europass Curriculum Vitae

PERSONAL INFORMATION

Gherman Bogdan-George

B-dul Muncii 103-105 Cluj Napoca 400641 jud. Cluj, Romania

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Bogdan.GHERMAN@mep.utcluj.ro

Sex: Male| Date of birth 22/03/1980| Nationality: Romanian

WORK EXPERIENCE

2019 – present

Associate Professor

Technical University of Cluj-Napoca
Faculty of Machine Building, Department of Mechanical Engineering Systems
Researcher in the Research Center for Industrial Robots Simulation and Testing CESTER

- Teaching activities for the disciplines: Computer Programming I and II, Object Oriented Programming and Client-Server Architectures, Medical and Service Robots
- Research activities in national and international research grants

2013 – present

Lecturer

Technical University of Cluj-Napoca
Faculty of Machine Building, Department of Mechanical Engineering Systems
Researcher in the Research Center for Industrial Robots Simulation and Testing CESTER

- Teaching activities for the disciplines: Computer Programming I and II, Object Oriented Programming and Client-Server Architectures
- Research activities in national and international research grants

2011 – 2013

Teaching Assistant

Technical University of Cluj-Napoca
Faculty of Machine Building, Department of Mechanical Engineering Systems
Researcher in the Research Center for Industrial Robots Simulation and Testing CESTER

- Teaching activities for the disciplines: Computer Programming I and II and Mechanics I and II
- Research activities in national and international research grants

2007-2011

Junior Researcher

Technical University of Cluj-Napoca
Faculty of Machine Building, Departament of Mechanical Engineering Systems
Researcher in the Research Center for Industrial Robots Simulation and Testing CESTER

- Research activities in national and international research grants
- Teaching activities for the disciplines: Computer Programming I

2004 – 2008

Design engineer

SC Caval SA str Scortarilor, nr. 12, Cluj Napoca, jud. Cluj, Romania
Design activities for metal products and furniture accessories

EDUCATION AND TRAINING

2007-2011 — **PhD in Mechanical Engineering** — EQF Level 8
Technical University of Cluj-Napoca
Faculty of Machine Building, Departament of Mechanical Engineering Systems
PhD thesis title: Researches concerning the development of kinematic, dynamic and functional models designed to an innovative hybrid parallel robot structure for the minimally invasive surgery

2002-2007 — **Dipl. Engineer** — EQF Level 6
Technical University of Cluj-Napoca
Faculty of Machine Building, Departament of Mechanical Engineering Systems
Competences: Mechanical Systems Design, CAD, Industrial robots control, Robotic systems simulation, Flexible production systems simulation

2004-2005 — **MsC in Economics** — EQF Level 7
Babeş-Bolyai University of Cluj-Napoca, Specialization: Economics and Information-Technology

1999-2004 — **Economist** — EQF Level 6
Babeş-Bolyai University of Cluj-Napoca, Specialization: Economics and IT

PERSONAL SKILLS

Mother tongue: Româna

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1 – Proficient user	C1 – Proficient user	C1 – Proficient user	C2 – Proficient user	C1 – Proficient user
French	A2 - Basic user	A2 - Basic user	A2 - Basic user	A2 - Basic user	A2 - Basic user
Italian	A2 - Basic user	A2 - Basic user	A2 - Basic user	A2 - Basic user	A2 - Basic user

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Excellent communication abilities as a result of:

- 8 years of experience in teaching
- 6 years of experience as course titular
- 12 years of experience as member of CESTER team, including participations at conferences, workshops, research grants

Organisational / managerial skills

Organisational / managerial skills :

- Coordinator for a research grant
- Member in organization committees of conferences
- Year tutor (2 years, Mechanical Engineering specialization)
- Student Practice Coordinator
- Member in the Bachelor's Board of Inquiry
- Elaboration of multiple national and international project proposals

Job-related skills

Teaching skills: main author, respectively co-author in two courses (books) and three laboratory courses
Research skills: member in over 10 research national and international research grants and over 60 published papers in international databases.

Digital skills	Java, C, C++, PHP, Visual Basic, Matlab, MSC Adams, MathCAD, Solid Edge, Siemens NX, SolidWorks, AutoCAD, Corel DRAW, Latex
Driving licence	B

ADDITIONAL INFORMATION

acc

Scientific activity (the whole career)

Representative publications (5 ISI articles)

