

LIST OF PUBLICATIONS

Emilia Brad

1. Key reference papers (10)

1. **Brad, E.**, Brad, S., *Algorithm for Designing Reconfigurable Equipment to Enable Industry 4.0 and Circular Economy-Driven Manufacturing Systems*. Applied Sciences. 2021, 11, 4446. <https://doi.org/10.3390/app11104446> IF 2.679 (2021) (Clarivate Analytics). [Q2]
2. **Brad, E.**, Brad, S. *Requirements Analysis in Disruptive Engineering Solutions Using the Paradigm of Living Systems*. Appl. Sci. 2021, 11, <https://doi.org/10.3390/app11219854>, 9854. (Clarivate Analytics). IF 2.679 (2021) [Q2]
3. Brad, S., Murar, M., Vlad, G., **Brad, E.**, Popanton, M., *Lifecycle Design of Disruptive SCADA Systems for Waste-Water Treatment Installations*, Sustainability, 2021, 13, 4950. <https://doi.org/10.3390/su13094950>, IF 3.251 (2021) (Clarivate Analytics). [Q2]
4. Brad, S., Murar, M., **Brad, E.**, *Design of Smart Connected Manufacturing Resources to Enable Changeability, Reconfigurability and Total-Cost-of-Ownership Models in the Factory-of-the-Future*, International Journal of Production Research, 56 (6), 2018, 2269-2291, 10.1080/00207543.2017.1400705, IF 3.68 (2018) (Clarivate Analytics). [Q1]
5. Brad, S., Murar, M., **Brad, E.**, *Methodology for Lean Design of Disruptive Innovations*, Procedia CIRP, Elsevier, 50(2016), 153-159, 2016, (Clarivate Analytics). (SCOPUS)
6. **Brad, E.**, Sârb, A., *Applying TRIZ and CMFD to Design Sustainable, Intelligent, and Inclusive Buildings*, Acta Technica Napocensis - Series: Applied Mathematics, Mechanics, and Engineering, Vol 64, No 3, pp. 543-550, 2021, (Clarivate Analytics).
7. Brad, S., Mocan, B., **Brad, E.**, Fulea, M., *TRIZ to Support Blue-design of Products*, Procedia CIRP, 39 (2016), 125-131, 2016, (Clarivate Analytics). (SCOPUS)
8. Brad, S., **Brad, E.**, *Directed Innovation of Business Models*, International Journal of Management, Knowledge and Learning, 5(1), 97-119, 2016. (SCOPUS)
9. **Brad E.**, Brad S., *Value Chain Planning in Cross-Industry Meta-Cluster Initiatives*, Balkan Region Conference on Engineering and Business Education, Sciendo, vol. 1(1), DOI: 10.2478/cplbu-2020-0030, pp. 256-264, ISSN 2391-8160, 2019. (BDI)
10. Brad, S., **Brad, E.**, *Enhancing SWOT Analysis with TRIZ-based Tools to Integrate Systematic Innovation in Early Task Design*, Elsevier, TRIZ Future Conference, Paris, pg. 91-100, 2013. (SCOPUS)

1. PhD Thesis

1. **Brad, E.**, *Research and Contributions to the Development of the Science of Reconfigurability and Methods for Designing Reconfigurable Manufacturing Equipment*, Technical University of Cluj-Napoca, September 25, 2010 (scientific advisor: Prof. Sorin Gabriel Popescu, PhD), distinction: Cum Laude.

2. Books and book chapters

1. Brad, S., **Brad, E.**, Mocan, B., *Basic Tools of Competitive Design in Robotics*, Cluj-Napoca, Ed. UT PRES, ISBN 973-662-161-8, 120 pg., 2005 (în limba engleză).



