

Lista de lucrări elaborate și publicate

A) Cărți publicate : autor/co-autor/editor a 9 cărți de specialitate publicate (5 – prim/unic autor) :

1. **Bâlc, N.**, (2001) Tehnologii Neconvenționale, Editura Dacia, Cluj-Napoca, 228 p., ISBN 973-35-1130-7
2. **Bâlc, N.**, Teză de doctorat : « Cercetări privind proiectarea pentru montaj și pentru fabricarea rapidă a prototipurilor aferente », Universitatea Tehnică din Cluj-Napoca, 2000, Cond. științific : Prof.dr.ing. Csaba Gyenge.
3. **Bâlc, N.**, Gyenge, Cs., Berce, P., (2006) Proiectare pentru fabricația competitivă – Teorie, aplicații și studii de caz, Editura Alma Mater, Cluj-Napoca, 321 p., ISBN (10) 973-7898-31-1
4. Marcu, V., Gyenge, C., Gligor, E., **Bâlc, N.**, (1995), Proiectarea cu DFA, Editura Transilvania Press, Cluj-Napoca, ISBN 973-97041-3-1
5. Berce, P., **Bâlc, N.**, Ancău, M., ș.a., (2000), Fabricarea Rapidă a Prototipurilor, Editura Tehnică, București, ISBN 973-31-1503-7.
6. Campbell, R.I., **Bâlc, N.**, (2003), Virtual Engineering Applications for Design and Product Development, Printed by Media Services, 242 p., Loughborough University (U.K.), ISBN 0 947974 15 6, (**publicată în Anglia, în limba engleză**)
7. Ivan, N.V., Berce, P., Drăgoi, M.V., Oancea, G., Ivan, M.C., **Bâlc, N.**, Lancea, C., ș.a., (2004), Sisteme CAD/CAPP/CAM – Teorie și practică, Editura Tehnică, București, ISBN 973-31-1530-4
8. **Bâlc, N.**, Berce, P., Editors, State of the Art and Prospectives of the Academic Research in Industrial Engineering, Editura Alma Mater, 2010, Cluj-Napoca, 71 pages, ISBN 978-606-504-105-9
9. **Bâlc, N.**, Berce, P., Editors, Actualități și Perspective ale Cercetării Universitare în Inginerie Industrială, Editura Alma Mater, 2010, Cluj-Napoca, 89 pages, ISBN 978-606-504-104-2

B) Lucrări științifice publicate în reviste de specialitate din UE sau România:

1. **N. Bâlc**, M. Damian, The study of Machining Complex Surfaces with Doughnut -Tools using Milling Machines, în **revista Gepgyarta/Technologia** nr. 9-10, pag. 444-449, September-October 1992, **Budapest, Hungary**, ISSN 0016-8580.
2. Cs. Gyenge, L. Kerekeş, I. Abrudan, M. Ancău, S. Popescu, **N. Bâlc**, F. Kapitany, Automatisierte Montage kleiner und Mittelgrober Metallteile, în **revista SPRECHER ENERGIE** nr. 3/1993, pag. 140-143, **Linz, Austria**, ISBN 3 211 82442 1.
3. A., Gaciu, **N. Bâlc**, S. Oltean, Modelarea suprafețelor complexe prelucrate prin eroziune electrică cu ajutorul funcțiilor B-Spline, Revista “Construcția de Mașini nr. 10 – Octombrie 1993, pag. 1-4, București.
4. **N. Bâlc**, A., Gaciu, Modernizarea tehnologiei de montaj a pieselor metalice pe suporturi din mase plastice, utilizând un robot echipat cu cap de forță activat ultrasonic, Revista “Construcția de Mașini nr. 11 – Noiembrie, 1993, pag. 69-72, București.
5. Berce, P., **Bâlc, N.**, Jidav, H. Tehnologii de Fabricare Rapida a Prototipurilor, Revista ‘Tehnologii Calitate Mașini Materiale’ (TCMM), vol. 32, pag. 351-358, București 1997.
6. Ancău M., **Bâlc, N.** The Optimisation Criteria for LOM Technology, ACTA Technica Napocensis, Section : Construction Machines, Materials, vol.42, pag. 31-38, Cluj-Napoca, 1999.
7. **Bâlc, N.**, Fabricația pieselor prin sinterizare selectivă cu laser, Revista de Politica Științei și Scientometrie, Număr Special 2005, pag. 1-14, București, ISSN – 1582-1218.
8. **Bâlc, N.**, Hitra izdelava orodij – Rapid Tooling, Journal of Inovations Development Technologies, Vol. 4 - 2006, pag. 60-65, Slovenia (www.irt3000.si), ISSN – 1854-3669.
9. Ancău, M., Berce, P., **Bâlc, N.**, Some Concepts of Rapid Prototyping Processes Simulations, Academic Journal of Manufacturing Engineering, Volume 4., nr. 2 / 2006, pag. 6-11, Timișoara, ISSN – 1583-7904.

