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## LISTA lucrărilor didactice și științifice publicate

### A – Teza de doctorat

„Cercetări privind fabricația elementelor active ale matrițelor prin sinterizare selectivă cu laser (SLS) ”

conducător științific : Prof.dr.ing. Petru Berce

Universitatea Tehnică din Cluj-Napoca

Susținere publică: ianuarie 2009

### B – Cărți și capitole în cărți publicate în ultimii 5 ani

#### B.1. CĂRȚI

1. P., Berce, N., Bâlc, C., Caizar, **R., Păcurar**, ș.a., Tehnologii de fabricație prin adăugare de material și aplicațiile lor, Editura Academiei, 2014, 387 p., ISBN 978-973-27-2396-8
2. **R., Păcurar**, A. Petrilak, Fabricația implanturilor medicale personalizate prin topire selectivă cu laser – studiu de caz, Editura Risoprint, 2015, 120 p., ISBN 978-973-53-1645-7
3. **R. Păcurar**, Fabricația pieselor metalice prin topire selectivă cu laser, cu aplicabilitate în domeniul industrial, Editura Tehnică Info Chișinău, 2015, 250 p., ISBN 978-9975-63-382-6
4. Cs. Gyenge, A. Păcurar, N. Bâlc, **R. Păcurar**, Tehnologii și echipamente de asamblare, Editura Tehnică Info Chișinău, 2015, 300 p., ISBN 978-9975-63-383-3
5. **R. Păcurar**, F. Popișter, Computer Aided Design – Surfaces, Sheet Metal and Mold Tools Modeling Using SolidWorks, Editura Risoprint, 2016, 176 p., ISBN 978-973-53-1774-4

#### B.2. CAPITOLE ÎN CĂRȚI PUBLICATE

1. **R. Păcurar**, A. Păcurar, chapter “Applications of the Selective Laser Melting Technology in the Industrial and Medical Fields” , 26 pages, published in the book entitled „New Trends in 3D Printing”, **edited by: dr. Igor V Shishkovsky**, Open-access book, IN-Tech Publishing House, Rijeka, Croatia, 2016, ISBN 978-953-51-4668-1

#### B.3. ÎNDRUMĂTOARE DE LUCRĂRI / PROIECT

1. Frățilă, D., Radu SA, **R. Păcurar**, ș.a., (2011) Tehnologii de fabricație. Îndrumător pentru lucrări de laborator, Editura UT Press, Cluj-Napoca, 170 p., ISBN 978-973-662-626-5

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2. N. Bâlc, **R. Păcurar**, Tehnologii neconvenționale și de prototipare rapidă – îndrumător de proiect, Editura Risoprint, 2016, 70 p, ISBN 978-973-53-1792-8

#### **B.4. CARTE ȘTIINȚIFICĂ INTERNAȚIONALĂ PUBLICATĂ CA ȘI EDITOR**

1. Laurentiu Slatineanu, Vasile Merticaru, Florin Negoescu, Margareta Coteata, **Răzvan Pacurar**, Gabriela Strnad, Irina Tita, Gheorghe Oancea, Petru Dusa, Eduard Nitu and Oana Dodun, Innovative Manufacturing Engineering 2015, Applied Mechanics and Materials, Volumes 809-810, Trans Tech Publications, Switzerland, 2015, doi: 10.4028/www.scientific.net/AMM.809-810, 1576 pages