2. **Brad, E.**, *Sisteme Flexibile de Fabricație*, Cluj-Napoca, Ed. UT PRES, ISBN 973-662-162-6, 90 pg., 2005.
3. Brad, S., Mocan, B., Duca, A., **Brad, E.**, *Robotizarea Asistată de Calculator a Fabricației*, Ed. UT Press, ISBN 978-973-662-361-5, 220 pg., 2008.
4. **Brad, E.**, *Bazele Sistemelor Flexibile de Fabricație și Elemente de Fabricație Suplă (Lean)*, Ed. U.T. Press, ISBN 978-973-662-875-7, 541 pg., 2013.
5. **Brad, E.**, *Fabricația Reconfigurabilă și Elemente de Proiectare a Echipamentelor de Fabricație Reconfigurabile*, Ed. U.T. Press, ISBN 978-973-662-876-4, 526 pg., 2013.
6. Brad, S., **Brad, E.**, Mocan, B., Fulea, M., *Tools and Methods of Competitive Design in Robotics*, Editura UT Press, ISBN 978-606-737-067-6, 183 pg., Cluj-Napoca, 2015.
7. Brad, S., **Brad, E.**, Chapter 6 *Quantifying and Leading Innovation with TRIZ within Competitiveness Strategies*, in: *Advances and Impacts of the Theory of Inventive Problem Solving* (ed. S. Koziółek, L. Chechurin, M. Collan), 65-74, Springer, ISBN 978-3-319-96531-4, ISBN 978-3-319-96532-1 (eBook), <https://doi.org/10.1007/978-3-319-96532-1>, 2018.
8. **Brad, E.**, Stan, A., *Eco-Ergo Design*, Ed. UT Press, ISBN 978-606-737-425-4, 225 pg., 2020.

3. Full-length articles/studies published in journals

1. Brad, S., **Brad, E.**, *Using TRIZ to Handle Small Datasets in Artificial Intelligence*, Acta Technica Napocensis - Series: Applied Mathematics, Mechanics, and Engineering, Vol 66, No 2, (accepted), 2023.
2. Popescu, S., Dragomir, M., Pitic, D., **Brad, E.**, *Method for Competitive Environmental Planning*, Environmental Engineering and Management Journal, FI 1.004, ISSN 1582-9596, vol. 11, issue 4, pg. 823-828, 2012 [Q3]
3. Brad, S., Mocan, B., **Brad, E.**, Fulea, M., *Environmentally Sustainable Economic Growth*, Amfiteatru Economic, 18(42), 446-460, 2016 [Q3]
4. Brad, S., Murar, M., **Brad, E.**, *Design of Smart Connected Manufacturing Resources to Enable Changeability, Reconfigurability and Total-Cost-of-Ownership Models in the Factory-of-the-Future*, International Journal of Production Research, 56 (6), 2018, 2269-2291, 10.1080/00207543.2017.1400705 [Q1]
5. Brad, S., Murar, M., Vlad, G., **Brad, E.**, Popanton, M., *Lifecycle Design of Disruptive SCADA Systems for Waste-Water Treatment Installations*, Sustainability, 2021, 13, 4950. [Q2]
6. **Brad, E.**, Brad, S., *Algorithm for Designing Reconfigurable Equipment to Enable Industry 4.0 and Circular Economy-Driven Manufacturing Systems*. Applied Sciences. 2021, 11, 4446 [Q2]
7. **Brad, E.**, Brad, S. *Requirements Analysis in Disruptive Engineering Solutions Using the Paradigm of Living Systems*. Appl. Sci. 2021, 11, 9854 [Q2]
8. Brad, S., **Brad, E.**, Ioaneș, C., *Method for Planning Multitasking Robot Application Programs in RAPID*, Journal of Solid State Phenomena (special issue: Robotics and Automation Systems), 166(1): 69-76, ISSN 1012-0394, DOI: 10.4028/www.scientific.net /SSP.166-167.69, 2010
9. Brad, S., Murar, M., **Brad, E.**, *Methodology for Lean Design of Disruptive Innovations*, Procedia CIRP, Elsevier, 50(2016), 153-159, 2016
10. Brad, S., Mocan, B., **Brad, E.**, Fulea, M., *TRIZ to Support Blue-design of Products*, Procedia CIRP, 39 (2016), 125-131, 2016