1. **Gherman B**., Pisla D., Vaida C., Plitea N.: On workspace and accuracy evaluation of a parallel robot for needle placement procedures, Proceedings Of The Romanian Academy, Series A-Mathematics Physics Technical Sciences Information Science, 17(4), 344–351, 2016
2. Pisla, D., **Gherman B. (c.a.)**, Vaida, C., Plitea, N.: Kinematic modelling of a 5-DOF hybrid parallel robot for laparoscopic surgery. Robotica, 30(7), 1095-1107. doi:10.1017/S0263574711001299, 2012
3. **Gherman B.**, Pisla, D., Vaida, C., Plitea N.: Development of Inverse Dynamic Model for a Surgical Hybrid Parallel Robot with Equivalent Lumped Masses, Robotics and Computer-Integrated Manufacturing, 28(3), 402-415, doi:10.1016/j.rcim.2011.11.003, 2012
4. Pisla D., Tucan P., **Gherman B.**, Crisan N., Andras I., Vaida C., Plitea, N.: Development of a parallel robotic system for transperineal biopsy of the prostate, Mech. Sci., 8, 195-213, doi: 10.5194/ms-8-195-2017, 2017
5. Plitea N., **Gherman B.**, Cocorean D., Vaida C., Pisla D.: Inverse dynamic modelling of a parallel robotic system for brachytherapy, Proceedings Of The Romanian Academy, Series A-Mathematics Physics Technical Sciences Information Science, 18(1), 55–63, doi: 10.1007/978-1-4020-8915-2_71

Presentations (5 in the last 5 years)

1. PaRReEx – An upper limb rehabilitation robot, Workshop international “Parallel robots for post-stroke rehabilitation”, 21 Martie 2019, Cluj-Napoca, România
2. A kinematic characterization of a parallel robotic system for lower limb rehabilitation, 7th European Conference on Mechanism Science, 4-6 Septembrie 2018, Aachen, Germania
3. Kinematic analysis of an exoskeleton-based robot for elbow and wrist rehabilitation, 24-28 Octombrie, 2017 – FLORIANÓPOLIS – BRAZIL, 6th International Symposium on Multibody Systems and Mechatronics – MuSMe
4. Kinematic design of a parallel robot for elbow and wrist rehabilitation, 2-3 noiembrie, 2017, Iasi, Romania, The 12th IFToMM International Symposium on Science of Mechanisms and Machines - SYROM'2017
5. PARA-BRACHYROB – An Innovative Parallel Robotic System used in Brachytherapy, 29 – 30 septembrie 2016, Cluj-Napoca, Workshop-ul International „Progress in Uro-Oncology

Research Grants (5 representative)

1. Innovative robotic instrument for surgical abdominal procedures – FOCUS, Programme: National Grants, code: GNaC 2018, no. 3216/06.02.2019, Financing Institution: Technical University of Cluj-Napoca, Duration: 12 month1 (2019), position: director
2. Creative Alliance in Research and Education focused on Medical and Service Robotics, Programme: Scopes International IP Grant - IZ74Z0_13736, Financing Institution: SNF, Switzerland, Duration: 3 years (2011-2013), Coordinator (Prof. D. Pisla – TU-CN, Romania, Prof. A. Rodic – IMP Belgrade, Serbia, Prof. H. Bleuler – EPFL Switzerland), position : member
3. Innovative Approaches Regarding Rehabilitation and Assistive Robotics for Healthy Ageing – AgeWell, Competitiveness Operational Programme 2014-2020, contract 20/01.09.2016, Instituția finanțatoare: EU contribution, National budget, Duration: 48 months, Coordinator: Prof. Giuseppe Carbone, position: member
4. High accuracy innovative approach for the robotic assisted intraoperatory treatment of hepatic tumors based on imagistic-molecular diagnosis – IMPROVE, PN-III-P1-1.2-PCCDI2017-0221, Financing institution: National Complex Project for Research, Development and Innovation, financed by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), Duration: 24 months, Coordinator: Prof. Doina Pisla, position: member
5. Robotic assisted prostate biopsy, a high accuracy innovative method – ROBOCORE, PN-II-PT-PCCA-2013-4-0647, Financing institution: National Complex Project for Research, Development and Innovation, financed by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), Duration: 24 months, Coordinator: Prof. Doina Pisla, position: member

Conferences (5 reprezentative)

1. **B. Gherman**, T. Girbacia, D. Cocorean, C. Vaida, S. Butnariu, N. Plitea, D. Talaba, D. Pisla, Virtual Planning of Needle Guidance for a Parallel Robot Used in Brachytherapy New Trends in Medical and Service Robots ,pp.109-120, 2015
2. **B. Gherman**, D. Pisla, G. Kacso, N. Plitea, Kinematic Behavior of a Novel Medical Parallel Robot for Needle Placement, Advances in Intelligent Systems and Computing,vol.371,pp.329-338,2015

Conferences (5 reprezentative)

3. **Gherman B**., Vaida, C., Birlescu, I., Pisla, A., Tucan, P., Pisla, D.Modelling and simulation of a robotic system for lower limb rehabilitation ASME 2018 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, IDETC/CIE 2018; Quebec City; Canada; vol 5B ,2018
4. **Gherman B.,** Carbone, G., Plitea, N., Ceccarelli, M., Banica, A., Pisla, D. Kinematic Design of a Parallel Robot for Elbow and Wrist Rehabilitation Mechanisms and Machine Science vol.57,pp.147-154, 2018
5. **Gherman, B.,** Plitea, N., Pisla, D. An innovative parallel robotic system for transperineal prostate biopsy Mechanisms and Machine Science vol.43, pp.421-429, 2017

