



## PERSONAL INFORMATION

Name and Surname

Telefon/Fax

E-mail

Date of birth

**BÎRLEANU V. CORINA**

0264 202787

[Corina.Birleanu@omt.utcluj.ro](mailto:Corina.Birleanu@omt.utcluj.ro)

**03.02.1963**

## PROFESSION / PRESENT OCCUPATION

Date

Work place

Position held

Occupation

Main activity

PhD coordonating

• Domain

Date of employment as a teacher in  
UTCN

**2012**

Department of Mechanical Systems Engineering, Faculty of Mechanical Engineering  
Engineer, Manufacturing Technology Speciality

Professor,  
Vice-Dean, Faculty of Machine Buildings from 2016

Teaching and research activities

YES

Mechanical engineering - 2010

1992

## WORK EXPERIENCE

Period

Occupation or position held

Name and address of employer

Main activity

**2007 - today**

Professor, Department of Mechanical Systems Engineering

Technical University of Cluj-Napoca, Street Memorandumului nr.28, RO-400114, Cluj-Napoca

Teaching and research activities

Period

Occupation or position held

Name and address of employer

Main activity

**2001 - 2007**

Associate Professor, Machine Elements and Tribology Department

Technical University of Cluj-Napoca, Street Memorandumului nr.28, RO-400114, Cluj-Napoca

Teaching and research activities

Period

Occupation or position held

Name and address of employer

Main activity

**1997 - 2001**

Senior Lecturer, Machine Elements and Tribology Department

Technical University of Cluj-Napoca, Street Memorandumului nr.28, RO-400114, Cluj-Napoca

Teaching and research activities

Period

Occupation or position held

Name and address of employer

Main activity

**1992 - 1997**

University Assistant, Machine Elements and Tribology Department

Technical University of Cluj-Napoca, Street Memorandumului nr.28, RO-400114, Cluj-Napoca

Teaching and research activities

Period

Occupation or position held

Name and address of employer

Main activity

**1986 - 1992**

Designer Engineer (with 2 year period at the IMUAS – Baia-Mare)

Research and Design Institute C.C.S.I.T MIU Bucharest, Cluj-Napoca Affiliate

Design / research activities

## EDUCATION AND TRAINING

Year	<b>1986</b>
Name and type of organisation	Politechnical Institute of Cluj-Napoca, Mechanical Faculty
Title of qualification awarded	Mechanical Engineer
Specialisation	Manufacturing Technology Speciality
Year	<b>1994</b>
Name and type of organisation	Institut fur Werkzeugmaschinen und Fertigungstechnik, TechnischenUniversitat „Carolo Wilhelmina“ zu Braunschweig, Germania
Title of qualification awarded	Researcher invited
Specialisation	Modern methods of supermachining of advanced ceramic materials
Year	<b>1996</b>
Name and type of organisation	Institut fur Werkzeugmaschinen und Fertigungstechnik, TechnischenUniversitat „Carolo Wilhelmina“ zu Braunschweig, Germania
Title of qualification awarded	Researcher invited
Specialisation	Tribology of advanced ceramics
Year	<b>2000</b>
Name and type of organisation	Company BBL Equipment BV Olanda,
Title of qualification awarded	Researcher invited
Specialisation	Tribological Behaviour of Advanced Ceramics Material
Year	<b>2003</b>
Name and type of organisation	Charles University, Faculty of Mathematics and Physics, Praha, Czech Republic
Title of qualification awarded	Ceepus Programm
Specialisation	Mathematical modeling
Year	<b>2004</b>
Name and type of organisation	OMEPS Italia
Title of qualification awarded	Researcher invited
Specialisation	Tribology of advanced ceramics
Year	<b>2005</b>
Name and type of organisation	Tehcnical Universty of Cluj-Napoca
Title of qualification awarded	Postgraduate Diploma series E nr. 00002809 /12.09.2005
Specialisation	Graduation certiccate in the postgraduate speciality: Use of Computer in Design Technology and Constructive
Year	<b>2007</b>
Name and type of organisation	OMEPS Italy
Title of qualification awarded	Researcher invited
Specialisation	Design / research activities

