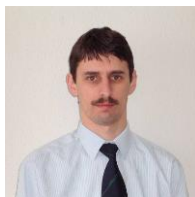


PERSONAL INFORMATION

DUDESCU Mircea Cristian



-  B-dul Muncii, 103-105, Cluj-Napoca, 400641, Romania
-  +40 (0)264 401663 / 401661
-  Mircea.Dudescu@rezi.utcluj.ro
-  <http://users.utcluj.ro/~dudescu>
-  Skype c_dudescu

Sex M | Date of birth 09/11/1971 | Nationality Romanian

WORK EXPERIENCE

15/04/1997 - 01/08/2001
01/09/2003 – 02/03/2005
01/12/2006 – prezent

Junior Assistant (1997-1999), Assistant (1999-2004), Lecturer (2004-2007), Associate Professor (2007-2013), Professor (2013-present)

TECHNICAL UNIVERSITY OF CLUJ-NAPOCA, Faculty of Mechanical Engineering, Department of Mechanical Engineering, B-dul Muncii 103-105, 400641, Cluj-Napoca, Romania www.utcluj.ro

- *Teaching activities:* courses and seminars in field of Strength of Materials & Finite Element Method;
- *Research:* Analysis of strain/stress state in machine parts, application of experimental techniques, optical methods of engineering analysis, FEM studies

Business or sector Higher education

01/10/2007 - 15/10/2010
part time

Team leader - computational engineering

ARRK RESEARCH & DEVELOPMENT SRL, Str. Taietura Turcului nr.47, EGH building, 40022 Cluj-Napoca, brunch office of P+Z Engineering GmbH, München, Germany www.puz.de

- Office coordination, recruiting, small simulation projects for automotive industry

Business or sector Engineering services for the product development process. CAE simulations

03/03/2005 - 30/09/2005
01/10/2005 - 30/11/2006

Experienced researcher (German Research Foundation project)

Researcher (fellow of the Alexander von Humboldt Foundation)

CHEMNITZ UNIVERSITY OF TECHNOLOGY, Germany, Institut für Mechanik, Professur Experimentelle Mechanik, Straße der Nationen 62, Germany, www.tu-chemnitz.de

- Development of a measurement system based on Electronic Speckle Pattern Interferometry (ESPI), Investigation into Non-linear Springback for High Strength Steel Sheets by ESPI
- Teaching activities – lab works in laser interferometry.

Business or sector Higher education

6/08/2001 - 05/08/2003

EU Research Assistant / Marie-Curie Fellow (FP5)

ETTEMEYER AG, Germany (actually DANTEC DYNAMICS GmbH), Nersinger Str. 12-16, D-89275 Elchingen, Germany, www.dantecdynamics.com

- Improving strain/stress calculation module for a speckle interferometry measuring system, connection with the Finite Element Method,
- Industrial applications of the speckle technique

Business or sector Optical Measurement Systems, Strain/stress analysis services

01/10/1996 - 30/03/1997

Designer Engineer

SOMES SA, Dej, str. Bistriței nr. 63, Dej, Romania, www.somes.ro

- Implementation of the Computer Aided Design (AutoCAD), design of different machine parts and assemblies for the paper machine

Business or sector Pulp and Paper Mill Company

EDUCATION AND TRAINING

- 1996 - 2001 **PhD (Dr.Eng.)**
 Technical University of Cluj-Napoca, Faculty of Mechanical Engineering, Cluj-Napoca, Romania
 - Mechanical Engineering: Strength of Materials, Elasticity and Plasticity
 - Thesis title: *Study of the flexible shells of revolution with application at metallic bellows.*
 - Adviser: Prof.dr.ing. Ioan Pastrav
- 1995-1996 **Master Degree**
 Technical University of Cluj-Napoca, Faculty of Mechanical Engineering, Cluj-Napoca, Romania
 - Advanced Methods in Engineering and Management of Quality Assurance
- 1990-1995 **Engineer**
 Technical University of Cluj-Napoca, Faculty of Mechanical Engineering, Cluj-Napoca, Romania
 - Fine Mechanics (first of my class)
- 1986-1990 **Baccalaureate Diploma**
 „Andrei Mureşanu” National College, Dej, Cluj county
 - Mechanic

