


## PERSONAL INFORMATION



## Motoc Luca Dana

 Transilvania University of Brasov

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Sex Female | Date of birth 08/07/1969 | Nationality Romanian

### POSITION PHD COORDINATOR IOSUD UTBV

PhD coordinator in the doctoral studies domain: **Mechanical Engineering**

Since: 2015/October

Expertise fields and research interest topics within the coordinated PhD domain

- Composite materials – synthesis, manufacturing, characterization
- Micromechanical prediction and FEM simulation
- Advanced materials for a wide range of engineering applications

### WORK EXPERIENCE

October 1<sup>st</sup>, 2017 - present

#### Professor

Transilvania University of Brasov, Faculty of Mechanical Engineering, Department of Automotive and Transport Engineering, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: manufacturing and assembling technologies, computer programming, numerical methods, applied informatics
- Research activities: composite materials manufacturing, testing and characterizing
- Management activities: students tutoring, undergraduate/master dissertation/PhD paper advising, monitoring and coordinating.

March 1<sup>st</sup>, 2017  
October 1<sup>st</sup>, 2017

#### Professor

Transilvania University of Brasov, Faculty of Material Science and Engineering, Material Science Department, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: composite materials, materials selection, operation research, robotics
- Research activities: composite materials manufacturing, testing and characterizing

Management activities: students tutoring, Erasmus + faculty coordinator, undergraduate/master dissertation/PhD paper advising, monitoring and coordinating.

October 1<sup>st</sup>, 2012  
March 1<sup>st</sup>, 2017

#### Associate professor

Transilvania University of Brasov, Faculty of Material Science and Engineering, Material Science Department, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: composite materials, materials selection, operation research, robotics
- Research activities: composite materials manufacturing, testing and characterizing
- Management activities: students tutoring, Erasmus + faculty coordinator, undergraduate/master dissertation/PhD paper advising, monitoring and coordinating.

October 1<sup>st</sup>, 2013 - 2012

#### Associate professor

Transilvania University of Brasov, Faculty of Mechanical Engineering, Precision Mechanics and Mechatronics Department, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: high level computer language, virtual instrumentation, technical optics, optoelectronics, geometrical optics, computerized optical systems, computational mechanics
- Research activities: composite materials manufacturing, testing and characterizing
- Management activities: students tutoring, undergraduate/master dissertation paper advising, monitoring and coordinating.

October 1<sup>st</sup>, 1999 - 2003

### Lecturer

Transilvania University of Brasov, Faculty of Mechanical Engineering, Precision Mechanics and Mechatronics Department, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: high level computer language, virtual instrumentation, technical optics, optoelectronics, geometrical and physical, optics, computerized optical systems, clinical diagnosis, equipment for optical information processing
- Research activities: optical systems for material testing and characterization
- Management activities: students tutoring, undergraduate/master dissertation paper advising, monitoring and coordinating.

October 1<sup>st</sup>, 1995 - 1999

### Assistant professor

Transilvania University of Brasov, Faculty of Mechanical Engineering, Precision Mechanics and Mechatronics Department, 29 Eroilor Av., 500036, Brasov, Romania

- Academic activities: high level computer language, technical optics, optoelectronics, geometrical and physical, optics
- Research activities: optical systems for mechanical devices

## EDUCATION AND TRAINING

September 1<sup>st</sup>, 2012-2017

### PhD in Industrial Production and Engineering

Polytechnic University of Valencia, Spain

- Associated rights and privileges – Cum laudae
- PhD thesis delivered – *Development of green composites based on epoxidized vegetable oils (EVOs) with hybrid reinforcements: natural and inorganic fibers*
- Specialization – Material Science -polymers and composite materials

September 29<sup>th</sup>, 2015

### Habilitation degree

Transilvania University of Brasov, Interdisciplinary Doctoral School, Mechanical Engineering domain

- Habilitation thesis delivered – *Tailoring the effective properties of hybrid polymer based composite materials*

October 1<sup>st</sup>, 2007-2009

### Master of Science in Finance and Banks

Transilvania University of Brasov, Faculty of Economical Sciences and Business Administration

- Finance analysis and management, public financial policies, finance accountancy, economics statistics, economical processes simulation and modelling

October 1<sup>st</sup>, 1996-2002

### PhD in Mechanical Engineering

Transilvania University of Brasov, Interdisciplinary Doctoral School, Mechanical Engineering domain

- Associated rights and privileges – Cum laudae
- PhD thesis delivered – *Contributions to analyzing the correlations between the tension level and the physical properties characteristic to certain materials by using non-destructive testing methods (sound, visual)*
- Specialization – strength of materials, elasticity and plasticity

October 1<sup>st</sup>, 1993-1995

### European Master of Science in Mechanical Engineering and Energy Management

Transilvania University of Brasov, Technical University of Cluj-Napoca, International Technological University, The Free University of Brussels

October 1<sup>st</sup>, 1987-1992

## License degree in Mechanical Engineering

Transilvania University of Brasov, Faculty of Mechanical Engineering, Precision Mechanics

- General assignments – computer aided design, manufacturing technologies, optoelectronics, optics, vibrations, modelling and simulation of mechanical devices, electronics, and quality assurance

### PERSONAL SKILLS

#### Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Cambridge First certificate, IELTS, TOEFL.					