10. Popa, C., Berce, P., Simon V., **Bâlc, N.**, Titanium-based Composite for Medical Applications of Rapid Prototyping, Academic Journal of Manufacturing Engineering, Volume 4., nr. 2 / 2006, pag.55-59, Timișoara, ISSN – 1583-7904.
11. **Bâlc, N.**, Dissemination for the Research of Excellence – IMAN Workshop on Innovative Manufacturing – Leading Article, Academic Journal of Manufacturing Engineering, Volume 4., nr. 2 / 2006, pag. 5, Timișoara, ISSN – 1583-7904.
12. **Bâlc, N.**, Berce, P., Popa, C., Păcurar, R., Industrial Applications of RP Technologies, Academic Journal of Manufacturing Engineering, Volume 4., nr. 3 / 2006, pag. 6-12, Timișoara, ISSN – 1583-7904.
13. Berce, P., **Bâlc, N.**, Ancău M., Rapid Prototyping Present and Perspectives, Academic Journal of Manufacturing Engineering, Volume 4., nr. 3 / 2006, pag. 13-17, Timișoara, ISSN – 1583-7904.
14. **Bâlc, N.**, Berce, P., Păcurar, R., Active Elements Tools Made by Selective Laser Sintering, Society of Manufacturing Engineers, Rapid Prototyping Journal – Third Quarter 2006, Vol. 12, nr. 3 / 2006, pag. 1-7, SUA, (www.sme.org/rtam).
15. Ancău, M., **Bâlc, N.**, Berce, P. The Optimization of Laminated Object Manufacturing Technology, Academic Journal of Manufacturing Engineering, Volume 5., nr. 1 / 2007, pag. 6
16. **N. Bâlc**, P. Berce, R. Păcurar, Comparison Between Different Infiltration Methods, in order to Decrease the Porosity of the SLS Metal Parts. , Academic Journal of Manufacturing Engineering, Volume Supplement - 1/ 2008, ISSN 1583-7904
17. P. Berce, **N. Bâlc**, R. Păcurar, Rapid Prototyping Applications at Technical University of Cluj-Napoca, Academic Journal of Manufacturing Engineering, Volume Supplement - 1/ 2008, ISSN 1583-7904
18. R. Păcurar, **N. Bâlc**, P. Berce, Software Compensations of the SLS Metal Parts Shrinkage, Academic Journal of Manufacturing Engineering, Volume Supplement - 2/ 2008, ISSN 1583-7904
19. **N. Bâlc**, R. Păcurar, The accuracy of the complex steel parts made by SLS and SLM, Academic Journal of Manufacturing Engineering, Volume 7, Issue 3/ 2009, pag.48-53, ISSN 1583-7904
20. A. Carean, **N. Bâlc**, R. Curta, Researches on the machining of the complex parts on CNC turning centres with milling capabilities, Academic Journal of Manufacturing Engineering, Volume 3/ 2009, pag. 60-65, ISSN 1583-7904;
21. Ceclan V.A, **Bâlc N.**, Achimas G., *Analysis of the factors having influence on the quality of bent tubular parts by finite element simulation of the forming process*, Acta Technica Napocensis, Cluj-Napoca, Series: Applied mathematics and mechanics, vol. XX, 2011, Categorie revista CNCSIS/B+;
22. Erban F., **Bâlc N.**, Achimaș G., *Research on the free cylindrical bending process of metallic sheets*, Acta Technica Napocensis, Cluj-Napoca, Series: Applied mathematics and mechanics, vol. XX, 2011, Categorie revista CNCSIS/B+;
23. Sabău, E., **Bâlc, N.**, Iancău, H., Hancu L., *Influence of manufacturing technology on mechanical characteristics of polymeric composite materials*, Acta Technica Napocensis, Cluj-Napoca, Series: Applied mathematics and mechanics, vol. XX, 2011, Categorie revista CNCSIS/B+;
24. Bere, P, Berce, P., **Balc, N.**, Iancu, H., Pruna, R., *Reinforced Fiber Composite Materials Using Modern Methods of Rapid Manufacturing*, Acta Technica Napocensis, Cluj-Napoca, Series: Applied mathematics and mechanics, vol. XX, 2011, Categorie revista CNCSIS/B+