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Certificate of linguistic competence – Technical University of Cluj-Napoca, Romania					
German	B2	B2	B2	B2	B2
Zertifikat Deutsch, Goethe Institut Dresden, Germany					

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

Courses and trainings

- AutoCAD Release 12 - *Autodesk Training Center, Technical University of Cluj-Napoca, Romania, 1996*
- Optical Methods in Experimental Mechanics - *Bergische Universität Wuppertal, Germany, 1998 - 1999 TEMPUS Mobility (Programme Tempus JEP 11177/96)*
- FEM Simulation for automotive industry: ANSA, NASTRAN, ABAQUS, at *Training and Support Center, P+Z Engineering GmbH, München, Germany, 07-09/2007*

Organisational / managerial skills

- Competencies developed through teaching & research activities:*
- Member in the Council of the Mechanical Engineering Faculty of TUCN (2008 – till present)
 - Member CNATDCU (The National Council for Attestation of University Titles, Diplomas and Certificates) – Commission “Mechanical Engineering, Mechatronics and Robotics (2011-2012)
 - Vice dean of Faculty of Mechanical Engineering from TUCN (2012-till present)
 - Coordinator and member in international and national research projects
 - Member in organizing committee of national and international symposiums & workshops
- Competencies acquired in industry :*
- Leadership – coordinator of the brunch office of German company P+Z Engineering GmbH (2007-2010)
 - Recruiting and employees evaluations
 - Coordination of industrial projects

- Job-related skills**
- Strength of materials, elasticity and plasticity
 - Experimental mechanics
 - Optical methods of engineering analysis
 - Material testing and characterization
 - Finite Element Method (Ansys, Algor, Nastran, Abaqus, Ansa)
 - Structural analysis and numerical simulation of microstructures (MEMS)
- Computer skills**
- Computer programming (Visual C++, Matlab)
 - Office suite - Microsoft Office™
 - Graphical editors/ vector drawing (Corel Designer Technical Suite)
 - Software platform Common Vision Blox - for vision application development
- Driving licence**
- B

ADDITIONAL INFORMATION

Publications

Relevant papers - selection (ISI)

