



## Europass Curriculum Vitae

### Personal information

First name(s) / Surname(s) **Mircea Bara**  
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E-mail(s) mircea.bara@mdm.utcluj.ro  
Nationality Romanian  
Date of birth 04,10,1959  
Gender Male

**Desired employment / Occupational field** **Technical University from Cluj, Memorandumului 28, Faculty of Mechanics, Department of Mecatronics and Machine Dynamics/ Education and Research**

### Work experience

Dates	September 2004 →
Occupation or position held	professor
Main activities and responsibilities	courses and applications to Equipment for automated industrial processes and Mechanical structures for mechatronics
Name and address of employer	Technical University from Cluj Napoca Memorandumului 28, 400114 Cluj Napoca (Romania)
Type of business or sector	Education and research
Dates	October 2001 - September 2004
Occupation or position held	Associate Professor
Main activities and responsibilities	courses and applications to Equipment for automated industrial processes and Elements for Precision Mechanics
Name and address of employer	Technical University from Cluj Napoca Memorandumului 28, 400114 Cluj Napoca (Romania)
Type of business or sector	Education and research
Dates	October 1992 - September 2001
Occupation or position held	Lecturer Dr.Ing
Main activities and responsibilities	Courses and applications to Equipment for automated industrial processes and Mechanisms
Name and address of employer	Technical University from Cluj Napoca Memorandumului 28, 400114 Cluj napoca (Romania)
Type of business or sector	Education and research
Dates	October 1990 - September 1992
Occupation or position held	assistant

Main activities and responsibilities	Applications for Mechanisms
Name and address of employer	Technical University from Cluj Napoca Memorandumului 28, 400114 Cluj Napoca (Romania)
Type of business or sector	Education and research
Dates	October 1988 - October 1990
Occupation or position held	research engineer
Main activities and responsibilities	research
Name and address of employer	Polytechnic Institute in Cluj-Napoca Cluj Napoca (Romania)
Type of business or sector	Education and research
Dates	October 1986 - September 1988
Occupation or position held	research engineer
Main activities and responsibilities	grinding machine design
Name and address of employer	ICSIT(Institute of Scientific Research and engineering) Titan Bucharest - branch Cluj Napoca Cluj Napoca (Romania)
Type of business or sector	research and design
Dates	October 1984 - September 1986
Occupation or position held	design engineer
Main activities and responsibilities	design of hydraulic and pneumatic equipments
Name and address of employer	SC Mebis SA Industriei 4, 420063 Bistrita (Romania)
Type of business or sector	industry
<b>Education and training</b>	
Dates	1979 - 1984
Title of qualification awarded	Mechanical Engineer
Principal subjects / occupational skills covered	Machine tools
Name and type of organisation providing education and training	Polytechnic Institute of Cluj-Napoca (Education and research) Memorandumului 28, 400114 Cluj Napoca (Romania)
Dates	October 1995 - April 2000
Title of qualification awarded	PhD
Principal subjects / occupational skills covered	Mechanical engineering
Name and type of organisation providing education and training	Technical University of Cluj Napoca (Education and research) Memorandumului 28, 400114 Cluj Napoca (Romania)
Dates	1998
Principal subjects / occupational skills covered	Specialization in modeling mechanical transmissions
Name and type of organisation providing education and training	University of Padova