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 16 research projects (manager – 3 research grants; member – 13 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 1992.
- Good ability to adapt multicultural environments.

#### Organizational/managerial skills

Project and team management developed skills through experience and project manager positions:

- 2007-2010 PNII-CNCSIS, IDEI Program, Title: Advanced research aiming the development of multiphase polymeric composite materials with improved mechanical and physical properties
- 2004-2005 CNCSIS, AT 172, Title: Analysis, manufacturing, modelling and non-destructive ultrasonic testing of particle reinforced polymeric composite materials for development a concurrent engineering environment

#### Job-related skills

- Experimental characterization/identification/evaluation of the behavior/(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
- Mechanical methods for engineering structures behavior under extreme environmental conditions
- Electrical measures for advanced materials/composite materials characterization

#### Digital competence

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](#)

Programming in high level computer languages – C/C++, graphical programming in LabVIEW (2018), linear and non-linear multi-scale material modelling, and structural analysis and simulation in FEM based environments, statistical data processing, numerical methods.

## ANNEXES

- Fellowship**
- 1<sup>st</sup> Jan. – 30<sup>th</sup> Aug. 1995 Queens University of Belfast, Astrophysics Laboratory, Northern Ireland, financial support of European Commission, Project Tempus, JEP 237/1993
  - 1<sup>st</sup> Feb. – 1<sup>st</sup> May 1999 Universite Bordeaux I, Mechanical and Physics Laboratory, France, financial support of European Commission, Socrates Program
  - 1<sup>st</sup> Sept. – 30<sup>th</sup> Oct. 2013 PYCO Fraunhofer Research Institution for Polymeric Materials and Composites, Berlin, Teltow Campus, Germany, financial support DAAD scholarship
  - 15<sup>th</sup> Nov. – 30<sup>th</sup> Nov. 2018 PYCO Fraunhofer Research Institution for Polymeric Materials and Composites, Berlin, Teltow Campus, Germany

**Publications**

Author and co-author of more than 180 scientific articles (18 articles in ISI journals, 25 articles in ISI proceedings, 75 in proceedings of international conferences world-wide)  
 Author and co-author of 11 books (4 – unique author, 4 – first author)  
 Author and co-author of 2 patents  
*Pressure-force transducer embedded in concrete pillars*  
*Adjusting resistor made of a piezo-resistive based effect composite material*

### Papers (selected)

#### ISI journals

**Motoc Luca, D.**, S. Ferrandiz Bou, R. Balart - Thermal properties comparison of hybrid CF/FF and BF/FF cyanate ester-based composites, Journal of Thermal Analysis and Calorimetry, ISSN 1388-6150, 2018, doi: 10.1007/s10973-018-7222-y (IF 1,953), vol. 133 (1), 509-518.

**Motoc Luca D.**, Ferrandiz S., Balart R. – Effects of fiber orientation and content on the mechanical, dynamic mechanical and thermal expansion properties of multi-layered glass/carbon fiber-reinforced polymer composites, Journal of Composite Materials, 2015, p. 1211-1221.

**Motoc Luca D.**, Ivens, J., Dadirlat, N. – Coefficient of thermal expansion evolution for cryogenic preconditioned hybrid carbon fiber/glass fiber reinforced polymeric materials, Journal of Thermal Analysis and Calorimetry, 2012

**Motoc Luca D.**, Curtu I., Soica A., Semenescu A. – Multiphase polymeric composite materials CTE variation with extreme environmental conditions, Materiale Plastice, vol. 47, no. 2, 2010, pp. 236-240, ISSN 0025-5289

**Motoc Luca D.**, Olteanu I., Luca V. – Tailoring the multiphase composite materials' electrical properties, Journal of Optoelectronics and Advanced materials, Vol. 12, no. 2, Aug. 2010, ISSN 1454-4164

**Motoc Luca D.**, Curtu I. – Dynamic mechanical analysis of multiphase polymeric composite materials, Materiale Plastice, vol. 46, no. 4, 2009, pp. 462-466, ISSN 0025-5289

