



## Europass Curriculum Vitae



### Personal information

First name/ Surname **Mihăiță HORODINĂ**  
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E-mail [horodina@tuiasi.ro](mailto:horodina@tuiasi.ro)  
Nationality Romanian  
Date of birth February 16, 1964  
Gender Male

### Desired employment / Occupational field

**Occupational field** Engineering, Science and Technology

### Work experience

Dates	October 1991 onwards
Occupation or position held	Assistant (1991-1995), Lecturer (1995-2009), Associate Professor (2009-2014), Professor (since 2014)
Main activities and responsibilities	<ul style="list-style-type: none"><li>-Head of <i>Machine-tools Experimental Research Laboratory</i>;</li><li>-Teaching the fundamentals of machine-tool design, mechanical systems dynamics, computer aided experimental research and data processing;</li><li>-Computer assisted experimental research on dynamics of the manufacturing systems;</li><li>-Computer assisted experimental research on active power evolution on actuated equipments;</li><li>-New strategies of active damping with piezoelectric actuated systems;</li><li>-High efficiency passive damping systems (passive dynamic absorbers);</li><li>-Mechatronics and mechanical prototyping.</li></ul>
Name and address of employer	'Gheorghe Asachi' Technical University of Iasi Faculty of Machine Manufacturing and Industrial Management Machine-tools and Tools Department 59 A, Bd. Dimitrie Mangeron, et.1, 700050, Iasi, Romania
Type of business or sector	Education and research

  

Dates	September 1988-September 1991
Occupation or position held	Engineer
Main activities and responsibilities	<ul style="list-style-type: none"><li>-Design and prototyping of special machine-tools;</li><li>-Preliminary supervising of prototypes manufacturing.</li></ul>

Name and address of employer	IMAMUS (AGMUS) Iasi 32, Sos. Chisinaului, 700265, Iasi, Romania
Type of business or sector	Machine-tools Manufacturing
Dates	2000-2003 (three years), 2005-2007 (34 months), August 2008, 2009, 2010 and 2011
Occupation or position held	Post doc researcher (2000-2003), Visiting researcher.
Main activities and responsibilities	<p>-Head of the mechanical prototyping team;</p> <p>-Design, manufacturing and experimental research in:</p> <ul style="list-style-type: none"> <li>-Pipe inspection robotics (a new architecture of driving systems, four wireless prototypes);</li> <li>-Active vibration isolation (six degree of freedom vibration isolator based on Stewart-Gough platform in cubic architecture and collocated decentralized integral velocity-force feedback closed loop control, two prototypes, part of two collaborative projects funded by European Space Agency) ;</li> <li>-Passive and active damping of structures, high efficiency tune mass dampers based on viscoelastic materials (more than 30 dB efficiency in damping);</li> <li>-Synthesis of new electrodynamic and piezoelectric actuators;</li> <li>-Adaptive optics (segmented mirrors with controllable shapes based on piezoelectric actuation);</li> <li>-Haptic systems (exoskeleton with 7 degree of freedom for human arm, robotic application, funded by European space Agency);</li> <li>-Magnetic actuated (semi active) braking devices (two prototypes).</li> </ul> <p>I was involved in some European projects founded by European Space Agency:</p> <ul style="list-style-type: none"> <li>- <i>Zero gravity testing of a six-axis vibration isolator and innovative sensing for a low frequency vibrations</i>, 48 ESA Parabolic Flight Campaign (17 March 2008), PRODEX No. 90147 (Active Structure Laboratory – ASL, Université Libre de Bruxelles -ULB, Belgium);</li> <li>- <i>ESA/ESTEC, EXOSTATION project: Control Stations for new Space Automation and Robotics Applications</i>, Contract No. 18408/04/NL/CP-ULB.</li> <li>- <i>PRODEX 90147, 38<sup>th</sup> ESA Parabolic flight campaign</i>, Bordeaux, 26-28 October, 2004.</li> <li>- <i>ESA-PRODEX: Parabolic Flight Test (September 2002) For Six-Axis Active Vibration Isolator</i>, PRODEX No. 90049 (ASL, ULB), A part of the research programme: <i>Two Phase Loop with Condensing-Separating System for the Experiment "Evaporative Convection and Turbulence in Pure Fluids"</i>.</li> </ul> <p>I was involved in some European projects:</p> <ul style="list-style-type: none"> <li>- <i>SMARTOOL project</i>, Contract no. GIRD-CT-2001-00551, funded by European Commission</li> <li>- <i>Wheel-rail Corrugation in Urban Transport project</i>, GRD2-2001-5006 funding by European Community.</li> </ul>