### C – Lucrări indexate ISI/BDI publicate în ultimii 10 ani

#### **c1) Articole publicate în reviste de specialitate de circulație internațională recunoscute (cotate ISI)**

1. P., Berce, **R. Păcurar**, N., Bâlc, Virtual Engineering for Rapid Product Development, ISI Proceedings of WSEAS Network Conference: "New Aspects of Engineering Mechanics, Structures, Engineering Geology", 5<sup>th</sup>-7<sup>th</sup> July 2008, Crete., Greece, ISSN 1790-2769
2. **R., Păcurar**, N., Bâlc, P., Berce, F. Prem, Research on Improving the Mechanical Properties of the SLS Metal Parts, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14<sup>th</sup>-16<sup>th</sup> September 2008, Ptuj, Slovenia, ISSN 1726-9679
3. N., Bâlc, P., Berce, **R., Păcurar**, CAD for optimal scaling of the 3D model, to compensate the SLS post-processing errors, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14<sup>th</sup>-16<sup>th</sup> September 2008, Ptuj, Slovenia, ISSN 1726-9679.
4. P., Berce, N., Bâlc, **R., Păcurar**, SLS Parameters Optimization using the Taguchi Method, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14<sup>th</sup>-16<sup>th</sup> September 2008, Ptuj, Slovenia, ISSN 1726-9679.
5. **R. Păcurar**, N. Bâlc, O. Roș, Optimum Scaling of the SLS Metal Parts Using Finite Element Analysis, The 14th International Conference Modern Technologies, Quality and Innovation- New face of TMCR, 2010, Slanic Moldova, vol. 1, pag. 439-442, ISSN 2066-3919
6. **R. Păcurar**, N. Bâlc, F. Prem, Research on how to improve the accuracy of the SLM metallic parts, AIP Proceedings - ESAFORM Conference on material forming: ESAFORM 2011, Belfast, Northern Ireland, vol. 1353, pag. 1385-1390,
7. **R. Păcurar**, A. Păcurar, P. Berce, N. Bâlc, O. Nemeș, "Porosity change by resin impregnation in structures obtained by selective laser sintering technology" in Studia Universitatis Babeș-Bolyai Chimia, vol. 57, no. 3, pp. 5-13, 2012.
8. **R. Păcurar**, P. Berce, "Research on How Lens Position of the Optical System is Influencing the Mechanical Characteristics of the Metallic Parts Made by Selective Laser Melting Equipment", in Interdisciplinary research in engineering: steps towards breakthrough innovation for sustainable development, vol. 8-9, pp. 285-292, 2013.
9. **R. Păcurar**, A. Păcurar, N. Bâlc, A. Petrilak, L. Morovic, "Estimating the Life-Cycle of the Medical Implants Made by SLM Titanium-Alloyed Materials Using the Finite Element Method", in Innovative manufacturing engineering, vol. 371, pp. 478-482, 2013.

10. **R. Păcurar**, P. Berce, "Research on the durability of injection molding tools made by selective laser sintering technology", in Proceedings of the Romanian Academy series A-mathematics physics technical sciences information science, vol. 14, no. 3, pp. 234-241, 2013.
11. **R. Păcurar**, A. Păcurar, A. Petrilak, N. Bâlc, "Finite Element Analysis to Predict the Mechanical Behavior of Lattice Structures Made by Selective Laser Melting Technology", Applied Mechanics and Materials vol. 657, pp. 231-235, 2014
12. **R. Păcurar**, A. Păcurar, "Finite Element Analysis to Improve the Accuracy of Parts Made by Stainless Steel 316L Material Using Selective Laser Melting Technology", Applied Mechanics and Materials vol. 657, pp. 236-240, 2014

**c2) Articole publicate la conferințe indexate în baze de date internaționale de referință în domeniul Inginerie Industrială (EBSCO, Copernicus, Google Scholar)**

1. N. Bâlc, P. Berce, C. Popa, **R. Păcurar**, "Industrial Applications of RP Technologies", in Academic Journal of Manufacturing Engineering, vol. 4, no. 3, pp. 6-12, 2006.
2. N. Bâlc, P. Berce, **R. Păcurar**, "Active Elements Tools Made by Selective Laser Sintering", in Rapid Prototyping Journal – Third Quarter, vol. 12, no. 3, 2006.
3. N., Bâlc, **R. Păcurar**, Crai, A "Research on how to decrease the porosity of the SLS metal parts", in Rapid Prototyping Journal – Third Quarter, vol. 12, no. 3, 2006.
4. N. Bâlc, P. Berce, **R. Păcurar**, "Comparison Between Different Infiltration Methods, in order to Decrease the Porosity of the SLS Metal Parts", in Academic Journal of Manufacturing Engineering, vol. 7, no. 1, pp. 6-11, 2009.
5. **R. Păcurar**, N. Bâlc, P. Berce, "Software Compensations of the SLS Metal Parts Shrinkage", in Academic Journal of Manufacturing Engineering, vol. 7, no. 1, pp. 74-81, 2009.
6. N. Bâlc, **R. Păcurar** "The accuracy of the complex steel parts made by SLS and SLM", in Academic Journal of Manufacturing Engineering, vol. 7, no. 3, pp. 48-53, 2009.
7. **R. Păcurar**, S.A. Radu, M. Ancău, "A new greedy selective algorithm for solving flowshop scheduling problems.", in Annals of DAAAM & Proceedings, 2010.
8. N. Bâlc, P. Berce, **R. Păcurar**, "Comparison between SLM and SLS in producing complex metal parts.", in Annals of DAAAM & Proceedings, 2010.
9. S., A. Radu, **R. Păcurar**, M. Ancău, "Research concerning the development of new generation of stochastic heuristic algorithms", in Academic Journal of Manufacturing Engineering, vol. 9, no. 4, 2011.
10. **R. Păcurar**, P. Berce, "Selective Laser Melting for Rapid Product Development", in Acta tehnica napocensis-series: applied mathematics, mechanics, and engineering, vol. 54, no. 2, 2011.
11. **R. Păcurar**, P., Berce M., Dura "Research on how to improve the mechanical properties of the metallic parts made by selective laser melting (SLM)", in Journal of Trends in the Development of Machinery and Associated Technology, pp. 81-84, 2011.
12. **R. Păcurar**, P., Berce, N., Balc, L, Goagas, "Finite element simulation to estimate the durability of the customized implants made by selective laser melting (SLM)", Journal of Trends in the Development of Machinery and Associated Technology, pp. 497-500, 2011.