Curtu I., **Motoc Luca D.** – Theoretical-experimental comparisons of multi-phase composite materials elastic coefficients retrieved from tensile, compressive and bending tests. Influencing factors, Materiale Plastice, ISSN 0025/5289, vol. 45, nr. 4, 2008, pp. 366-371

Oltean, D. I., **Motoc Luca D.**, Luca V., Roşu D. – Electrical properties of metallic iron particle reinforced polymeric composite materials, Journal of Optoelectronics and Advanced Materials, Vol. 10, no. 12, 2008, pp. 3328-3331, ISSN 1454-4164

#### ISI proceedings

**Motoc Luca D.** - Dynamic mechanical characterization of CF/GF hybrid reinforced polymeric composite structures, ESDA 2012 – Proceedings of the 11<sup>th</sup> Biennial Conference on Engineering Systems, Design and Analysis, July 2-4, Nantes, France, <http://www.asme.org/>

**Motoc Luca D.**, Vlase S. - Micromechanical based simulation and experimental approaches in the thermal conductivities assessment of hybrid polymeric composite materials, ESDA 2012 – Proceedings of the 11<sup>th</sup> Biennial Conference on Engineering Systems, Design and Analysis, July 2-4, Nantes, France, <http://www.asme.org/>

**Motoc Luca D.**, Pop, P. A., Ferrandiz Bou, S., Dadirlat, N. - Tailoring thermal properties of hybrid glass fibers/carbon fibers reinforced polymeric composites, IMECE2011 - Proceedings of the 2011 ASME International Mechanical Engineering Congress & Exposition, Nov. 11-17, Denver, Colorado, USA, <http://www.asme.org/>

**Motoc Luca D.**, Curtu I., Campean M. – Environmental effects on multiphase polymeric composite materials thermal properties, ECCM14- Proceedings to The 14<sup>th</sup> European Conference on Composite Materials, June 7-10 2010, Budapest, Hungary, ISBN 978-963-313-008-7, <http://eccm14.pt.bme.hu>

**Motoc Luca D.**, Pop A. P., Bejinariu Gh. - Sizing the cryogenic conditioning on the CTE and Young modulus in case of polymeric multiphase composites, MSEC 2010 – International Manufacturing Science and Engineering Conference, ASME 2010, Oct. 12-15, Erie, USA, ISBN 978-0-7918-3887-7, <http://www.asme.org/>

**Books (selected)**

Szava I., Ciofoaia V., **Motoc Luca D.**, Curtu I.-Metode experimentale în dinamica structurilor mecanice (en. Experimental methods in mechanical structures dynamics), Ed. Universității "Transilvania" din Brașov, 2001, ISBN 973-9474-40-3

**Motoc Luca D.** – Materiale compozite cu pulberi: analiză, modelare, fabricare și testare ultrasonică nedistructivă (en. Particle reinforced composite materials: analysis, modelling, manufacturing and non-destructive ultrasonic testing), Ed. Universității „Transilvania” din Brașov, 2005, ISBN 973-635-527-6

Curtu I., **Motoc Luca D.** – Micromecanica materialelor compozite. Modele teoretice (en. Composite materials micromechanics. Theoretical models) , Ed. Universității „Transilvania” din Brașov, 2009, ISBN 978-973-598-469

**Chapters in international books**

**Motoc Luca D.** – Temperature dependent properties of CF/FF and BF/FF reinforced hybrid epoxy composites, Advances in Material Science Research, Nova Science Publishers Inc., 2017, ISBN: 978-1-53612-769-0, vol. 31

**Motoc Luca D.**, Oltean I. D. - Conductive polymeric composite material's behaviour under various loading conditions, DAAAM International Scientific Book 2008, ISBN 3-901509-69-0, ISSN 1726-9687, Ed. B. Katalinic, Publisher DAAAM International Viena.

Șoica A., **Motoc Luca D.**, Lache S., Țărulescu S. - Aspects concerning of the automotive-pedestrian collision, DAAAM International Scientific Book 2008, ISBN 3-901509-69-0, ISSN 1726-9687, Ed. B. Katalinic, Publisher DAAAM International Viena.

Curtu I., **Motoc Luca D.** –Theoretical and experimental approach of multi-phase composite materials, DAAAM International Scientific Book 2009, ISBN 978-3-901509-71-1, ISSN 1726-9687, Ed. B. Katalinic, Publisher DAAAM International Viena.

Motoc Luca D., Ciofoaia V. – Predicting, measuring and tailoring thermal properties of morphological and structural modified polymeric composite materials, Engineering the future, Ed. L. Dudas, ISBN 978-953-307-210-4, Sciyo, <http://www.sciyo.com>, 2010.