11. **Brad, E.**, Sârb, A., Popa, R.M., Timoftei, S., *Techniques for Ensuring Cost Savings and Environment Protection in Buildings*, Acta Technica Napocensis - Series: Applied Mathematics, Mechanics, and Engineering, Vol 61, No 4, pp. 647-656, 2018
12. **Brad, E.**, Sârb, A., *Applying TRIZ and CMFD to Design Sustainable, Intelligent, and Inclusive Buildings*, Acta Technica Napocensis - Series: Applied Mathematics, Mechanics, and Engineering, Vol 64, No 3, pp. 543-550, 2021
13. Mocan, B., Brad, S., Fulea, M., Murar, M., **Brad, E.**, *Safety Management within a Robotic Manufacturing Systems through Layout Design*, Acta Technica Napocensis Series-Applied Mathematics Mechanics and Engineering, ISSN: 1221-5872, WOS: 000451702200018, pp. 137-146, 2018
14. Timoftei, S., **Brad, E.**, Sârb, A., Stan, O. *Open-source Software in Robotics*, Acta Technica Napocensis Series-Applied Mathematics Mechanics and Engineering, ISSN: 1221-5872, Vol. 61, No. 3, pp. 519-526, 2018
15. Brad, S., **Brad, E.**, *Enhancing SWOT Analysis with TRIZ-based Tools to Integrate Systematic Innovation in Early Task Design*, Procedia Engineering, 131(2015), 616-625, Elsevier, 2015
16. Brad, S., Fulea, M., **Brad, E.**, Mocan, B., *Smart Deployment of Demonstrators into Commercial Successful Solutions*, Procedia CIRP, Elsevier, DOI: 10.1016/j.procir.2014.03.137, vol. 21, 503-508, 2014
17. Brad, S., **Brad, E.**, *Directed Innovation of Business Models*, International Journal of Management, Knowledge and Learning, SCOPUS, 5(1), 97-119, 2016
18. Brad, S., **Brad, E.**, Morar, L., *Competitive Engineering in Product Redesign*, Acta Technica Napocensis (B), Series: Applied Mathematics and Mechanics, No. 50, vol. I/2007, ISSN 1221-5872, pg. 39-44, 2007
19. Brad, S., **Brad, E.**, *Designing Trends in Robotics - Design for Excellence*, Romanian Journal of Technical Sciences (B). Applied Mechanics, Tome 47, ISSN 0035-4074, ISBN 973-27-0932-4, pg. 583-586, 2002
20. Brad, S., **Brad, E.**, *Quantifying the Market Potential of an Innovative Product Idea*, Acta Technica Napocensis (B), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 51(1): 7-12, 2008
21. Brad, S., Fulea, M., **Brad, E.**, Mocan, B., *Systematic Integration of Innovation in Process Improvement Projects Using the Enhanced Sigma-TRIZ Algorithm and Its Effective Use by Means of a Knowledge Management Software Platform*, Informatica Economica (B+), ISSN 1453-1305, 13(4): 75-89, 2009
22. Brad, S., **Brad, E.**, *Quality Planning in Robotized Manufacturing Systems*, Acta Mechanica Slovaca, ISSN 1335-2393, pg. 63-69, 2006
23. Brad, S., **Brad, E.**, *Swarm Intelligence-Based Evolutionary Algorithm for Conceptual Design of Reconfigurable Manufacturing Equipments*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(3): 393-398, 2010
24. **Brad, E.**, Brad, S., *Model for Quantifying the Reconfiguration Index of Reconfigurable Manufacturing Equipments*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(3): 503-508, 2010
25. **Brad, E.**, Popescu, S., *Design Principles of Reconfigurable Manufacturing Equipments*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(3): 509-514, 2010