Dates	1999																																								
Principal subjects / occupational skills covered	Specialization in using CATIA V5 software																																								
Name and type of organisation providing education and training	University of Zaragoza																																								
Mother tongue(s)	<b>Romanian</b>																																								
Other language(s)																																									
Self-assessment																																									
European level (*)																																									
<b>English</b>																																									
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	(*) <a href="#">Common European Framework of Reference (CEF) level</a>																																								
<b>Publications</b>	<p><b>Short description:</b></p> <p><b>Dissertations:</b> 2 – Degree thesis (Polytechnic Institute of Cluj-Napoca); PhD Thesis (Technical University of Cluj Napoca),</p> <p><b>Books:</b> 3– 2 monographs (Publishing House Todesco, 2002); 1 (Publishing House Dacia).</p> <p><b>Co-edited Books:</b> -</p> <p><b>Chapters in Books:</b> 4 – 3(Springer-Verlag); 1( Publishing House Todesco)</p> <p><b>ISI Journals:</b> 6 (Mechanika,CMC: Computers, Materials &amp; Continua; Proceedings of the Romanian Academy),</p> <p><b>Other papers:</b> 25 ( Acta Tehnica Napocensis,. Scientific Bulletin of the University Transylvania of Brosov, Scientific Bulletin of the University Polytechnica Timisoara, Scientific Bulletin of the University of North Baia Mare</p> <p><b>Conference Proceedings:</b>77</p> <p><b>See Annex 3. Selected list of publications</b></p>																																								
<b>Miscellanea</b>	<p><b>Hirsch index 2 according to Web of Science</b></p> <p><b>Total number of citations, according to Web of Science: 7.</b></p>																																								
<b>Awards</b>	<p><b>Prize Aurel Vlaicu</b> - Romanian Academy (1992) for the paper “Frontal transmissions with balls “, Publishing House of the Romanian Academy (in Romanian).</p>																																								
<b>Patent</b>	<p><b>Patent Number A/00145</b> : Procedure and 3D printer for making items containing networks of composite materials, Inventors: Brişan Cornel, Bara Mircea, Munteanu Ligia, Chiroiu Veturia, 26 feb. 2015.</p> <p><b>Patent Number nr.93186</b> - “Frontal transmissions with balls” Inventors :Handra-Luca, V., Bara , M., 1987</p> <p><b>Patent Number nr.95195-</b> “Arm industrial robots” Inventors: Kovacs,L., Bara, M., Ciupan C.Pop A.,1989</p> <p><b>Patent Number nr.121396B-</b>“ Precession speed variator” Inventors: Bara, M., Brisana, C.1999</p>																																								
<b>Managerial Experience</b>	<b>See Annex 1. Managerial Experience</b>																																								

**Visibility of Scientific Contributions****Memberships of Professional Organisation:**

1. Association of Mechanisms and Mechanical Transmissions Romanian,
2. Romanian Association of Robotics and Mechatronics Romanian Society
3. International Federation for the Promotion of Mechanism and Machine Science *IFToMM*

**Driving licence**

yes

**Annexes**

2 Annexes

**Annex 1. Managerial Experience****National Projects as a Principal Investigator**

Project	Period
1. Project code 5217 / 1999 ANSTI, <i>Research on the competitive development of bipedal robots structure</i>	1999-2002
2. Projects code 1208 /1996 ANSTI, <i>Research on the calculation, design and testing of construction reducers cylindrical bearings modules robotics systems</i>	1996-2000
3. Design and development of a production system of wooden shafts	2017

**Investigator (Team Member): 12 (1International and 8 National Projects)**

Program/Project	Period
1. Project ; <i>Mathematical Modelling and experimental Research on Parallel Anthropomorphic Robot, (manager Brisan C.) Contract research funded by the Alexander von Humboldt Foundation,</i>	2003
2. Project no.27 /1989 with the Company Mechanics Stei: - <i>Studies and research on geometric kinematic calculation of Drive Disc.</i>	1989
3. Project no..106/1988 with the Company Mechanics: - <i>Technology technical quality control of parts of gear units cycloidal and harmonic mining.</i>	1988-1989
4. Project no.1081/1993 MEC - <i>Studies and research on achieving multiple discs dimmers and dimmers high performance gear.</i>	1993-1995
5. Project no. 1308 / 1996 MEC <i>Research on geometry, kinematics, design and execution frontal gearboxes</i>	1996 -1999
6. Project no. 4003 /1995 MEC <i>Research on numerical calculation, computer modeling and execution technology special gear</i>	1995-1997
7. Project no. 6113 / 2000 MEC - <i>Research on the structure, kinematics and dynamics of robots with mixed structure with applications in work</i>	2000-2003
8. Project no 5129 / 1999 MEC- <i>The model of reconfigurable parallel robots structure</i>	1999-2002
9. Project no. 66 / 1997.. Contract with the World Bank <i>Robotic systems engineering quality assurance</i>	1997-1999
10 Project no 46 / 1997 Contract with the World Bank - <i>Special mechanical transmission structure optimization of mechatronic systems</i>	1998-2000
11. Project no. 195 / 1997 Contract with the World Bank <i>Mechatronics education development program</i>	1997-2000
12. Project no. 6603 /2001 MEC- <i>Research on robotic systems with applications in the construction services</i>	2001-2003
13. Autonomous robotic systems for waste management in the context of smart city	2018-2020

**Annex2. Selected list of Publications****Books**

1. Bara M., 2001, *Hydro-pneumatics equipment for automated industrial processes*, Publishing House Toderesco, Cluj – Napoca, ISBN 973-8198-18-6, (in romanian).
2. Bara M., 2001, *Transmission sine*, Publishing House Toderesco, Cluj – Napoca, 204 pag., ISBN 973-8198-11-9, (in romanian).
3. Handra-Luca, V., Brisan, C., **Bara, M.**, Brad, St., 2003, *Introduction to Topology modeling robots special*, Publishing House Dacia, Cluj-Napoca, ISBN 973 – 35 – 0982 - 5 (in romanian).