Honours and awards (5 semnificative)

1. Best paper award: Carbone G., Gherman B., Ulinici I., Vaida C., Pisla D.: Design Issues for an Inherently Safe Robotic Rehabilitation Device, International Conference on Robotics in Alpe-Adria Danube Region, AAD 2017: Advances in Service and Industrial Robotics pp 1025-1032, 2017
2. The Great OSIM Prize at the International Exhibition of Inventics – Inventica 2014 for the patent: Surgical Robot, RO-126271, authors: Plitea N., Pisla D., Vaida C., Gherman B.
3. Gold Medal at the International Exhibition of Research, Innovations and Inventions, Pro Invent 2018 for the patent Spherical Robot for Medical Recovery of the Proximal Area at the Upper Limb Level, OSIM A00374/14.06.2017. Authors: Vaida C., Plitea N., Pîslă D., Carbone G., Gherman B., Ulinici I.
4. Gold Medal at the International Exhibition of Research, Innovations and Inventions, Pro Invent 2018 for the patent Automated medical instrument for radiofrequency ablation, OSIM A00379/2017. Authors: Pisla D., Vaida C., Birlescu I., Graur F., Gherman B., Tucan P., Plitea N.
5. Gold Medal at the International Exhibition of Research, Innovations and Inventions, Pro Invent 2018 for the patent Automated medical instrument with multiple needles for brachytherapy, OSIM A00431/2017. Authors: Pisla D., Vaida C., Birlescu I., Graur F., Gherman B., Tucan P., Plitea N.

Affiliations

Robotics Society of Romania , SR
Mechanisms and Machine Science Romanian Association, ARoTMM
International Federation for the Promotion of Mechanism and Machine Science, IFToMM

APPENDIX Complete list of publications

Assoc Prof. dr.-ing. Bogdan GHERMAN 13.01.2020

Assoc. Prof. Dipl. Eng. Bogdan GHERMAN, PhD
TECHNICAL UNIVERSITY OF CLUJ-NAPOCA
FACULTY OF MACHINE BUILDING
MECHANICAL ENGINEERING DEPARTMENT
Research Center for Industrial Robots Simulation and Testing

SCIENTIFIC PUBLICATIONS, RESEARCH GRANTS AND PATENTS LIST

Dipl. Eng. GHERMAN Bogdan, PhD
Technical University of Cluj-Napoca
CESTER - Research Center for Industrial Robots Simulation and Testing
E-Mail: Bogdan.Gherman@mep.utcluj.ro Tel: +40 744 89.25.67

PhD Thesis

Researches on the development of kinematic, dynamic and functional models for an innovative parallel hybrid robot for minimally invasive surgery – Scientific coordinator: Prof. Dipl. Eng. Doina Liana PISLA, PhD

A. Teaching Activity

1. Vaida, C., **Gherman, B.,** Pisla, D., Utilizarea şi programarea calculatoarelor, Vol. III, Programare în MATLAB cu aplicaţii în inginerie, coordinated by Prof. Dipl. Eng. Doina Liana Pisla, PhD, Ed. Mediamira, Cluj-Napoca, 2014, ISBN- 978-973-713-312-0
2. **Gherman, B.,** Vaida, C., Pisla, D., Utilizarea şi programarea calculatoarelor, Vol. II, Programare în limbajul C cu aplicaţii în inginerie, e coordinated by Prof. Dipl. Eng. Doina Liana Pisla, Ed. Mediamira, Cluj-Napoca, 2013, ISBN- 978-973-713-305-2

1.b. Laboratory works

1. Robotic system for laparoscopy in minimally invasive interventions, 2010
2. Robotic system for cancer treatment through brachytherapy, 2016
3. Robotic system for active surgical systems in minimally invasive interventions, 2012
4. Robotic system for prostate biopsy, 2017
5. YuMi collaborative robotic system, 2018
6. Robotic instruments for the cancer diagnosis and treatment for: brachytherapy (6 needles), radiotherapy ablation and biopsy, 2017