26. Popescu, S., **Brad, E.**, *Performance Planning of Reconfigurable Manufacturing Equipments*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(3): 445-450, 2010
27. Nedezki, C.M., Julean, D., **Brad, E.**, *Inverse Geometric Model of 4RUU Manipulator*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(3): 487-490, 2010
28. Nedezki, C.M., **Brad, E.**, *Workspace Analysis for 3RUU Parallel Manipulator*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(4): 649-652, 2010
29. Nedezki, C.M., **Brad, E.**, *The Analysis of the Singularities of the Parallel Spatial Manipulator 3RUU*, Acta Technica Napocensis (B+), Series: Applied Mathematics and Mechanics, ISSN 1221-5872, 53(4): 653-656, 2010
30. Brad, S., Chioreanu, A., Fulea, M., Mocan, B., **Brad, E.**, *Reconfigurability Function Deployment in Software Development*, Informatica Economică, 15(2): 130-141, 2011
31. **Brad, E.**, *Indicatori de Evaluare a Eficacității Proceselor Organizaționale în Contextul Sistemelor de Management al Calității*, Calitatea AS, ISSN 1582-2559, SCOPUS, vol. 12, nr. 4, pg. 7-12, 2011
32. **Brad, E.**, Pitic, L., *Conducerea Inovației de Proces Utilizând o Abordare de Tip Control Adaptiv și Costurile Calității*, Calitatea AS, SCOPUS, ISSN 1582-2559, vol. 12, nr. 124, pg. 19-26, 2011
33. Brad, S., **Brad, E.**, Mocan, B., *Framework for Eco-Innovative Design with Application in Low Voltage Electric Appliance Industry*, International Journal of Environmental Technology and Management, Inderscience Enterprises (SCOPUS), vol. 14, nr. 5/6, pg. 379-396, ISSN 1466-2132, 2011
34. Brad, S., Mocan, B., **Brad, E.**, Mocan, M., *Economic Development of Peripheral/Lagging Zones through Smart Innovation*, International Journal of Transitions and Innovation Systems, SCOPUS, 4(3/4), 201-220, 2015
35. Brad, S., Mocan, B., **Brad, E.**, Fulea, M., *Leading Innovation to Improve Complex Process Performances by Systematic Problem Analysis with TRIZ*, Procedia Engineering, 131(2015), 1121-1129, Elsevier, 2015
36. Popescu, S., **Brad, E.**, *Cercetări Privind Asigurarea Calității în Dezvoltarea Procedeelor de Studiu al Pieței*, Cluj-Napoca, Revista Casa Calității, nr. 2/1999, pg. 41-48, 1999

4. Full-length publications featured in proceedings from international conferences

1. Fulea, M., Mocan, B., **Brad, E.**, Homorodean, H., *Designing the Usability of an Innovation Management Assessment Software Platform*, 2016 International Conference on Production Research - Regional Conference Africa, Europe and the Middle East (ICPR-AEM 2016) and 4th International Conference on Quality and Innovation in Engineering and Management (QIEM 2016), pp. 340-345, 2016
2. Timoftei, S., **Brad, E.**, Fenișer C., Vaida, C., Filip, D., *Integration of Industrial Robots in Fine Arts Applications: Algorithms and a Case Study with ABB Robot Technology*, International Conference on Production Research – Africa, Europe and the Middle East and 4th International Conference on Quality and Innovation in Engineering and Management, 25-30 July 2016, Cluj-Napoca, Romania, pp. 466-471, 2016