## TEACHING ACTIVITIES

PROFESIONAL COMPETENCES	COURSES	PROGRAM OF STUDIES	YEAR
	Mecanismos and Machine Elements Part I	Industrial Economic Engineering and Industrial Robots – line of studies in English	II
	Mecanismos and Machine Elements Part II	Industrial Economic Engineering and Industrial Robots – line of studies in English	III

## SCIENTIFIC ACTIVITY

### RESEARCH TOPICS

- I. TRIBOLOGY AND NANOSYSTEMS**
  - 1.** *Design of robust vibration of microsensors (MEMS)*
  - 2.** *Nanomechanics and nanotribology of MEMS*
  - 3.** *Mathematical modeling of fundamental tribological processes*
  - 4.** *Theoretical and experimental research on the behavior of ceramics tribosystems*
- II. MACHINE ELEMENTS AND MECHANICAL TRANSMISSIONS**

**PUBLICATIONS**  
(REPRESENTATIVE PAPERS  
PUBLISHED BETWEEN 2013-2018)  
**186**

Total number of books / monographs: **18**  
Total number of published scientific papers: **168**  
Representative papers (**2012-2017**)

1. **Birleanu C.**, Pustan M. et.all (**2018**) Relative humidity influence on adhesion effect in MEMS flexible application, Jurnal Microsystem Technologies, Micro- and Nanosystems Information Storage and Processing Systems. ISSN: 0946-7076 (Print) 1432-1858 (Online)
2. Pustan M., **Birleanu C.**, Dudescu, C. (**2017**) Nanocharacterization of the adhesion effect and bending stiffness in optical MEMS, Applied Surface Science, Volume 421, Part A, 2017, Pages 191-199, <https://doi.org/10.1016/j.apsusc.2016.12.021>.
3. Pustan M., Dudescu C., **Birleanu C.**, Rusu F. (**2017**) Nanocharacterization of the Mechanical and Tribological Behavior of MEMS Micromembranes, Book chapter in Nanomechanics, book edited by Intech, ISBN 978-953-51-3182-3, Print ISBN 978-953-51-3181-6, Published: May 24, 2017 under CC BY 3.0 license.
4. Belcin O, **Birleanu C.**, Pustan M. (**2015**) – Machine Elements. Structural Elements in Design; Ed. Risoprint 2015, 585 pp, Cluj-Napoca.
5. Pustan M., **Birleanu C.**, Dudescu, C., Golinval J.-C. (**2014**) - Dynamical behavior of smart mems in industrial applications, Book chapter in Smart sensors and MEMS: Intelligent devices and microsystems for industrial applications, Woodhead Publishing Series in Electronic and Optical Materials No. 51, ISBN 0 85709 502 1, ISBN-13: 978 0 85709 502 2.
6. **Birleanu C.**, Pustan M. (**2015**) - Analysis of the adhesion effect in RF-MEMS switches using atomic force microscope, Analog Integrated Circuits and Signal Processing, DOI 10.1007/s10470-014-0481-z
7. 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, DOI 10.1007/s10470-014-0482-y.
8. Voicu R., Pustan M., **Birleanu C.**, Baracu A., Müller R. (**2015**) - Mechanical and tribological properties of thin films under changes of temperature conditions, Surface and Coatings Technology, doi:10.1016/j.surfcoat.2015.01.026,
9. Merie V., Pustan M., **Birleanu C.**, (**2015**)- The effect of sensing area position on the mechanical response of mass-detecting cantilever sensor; Microsystem Technologies; ISSN 0946-7076, 2015
10. Merie V., Pustan M., **Birleanu C.**, Negrea G. (**2015**) - Nanocharacterization of Titanium Nitride Thin Films Obtained by Reactive Magnetron Sputtering; JOM, The Journal of The Minerals, Metals & Materials Society
11. Merie V., Candea VC., **Birleanu C.**, Pascuta P., Popa CO. (**2014**) - The influence of titanium dioxide on the tribological characteristics of a Fe-based friction composite material, Journal of Composite Materials, 2014, Vol 48(2) 235–243, DOI: 10.1177/0021998312470152,
12. Merie V., Pustan M., **Birleanu C.**, Candea V., Popa C. (**2014**) - Tribological and micro/nano-structural characterization of some Fe-based sintered composites, International Journal of Materials Research, DOI: 10.3139/146.111084.
13. Pustan M., Dudescu C., **Birleanu C.** (**2014**) - Reliability Design Based on Experimental Investigations of Paddle MEMS Cantilevers Used in Mass Sensing Applications, Sensor Letters, 1600-1606 (2014). <http://www.aspbs.com/sensorlett.html>.