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13. **R. Păcurar**, N., Balc, M. Căprar, "Finite Element Analysis to Compensate the Errors of the Selective Laser Melting Process", *Journal of Trends in the Development of Machinery and Associated Technology*, pp. 493-496, 2011.
  14. **R. Păcurar**, N. Bâlc, O. Roş, "Finite element analysis to improve the SLS process for rapid product development", in *The 15th International Conference Modern Technologies, Quality and Innovation- New face of TMCR*, 2011.
  15. A.,S., Radu, A., Păcurar, **R. Păcurar**, "Manufacturing of the active mold elements and optimisation of the necessary material used for vacuum casting process", in *Acta tehnica napocensis-series: applied mathematics, mechanics, and engineering*, vol. 55, no. 4, 2012.
  16. **R. Păcurar**, A. Păcurar, A. S. Radu, "Research on how to control the porosity of the medical implants made by selective laser melting technology", in *Acta tehnica napocensis-series: applied mathematics, mechanics, and engineering*, vol. 55, no. 4, 2012.
  17. **R. Păcurar**, A. Păcurar, "Research on how to correlate the accuracy of the prototype model, tools and plastic injected parts in the rapid product development process, using the selective laser sintering method", in *Acta tehnica napocensis-series: applied mathematics, mechanics, and Engineering*, vol. 56, no. 1, 2013.
  18. Cs Gyenge, A. Păcurar, **R. Păcurar**, S.A Radu, "Some characteristics aspects regarding the precision manufacturing of worm gears", *Academic journal of manufacturing engineering*, Vol. 11, Issue 4, 2013
  19. **R. Păcurar**, A. Păcurar, "Innovative solution to decrease the porosity of injection moulding tools made by selective laser sintering technology", in *Acta tehnica napocensis-series: applied mathematics, mechanics, and engineering*, vol. 56, no. 1, 2013.
  20. **R. Păcurar**, A. Păcurar, N. Bâlc, "Research on the Accuracy of Injection Molding Tools Made by H13 Material Using the Selective Laser Melting Technology", in *Recent Advances in Engineering Mechanics, Structures and Urban Planning*, pp. 81-86, 2013.
  21. **R. Păcurar**, A. Păcurar, A. S., Radu, "Finite element analysis to estimate the efficiency of a wind turbine rotor", in *Acta tehnica napocensis-series: applied mathematics, mechanics, and engineering*, vol. 57, no. 3, 2014.
  22. **R. Păcurar**, A. Păcurar, Popişter, F., Popişter, A. "Finite Element Analysis to Improve the Accuracy of ABS Plastic Parts Made by Desktop 3D Printing Method", in *Applied Mechanics and Materials*, vol. 760, pp. 509-514, 2015.
  23. **R. Păcurar**, A. Păcurar, A.S. Radu, Research on the Influence of the Orientation of Deposited Material on the Mechanical Properties of Samples Made from ABS M30 Material Using the 3D Printing Method, in *Applied Mechanics and Materials*, Vol. 809-810, pp. 429-434, 2015
  24. **R. Păcurar**, A. Păcurar, Topology Optimization of an Airplane Component to Be Made by Selective Laser Melting Technology, in *Applied Mechanics and Materials*, Vol. 808, 2015
  25. Cs. Gyenge, A. Păcurar, L. Oláh, **R. Păcurar**, New manufacturing technology for variable pitch and variable screw profile worms in *Applied Mechanics and Materials*, Vol. 808, 2015
  26. D. I., Moldan, **R. Păcurar**, "Finite Element Analysis to Estimate the Mechanical Behavior of a Tripod Used in Emergency Situations", in *6Th International Conference on Modern Power Systems MPS 2015*, 18-21 May 2015, Cluj-Napoca, Romania, *Acta Electrotehnica*, vol. 3, pp. 174-178, 2015.