2. Scientific Activity

2.a. Author/co-author/ published scientific papers

1. Pisla, D., Vaida, C. (c.a.), Birlescu, I., Hajjar, N.A., **Gherman, B.**, Plitea, N.: Risk Management for the Reliability of Robotic Assisted Treatment of Non-resectable Liver Tumors, Applied Sciences, vol. 10(1), 52, 2020
2. Tucan, P., Vaida, C., Carbone, G., Pisla, A., Puskas, F., **Gherman, B.**, Pisla, D.: A kinematic model and dynamic simulation of a parallel robotic structure for lower limb rehabilitation, IFToMM World Congress on Mechanism and Machine Science, pp. 2751-2760, 2019
3. Vaida, Calin; Birlescu, Iosif; Pisla, Adrian; Carbone, Giuseppe; Plitea, Nicolae; Ulinici, Ionut; **Gherman, Bogdan**; Puskas, Ferenc; Tucan, Paul; Pisla, Doina; RAISE-An Innovative Parallel Robotic System for Lower Limb Rehabilitation New Trends in Medical and Service, Robotics, pp 293-302, 2019
4. Nadas, Iuliu; Pisla, Doina; Ceccarelli, Marco; Vaida, Calin; **Gherman, Bogdan**; Tucan, Paul; Carbone, Giuseppe; Design of Dual-Arm Exoskeleton for Mirrored Upper Limb Rehabilitation,New Trends in Medical and Service, Robotics, pp 303-311, 2019
5. Birlescu, Iosif; Tucan, Paul; **Gherman, Bogdan**; Vaida, Calin; Crisan, Nicolae; Radu, Corina; Plitea, Nicolae; Pisla, Doina; Kinematic Analysis for a Prostate Biopsy Parallel Robot Using Study Parameters, Computational Kinematics, 135-142, 2018

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6. Nadas, Iuliu Adrian; Pisla, Doina; Vaida, Calin; **Gherman, Bogdan**; Carbone, Giuseppe; Towards Cost-Oriented User-Friendly Robotic Systems for Post-Stroke Rehabilitation, Handbook of Research on Biomimetics and Biomedical Robotics, pp 99-141, 2018
7. Vrublevskis, J; Duncan, S; Berthoud, L; Bowman, P; Hills, R; McCulloch, Y; Pisla, D; Vaida, C; **Gherman, B**; Hofbaur, M; Description of European Space Agency (ESA) Remote Manipulator (RM) System Breadboard Currently Under Development for Demonstration of Critical Technology Foreseen to be Used in the Mars Sample Receiving Facility (MSRF), Second International Mars Sample Return, Vol. 2071, 2018
8. Pisla, D., **Gherman, B.,** Tucan, P.,Vaida, C., Govor, C., Plitea, N., On the kinematics of an innovative parallel robotic system for transperineal prostate biopsy, 2015 IFToMM World Congress Proceedings, IFToMM 2015
9. Pisla, D.; Plitea, N.; **Gherman, B.** G.; Vaida, C.; Pisla, A.; Suciu, M., Kinematics and Design of a 5-DOF Parallel Robot Used in Minimally Invasive Surgery, ADVANCES IN ROBOT KINEMATICS: MOTION IN MAN AND MACHINE, pp.99-106, 2010
10. Pisla, D.; **Gherman, B.** G.; Suciu, M.; Vaida, C.; Lese, D.; Sabou, C.; Plitea, N., On the Dynamics of a 5 DOF Parallel Hybrid Robot Used in Minimally Invasive Surgery, NEW TRENDS IN MECHANISM SCIENCE: ANALYSIS AND DESIGN, pp.691-699, 2010
11. Nadas, I.,Pisla, D.,Ceccarelli, M.,Vaida, C., **Gherman, B**.,Tucan, P., Carbone, G., Design of dual-arm exoskeleton for mirrored upper limb rehabilitation, Mechanisms and Machine Science, Vol. 65, pp. 303-311, 2019
12. **Gherman, B**., Birlescu, I., Puskas, F.,Pisla, A., Carbone, G., Tucan, P., Banica, A., Pisla, D.A kinematic characterization of a parallel robotic system for lower limb rehabilitation Mechanisms and Machine Science,vol 59,pp 27-34,2019
13. Vaida, C., Birlescu, I., Pisla, A., Carbone, G., Plitea, N., Ulinici, I., **Gherman, B.,** Puskas, F., Tucan, P., Pisla, D. 10 RAISE - An innovative parallel robotic system for lower limb rehabilitation Mechanisms and Machine Science vol65, pp293-302, 2019
14. **Gherman B**., Vaida, C., Birlescu, I., Pisla, A., Tucan, P., Pisla, D.Modelling and simulation of a robotic system for lower limb rehabilitation ASME 2018 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, IDETC/CIE 2018; Quebec City; Canada; vol 5B ,2018
15. **Gherman B.,** Carbone, G., Plitea, N., Ceccarelli, M., Banica, A., Pisla, D. Kinematic Design of a Parallel Robot for Elbow and Wrist Rehabilitation Mechanisms and Machine Science vol.57, pp.147-154, 2018
16. Plitea, N., **Gherman, B.,** Carbone, G., Ceccarelli, M., Vaida, C., Banica, A, Pisla, D., Pisla, A. Kinematic analysis of an exoskeleton-based robot for elbow and wrist rehabilitation Mechanisms and Machine Science vol.54, pp.424-433, 2018
17. Nadas, I.A., Pisla, D., Vaida, C., **Gherman, B**.G., Carbone, G. 5 Towards cost-oriented user-friendly robotic systems for post-stroke rehabilitation Handbook of Research on Biomimetics and Biomedical Robotics pp.99-141, 2017
18. **Gherman, B.,** Plitea, N., Pisla, D. An innovative parallel robotic system for transperineal prostate biopsy Mechanisms and Machine Science vol.43, pp.421-429, 2017
19. Major, K.A., Major, Z.Z., Carbone, G., Pisla, A., Vaida, C., **Gherman, B**., Pîsla, D.L. Ranges of motion as basis for robot-assisted poststroke Human and Veterinary Medicine vol.8(4), pp.192-196, 2016
20. Vaida, C., Pisla, D., Tucan, P., **Gherman, B**., Govor, C., Plitea, N. An innovative parallel robotic structure designed for transperineal prostate biopsy IFToMM World Congress Proceedings, IFToMM 2015, 2015
21. Itul, T., **Gherman, B**., Pîslă, Comparative study of two 2-DOF parallel mechanisms used for orientation Mechanisms and Machine Science ,vol.14, pp.148-157, 2014

