properties of advanced new materials used in automotive engineering. Optoelectronics and Advanced Matrics- Rapid Communications, VL 7,IS 5-6,p.452-455,MAY-JUN 2013.

Modrea, A., Vlase, S., Calin, M. R., Peterlicean, A., The influence of dimensional and structural shifts of the elastic constant values in cylinder fiber composites. Journal of Optoelectronics and Advanced Matrics, VL 15,IS 3-4,p.278-283,MAR-APR 2013.

Vlase, S., Teodorescu, P. P., Elasto-Dynamics of a Solid with a General "Rigid" Motion using FEM Model. Part I. Theoretical Approach. Romanian Journal of Physics, VL 58,IS 7-8,p872-881,2013.

Vlase, S., Teodorescu, P. P., Itu, C., Scutaru, M. L., Elasto-Dynamics of a Solid with a General "Rigid" Motion using FEM Model. Part II. Analysis of a Double Cardan Joint. Romanian Journal of Physics, VL 58,IS 7-8,p882-892,2013.

Vlase, S., Teodorescu-Draghicescu, H., Calin, M. R., Scutaru, M. L., Advanced PolyLite composite laminate material behavior to tensile stress on weft direction. Journal of Optoelectronics and Advanced Matrics, VL 14,IS 7-8,p658-663,JUL-AUG 2012:

Calin, M. R., Calin, M. A., Vlase, S., Radulescu, I., Advanced materials in experimental equipments for absolute measurement of X and gamma-ray exposure rate with free-air and cavity ionization chambers. Journal of Optoelectronics and Advanced Matrics, VL 14,IS 3-4,p.282-286,MAR-APR 2012.

Stanciu, A., Teodorescu-Draghicescu, H., Vlase, S., Scutaru, M. L., Calin, M. R., Mechanical behavior of CSM450 and RT800 laminates subjected to four-point bend tests. Optoelectronics and Advanced Matrics- Rapid Communications, VL 6,IS 3-4,p.495-497,MAR-APR 2012.

Scutaru, Maria Luminita, Vlase, Sorin, Some Properties of Motion Equations Describing the Nonlinear Dynamical Response of a Multibody System with Flexible Elements. JOURNAL OF APPLIED MATHEMATICS, DI 10.1155/2012/628503,2012.

Vlase, S., Dynamical Response of a Multibody System with Flexible Elements with a General Three-Dimensional Motion. Romanian Journal of Physics, VL 57,IS 3-4,p676-693,2012.

Niculita, C., Vlase, S., Bencze, A., Mihalcica, M., Calin, M. R., Serbina, L., Optimum stacking in a multi-ply laminate used for the skin of adaptive wings. Optoelectronics and Advanced Matrics- Rapid Communications, VL 5,IS 11,p.1233-1236,NOV 2011.

Calin, M. R., Calin, M. A., Vlase, S., Radulescu, I., Simion, C. A., Advanced materials and technologies for high-pressure krypton detectors in industrial use. Journal of Optoelectronics and Advanced Matrics, VL 13,IS 9-10,p.1181-1184,SEP-OCT 2011.

Katouzian, M., Vlase, S., Calin, M. R., Experimental procedures to determine the viscoelastic parameters of laminated composites. Journal of Optoelectronics and Advanced Matrics, VL 13,IS 9-10,p.1185-1188,SEP-OCT 2011.

Teodorescu-Draghicescu, H., Stanciu, A., Vlase, S., Scutaru, L., Calin, M. R., Serbina, L., Finite element method analysis of some fibre-reinforced composite laminates. Optoelectronics and Advanced Matrics- Rapid

Communications, VL 5,IS 7, p.782-785,JUL 2011.

Teodorescu-Draghicescu, H.,Vlase, S.,Scutaru, L.,Serbina, L.,Calin, M. R., Hysteresis effect in a three-phase polymer matrix composite subjected to static cyclic loadings. Optoelectronics and Advanced Materials- Rapid Communications,VL 5,IS 3-4,p.273-277,MAR 2011.

Vlase, S.,Teodorescu-Draghicescu, H.,Motoc, D. L.,Scutaru, M. L.,Serbina, L., Calin, M. R.,Behavior of multiphase fiber-reinforced polymers under short time cyclic loading. Optoelectronics and Advanced Materials- Rapid Communications,VL 5,IS 3-4,p419-423,MAR 2011.

Vlase, S.,Teodorescu-Draghicescu, H.,Calin, M. R.,Serbina, L.,Simulation of the elastic properties of some fibre-reinforced composite laminates under off-axis loading system. Optoelectronics and Advanced Materials- Rapid Communications,VL 5,IS 3-4,p.424-429,MAR 2011.