## Chapters in books

1. Proceeding SYROM 2009 , editor I. Visa, Cap. *Designing aspects of differential transmission with balls*, Publishing Springer, Berlin, ISBN 978-90-481-3521-9, .
2. Mechatronic platform for education and research, editor V. Mătieș, 2009, Cap. *Laborator mobil de mecatronică*, Publishing Toderco , Cluj Napoca, ISBN 978-973-7695-79-6
3. Proceeding SYROM 2014 , editor I. Visa, , *Vibrations Concerning with Safety in Vehicle Rolling* ,Publishing Springer, Berlin, 978-3-319-01844-7,
4. Proceeding SYROM 2014 , editor I. Visa , *Research Regarding Modelling of Involute-Bevel Gears* , Publishing Springer, Berlin, 978-3-319-01844-7.

## ISI Journals

1. L. Munteanu, D. Dumitriu, V. Chiroiu, C. Brișan, M. Bara, D. Marin, 2015. *On the tactile sensing based on the smart materials*, CMC: *Computers, Materials & Continua*, vol.46, nr.2, pp.79-103, ISSN 1546-2218, IF (2014/2015) 0,964, SRI 0,911.
2. Handra-Luca , V., **Bara , M.**, 1992, *Geometrie und Kinematik des Reduktionsgetriebes mit Übertragungskugeln*, In *Konstruktion*, Nr.44, Springer Verlag, Berlin, ISSN 0720-5953 p. 155-160.
3. Handra-Luca , V., **Bara , M.**, 1988, *Frontal gear whit Balls*. In *Studies and research applied mechanics of the Romanian Academy*, Nr.2 Tomul 47, București, p.175-181.
4. **Bara M.**, Stan S, Verdes D. Teutan E. 2009, *Design and virtual reality simulation of frontal-sinusoidal ball transmission*, Rev. MECHANIKA, ISSN 1392 – 1207, Volume.1(75), p
5. E. Teutan **M. Bara**, I Ardelean. 2010, *Theoretical considerations regarding the virtual modelling of surfaces used in topography*, MECHANIKA ,ISSN 1392 – 1207, Volume 5(85) , p.51-65.
6. E. Teutan **M. Bara**, I Ardelean, 2012, *Generating of digitised with the aid of Tetrobot module*, MECHANIKA, . ISSN 1392 - 1207. 2012 Volume 18(6): p.666-670