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22. **Bogdan Gherman**, Nicolae Plitea, Bogdan Galdau, Calin Vaida, Doina Pisla On the Kinematics of an Innovative Parallel Robot for Brachytherapy, 2014/1/1, Advances in Robot Kinematics, Springer International Publishing Advances in Robot Kinematics,vol.1(1), pp. 475-483, 2014
23. N Plitea, C Vaida, **B Gherman**, A Szilaghyi, B Galdau, D Cocorean, F Covaciu, D Pisla An innovative family of modular parallel robots for brachytherapy, 2014/1/1, The 11th IFToMM International Symposium on Science of Mechanisms and Machines, Pages 69-79, Springer International Publishing The 11th IFToMM International Symposium on Science of Mechanisms and Machines, vol.1(1), pp. 69-79, 2014
24. Stoica, A., Pisla, D., Szilaghyi, A., **Gherman, B**., Plitea, N. Workspace and singularity analysis for a parallel robot used in surgical applications Mechanisms and Machine Science, vol.7, pp. 149-157, 2013
25. Vaida, Calin; **Gherman, Bogdan**; Pisla, Doina; Plitea, Nicolae ,A CT-scan compatible robotic device for needle placement in medical applications INTERDISCIPLINARY RESEARCH IN ENGINEERING: STEPS TOWARDS BREAKTHROUGH INNOVATION FOR SUSTAINABLE DEVELOPMENT, vol.8-9, pp. 574-583, 2013
26. Gyurka, B., **Gherman, B**., Vaida, C., Kovacs, I., Pisla, D. Optimal control for reducing the energy consumption of a reconfigurable parallel robot, IFAC Proceedings Volumes (IFAC-PapersOnline) Volume 2, Issue PART 1, 2013, Pages 143-148 IFAC Proceedings Volumes (IFAC-PapersOnline), vol.2, pp.143-148, 2013
27. **Gherman, B**., Vaida, C., Plitea, N., Gyurka, B., Pisla, D. The experimental model of an active parallel surgical robot Quality - Access to Success, vol. 13(5), pp. 361-366, 2012
28. Gyurka, B.; Pisla, D.; Stancel, E.; Vaida, C.; Kovacs, I.; **Gherman, B**.; Balogh, Sz.; Plitea, N. Integrated Control Techniques for PARASURG 9M Parallel Robot 2012 IEEE INTERNATIONAL CONFERENCE ON AUTOMATION, QUALITY AND TESTING, ROBOTICS, THETA 18TH EDITION, pp. 461-466, 2012
29. Vaida, C.; Pisla, D.; Plitea, N.; **Gherman, B.;** Gyurka, B.; Graur, F.; Vlad, L. Development of a Voice Controlled Surgical Robot NEW TRENDS IN MECHANISM SCIENCE: ANALYSIS AND DESIGN, vol. 5 , pp.567-574, 2010
30. **Gherman, B**.; Vaida, C.; Pisla, D.; Plitea, N.; Gyurka, B.; Lese, D.; Glogoveanu, M. Singularities and Workspace Analysis for a Parallel Robot for Minimally Invasive Surgery PROCEEDINGS OF 2010 IEEE INTERNATIONAL CONFERENCE ON AUTOMATION, QUALITY AND TESTING, ROBOTICS (AQTR 2010), VOLS. 1-3, pp. 319-324, 2010
31. Gyurka, B.; Pisla, D.; Stancel, E.; Vaida, C.; **Gherman, B**.; Lese, D.; Suciu, M.; Plitea, N. The Control of the PARAMIS Parallel Robot using a Haptic Device PROCEEDINGS OF 2010 IEEE INTERNATIONAL CONFERENCE ON AUTOMATION, QUALITY AND TESTING, ROBOTICS (AQTR 2010), VOLS. 1-3, pp. 354-359, 2010
32. Vaida, C.; Pisla, D.; Plitea, N.; **Gherman, B**.; Gyurka, B.; Stancel, E.; Hesselbach, J.; Raatz, A.; Vlad, L.; Graur, F. Development of a Control System for a Parallel Robot Used in Minimally Invasive Surgery INTERNATIONAL CONFERENCE ON ADVANCEMENTS OF MEDICINE AND HEALTH CARE THROUGH TECHNOLOGY, vol. 26, pp. 171-176, 2009
33. Plitea, N.; Pisla, D.; Vaida, C.; **Gherman, B**.; Pisla, A. Dynamic Modeling of a Parallel Robot Used in Minimally Invasive Surgery PROCEEDINGS OF EUCOMES 08, THE SECOND EUROPEAN CONFERENCE ON MECHANISM SCIENCE, pp.595-602, 2009
34. **Gherman, Bogdan**; Pisla, Doina; Vaida, Calin; Plitea, Nicolae Development of inverse dynamic model for a surgical hybrid parallel robot with equivalent lumped masses ROBOTICS AND COMPUTER-INTEGRATED MANUFACTURING, vol.28(3), pp.402-415, 2012