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27. A. Păcurar, **R. Păcurar**, „Research on the Predictive Maintenance Procedure for a Black Lye Pump of Regeneration Boiler Used in the Paper and Pulp Company”, „International Journal of Mechanical Engineering and Automation, Vol. 2, No. 9, pp. 406-411, 2015

## D – Lucrări publicate în reviste și volume de conferințe cu referenți (neindexate)

1. Bâlc, **R. Păcurar**, Comșa S., *Thermal Shrinkage Modeling in Selective Laser Sintering*, Computing and Solutions In Manufacturing Engineering, Brasov – Sinaia, 2004, ISBN 973-635-372-9
2. N. Bâlc, **R. Păcurar**, *Rapid Tooling For Injection Molding, Using The SLS Technology*, Computing and Solutions In Manufacturing Engineering, Brasov – Sinaia, 2004, ISBN 973-635-372-9
3. C. Mureșan, **R. Păcurar**, Minimization Of Effect Of CBN Wheel Wear On Ground Gear Errors, , Computing and Solutions In Manufacturing Engineering, Brasov – Sinaia, 2004, ISBN 973-635-372-9
4. N. Bâlc, P. Berce, **R. Păcurar**, Injection moulding tools made by selective laser sintering, The 8<sup>th</sup> Esaform Conference on Material Forming, Cluj-Napoca, 27-29 April 2005, ISBN 973 27 1175 2.
5. N., Bâlc, P., Berce, **R., Păcurar**, S.A., Radu, The spatial deformations during the SLS metal parts post-processing, Proceedings of the 7th International MTeM Symposium: "Modern Technologies and Machine-tools", 6<sup>th</sup>-8<sup>th</sup> October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
6. N., Bâlc, **R., Păcurar**, A., Crai, Research on how to reduce the porosity of metallic parts made by SLS, Proceedings of the 7th International MTeM Symposium: "Modern Technologies and Machine-tools", 6<sup>th</sup>-8<sup>th</sup> October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
7. N. Bâlc, P. Berce, **R. Păcurar**, Considerations on Selecting the Rapid Tooling Technologies – Examples and Case Studies, The 1-st DAAAM International Specialized Conference on Additive Technologies, pag. 31-36, Celje, Slovenia, April 2007, ISBN 3-901509-61-5
8. N. Bâlc, P. Berce, **R. Păcurar**, B. Barisic, Using the CAD Compensation Factors to Improve the Accuracy of the SLS Parts, The 8-th International MTeM Conference Proceedings, pag. 43-46, Cluj-Napoca 4-5 October 2007, Romania, ISBN 973-9087-83-3
9. P. Berce, **R. Păcurar**, M. Mera, N. Bâlc, How Rapid Tooling Could Be Applied to the Industry, The 8-th International MTeM Conference Proceedings, pag. 51-54, Cluj-Napoca 4-5 October 2007, Romania, ISBN 973-9087-83-3
10. **R. Păcurar**, N. Bâlc, P. Berce, Research on Post-Processing the Metal Parts Made by Selective Laser Sintering (SLS), The 8-th International MTeM Conference Proceedings, pag. 351-354, Cluj-Napoca 4-5 October 2007, Romania, ISBN 973-9087-83-3
11. **R. Păcurar**, N. Bâlc, P. Berce, Original software package for compensating the SLS errors, The 9-th International MTeM Conference Proceedings, pag. 225-228, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
12. **R. Păcurar**, P. Berce, N. Bâlc, Research on mechanical properties of the steel parts, made by SLS and SLM, The 9-th International MTeM Conference Proceedings, pag. 229-232, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704