Name and address of employer	<p>Active Structure Laboratory, Université Libre de Bruxelles, Belgium.</p> <p>Head of the Lab: Professor André Preumont.</p> <p>Email: <a href="mailto:andre.preumont@ulb.ac.be">andre.preumont@ulb.ac.be</a></p> <p>ULB, Department of Mechanical Engineering and Robotics,</p> <p>Active Structures Laboratory, avenue F.D.Roosevelt, 50, CP 165/42, B-1050 Brussels Belgium</p> <p>Email: <a href="mailto:scmero@ulb.ac.be">scmero@ulb.ac.be</a></p> <p><a href="http://scmero.ulb.ac.be/team.php">http://scmero.ulb.ac.be/team.php</a></p>
Type of business or sector	Scientific research

## Education and training

Dates	1994-1998
Title of qualification awarded	PhD
Principal subjects/occupational skills covered	<p>Thesis Title: '<i>Contribution on Adaptive Driving and Diagnosis Systems Optimization on Toothed-wheels Milling Machines</i>', Computer aided theoretical and experimental research on the optimisation of toothed- wheels manufacturing milling machines.</p>
Name and type of organisation providing education and training	'Gheorghe Asachi' Technical University of Iasi, Romania

Level in national or international classification	ISCED 6
Dates	1983-1988
Title of qualification awarded	Bachelor of Engineering (Mechanics)
Principal subjects/occupational skills covered	-Mechanical engineering; -Machine-tools and flexible manufacturing systems design and prototyping; -Manufacturing processes.
Name and type of organisation providing education and training	'Gheorghe Asachi' Polytechnic Institute of Iasi, Romania. Faculty of Mechanics
Level in national or international classification	ISCED 5

## Personal skills and competences

Mother tongue **Romanian**

Self-assessment	Understanding		Speaking		Writing
<i>European level (*)</i>	Listening	Reading	Spoken interaction	Spoken production	
<b>English</b>	B1 Independent user	B1 Independent user	B1 Independent user	B1 Independent user	B1 Independent user
<b>French</b>	B2 Proficient user	B2 Proficient user	B2 Proficient user	B2 Proficient user	B1 Independent user

(\*) [Common European Framework of Reference for Languages](#)

Social skills and competences	Team work: I have worked in many types of teams of researchers in Romania and abroad (Belgium).
Organisational skills and competences	I am foreign partner of the Active Structure Laboratory, University Librè de Bruxelles, Belgium. I was Project Manager in the framework of PN-II-ID-PCE-2008-2 research programme (PNII – IDEI code ID 313/2008 ) funded by Romanian Authority for Scientific Research (CNCSIS–UEFISCSU).
Technical skills and competences	-Computer assisted experimental research in dynamics of the structure and equipments; -Computer assisted experimental research of the phenomena mirrored in the evolution of the actuation power; -Computer assisted data processing; -Passive and active damping; -Design and manufacturing of mechatronics experimental setup in various domains; -Design, manufacturing and experimental research on electro-dynamic and piezoelectric actuators; -Robotics; -Design and manufacturing of loading sensors with strain gages.
Computer skills and competences	Operating systems: MS Windows; Software applications: Matlab and Simulink, Autocad, MS Office, various dedicated software application for mechanical engineering.
Artistic skills and competences	I have some skills in Romanian orthodox liturgy music.

**Additional information** Personal references: Professor André Preumont, Active Structure Laboratory, Université Libre de Bruxelles, Belgium.  
Email: [andre.preumont@ulb.ac.be](mailto:andre.preumont@ulb.ac.be)