- **Dudescu, C.**, Botean, A., Hărdău, M., Bal, N. (2014): Measurement of thermoplastics tensile properties using digital image correlation, *Key Engineering Materials*, vol. 601 (2014) pp. 33-36, DOI:10.4028/www.scientific.net/KEM.601.33
- Leordean, D., **Dudescu C.**, Marcu, T., Berce, P., Bâlc, N. (2015): *Aspects related to the application of the selective laser melting technology to customized Ti-6Al-7Nb implants*. *Rapid Prototyping Journal*, vol. 21 issue 1, pp. DOI: 10.1108/RPJ-11-2012-0107
- Pustan, M., **Dudescu, C.**, Birleanu, C. (2015): *Nanomechanical and nanotribological characterization of a MEMS micromembrane supported by two folded hinges*. *Analog Integrated Circuits and Signal Processing*, 82 (3), pp. 627-635, DOI: 10.1007/s10470-014-0482-y
- Pustan, M., **Dudescu, C.**, Birleanu, C. (2014): Reliability Design Based on Experimental Investigations of Paddle MEMS Cantilevers Used in Mass Sensing Applications. *Sensor Letters*, 12 (11), pp. 1600-1606(7), DOI: 10.1166/sl.2014.3371
- Ilea, A., Butnaru, A., Sfrângeu, S.A., Hedeşiu, M., **Dudescu, C.M.**, Berce, P., Chezan, H., Hurubeanu, L., Trombitaş, V.E., Câmpian, R.S., Albu, S. (2014): *Role of Mastoid Pneumatization in Temporal Bone Fractures*, *American Journal of Neuroradiology*, DOI: [10.3174/ajnr.A3887](https://doi.org/10.3174/ajnr.A3887)
- **Dudescu, C.**, Botean, A., Hardau, M. (2013): *Thermal expansion coefficient determination of polymeric materials using digital image correlation*, *Materiale Plastice* 50 (2013) 55-59.
- Pustan, M., Birleanu, C., **Dudescu, C.** (2013): *Simulation and experimental analysis of thermo-mechanical behavior of microresonators under dynamic loading*, *Microsystems Technology*, vol 19, Issue 6, pp. 915-922, DOI 10.1007/s00542-012-1728-1.
- Pustan, M., **Dudescu, C.**, Birleanu, C., Rymuza, Z. (2013): *Nanomechanical studies and materials characterization of metal/polymer bilayer MEMS cantilevers*, *International Journal of Materials Research*, volume 12, pages 1-7, DOI 10.3139/146.110879
- Pascalau, V., Popescu, V., Popescu, G.L., **Dudescu, M.C.**, Borodi, G., Dinescu, A., Perhaița, I., Paul, M. (2012): *The alginate/k-carrageenan ratio's influence on the properties of the cross-linked composite films*. *Journal of Alloys and Compounds*, Vol. 536, Suppl. 1, pp. S418-S423, DOI 10.1016/j.jallcom.2011.12.026.
- **Dudescu, C.**, Naumann, J., Stockmann, M. and Steger H. (2011): *Investigation of Non linear Springback for High Strength Steel Sheets by ESPI*. *STRAIN - International Journal of Experimental Mechanics*, Blackwell Publishing, UK, Vol. 47 Issue Suppl.2, pp. 8-18, DOI: 10.1111/j.1475-1305.2009.00729.x.
- **Dudescu, M.**, Naumann, J., Stockmann, M., Nebel, S., (2006): *Characterisation of Thermal Expansion Coefficient of Anisotropic Materials by ESPI*. *STRAIN - International Journal of Experimental Mechanics*, Blackwell Publishing, UK, Vol. 42, Issue 3, August 2006, pp. 197-206, DOI: 10.1111/j.1475-1305.2006.00271.x.

Books and chapter in books (selection)

- **Mircea Cristian Dudescu**, (2013): *Fundamentals of Strength of Materials. Simple loadings*. Editura U.T.PRESS, Cluj-Napoca, ISBN 978-973-662-831-3, 320 pag.
- Pustan, M., Birleanu, C., **Dudescu C.**, Golinval, J.C. (2013): *Smart sensors and MEMS: Intelligent devices and microsystems for industrial applications*, Woodhead Publishing Limited, Cambridge, UK, ISBN 0-85709-502-1, Chapter 12 "Dynamical behavior of smart MEMS in industrial applications"
- **Mircea Cristian Dudescu**, (2010): *Introduction in Electronic Speckle Pattern Interferometry*. Editura Risoprint, Cluj-Napoca, ISBN 978-973-53-0291-7, 164 pag.
- **Mircea Cristian Dudescu**, (2005): *Strength calculation of bellows*. Editura U.T.Press, Cluj-Napoca, ISBN 973-662-207-X, 160 pag.

- Projects** *Research projects (selection) – project coordinator / work-package responsible*
- *Modeling and simulation of the automotive parts by Finite Element Method.* Research contract with German company P+Z Engineering GmbH (www.puz.de) from München. Research and specialization has been carried out in München, Ingolstadt and Cluj-Napoca, no. UTC-N/24215/2007, period 08/2007-12/2007.
 - *Analysis of the strain gauge properties applied on wood,* grant de cercetare (RKS-RUM /1119802), financed by Hertie Stiftung & Alexander von Humboldt Stiftung Germany, period 06/2007 – 05/2008.
 - *Analysis of elastic-plastic characteristics by Electronic Speckle Pattern Interferometry (ESPI),* research grant at Chemnitz University of Technology, Germany, Department of Experimental Mechanics, financed by Alexander von Humboldt Foundation (IV-RUM1119802 STP), Germany, period 12/2005–12/2006.
 - *MATLAB Scientific Toolbox for Strain-Stress Analysis,* Marie-Curie European Reintegration Grant, research grant financed by EC within 6th Framework Program (FP6), Research Directorate General Human Resources and Mobility (contract no. MERG-CT-2004-510256), period 2004-2005.
 - *Numerical and experimental methods to analyse elastic membranes,* research contract type AT financed by CNCSIS, no. AT3/2004, code CNCSIS 94, period 2004-2005.
 - *Speckle interferometry for industrial needs – strain-stress calculation and link to finite element analysis,* Marie-Curie Fellowship financed by European Community within 5th Framework Program (FP5), Research Directorate General Human Resources and Mobility (contract no. HPMI-CT-1999-00029) period 08/2001–08/2003, project coordinator Dr. Ettemeyer GmbH, Ulm, Germany, postdoctoral researcher / *workpackage responsible*.
 - *Untersuchung des Formänderungsvermögens metallischer Werkstoffe mit hohen hydrostatischen Zugspannungsanteil und höheren Temperaturen,* research project financed by German Research Foundation (Deutsche Forschungsgemeinschaft DFG), project no. NA 245/4-1, period 03/2005 – 09/2005, coordinator Chemnitz University of Technology, Germany, researcher / responsible for the development of a measuring system based on speckle pattern interferometry (ESPI).
- Conferences** *International conferences (selection)*
- Pustan, M., **Dudescu, C.**, Birleanu, C. (2013): *The effect of sensing area position on the mechanical response of mass - detecting cantilever sensor.* Symposium on Design, Test, Integration and Packaging of MEMS/MOEMS (DTIP 2013), 16-18 April 2013 Barcelona, Spain, p. 173-179, ISBN: 978-2-35500-025-6.
 - Pustan M., **Dudescu C.**, Birleanu C. (2013): *Measurement of energy loss coefficient of electrostatically actuated MEMS resonators.* 4th International Conference on Integrity, Reliability & Failure IRF2013, Funchal, Portugal, 23-27 June 2013, p. 305-309.
 - **Dudescu, M.C.**, Stockmann, M., Naumann, J. (2012): *Optical measurement of the strain-stress response during unloading of metal sheets undergoing large plastic deformations.* In: 11th Youth Symposium on Experimental Solid Mechanics, 30th of May 2012 – 2nd of June 2012, Brasov, Romania, ISBN 978-606-19-0078-7.
 - **Dudescu, M.**, Mândru, D. (2011): *Analysis of a Dexterous Instrument for Minimally Invasive Procedures, Based on Bellows Actuators,* International conference on advancements of medicine and health care through technology, Cluj-Napoca, Romania. IFMBE Proceedings, 2011, Vol. 36 (2), pp.176-179, DOI: 10.1007/978-3-642-22586-4_38.
 - **Dudescu, M.C.** (2011): *Measurement of materials properties by electronic speckle pattern interferometry,* 10th Youth Symposium on Experimental Solid Mechanics, 25-28 May 2011, Chemnitz, Germany (**Keynote lecture**) ISBN 978-3-941003-34-7.
 - **Dudescu, M.**, Botean, A., Hărdău, M. (2009): *Digital image correlation method applied to material testing.* In: Proceedings of the 26th Danubia-Adria Symposium on Advances in Experimental Mechanics, September 23-26, 2009, Leoben, Austria, pp. 45-47, ISBN 978-3-902544-02-
 - Dudescu, M., Păstrav, I., Șomotecan, M. (2008): *Aspects related application of the electrical strain gauges on wood.* 25th Danubia-Adria Symposium on Advances in Experimental Mechanics, Ceske Budejovice, CZECH REPUBLIC, Sep. 24-27, pp. 59-60.
- Honours and awards**
- Awarding prizes for research results (PN-II-RUPRECISI-2011-3-1523, PN-II-RU-PRECISI-2012-6-1041)
- ResearcherID**
- C-2090-2011
- ORCID**
- 0000-0001-7743-4542
- Memberships**
- Member of General Association of Romanian Engineers (AGIR), since 1997.
 - Member of Romanian Association for Stress Analysis (**ARTENS**) since 1998, Vice-president of the ARTENS Branch Cluj, since 2011.
 - Member of the Humboldt Club Transilvania, since 2006.

19.05.2015