3. Brad, S., **Brad, E.**, Mocan, B., *Bringing the Edge of Competitiveness into Engineering Design Education*, 5th Balkan Region Conference on Engineering and Business Education, Sibiu, ISSN 183-6730, 363-368, 2009
4. Brad, S., Fulea, M., Mocan, B., **Brad, E.**, *Systematic Innovation for Improving Competitiveness of a Master Study Programme*, International Conference on Engineering & Business Education, Innovation and Entrepreneurship, Sibiu, Oct. 18-21, ISBN 978-606-12-0369-7 / ISSN 1843-6730, pg. 365-368, 2012
5. Fulea, M., Ilies, A., Brad, S., **Brad, E.**, Mocan, B., Murar, M., *An Innovative Approach on Prioritizing Internal Improvement Projects within SMEs*, 3rd Int. Conf. on Quality and Innovation in Engineering and Management, 978-973-662-978-5, Cluj-Napoca, 209-214, 2014
6. Mocan, B., Fulea, M., **Brad, E.**, Brad, S., *State-of-the-Art and Proposals on Reducing Energy Consumption in the Case of Industrial Robotic Systems*, 3rd Int. Conf. on Quality and Innovation in Engineering and Management, 978-973-662-978-5, Cluj-Napoca, 337-341, 2014
7. Brad, S., Mocan, B., **Brad, E.**, Fulea, M., *Vectors of Innovation for Balancing Economic Growth and Sustainable Development*, Proceedings, BASIQ Int. Conference, ISSN 2457-483X, Bucharest, 457-464., 2015
8. Brad, S., **Brad, E.**, *Lean Innovation of Course Unit Content*, 3rd International Engineering and Technology Education Conference & 7th Balkan Region Conference on Engineering and Business Education, Sibiu, DOI 10.1515/cplbu-2015-0020, 2015
9. Brad S., **Brad E.**, Homorodean D. *CALDET: A TRIZ-Driven Integrated Software Development Methodology*. In: Benmoussa R., De Guio R., Dubois S., Koziółek S. (eds) *New Opportunities for Innovation Breakthroughs for Developing Countries and Emerging Economies*. TFC 2019. IFIP Advances in Information and Communication Technology, vol 572. Springer, Cham. ISBN 978-3-030-32496-4, pp. 400-416, DOI: 10.1007/978-3-030-32497-1_32, WOS:000571099200032, ISSN: 1868-4238, eISSN: 1868-422X, 2019
10. Chiorean, A., Brad, S., **Brad, E.** *Knowledge Modelling of E-maintenance in Industrial Robotics*, Interdisciplinary Research in Engineering: Steps Towards Breakthrough Innovation for Sustainable Development, Advanced Engineering Forum, vol. 8-9, pp. 603-610, DOI 10.4028/www.scientific.net/AEF.8-9.603, 2013
11. Brad, S., Fulea, M., Mocan, B., Duca, A., **Brad, E.**, *Software Platform for Supporting Open Innovation*, 2008 IEEE-TTTC International Conference AQTR, ISBN 1-4244-0361-8, SCOPUS, IEEE Xplore, 224-229, 2008
12. Brad, S., Fulea, M., **Brad, E.**, *A PSS Approach in Software Development*, 2nd CIRP IPS2 Conference 2010 on Product-Service Systems, Linkoping, Suedia, ISBN 978-91-7393-381-0, 291-298, 2010. (conferință nivel A)
13. Brad, S., **Brad, E.**, Mocan, B., *Concurrent Approach for Multiple Eco-function Design*, 17th CIRP International Conference on Life Cycle Engineering, Hefei, China, ISBN 978-7-5650-0186-4, 236-241, 2010. (conferință nivel A)
14. Fulea, M., **Brad, E.**, Mocan, B., Brad, S., *Managing Emotional Aspects of PSS Functionalities for Sustainability*, 5th CIRP Int. Conf. on Industrial Product Service Systems, Bochum, Germany, March 14-15, in: *Product-Service Integration for Sustainable Solutions*, Lecture Notes in Production Engineering (ed. Horst Meier), Ed. Springer, Springer Link, ISBN 978-3-642-30819-2, pg. 165-175, 2013
15. Brad, S., **Brad, E.**, *Enhancing SWOT Analysis with TRIZ-based Tools to Integrate Systematic Innovation in Early Task Design*, Elsevier, TRIZ Future Conference, Paris, SCOPUS, pg. 91-100, 2013