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35. Pisla, Doina; **Gherman, Bogdan**; Vaida, Calin; Plitea, Nicolae Kinematic modelling of a 5-DOF hybrid parallel robot for laparoscopic surgery ROBOTICA, vol. 30(7), pp.1095-1107, 2012
36. **Gherman, Bogdan**; Pisla, Doina; Vaida, Calin; Plitea, Nicolae ON WORKSPACE AND ACCURACY EVALUATION OF A PARALLEL ROBOT FOR NEEDLE PLACEMENT PROCEDURES PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE, vol. 17(4), pp.344-351, 2016
37. Plitea, Nicolae; **Gherman, Bogdan**; Cocorean, Dragos; Vaida, Calin; Pisla, Doina INVERSE DYNAMIC MODELLING OF A PARALLEL ROBOTIC SYSTEM FOR BRACHYTHERAPY PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE, vol. 18(1), pp. 55-63, 2017
38. Vaida, C.; Plitea, N.; Pisla, D.; **Gherman, B**. Orientation module for surgical instruments-a systematical approach MECCANICA, vol.48(1), pp.145-158, 2013
39. Pisla, D.; **Gherman, B.**; Plitea, N.; Gyurka, B.; Vaida, C.; Vlad, L.; Graur, F.; Radu, C.; Suciu, M.; Szilaghi, A.; Stoica, A. PARASURG hybrid parallel robot for minimally invasive surgery CHIRURGIA, vol. 106(5), pp.619-625, 2011
40. Pisla, Doina; **Gherman, Bogdan**; Vaida, Calin; Suciu, Marius; Plitea, Nicolae An active hybrid parallel robot for minimally invasive surgery ROBOTICS AND COMPUTER-INTEGRATED MANUFACTURING,vol.29(4), pp.203-221, 2013
41. Plitea, N.; Hesselbach, J.; Pisla, D.; Raatz, A.; **Gherman, B**.; Vaida, C. Dynamic analysis and design of a surgical parallel robot used in laparoscopy JOURNAL OF VIBROENGINEERING, vol.11(2), pp.215-225, 2009
42. Plitea, Nicolae; Pisla, Doina; Vaida, Calin; **Gherman, Bogdan**; Szilaghyi, Andras; Galdau, Bogdan; Cocorean, Dragos; Covaciu, Florin ON THE KINEMATICS OF A NEW PARALLEL ROBOT FOR BRACHYTHERAPY PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE, vol. 15(4), pp.354-361, 2014
43. Pisla, D.; Plitea, N.; Vaida, C.; Hesselbach, J.; Raatz, A.; Vlad, L.; Graur, F.; Gyurka, B.; **Gherman, B**.; Suciu, M. PARAMIS parallel robot for laparoscopic surgery CHIRURGIA, vol. 105(5), pp. 677-683, 2010
44. Pisla, Doina; Birlescu, Iosif; Vaida, Calin; Tucan, Paul; Pisla, Adrian; **Gherman, Bogdan**; Crisan, Nicolae; Plitea, Nicolae ALGEBRAIC MODELING OF KINEMATICS AND SINGULARITIES FOR A PROSTATE BIOPSY PARALLEL ROBOT PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE, vol.19(3), pp. 489-497, 2018
45. Pisla, D., Tucan, P., **Gherman, B**., Crisan, N., Andras, I., Vaida, C.(c.a.), and Plitea, N. Development of a parallel robotic system for transperineal biopsy of the prostate Mechanical Sciences, vol.8, pp.195-213, 2017
46. Carbone, Giuseppe; **Gherman, Bogdan**; Ulinici, Ionut; Vaida, Calin; Pisla, Doina Design Issues for an Inherently Safe Robotic Rehabilitation Device ADVANCES IN SERVICE AND INDUSTRIAL ROBOTICS, vol.49, pp.1025-1032, 2018
47. Birlescu, Iosif; Craciun, Florin; Vaida, Calin; **Gherman, Bogdan**; Pisla, Doina AN INNOVATIVE AUTOMATED INSTRUMENT FOR ROBOTICALLY ASSISTED BRACHYTHERAPY USED IN CANCER TREATMENT ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING, vol. 60(4), pp.633-638, 2017

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2.b. Author / co-author / other papers (projects, studies etc.)

Patents and pending patents

Granted patents

1. Plitea, N., Pîslă, D., Vaida, C., **Gherman, B.**: Surgical robot. RO-126271, Romania (2012)
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4. D. Pisla, C. Vaida, I. Birlescu, F. Graur, B. Gherman, P. Tucan, N. Plitea: „ Automated medical instrument for radiofrequency ablation" Patent pending: A00379/10.06.2017
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6. N. Plitea, D. Pisla, C. Vaida, B. Gherman, A. Szilaghyi, B. Galdau, D. Cocorean: Parallel robot for brachytherapy with two kinematic chains of type 2CRRU and CRU, Pending patent, RO129696-A2.
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16. Plitea, N., Pisla, D., Vaida, C., Gherman, B., Tucan, P., PRoHep-LCT- Parallel robot for laparoscopic treatment of liver cancer, Patent pending A1017/03.12.2018

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Oral communications as invited speaker in international symposia

1. Dynamics of a Parallel Platform for HelicopterFlight Simulation Considering Friction, SYROM 2009, Springer Verlag, Seite 365-378, 2009
2. Surgical robots, Int. Workshop: „From Biological Systems Inspiration To Robotic Structures", Craiova July, 5-7, 2012
3. Kinematics and Design of a 5-DOFParallel Robot used in Minimally Invasive Surgery, Advances in Robot Kinematics: Motion in Man and Machine, July 27 – July 1, 2010
4. On the Dynamics of a 5 DOF Parallel Hybrid Robot used in Minimally Invasive Surgery, SEP 14-18, 2010, Cluj-Napoca, 3rd European Conference on Mechanisms Science (EUCOMES 2010 Conference)
5. Singularities and Workspace Analysis for a Parallel Robot for Minimally Invasive Surgery, MAY 28-30, 2010, Cluj-Napoca, IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR)
6. The experimental model of an active parallel surgical robot, International Conference on Quality and Innovation in Engineering and Management, Cluj-Napoca, 22-24 November 2012
7. An innovative family of modular parallel robots for brachytherapy, 11-12 noiembrie 2013, Brasov, România, SYROM 2013, The 112th IFToMM International Symposium on Science of Mechanisms and Machines - SYROM'2013
8. SMART Furniture - QUO VADIS, JUL 01-05, 2014, Cluj-Napoca, International Conference on Production Research - Regional Conference Africa, Europe and the Middle East (ICPR-AEM) / 3rd International Conference on Quality and Innovation in Engineering and Management (QIEM)
9. Kinematic Modelling of a new 5-DOF (Axis) Parallel Robot used in Brachytherapy, The VIth International Conference on Robotics (ROBOTICS 2014), 23-25 October, Bucharest, Romania
10. Kinematic Behavior of a Novel Medical Parallel Robot for Needle Placement, 24th International Conference on Robotics in Alpe-Adria-Danube Region (RAAD 2015), 27-29 May 2015, Bucharest, Romania
11. BIO-PROS-2: an innovative parallel robotic structure for transperineal prostate biopsy, 19-21 mai, 2016, Cluj-Napoca, Romania, IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR)

12. PARA-BRACHYROB – An Innovative Parallel Robotic System used in Brachytherapy, 29 – 30 September 2016, Cluj-Napoca, International Workshop „Progress in Uro-Oncology"
13. Kinematic design of a parallel robot for elbow and wrist rehabilitation, 2-3 November, 2017, Iasi, Romania, The 12th IFToMM International Symposium on Science of Mechanisms and Machines - SYROM'2017
14. Kinematic analysis of an exoskeleton-based robot for elbow and wrist rehabilitation, 24-28 Octombrie, 2017 – FLORIANÓPOLIS – BRAZIL, 6th International Symposium on Multibody Systems and Mechatronics – MuSMe
15. Modelling and simulation of a robotic system for lower limb rehabilitation, August 26-29, 2018 in Quebec City, Canada, ASME 2018 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2018)
16. A kinematic characterization of a parallel robotic system for lower limb rehabilitation, 7th European Conference on Mechanism Science, 4-6 September 2018, Aachen, Germany
17. PaRReEx – An upper limb rehabilitation robot, international Workshop "Parallel robots for post-stroke rehabilitation", 21 March 2019, Cluj-Napoca, Romania