## BDI Journals

1. **Bara M.**, Brisan C., Ardelean I., 2002, *The dynamic balancing of a cylindrical-cosinusoidal transmission with balls*, In journal *Mechanisms and manipulators*, no.1, Bucuresti, p. 9-14, ISSN 1583-4743 (in romanian).
2. Brișan, C., **Bara, M.**, Csibi, V., 2003, *Virtual models of machine tools with parallel topology*, In journal *Muszaki szemle*, Nr.22, Cluj Napoca, p. 3-10, ISSN 1454-0746, (in romanian).
3. **Bara M.**, Brisan C., Stan, S., 2003, *Manufacturing and assembly errors modeling for anthropomorphic pseudo – tetrobots*, În revista *Machine Building*, Bucuresti, (55), nr.11-12, p.88-91
4. Brișan, C., **Bara, M.**, Stan, S., 2003, *Virtual models and control strategy design of planar manipulators*, In journal *Machine Building*, Bucuresti, (55), nr. 11-12, p.92-95.
5. **Bara, M.**, Handra-Luca ,V., 2000, *New aspects kinematics sinusoidal ball transmission*, Scientific Bulletin of the University Petru Maior ,Tg. Mureș, p. 29-34, ISBN973-8084-14-8.
6. **Bara, M.**, 2001, *Transmisii frontale diferențiale*, Scientific Bulletin of the University of North Baia Mare, ISBN 1224-3264
7. **Bara, M.**, 2001, *Influența fenomenului de interferență la căile de rulare ale transmisiilor cilindro- sinusoidale*, Scientific Bulletin of the University of North Baia Mare
8. **Bara M.**, Brisan C., Stan S., 2003, *The aspects concerning the geometry and kinematics of the cylindrical – cosinusoidal transmissions*, Scientific Bulletin of the University of North Baia Mare,
9. Brisan C., **Bara M.**, 2003, *Aspects of Virtual Models Design for Parallel Robots*, Scientific Bulletin of the University of North Baia Mare ,
10. Rusu, c., bara m. ardelean, i., 2003, *Contributions to study the kinematics of mechanisms pentalater* Scientific Bulletin of the University of North Baia Mare ,
11. Rusu, c., bara m. ardelean, i., 2003 *Aspects concerning synthesis geometrie- pentalater positional mechanisms*. Scientific Bulletin of the University of North Baia Mare,
12. Stan, S., **Bara, M.**, V. Maties, 2004, *Aspects concerning the precision of planetary gear's positioning with screw*, Publ. in Acta Tehnica Napocensis, nr. 47, vol.I Cluj Napoca, , ISSN 1221-5872,
13. **Bara, M.**, Brisan, C., 2004,, *The study of the friction losses in the frontal transmission with balls*, Publ. in Acta Tehnica Napocensis, nr. 47, vol.I Cluj Napoca, , ISSN 1221-5872,
14. Brisan ,C., **Bara, M.**, 2004, *Modular Kinematics of Anthropomorphic Robots*, Publ. in Acta Tehnica Napocensis, nr. 47, vol.II Cluj Napoca, ISSN 1221-5872,

15. Brisan, C. **Bara, M.**, 2006, *Virtual models of partner robots with 3DOF*, Acta Technical Napocensis, Cluj Napoca, ISSN 1221-5872,
16. Ardelean, I., **Bara, M.** 2006, *Research of the methods of syntheses for treatment of the signal uses in measurement*, Acta Technical Napocensis, Cluj Napoca, ISSN 1221-5872,
17. **Bara M.**, 2007, *The differential Frontal transmission, The 1 st International Conference Advanced Engineering in Mechanical System, ADEMS'07*, Publ. in Acta Tehnica Napocensis, nr50 vol.II Cluj Napoca, ISSN 121-5872,
18. **Bara M.**, 2007, *The division of the momentum of load in frontal transmissions, The 1 st International Conference Advanced Engineering in Mechanical System, ADEMS'07*, Publ. in Acta Tehnica Napocensis, nr50 vol.II Cluj Napoca, ISSN 121-5872, p.249-242.