16. Fulea, M., Popescu, S., **Brad, E.**, Mocan, B., Murar, M., *A literature survey on reconfigurable industrial robotic work cells*, Robotics 2014, Bucharest, SCOPUS, 2014
17. Brad, S., **Brad, E.**, Crisan, L., Crisan A., *Framework for Planning Polycentric Innovation in High-tech Dynamic Industries*, the 23rd International Conference on Production Research (ICPR23), SCOPUS, Manila, 2-6 August, 2015
18. **Brad E.**, Brad S., *Value Chain Planning in Cross-Industry Meta-Cluster Initiatives*, Balkan Region Conference on Engineering and Business Education, Sciendo, vol. 1(1), DOI: 10.2478/cplbu-2020-0030, pp. 256-264, ISSN 2391-8160, 2019
19. Brad, S., Blebea, I., **Brad, E.**, *3D Computer Graphics Simulation of Inverse Kinematics in a Constrained Space and Direct Kinematics for an Anthropomorphic Robot Arm with 5 DOF*, Proceedings of the 4th Int. Workshop RAA'95, Portschach, Austria, vol.I, pg.63-66, 1995.
20. Popescu, S., Berce, P., Tătaru, O., Brad, S., **Brad, E.**, *Quality Analysis of the Research Management Within Technical University of Cluj-Napoca*, Proceedings of the 9th International DAAAM Symposium, Cluj-Napoca, oct., pg. 405-406, 1998
21. Galis, M., **Brad, E.**, Brad, S., *An Approach for Conceptual Design of FMS Layout Using a Multi-Criteria & Multi-Objective Decision Technique*, Proceedings of the 5th International MTeM Symposium, Cluj-Napoca, oct.2001, Ed. Alma Mater, ISBN 973-85354-1-7, pg. 207-210, 2001
22. Brad, S., **Brad, E.**, *Quality Through Course Unit Design: A Point of View on Quality Assurance in Higher Education*, Proceedings Int. Cong. MTeM'03, Cluj-Napoca, Ed. Roprint, ISBN 973-656-490-8, pg. 77-80, 2003
23. Crişan, L., **Brad, E.**, Hurgoiu, D., Checicheş, D., *Quality Improvement of Violin Surfaces Using 3D Scanning Equipment*, microCAD International Conference, March 2004, Miskolc, Hungary, ISBN 963 661 618 3, pg. 43-48, 2004
24. Crişan, L., Lantoş, M., **Brad, E.**, Grozav, S., *Quality Improvement of ROMBAT Pilot 12-55 Battery Using FMEA Method*, microCAD International Conference, March 2004, Miskolc, Hungary, ISBN 963 661 618 3, pg. 49-55, 2004
25. Brad, S., Mocan, B., **Brad, E.**, *Innovative Approach for Better Planning the Design Process of Quality Management Systems According to ISO 9001:2000 Standard*, Proceedings Int. Conf. of Production Engineering "Development and Modernization of Production" RIM05, Bihac, Bosnia-Herzegovina, ISBN 99589262-0-2, pg. 431-436, 2005
26. Brad, S., Fulea, M., Mocan, B., **Brad, E.**, *An Innovative Intelligent Software Application for Quality Cost Management*, Int. Conf. MTeM05, Cluj-Napoca, ISBN 973-9087-83-3, pg. 177-120, 2005
27. **Brad, E.**, Brad, S., *Design for Reconfiguration of Production Equipments*, Proceedings of the 6th International Scientific Conference on Production Engineering (Development and Modernization of Production), RIM2007, Bihac, Bosnia-Herzegovina, ISBN 978-9958-9262-1-1, pg. 59-64, 2007

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