**GRANTS,  
RESEARCH CONTRACTES**

**36**

1. **Project STAR 2017-2019** - Materiale cu performanță înaltă pentru generația următoare de generatoare termoelectrice spațiale (MatSpaceTEG), – team member, senior researcher.
2. **Project: PN-II-RU-TE-2014-4-1271 / 2015-2017** - Advanced design of micro membranes with multiple degrees of freedom for optical MEMS applications (multiDOF) – team member, senior researcher.
3. **Project – ERA.NETnr.22 / 2016 – 2018** - Microgrippers as end-effectors with integrated sensors for microrobotic applications (ROBOGRIP) – team member, senior researcher.
4. **Project - PN-III-P2-2.1-PED-2016-1727, PED 33 / 2017-2019** - Manufacture of a MEMS switch with robust metallic contact (ROMECC), team member, senior researcher.
5. **Project: PN-II-RU-TE-2011-3-0106 / 2011-2013** - Nanomechanical and nanotribological characterizations for reliability design of MEMS resonators – team member, senior researcher
6. **Project – ERA.NET- 2012 – 2015** - Modelare 3D pentru proiectarea robustica a microsenzorilor de

vibratie (3SMVIB) -- team member, senior researcher

**7. Project STAR 2012-2015** - Reliability design of RF-MEMS switches for space applications, The Research, Development and Innovation Space Technology and Advanced Research – STAR, – team member, senior researcher

**8. Project STAR 2013-2016** - Tribomechanical Characterization of MEMS Materials for Space Applications under harsh environments, Development and Innovation Space Technology and Advanced Research – STAR, – project manager.

**9. Research project nr. 37/2009** - Studies and research on advanced ceramic materials testing at the macro scale and nano tribological - project manager

**10. Project nr.24 / 2008** - CNCSIS 1569 (2008), Tribological design (Tribodesignul) advanced ceramic media with cracks subject to contact pressure - project manager,

**11. Project nr. 71-048 / 2007 - 2010**, Innovative technologies for obtaining composite materials with tailored properties of sliding bearings for the automotive industry, - responsabil UTC-N.

#### OTHER ACTIVITIES

Group leader of Machine Elements and Tribology – 2011 – now

Vice-Dean, Faculty of Machine Buildings from 2016

Member of the University Senate

Member of the Commission Management and Internal Communication of the Senate

Member of the Faculty Council

Responsabil of the Commission of Management and Internal Communication of the Faculty Council

Member of the commission of license studies, Economic Engineering speciality

Member of doctoral committees

Member of scientific committees and of organizing International (SNOM XIX – 1999, MTM 2004, MTM 2017, SNOM XXVII - 2007, ADEMS 2007, 2009, 2011, 2013 ICMSAV XXXVI, XXXVIII, SNOM 2012, 2013, 2014, 2015, 2016 etc, ROTRIB 2017)

Member of scientific committees International Exploratory Workshop – Nanomechanics and nanotribology for reliability design of micro-and nano systems, proect PN-II-ID-WE-2012-4-063/2012 nr.81 / 26.09..2012

Member in the laboratory MINAS (MicroNanoSystems)

Member in professional associations: AGIR, ART, ARoTMM, ROAMET, etc. President of ART Cluj-Napoca, Vice-president of ROAMET Romania.

Vicepresident of ROAMET professional association and ART Cluj subsidiary president

Chairman: ADEMS 2011, ICMSAV XXX VI – 2012, etc

Chairman International Conference "ADVANCED ENGINEERING IN MECHANICAL SYSTEMS", ADEMS 2013

#### KNOWN FOREIGN LANGUAGE SELF-ASSESSMENT EUROPEAN LEVEL (\*) LANGUAGE

Understanding		Speaking		Writing	
	Listening	Reading	Conversation	Speech	Writing
English	B2	B2	B2	B2	B2
French	A1	A1	A1	A1	A1
(*)Common European Framework of Reference for Languages					

Cluj-Napoca  
07 december 2018

**Prof. Dr. Eng. Corina BÎRLEANU**