## Annexes

### Some relevant scientific papers :

1. **Horodincă, M.** (2013), A study on actuation power flow produced in an active damping system, *Mechanical Systems and Signal Processing* 39 (2013) pp. 297–315.
2. **Horodincă, M.**, Seghedin, N., Carata, E., Boca, M., Filipoaia C., and Chitariu, D., (2011), Dynamic Characterisation of Piezoelectric Actuated Mechanical Systems Using Energetic Parameters, *Mechanics of Advanced Materials and Structures*, vol 21, issue 2, pp. 154-164, 2014
3. **Horodincă, M.**, Seghedin, N., Carata, E., Filipoaia, C., Boca, M. and Chitariu, D. (2011), Experimental Investigations of the Power Absorbed at Mechanical Resonance. *Experimental Techniques*, vol. 30, Issue 7, pp. 21-31, September 2013
4. Bilal Mokrani, Renaud Bastait, **Mihaita Horodincă**, Iulian Romanescu, Ioanica Burda, Régis Viguié, André Preumont, Parallel piezoelectric shunt damping of rotationally periodic structures, *Advances in Materials Science and Engineering*, vol. 2015, Article ID 162782, 12 pages, 2015.
5. Bastait, R., Alaluf, D., **Horodincă, M.**, Romanescu I., Burda, I., Martic, G., Rodrigues, G., Preumont, A., (2014), Segmented bimorph mirrors for adaptive optics: segment design and experiment, *Applied Optics*, vol. 53, no. 29, pp. 6635-6642.
6. Preumont A., **Horodincă M.**, Romanescu I., de Marneffe B., Avraam M., Deraemaeker A., Bossens F., Abu Hanieh A., (2007) A six-axis single-stage active vibration isolator based on Stewart platform, *Journal of Sound and Vibration*, vol. 300, Issues 3-5, March 2007, Pages 644-661, ISSN 0022-460X.
7. Collette C., **Horodincă M.**, Preumont A., (2009) Rotational vibration absorber for the mitigation of rail rutting corrugation, *Vehicle System Dynamics*, ISSN 0042-3114, Volume 47, Issue 6, June 2009, pages 641–659.
8. Avraam M., **Horodincă M.**, Romanescu I., Preumont A., (2010) Computer Controlled Rotational MR-brake for Wrist Rehabilitation Device, *Journal of Intelligent Material Systems and Structures*, ISSN: 1045-389X, Vol 21, nr. 15, pages 1543-1557.
9. Abu Hanieh A., **Horodincă M.**, Preumont A., (2002) Six-degrees-of-freedom hexapods for active damping and active isolation of vibrations, *Journal de Physique IV*, (now *European Physical Journal-Special Topics*), Vol. 12, Pr11-41-Pr11-48, December, 2002. ISBN 2-86883-649-6.
10. Ganguli A., Deraemaeker A., Romanescu I., **Horodincă M.**, Preumont A., (2006) Simulation and Active Control of Chatter in Milling via a Mechatronic Simulator, *Journal of Vibration and Control*, vol. 12 No 8, pp. 817-848, August 2006, ISSN 1077-5463.
11. de Marneffe B., Avraam M., Deraemaeker A., **Horodincă M.**, Preumont A., (2009) Vibration Isolation of Precision Payloads: A six-axis Electromagnetic Relaxation Isolator, *AIAA Journal of Guidance, Control and Dynamics*, ISSN 0731-5090, vol. 32. No. 2 March-April 2009, pp.395-401

### Patents:

1. **Horodincă, M.**, Doroftei, I. (2000), *Conical Planetary Gear Reducer Having a Central Wheel*, RO 116224 (B1).
2. **Horodincă, M.**, (2004), *Absolute Angular Position Probe and Method for Measuring Angular Displacement*, RO 119487 (B1).
3. **Horodincă, M.**, Seghedin, N., (1996), *Planetary Reduction Gear With Intermediary Solar Gears*, RO 111612 (B1).
4. **Horodincă, M.**, Seghedin, N., Gafincu, M., (1996), *Reduction Gear with Cylindrical Gear Wheels and Quadrilateral Mechanism*, RO 111610 (B1).
5. **Horodincă, M.**, (1993), *Absolute Analogical Transducer of Rotation And Method of Measurement for Angular Displacements*, RO 106610 (B1).
6. Doroftei, I., **Horodincă, M.** (2000), *Planetary Motor Reducer with Restrained Satellite and Mobile Seating*, RO 116120 (B).
7. Doroftei, I., **Horodincă, M.**, Merticaru, V., (2000), *Planetary Reduction-Gear with Fixed-Point and Multiple- End Satellite*, RO 115822 (B).
8. Doroftei, I., **Horodincă, M.**, (1998), *Planetary reduction gear box*, RO 113588 (B).
9. Doroftei, I., **Horodincă, M.**, (1997), *Planetary Switch*, RO 112130 (B).

### Hirsch index:

- 10 on Google Scholar
- 7 on Scopus
- 6 on Web of Science

Date: 11.04.2016 ; Place: Iași, Romania

Signature:

