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Articole științifice publicate în reviste indexate Web of Science - Thomson Reuters (selecție)

1. Dumitru, S, **Dumitru, N**, Copilusi, C, Rosca, AS, Computational Method for Dynamic Analysis of Multibody Systems with Deformable Elements, MATHEMATICS, 2797, *Category Quartile, Q1,*
   http://dx.doi.org/10.3390/math13172797
2. **Dumitru, N**., Ciurezu-Gherghe, L., Copilușı, C., Geonea, I., & Dumitru, S. (2022). Theoretical and experimental study methods for a robotic system with deformable elements used in minimally invasive surgery. Mechanism and Machine Theory, 167, 104459, *Category Quartile, Q1,*
   https://www.sciencedirect.com/science/article/pii/S0094114X21002172

3. Copilusi, C., Dumitru, S., **Dumitru, N**., Geonea, I., & Mic, C. (2024). An Exoskeleton Design and Numerical Characterization for Children with Duchenne Muscular Dystrophy. *Bioengineering*, *11*(11), 1072. https://pmc.ncbi.nlm.nih.gov/articles/PMC11591250/, *Category Quartile Q2*

4. Dumitru, S., Constantin, A., Copilusi, C., & **Dumitru, N**. (2021). Impact Dynamics Analysis of Mobile Mechanical Systems. Mathematics, 9(15), 1776, *Category Quartile, Q1*
   https://www.mdpi.com/2227-7390/9/15/1776
5. Dumitru, S., Copilusi, C., **Dumitru, N.,** Geonea, I., (2024). A Dynamic Analysis of a Poly-Articulated Robot, Computation 12(8),156, *Category Quartile Q2*.

   https://doi.org/10.3390/computation12080156

6. Copilusi, C., Dumitru, S., Geonea, I., Ciurezu, L. G., & **Dumitru, N**. (2022). Design Approaches of an Exoskeleton for Human Neuromotor Rehabilitation. Applied Sciences, 12(8), 3952, *Category Quartile Q1*.
   https://www.mdpi.com/2076-3417/12/8/3952
   WOS:000787026200001
7. Bolcu, A., **Dumitru, N**., Ciuca, I., Stanescu, M. M., & Bolcu, D. (2017). *The Vibrations Study of DAMMAR Based Composite Bars Reinforced with Natural Fibers by Using a New Euler-Bernoulli Theory*. MATERIALE PLASTICE, 54(3), 423-429,
   http://www.revmaterialeplastice.ro/pdf/4%20BOLCU%20A%203%2017.pdf
   WOS:000426412300004
8. Ciupitu, I., **Dumitru, N**., & Teisanu, C. (2003). *Static analysis of the guiding bearing drill contact by finite element method*. Journal of materials processing technology, 143, 270-276. *Category Quartile, Q1*

https://www.sciencedirect.com/science/article/pii/S0924013603004709
WOS:000187510100052

9. Roșca, A., Dumitru, S., Catalu, D., **Dumitru, N**., & Geonea, I. (2022). Dynamic motion analysis of a wheelchair for people with locomotor disabilities. Acta Technica Napocensis - series: Applied Mathematics, Mechanics, and Engineering, 65(2s), , Retrieved from https://atna-mam.utcluj.ro/index.php/Acta/article/view/1921
10. Calangiu, A., Dumitru, S., Copilusi, C., Rosca, A., Demian, M., & **Dumitru, N**. (2022). Optimizing in a dynamic mode the connecting rod from an internal combustion engine. Acta Technica Napocensis - Series: Applied Mathematics, Mechanics, and Engineering, 65(2S). Retrieved from https://atna-mam.utcluj.ro/index.php/Acta/article/view/1901
11. Ionică, v., **Dumitru, N.**, Geonea, I., & Bogdan, m. (2022). Modelling the vibratory effects of rail traffic on the environment. Acta Technica Napocensis - Series: Applied Mathematics, Mechanics, and Engineering, 65(2S). Retrieved from https://atna-mam.utcluj.ro/index.php/Acta/article/view/1911
12. Constantin, A., Oțât, O., Calangiu, A., Crăciunoiu, N., Margine, a., & **Dumitru, N**. (2022). The dynamic impact study of a crank connecting rod mechanism. Acta Technica Napocensis - series: Applied Mathematics, Mechanics, And Engineering, 65(2S). Retrieved from https://atna-mam.utcluj.ro/index.php/Acta/article/view/1904

Articole și publicații științifice indexate Web of Science - Thomson Reuters (WOS – selecție)

1. Geonea, I., Copilusi, C., **Dumitru, N**., Margine, A., Ciurezu, L., & Rosca, A. S. (2022, May). A New Exoskeleton Robot for Human Motion Assistance. In 2022 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR) (pp. 1-6). IEEE. https://ieeexplore.ieee.org/abstract/document/9801965/
   WOS:000890261900040
2. Ciurezu-Gherghe, L., **Dumitru, N.,** Geonea, D., & Bostina, S. (2022, May). Snake-Like Flexible Mechanical System With Applications in Exploratory Activities. In 2022 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR) (pp. 1-5). IEEE.
   https://ieeexplore.ieee.org/abstract/document/9802035
   WOS:000890261900043

3. Geonea, I., **Dumitru, N**., Copilusi, C., & Margine, A. (2020, January). Experimental Determination of the Loading Capacity of the Elastic Bracelet Assembly. In IOP Conference Series: Materials Science and Engineering (Vol. 724, No. 1, p. 012006). IOP Publishing. https://iopscience.iop.org/article/10.1088/1757-899X/724/1/012006/meta
   WOS:000619349400006

4. **Dumitru N.**, Copilusi C., Calangiu A., Geonea I. (2020) An Engine Mechanism Dynamic Analysis by Considering the Kinematic Elements as Deformable Ones. In: Dumitru I.,

Covaciu D., Racila L., Rosca A. (eds) The 30th SIAR International Congress of Automotive and Transport Engineering. SMAT 2019. Springer, Cham. https://doi.org/10.1007/978-3-030-32564-0_2
WOS:000528526600002

5. Bolcu A., **Dumitru N**., Bolcu D., Miritoiu C.M., Stanescu M.M. (2020) A Study of the Mechanical Behavior of a Car Part Realized from Epoxy Resin Reinforced with Cotton Woven. In: Dumitru I., Covaciu D., Racila L., Rosca A. (eds) The 30th SIAR International Congress of Automotive and Transport Engineering. SMAT 2019. Springer, Cham. https://doi.org/10.1007/978-3-030-32564-0_64
WOS:000528526600064

6. **Dumitru N**., Geonea I., Copilusi C., Dumitru S., Otat O. (2019) Dynamic Models for Analyzing a Self-propelled Vehicle for People with Locomotor Disabilities. In: Burnete N., Varga B. (eds) Proceedings of the 4th International Congress of Automotive and Transport Engineering (AMMA 2018). AMMA2018 2018. Proceedings in Automotive Engineering. Springer, Cham. https://doi.org/10.1007/978-3-319-94409-8_78
WOS:000578264900078

7. Ionut Geonea, **Nicolae Dumitru**, Cristian Copilusi, Ilie D., Otat O., Dragos Tutunea. (2019) Theoretical and Experimental Analysis for the Load Capacity of the Cone Tightening Assemblies. In: Burnete N., Varga B. (eds) Proceedings of the 4th International Congress of Automotive and Transport Engineering (AMMA 2018). AMMA2018 2018. Proceedings in Automotive Engineering. Springer, Cham. https://doi.org/10.1007/978-3-319-94409-8_51
WOS:000578264900051

8. **Nicolae, Dumitru**, Sorin, Dumitru, Cristian, Copilusi, Cristina, Ploscaru (2018, May). A Reconfigurable Leg Exoskeleton for Human Locomotion Rehabilitation. In 2018 International Conference on Control, Artificial Intelligence, Robotics & Optimization (ICCAIRO) (pp. 95-102). IEEE.
WOS:000493714800015
https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8698429

9. Geonea, I., **N. Dumitru**, and A. Margine. "*Analytical and Numerical Study of Critical Speed for Right Shafts*." Acoustics and Vibration of Mechanical Structures—AVMS-2017. Springer, Cham, 2018. 411-417.
https://link.springer.com/chapter/10.1007/978-3-319-69823-6_49
WOS:000437313600049

10. Dumitru, S., Copilusi, C., & **Dumitru, N**. (2018, May). *A leg exoskeleton command unit for human walking rehabilitation*. In 2018 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR) (pp. 1-6). IEEE.
https://ieeexplore.ieee.org/abstract/document/8402732
WOS:000450065900033

11. Bolcu, A., **Dumitru, N**., Ciuca, I., Stanescu, M. M., & Bolcu, D. (2017). *The Vibrations Study of DAMMAR Based Composite Bars Reinforced with Natural Fibers by Using a New Euler-Bernoulli Theory*. MATERIALE PLASTICE, 54(3), 423-429. **IF 1.248**
http://www.revmaterialeplastice.ro/pdf/4%20BOLCU%20A%203%2017.pdf
WOS:000426412300004
P1.4=3·(0,2+FI)/n=3·(0,2+1.248)/5=0.8688

12. Geonea, Ionut, **Nicolae Dumitru**, and Ilie Dumitru. "Experimental and theoretical study of friction torque from radial ball bearings." IOP Conference Series: Materials Science and Engineering. Vol. 252. No. 1. IOP Publishing, 2017.
https://iopscience.iop.org/article/10.1088/1757-899X/252/1/012048/meta
WOS:000419817200048

13. Marinescu, Gabriel Cătălin, Ştefan-Cristian Castravete, and **Nicolae Dumitru**. "*Vibration study of a vehicle suspension assembly with the finite element method*." IOP Conference Series: Materials Science and Engineering. Vol. 252. No. 1. IOP Publishing, 2017.
https://iopscience.iop.org/article/10.1088/1757-899X/252/1/012030/meta
WOS:000419817200030

14. Oana, O., **Nicolae, Dumitru**, & Ilie, D. (2017, October). *Dynamic models to analyse the influence of the seat belt in a frontal collision*. In IOP Conference Series: Materials Science and Engineering (Vol. 252, No. 1, p. 012017). IOP Publishing.
https://iopscience.iop.org/article/10.1088/1757-899X/252/1/012017/meta
WOS:000419817200017

15. **Dumitru, N**., Copilusi, C., Geonea, I., & Margine, A. (2016, October). *Kinematic and Dynamic Study of a Mechanism for a Vehicle Front and Rear Stabilizer Bars*. In International Congress of Automotive and Transport Engineering (pp. 161-169). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-45447-4_18
WOS:000390821400018

16. Oţăt, O. V., **Dumitru, N.**, Oţăt, V., & Dumitru, I. (2016, October). *Determination of Kinematic and Dynamic Behavior in the Driver's Skull upon the Impact with the Steering Wheel*. In International Congress of Automotive and Transport Engineering (pp. 812-819). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-45447-4_89
WOS:000390821400089

17. Geonea, I., **Dumitru, N.** (2016). *Motion analysis of a robotic wheelchair*. In Advances in Robot Design and Intelligent Control (pp. 471-479). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-21290-6_47
WOS:000381804400047

18. **Dumitru, N.**, Copilusi, C., & Ciortan, M. (2016). *Kinematic and Dynamic Study Contributions on Human Jaw System*. In New Trends in Medical and Service Robots (pp. 79-91). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-23832-6_7
WOS:000429272700007

19. Sorin, Dumitru., Dorian, C., Florin, M. L., **Nicolae, Dumitru**, & Valentin, G. (2015, October). *The experimental model of an forearm exoprosthesis*. In System Theory, Control and Computing (ICSTCC), 2015 19th International Conference on IEEE. (pp. 255-259).
https://ieeexplore.ieee.org/abstract/document/7321302
WOS:000382384100043

20. Geonea, I., **Dumitru, N**., & Margine, A. (2015). *Design and motion study of a wheelchair for disabled people*, WORLD CONGRESS ON ENGINEERING, WCE 2015, VOL II Book Series: Lecture Notes in Engineering and Computer Science Pages: 1028-1033.
http://www.iaeng.org/publication/WCE2015/WCE2015_pp1028-1033.pdf
WOS:000380592500067

21. **Dumitru, N**., Dumitru, S., Copilusi, C., Semenescu D., & Geonea, I. (2015). *Modal dynamic analysis of the wicket gate mechanism from a hydraulic turbine*. In Proceedings of the World Congress on Engineering (Vol. 2). Lecture Notes in Engineering and Computer Science 2218, pp. 1213-1218.
http://www.iaeng.org/publication/WCE2015/WCE2015_pp1213-1218.pdf
WOS:000380592500102

22. Geonea, I., Ungureanu, A., **Dumitru, N**., & Racilă, L. (2015). *Dynamic Modelling of a Four Legged Robot*. In New Trends in Mechanism and Machine Science (pp. 147-155). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-09411-3_16
WOS:000357867900016

23. **Dumitru, N**., Craciunoiu, N., Malciu, R., & Ploscaru, N. (2015). *Elastodynamic analysis of the sucker rod pumping system mechanism*. In New Trends in Mechanism and Machine Science (pp. 355-363). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-09411-3_38
WOS:000357867900038

24. Ciunel, S., Popa, D. L., & **Dumitru, N.** (2013). *Studies about Movement Biofidelity of a Dummy Neck Used in an Impact Testing Device*. In Applied Mechanics and Materials (Vol. 371, pp. 539-543). Trans Tech Publications.
https://www.scientific.net/amm.371.539
WOS:000334556900105

25. **Dumitru, N**., Malciu, R., Calbureanu, M., Dumitru, S., & Marinescu, G. C. (2012). *Dynamic Analysis of a Mobile Mechanical System with Deformable Elements*. In Advanced Materials Research (Vol. 463, pp. 1242-1245). Trans Tech Publications.
https://www.scientific.net/AMR.463-464.1242
WOS:000308114100244

26. Copilusi, C., Grecu, V., & **Dumitru, N.** (2013). *Human upper limb robotic system experimental analysis by using Contemplas motion software*. In Applied Mechanics and Materials (Vol. 325, pp. 1062-1066). Trans Tech Publications.
https://www.scientific.net/AMM.325-326.1062
WOS:000400801300006

27. **Dumitru, N**., Copilusi, C., Marin, M., & Rusu, L. (2010). *Human Lower Limb Dynamic Analysis with Applications to Orthopedic Implants*. In New Trends in Mechanism Science (pp. 327-334). Springer, Dordrecht.
https://link.springer.com/chapter/10.1007/978-90-481-9689-0_38
WOS:000395597100038

28. **Dumitru, N**., Malciu, R., & Geonea, I. (2010). *Differential transmission for robotizing a powered wheelchair*. Proceedings of the OPTIROB, 47-51.
http://rpsonline.com.sg/proceedings/9789810858407/978-981-08-5840-7_S1-10.xml
WOS:000392682500009

29. **Nicolae Dumitru**, Danel Semenescu, Nicolae Craciunoiu, Daniela Vintila and Ionut Geonea, *On the Modeling of a Hydraulic Turbine Directory Apparatus*, Proceedings Of The Fifth International Conference On Optimization Of The Robots And Manipulators, 2010 Pages: 75-80 Published: 2010.
http://rpsonline.com.sg/proceedings/9789810858407/978-981-08-5840-7_S2-5.xml
WOS:000392682500014

30. **Dumitru, N**., Negru, M., & Dumitru, S. (2010). *Simulation of a pressure controlled hose type joint using FEM*. In SYROM 2009 (pp. 549-562). Springer, Dordrecht.
https://link.springer.com/chapter/10.1007/978-90-481-3522-6_46
WOS:000289492600046

31. Copilusi, C., **Dumitru, N**., Rusu, L., & Marin, M. (2010, June). *Cam mechanism kinematic analysis used in a human ankle prosthesis structure*. In World Congress on Engineering, London, UK, June (pp. 1316-1320).
http://www.iaeng.org/publication/WCE2010/WCE2010_pp1316-1320.pdf
WOS:000394059900100

32. Grecu, V., **Dumitru, N**., & Grecu, L. (2009, March). *Analysis of human arm joints and extension of the study to robot manipulator*. In Proceedings of the International MultiConference of Engineers and Computer Scientists (Vol. 2, pp. 18-20).
http://www.iaeng.org/publication/IMECS2009/IMECS2009_pp1348-1351.pdf
WOS:000266097201035

33. **Dumitru, N**., Copilusi, C., & Zuhair, A. (2009, July). *Dynamic Modeling of a Mobile Mechanical System with Deformable Elements*. WORLD CONGRESS ON ENGINEERING 2009, VOLS I AND II Book Series: Lecture Notes in Engineering and Computer Science Pages: 1569-+ Published: 2009.
http://iaeng.org/publication/WCE2009/WCE2009_pp1569-1574.pdf
WOS:000271615700291

Articole și publicații științifice BDI, (SCOPUS și WOS) – selecție

1. Dumitru, N. Dumitru, S. Copilusi, C. Geonea, I. Catalu, D. Structural Kinematic Analysis of a Wheelchair Mechanism Designed for Disabled Persons. Lecture Notes in Mechanical EngineeringPages 59 – 70. 2024 3rd International Conference on Innovation in Engineering, ICIE 2024Povoação 26 June 2024through 28 June 2024.
https://link.springer.com/chapter/10.1007/978-3-031-61575-7_6

2. Geonea, I., **Dumitru, N.,** Dumitru, S., Copilusi, C., Tarnita, D. (2024). Structural Solutions of Walking Mechanisms Intended to Exoskeleton Robots to Assist Human Gait. In: Lovasz, EC., Ceccarelli, M., Ciupe, V. (eds) Mechanism Design for Robotics. MEDER 2024. Mechanisms and Machine Science, vol 166. Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-031-67383-2_26#citeas

3. **Dumitru, N**., Dragut, E., Craciunoiu, N., & Geonea, I. (2018). *Experimental Bench for Spur Gears Efficiency Measurement*. In New Advances in Mechanism and Machine Science (pp. 477-485). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-79111-1_47
4. **Dumitru, N**., Copilusi, C., Dumitru, S., Rosu, E., *Design of a reconfigurable exoskeleton used on human locomotion recovery*, International Journal of Mechanics 12, pp. 150-161, 2018.
http://www.naun.org/main/NAUN/mechanics/2018/a382003-abn.pdf
5. **Dumitru N**., Copilusi C., Dumitru S., Rusu L., Rosu E., *A Knee Exoskeleton Mechanism Dynamic Analysis*, Proceedings of the World Congress on Engineering and Computer Science 2018 Vol II, WCECS 2018, October 23-25, 2018, San Francisco, USA.
http://www.iaeng.org/publication/WCECS2018/WCECS2018_pp552-557.pdf
6. **Dumitru, N**., Craciunoiu, N., Geonea, I., & Copilusi, C. (2017). *Elastodynamic Analysis of a Mechanism with Flexible Links*. Lecture Notes in Engineering and Computer Science, 2230, pp. 821-828.
http://www.iaeng.org/publication/WCE2017/WCE2017_pp821-828.pdf
7. **Dumitru, N**., & Dumitru, V. C. (2014). *Mechatronic System with Applications in Medical Robotics*. In The 11th IFToMM International Symposium on Science of Mechanisms and Machines (pp. 371-379). Springer, Cham.
https://link.springer.com/chapter/10.1007/978-3-319-01845-4_37
8. **Dumitru, N**., Malciu, R., Calbureanu, M., *A finite element formulation for the elastodynamic analysis of mobile mechanical systems*, International Journal of Mathematical Models and Methods in Applied Sciences, 7(7), pp. 708-716, 2013.
http://www.naun.org/main/NAUN/ijmmas/g052001-240.pdf

9. **Dumitru, N**., Malciu, R., Grecu, V., *Theoretical and experimental study of the human upper limb dynamic behavior*, Advanced Materials Research 748, pp. 759-764, 2013. https://www.scientific.net/AMR.748.759 http://toc.proceedings.com/17866webtoc.pdf
10. **Dumitru, N**., Copilusi, C., Geonea, I., Tarnita, D., & Dumitrache, I. (2015). *Dynamic analysis of an exoskeleton new ankle joint mechanism*. In New Trends in Mechanism and Machine Science (pp. 709-717). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-09411-3_75
11. Geonea, I., **Dumitru, N**., Tarnita, D., Copilusi, C., & Rosca, A. S. (2020, July). Design and Motion Analysis of an Exoskeleton Robot for Assisting Human Locomotion. In International Workshop on Medical and Service Robots (pp. 44-52). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-030-58104-6_6
12. Copilusi, C., **Dumitru, N.**, Margine, A., Geonea, I., Rosca, A. S., & Rosu, E. (2020, July). Method for 3D Modeling of Human Osteo-Articular System Bones. In International Workshop on Medical and Service Robots (pp. 298-305). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-030-58104-6_34
13. Geonea, I. D., **Dumitru, N.**, Copilusi, C., Margine, A., Ciurezu, L., & Didu, A. (2020, May). New design and motion analysis of an exoskeleton robot for assisting human locomotion. In 2020 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR) (pp. 1-6). IEEE.
14. Copilusi, C., **Dumitru, N.**, Margine, A., Rosca, A., & Rosu, E. (2020). A Child Orthosis Design and Simulation Based on Dynamic Considerations. In The 10th International Conference on Engineering, Project, and Production Management (pp. 497-509). Springer, Singapore. https://link.springer.com/chapter/10.1007/978-981-15-1910-9_41
15. Copilusi, C., **Dumitru, N.**, Margine, A., & Geonea, I. (2019, August). Dynamic Analysis of a Human Ankle Joint Prosthesis. In IOP Conference Series: Materials Science and Engineering (Vol. 568, No. 1, p. 012077). IOP Publishing. https://iopscience.iop.org/article/10.1088/1757-899X/568/1/012077/meta
16. Geonea, I., **Dumitru, N**., Rosca, A., Craciunoiu, N., Racila, L., & Copilusi, C. (2019, August). Computation of a torsion spring stabilizer bar rigidity and fatigue resistance. In IOP Conference Series: Materials Science and Engineering (Vol. 568, No. 1, p. 012013). IOP Publishing. https://iopscience.iop.org/article/10.1088/1757-899X/568/1/012013/meta
17. Didu, A., **Dumitru, N**., & Calangiu, A. M. (2019, May). Thermally coupled structural analysis of a connecting rod obtained by powder metallurgy. In IOP Conference Series: Materials Science and Engineering (Vol. 514, No. 1, p. 012030). IOP Publishing. https://iopscience.iop.org/article/10.1088/1757-899X/514/1/012030/meta
18. Geonea, I., **Dumitru, N**., Tarnita, D., & Rinderu, P. (2019, June). Design and kinematics of a new leg exoskeleton for human motion assistance. In IFToMM World Congress on Mechanism and Machine Science (pp. 165-174). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-030-20131-9_17
19. Geonea, I., **Dumitru, N**., Rinderu, P., & Margine, A. (2018). Design Solutions for Human Legs Motion Assistance Exoskeletons. In Proceedings of the World Congress on Engineering (Vol. 2). http://www.iaeng.org/publication/WCE2018/WCE2018_pp783-788.pdf

20. Geonea, I., **Dumitru, N**., Rosca, A., & Didu, A. (2018). *Design, Numerical Simulation and Manufacturing of a Powered Wheelchair*. In New Advances in Mechanism and Machine Science (pp. 191-199). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-79111-1_19
21. Ciurezu-Gherghe, L., **Dumitru, N.,** & Copilusi, C. (2018). *Design and Simulation of a Snake like Robot*. In New Advances in Mechanism and Machine Science (pp. 263-272). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-79111-1_26
22. Copilusi, C., **Dumitru, N**., & Margine, A. (2018). *Children Locomotion Rehabilitation Test Bed Designed from Kinematic Considerations*. In New Advances in Mechanism and Machine Science (pp. 171-179). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-79111-1_17
23. Oţăt, O.V., **Dumitru, N.**, Oţăt, V., *The kinematic behaviour of the driver and the degree of injuries in vehicle frontal collision*, International Journal of Mathematics and Computers in Simulation, 10, pp. 53-62, 2016. http://www.naun.org/main/NAUN/mcs/2016/a162002-252.pdf
24. Copilusi, C., Ceccarelli, M., **Dumitru, N**., & Carbone, G. (2014). *Design and simulation of a leg exoskeleton linkage for a human rehabilitation system*. In The 11th IFToMM international symposium on science of mechanisms and machines (pp. 117-125). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-01845-4_12
25. Geonea, I. D., Margine, A., **Dumitru, N**., & Copilușı, C. (2014). *Design and Simulation of a Mechanism for Human Leg Motion Assistance*. In Advanced Materials Research (Vol. 1036, pp. 811-816). Trans Tech Publications. https://www.scientific.net/AMR.1036.811
26. Marinescu, G. C., **Dumitru, N**., & Geonea, I**.** (2013). *Dynamic Modelling and Simulation of an Auto Vehicle Steering Mechanism Considering its Elements as Flexible.* In Applied Mechanics and Materials (Vol. 245, pp. 150-155). Trans Tech Publications. https://www.scientific.net/AMM.245.150
27. Copilusi, C., **Dumitru, N**., Margine, A., *Modular knee orthosis fem analysis from kinematic considerations*, Mechanisms and Machine Science, 7, pp. 431-439, 2013. https://link.springer.com/chapter/10.1007/978-94-007-4902-3_46
28. Copilusi, C., Marin, M., **Dumitru, N**., & Rusu, L. (2012). *Locomotion System Dynamic Analysis with Application on Children Orthotics and Prostheses Devices*. In World Congress on Engineering. Lecture Notes in Engineering and Computer Science, 3, pp. 1663-1668. http://www.iaeng.org/publication/WCE2012/WCE2012_pp1663-1668.pdf

Brevete de invenții

1.Exoskeleton-type system to assist locomotion in locomotor-disabled persons, has elements leading mechanisms for right leg and left leg which are actuated by electric motor which transmits movement to axle. Autori: DUMITRU N, GEONEA I D, DUMITRU S, COPILUSI P C, CIUREZU-GHERGHE L. Anul publicarii:2020. Nr. RO134430-A1.

Link:

https://www.webofscience.com/wos/alldb/full-record/DIIDW:2019839404

2.Robotic system for neuro-motor rehabilitation for functional recovery of person, has elements that are articulated to one another by some kinematic rotation couples, and movement of three actuators are placed on frame by chain transmissions. Autori: DUMITRU N, COPILUSI P C, DUMITRU S, GEONEA I D, ROSU E. Nr. RO134022-A2.

Link:

https://www.webofscience.com/wos/alldb/full-record/DIIDW:202036417K

3.Exoskeleton type mechatronic system for assisting walking of locomotor disabled persons, has elements whose lengths are adjustable depending on anthropomorphic dimensions of subjects, and structure that consists of mobile kinematic elements. Autori: Geonea I., Dumitru N., Dumitru S., Copilusi C., Ciurezu – Gherghe L. Nr. RO134430-A1/RO134430-B1.

Link:

https://www.webofscience.com/wos/alldb/full-record/DIIDW:202097272M

4.Exoskeleton intended for the rehabilitation of human locomotion, has mechanism having role of actuating ankle and leg and that consists of number of nine kinematic mobile elements of bar type, with rectangular cross-section. Autori: Copilusi C., Geonea I., Dumitru N., Margine Al., Dumitru S., Ciurezu – Gherghe L. Nr. RO135806-A0.

Link https://www.webofscience.com/wos/alldb/full-record/DIIDW:2022B3284X

5. Brevet, nr. A 00147 din 2019, Exoschelet destinat asistării mersului uman și reabilitării, data de depozit, 05.03.2019. Titular-Universitatea din Craiova. **Acordat prin hotărârea OSIM 4.3/35 din 29.01.2021. Patent Number: RO134430-A1**

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https://patents.google.com/patent/RO134430A1/ro?oq=Patent+Number:+RO134430-A1

Produse, tehnologii, platforme și servicii inovative
Coordonator/prim autor

1. Sistem Robotic Destinat Reabilitarii Locomotiei Persoanelor cu Deficiente Neuromotorii (acronim: NeuRob), Cerere de brevet 16/18.10.2018. OSIM cu Nr. A/00816/18.10.2018.

2. Vehicul robotizat pentru deservirea persoanelor cu deficienţe locomotorii.