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13. N. Bâlc, **R. Păcurar**, P. Berce, Rapid Product Development Using the SLS Tooling Method, Micro-CAD, Miskolc, 2010
  14. P. Berce, N. Bâlc, **R. Păcurar**, Industrial Applications of Selective Laser Sintering Technology, Micro-CAD, Miskolc, 2010
  15. **R. Păcurar**, P. Berce, N. Bâlc, Finite Element Analysis for Estimating the Shrinkage of Metal Parts During SLS Post-Processing Stage in the Oven , Micro-CAD, Miskolc, 2010
  16. **R. Păcurar**, N. Bâlc, O.Roş, Improving the Accuracy of the SLS Metal Parts using the Finite Element Method, International Journal of Modern Manufacturing Technologies, vol. II, no. 1/2010, pag. 61-66, ISSN 2067-3604
  17. R.A. Păcurar, P. Berce, C. Caizar, **R. Păcurar**, Optical Metrology on Vacuum Cast Silicone Rubber Form, The 5th International Conference on Manufacturing Science and Education - MSE 2011, vol. 1, pag. 55-58, ISSN 1843-2522
  18. F. Prem, D. Leordean, N. Bâlc, **R. Păcurar**, The Influence of Working Parameters of SLM Technology on Surface Quality and Precision of Stainless Steel Parts, Annals of MTeM Conference for 2011, vol. 10, pag. 283-286, ISBN 978-606-8372-02-0

## E) Contracte de cercetare câştigate prin competiție națională sau internațională

- Director de proiect la 1 contract câştigat prin competiție națională :
  - Contractul CNCSIS nr 332 / 2006 (Tip T-D), Tema : “Cercetări teroretice și experimentale privind fabricația elementelor active de matrițe prin sinterizare selectivă cu laser (SLS)” (2006-2008)
- Membru in cadrul proiectului de cercetare postdoctorala (2010-2013): POSDRU/89/1.5/2/52603 - "Dezvoltarea si sustinerea de programe postdoctorale multidisciplinare in domenii tehnice prioritare ale strategiei nationale de cercetare-dezvoltare-inovare" / Titlul programului de cercetare - intitulat: "Cercetari teoretice si experimentale privind fabricatia pieselor metalice prin topire selectiva cu laser (SLM)", Nr. Contract: 15509/01.07.2010, manager de proiect: prof.dr.ing. Vlaicu Aurel
- Membru al colectivelor de cercetare în cadrul unor proiecte câştigate prin competiție națională:
  - Proiect de cercetare de excelență CEEEX nr. 41/2005, “ Rețea de Fabricație Inovativă (IMAN), (2005-2008), buget : 1.420.000 RON, Director de Proiect : Prof.dr.ing. Petru Berce
  - Contract CNCSIS - PLATFORMA INTEGRATA DE CERCETARE SI FORMARE PENTRU PRODUCTIA INOVATIVA: FABRICA VIITORULUI, 2006-2008, Buget: 4.928.000 RON, Director de proiect: Prof. P. Berce,
  - Contract CNCSIS – PN II – parteneriate - Sisteme expert de optimizare a proceselor tehnologice, 2007- 2010 (Director de proiect: prof.dr.ing. Ancau Mircea

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- Contract CNCSIS – PN II – idei - Cercetari privind dezvoltarea de noi generatii de algoritmi euristici stocastici de rezolvare a problemelor de esalonare a fabricatiei, 2009 - 2011 (Director de proiect: prof.dr.ing. Ancau Mircea)
  - Membru al colectivelor de cercetare în cadrul unor proiecte câștigate prin competiție internațională:
    - Contractul FP6 “ Optical 3D Metrology – Automated in-line metrology for quality assurance in the manufacturing industry” – OP3MET (2006-2008) – Co-operative Research Project. Responsabil din partea UTC-N: Prof. P. Berce,
    - Contract FP7 “ADm-ERA- Reinforcing Additive Manufacturing Research Cooperation Between the Central Metallurgical Research and Development Institute and the European Research Area”, (2011-2013) Responsabil din partea UTC-N: Prof. N. Balc
    - Contract HORIZON 2020, Boosting the scientific excellence and innovation capacity in additive manufacturing of the Technical University of Cluj-Napoca – AMaTUC, (2016-2019), Director de proiect: Prof. N.Balc

Data: 23.06.2016

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