#### Conference Proceedings:

1. **Bara, M.**, 1995, *Cosideraciones cinematicas acerca de un modulo de orientacion esferica*, I Congreso Iberoamericano de Ingenieria Mecanica, Madrid, Spania, vol. 3, p.105-109
2. Brisan, C., **Bara, M.**, Rusu, C., Stan, S., 2003, *Aspects of modelling of anthropomorphic mechanisms*, CD - Proceedings of 12<sup>th</sup> International Workshop on Robotics in Alpe-Adria-Danube Region RAAD'2003, Cassino, Italy, paper no.21.
3. Brisan, C., **Bara, M.**, Stan, S., 2003, *Aspect of designing of hip endoprostheses using biped robots kinematics*, Proceedings of the 5<sup>th</sup> International Conference on Climbing and Walking Robots CLAWAR2002, Professional Engineering Publishing Limited, London, p. 61-67, ISBN 186058 409- 8.
4. **Bara, M.**, Brişan, C., 2004, *Designing Aspects of a Special Transmission with Balls*, Proceedings of The 11<sup>th</sup> World Congress in Mechanism and Machine Science, Tianjin, China, ISBN 7-111-140737/TH.1438, p.872-878.
5. Brisan, C., **Bara, M.**, 2004, *Error Modelling and Virtual Model of a New Parallel Kinematic Machine*, The 4<sup>th</sup> Parallel Kinematics Seminar PKS2004, Chemnitz, Germany, ISBN 3-937-524-05-3, p.723-726.
6. **Bara, M.**, 2004, *Designing Aspects of a Frontal-sinusoidal Transmission with Balls*, 2004 ASME International Mechanical Engineering Congress, November 13–19, Anaheim, California USA, no. IMECE 2004-59309, ISBN 0-7918-4179-0.
7. **Bara, M.**, 2005, *The Dynamic Study of a Frontal-sinusoidal Transmission with Balls*, 2005 ASME International Mechanical Engineering Congress, November 5-10, Orlando, Florida, USA, no. IMECE 2005-79048, ISBN 0-3517-2568-0.
8. **Bara, M.**, 2006, *Designing Aspects of Cylindrical Transmission* 2006 ASME International Mechanical Engineering Congress, November 5–10, 2006, Chicago, Illinois USA, IMECE 2006-13078, ISBN 0-7918-3790-4
9. **Bara, M.**, Handra-Luca, V., 2000, *The Kinetostatics of the Frontal-Sinusoidal Transmissions with Balls*, Proceedings of International Symposium MTM- 2000, Timișoara, p. 47-50.
10. **Bara, M.**, 2000, *Teoretical Aspects Concerning the Division of the momentum in Stepped Frontal Transmissions*. Proceedings of Internațional Symposium MTM-2000, Timișoara, p. 59-66.
11. **Bara, M.**, 2000, *The Dynamics of the Frontal-Sinusoidal Transmission with Balls*, Proceedings of Internațional Symposium, MTM-2000, Timișoara, p. 51-58
12. **Bara, M.**, 2001, *The influence of the interference phenomenon upon the geometry of the frontal-sinusoidal transmission with balls*, Proceedings of IFTOMM 2001 ( Internațional Symposium on Linkages and Computer Aided Design Methods), București, p. 61 – 66, ISBN 073-8143-38-1.
13. **Bara, M.**, Teuțan, E., 2001, *New aspects concerning the kinematic study of frontal-sinusoidal transmissions with balls*, Proceedings of IFTOMM 2001 (Internațional Symposium on Linkages and Computer Aided Design Methods), București, p. 67 – 72, ISBN 073-8143-38-1.
14. **Bara, M.**, 2001, *The study of the dynamic balancing of a frontal-sinusoidal transmission with balls*, Proceedings of IFTOMM 2001( Internațional Symposium on Linkages and Computer Aided Design Methods), București, p. 55 – 60, ISBN 073-8143-38-1.
15. **Bara, M.**, Csibi, V., 2001, *The geometry and kinematics of the cylindrical- sinusoidal transmissions with balls*, OGÉT 2001 Internațional Symposium, Cluj-Napoca, p. 38-43, ISSN 145-0746.
16. **Bara, M.**, Csibi, V., 2001, *The study of the interference phenomenon in cylindrical-sinusoidal transmission with balls*, OGÉT 2001 Internațional Symposium, Cluj-Napoca, 44-49, ISSN 145-0746
17. **Bara, M.**, 2001, *The study of the dynamic balancing of a cylindrical- sinusoidal transmission with balls*, Proceedings of The 5<sup>th</sup> International MteM Symposium, Cluj–Napoca, p. 23- 26, ISBN 973-85354-1-7.
18. **Bara, M.**, Brişan, C., 2003, *The geometry and kinematics of the differential cylindrical transmission*, Proceedings of The 6<sup>th</sup> International MteM Symposium, Cluj–Napoca, , ISBN 973-656-490-8, p.27-30.
19. **Bara, M.**, Brisan, C., 2003, *Griper mechanism for the cylindrical mechanical parts*, Proceedings of The 6<sup>th</sup> International MteM Symposium, Cluj–Napoca, , ISBN 973-656-490-8, p. 31-34
20. Ardelean, I., **Bara, M.**, 2004, *Considerations on integrating the equations of motion mechanisms in mechatronic systems structure*, A VII International Conference on Mechanical and Mechatronics COMEFIM 7, Bucharest, ISBN 973-86886-1-2, p.19-20
21. Brisan, C., **Bara, M.**, 2004, *Aspects of pasive and active protection of the buildings using parallel mechanisms*, Proceedings of the 2<sup>nd</sup> International Conference on Robotics, Timisoara, ISBN 937-97258-3, p.33-34
22. **Bara, M.**, Teuțan, E., 2005, *The influence of the interference phenomenon upon the geometry of the frontal-sinusoidal transmission with balls*, Proceedings of IFTOMM 2005, București, p. 61 – 66, ISBN 073-8143-38-1.

April 25 2018

Prof.dr.ing Mircea Bara