2.c. Research Grants

Coordinator

1. **Innovative robotic instrument for surgical abdominal procedures - FOCUS**
   - Programme: National Grants, code: GNaC 2018, no. 3216/06.02.2019
   - Financing Institution: Technical University of Cluj-Napoca
   - Duration: 12 month1 (2019)

Member in International Grants

1. **Creative Alliance in Research and Education focused on Medical and Service Robotics**
   - Programme: Scopes International IP Grant - IZ74Z0_13736
   - Financing Institution: SNF, Switzerland
   - Duration: 3 years (2011-2013)
   - Coordinator (Prof. D. Pisla – TU-CN, Romania, Prof. A. Rodic – IMP Belgrade, Serbia, Prof. H. Bleuler – EPFL Switzerland)

2. **An innovative robotic system for upper limb rehabilitation – InnoHealth**
   - Programme: RIS 2019 Innovation Call
   - Financing Institution: European Innovation Technology - Health
   - Duration: 5 months
   - Coordinator (Prof. D. Pisla)

3. **Development of kinematic and dynamic models for parallel robots with applications in surgery - PROINS**
   - Programme: Bilateral Cooperation (Austria - Romania)
   - Financing Institution: Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding
   - Duration: 18 months
   - Coordinator (Prof. D. Pisla , Romania, Prof. M. Husty, Austria)

4. **EDREAM - enabling new Demand REsponse Advanced, Market oriented and secure technologies, solutions and business models**

- Horizon 2020 Framework Programme
- Financing Institution:EU institutions
- Duration: 24 months
- Coordinator: Prof. Ioan Salomie

Member in research grants won in national competitions

1. **Innovative Approaches Regarding Rehabilitation and Assistive Robotics for Healthy Ageing - AgeWell**
   - Competitiveness Operational Programme 2014-2020, contract 20/01.09.2016
   - Instituția finanțatoare: EU contribution, National budget
   - Duration: 48 months
   - Coordinator: Prof. Giuseppe Carbone

2. **High accuracy innovative approach for the robotic assisted intraoperatory treatment of hepatic tumors based on imagistic-molecular diagnosis - IMPROVE**
   - PN-III-P1-1.2-PCCDI2017-0221
   - Financing institution: National Complex Project for Research, Development and Innovation, financed by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
   - Duration: 24 months
   - Coordinator: Prof. Doina Pisla

3. **Robotic assisted prostate biopsy, a high accuracy innovative method - ROBOCORE**
   - PN-II-PT-PCCA-2013-4-0647
   - Financing institution: National Complex Project for Research, Development and Innovation, financed by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
   - Duration: 24 months
   - Coordinator: Prof. Doina Pisla

4. **A multi-purpose needle insertion device for the diagnosis and treatment of cancer - ACCURATE**
   - PN-II-RU-TE- 2014-4-0992
   - Financing institution: National Complex Project for Research, Development and Innovation, financed by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
   - Duration: 24 months
   - Coordinator: Conf. Calin Vaida

5. **Diagnosis and treatment system for spine affections - SPINE**
   - PN-II-PT-PCCA-2013-4-1596
   - Financing institution: National Complex Project for Research, Development and Innovation, financed by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
   - Duration: 24 months
   - Coordinator: Prof. Silviu Butnariu, Transylvania University of Brasov

6. **Robotic assisted brachytherapy, an innovative approach of inoperable cancers -**

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CHANCE

- Planul National de Cercetare-Dezvoltare si Inovare pentru perioada 2007 - 2013 (PNCDI II) PN-II-PT-PCCA-2011-3.2-0414
- Instituția finanțatoare: Unitatea Executivă pentru Finanțarea Învățământului Superior, a Cercetării, Dezvoltării și Inovării (UEFISCDI)
- Durata: 36 luni
- Director Prof. Nicolae Plitea

7. **Innovative development of a virtual system for e-learning in hepatic endoscopic surgery – HEPSIM**
   - Programme: PNCD II P4 92080/2008
   - Financing Institution: Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding
   - Duration 3 years (2008 - 2011)
   - Coordinator: Dr. Florin Graur, University of Medicine and Pharmacy Cluj-Napoca

8. **Multidisciplinary development of surgical robots based on innovative parallel structures**
   - Programme: PNCD II Nr. 1687, Tip P-4 2007 - 2010
   - Financing Institution: Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding
   - Duration 3 years (2007 - 2010)
   - Coordinator Prof. D. Pisla, Technical Univ. of Cluj-Napoca

Member in industrial research and development projects

1. **Manipulation Systems for Sample Handling in a Sample Receiving Facility", TASUK /16/11305/NBO/1424, ESA-European Space Agency,** Coordinator Prof. Doina Pisla

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14-06-2019

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