Teodorescu-Draghicescu, Horatiu,Vlase, Sorin, Homogenization and averaging methods to predict elastic properties of pre-impregnated composite materials. COMPUTATIONAL MATERIALS SCIENCE,VL 50,IS 4,p.1310-1314,DI 10.1016/j.commatsci. 2010.04.040,FEB 2011.

Vlase, S.,Method of Eliminating Lagrangian Multipliers from the Equation of Motion of Interconnected Mechanical Systems. Journal of Applied Mechanics, Transactions of ASME, 54 (1), pp. 235-237, 1987.

Vlase, S.,Elimination of lagrangian multipliers. (1987) *Mechanics Research Communications*, 14 (1), pp. 17-22.

## GRANTS AND CONTRACT AS PROJECT COORDINATOR

### International Grants/Project Coordinator

1. **FINITE ELEMENT ANALYSIS OF FIBROUS COMPOSITE MATERIALS.** NATO-EV: Contract number: CPB.EAP.EV.982300/21/ **2006**, Project coordinator: **Sorin Vlase**;
2. Technische Universität, Stuttgart, Germany, **Dynamical Analysis of Mechanical Systems.** TEMPUS, Contract number: IMG-94-RO-1102/**1994**, Project coordinator: **Sorin Vlase**;
3. **Finite Element Methods Applied to the Calculus of Composites Materials.** PROMETEUS, Technische Universität, München, Germany, **1993**. Project coordinator: **Sorin Vlase**.

### National Grants/Project Coordinator

4. **Modelling and simulation of behavior under mechanical loads, by means of finite element methods, of composite materials in order to identify their properties.** CEEX MODULUS I- Contract number: 42/2005, Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
5. **Results and trends in modern mechanical fiber reinforced polymer composite materials.** CEEX Modulus III, Contract number: 35/2006, Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
6. **Experimental and nonlinear analysis and optimal control of mechanical multibody systems with applications in mechanical engineering and robotics - ADEL.** CEEX MODULUS I, Contract number: 61/2006, Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
7. **Virtual analysis of multibody systems with applications in automotive design (symbolic representations and numerical simulation).** Contract number: 930/2007, CNCSIS, Tip A, 2007, Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
8. **Developing interdisciplinary laboratory for modeling and identification of advanced multifunctional composite materials mechanics - COMLAB.O2.1. IMPACT** Contract number: **784-iunie 2007**, Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
9. **Increased reliability of the bearings used in the automotive industry. AUTO-RULO. IMPACT-** Contract number: **1358/2008 –2008**, Beneficiary: MCT, Project coordinator: **Sorin**

10. **The 2nd Advanced Composite Materials Engineering** - COMAT2008. Contract number: 710/2008 – Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
11. **Developemenet of Componentes of Advanced Composite Materials with Applications in Automotive Engineering.** POSCCE, 2012 with IMM VIOSON srl and INAR SA Braşov. Project coordinator: **Sorin Vlase**.
12. **System calibration measurement and control equipment used in industry, operating at high temperatures.** Innovation cecks. 2014, Landa srl Bucureşti, Beneficiary: Project coordinator: **Sorin Vlase**.
13. **Grant PNI** Contract number: **51-041/2007**. Beneficiary: MCT, Project coordinator: **Sorin Vlase**.
14. **Rigid motion control systems (robots and manipulators). Part I. Dynamic analysis of the motion of elastic solids.** Contract number: Grant 5005/28/1996. Beneficiary: Ministerul Învăţământului, D.G.I.S.C.S.U. Project coordinator: **Sorin Vlase**.
15. **Finite element analysis of mechanical systems with elastic elements (with applications to robots and manipulators).**Contract number: 4005/nr.282, 1995, Beneficiary: CNCSIS - Ministerul Învăţământului. Project coordinator: **Sorin Vlase**.

#### Contract with IMM and other authorities

16. **Noise measurements to validate assessed by vehicular traffic; measurements for determining chemical pollution.** Contract number: 4165AK/2007. Beneficiary: Terti Ministry of Environment and Sustainable Development. Project coordinator: **Sorin Vlase**.
17. **Noise map for the city of Targu Mures 2009**, Beneficiary: Targu Mures City Hall, Project coordinator: **Sorin Vlase**
18. **Noise map for the city of Targu Mures 2014**, Beneficiary: Targu Mures City Hall, Project coordinator: **Sorin Vlase**
19. **Forced vibrations of the U12 engine.** Contract number: 452/1984. Beneficiary: CCSITT Braşov. Project coordinator: **Sorin Vlase**
20. **Stresses and vibration of the crankshaft nr. 232.03.101.** Contract number: 621/1983, Beneficiary: INMT Bucureşti. Project coordinator: **Sorin Vlase**.