B) Lucrări științifice prezentate la conferințe internaționale și publicate

în România, în UE, sau în SUA:

25. O. Roș, **N. Bâlc**, Tehnologie de grup asistată de calculator, Conferința MTeM '91, pag. 73-78, Sept. 1991, Cluj-N., România.
26. O. Roș, P. Berce, **N. Bâlc**, Cercetări privind prelucrarea prin vibro-rulare a suprafețelor cilindrice exterioare, Conferința MTeM '91, pag. 296-301, Sept. 1991, Cluj-N., România.
27. Cs. Gyenge, L. Kerekeş, I. Abrudan, M. Ancău, S. Popescu, **N. Bâlc**, F. Kapitany, Automatisierte Montage von Metallteilen Kleinerer und Mittlerer Grossen, Proceedings of the 3rd DAAAM Conference, 4-6 November 1992, pag. 67-72, Budapest, ISBN 86-435-0084-4.
28. **N. Bâlc**, Cs. Gyenge, Assembly Automation Possibilities of the sprinklers using DFA software, Proceedings of the 5th International DAAAM Symposium, 27-29 October 1994, pag. 31-33. Maribor, Slovenia, ISBN 3-901509-00-3.
29. Cs. Gyenge, **N. Bâlc**, Aspects of the DFA Methodology using for Designing of the Assembly Technology of some Home Appliance Products, Proceedings of the 5th International DAAAM Symposium, 27-29 October 1994, pag. 151-153. Maribor, Slovenia, ISBN 3-901509-00-3.

30. Cs. Gyenge, **N. Bâlc**, Education and research activities in the field of robotics at the Faculty of Machine Building, Technical University of Cluj-N., Proceedings of the 3th International Workshop on Robotics in Alpe-Adria Region – RAAD'94, pag. 269 – 272, ISBN 963 420 482 1.
31. **N. Bâlc**, M. Popa, Robot Trajectory Planning using B-Splines Functions, Proceedings of the 5th International DAAAM Symposium, 27-29 October 1994, pag. 33-35, Maribor, Slovenia, ISBN 3-901509-00-3.
32. M. Popa, **N. Bâlc**, Herausforderungen und Chancen des Thermischen Verhaltens als Abnehmerprüfung der Werkzeugmaschinen, Proceedings of the 5th International DAAAM Symposium, 27-29 October 1994, pag. 359-361. Maribor, Slovenia, ISBN 3-901509-00-3.
33. Cs. Gyenge, **N. Bâlc**, P. Berce, Assembly with Robots of the Straight Way Valves, IEEE Proceedings of the 5th International Workshop on Robotics in Alpe-Adria Region - RAAD'96, pag. 283-288, Budapest, June 1996, Hungary, ISBN 963 420 482 1.
34. **Bâlc**, N. Fabricarea rapidă a prototipurilor prin stereolitografie utilizând sistemul SLA-250. Conferința Internațională de Comunicări Științifice TMCM '96, Iași, 24-25 Mai 1996, Vol. III, pag. 249-257, ISBN 9975-910-00-9.
35. Berce, P., **Bâlc**, N. O nouă familie de tehnologii de fabricație rapidă a prototipurilor. Conferința Internațională de Comunicări Științifice TMCM '96, Iași, 24-25 Mai 1996, Vol. III, pag. 257-265, ISBN 9975-910-00-9.
36. Berce, P., **Bâlc**, N. Slicing Method For Rapid Prototyping. Proceedings of the 8th International DAAAM Symposium, 23-25 October 1997, pag. 31-32, Dubrovnik, Croatia, ISBN 3-901509-04-6.
37. **Bâlc**, N. Feature Based Design for Assembly. Proceedings of the 9th International DAAAM Symposium, 22-24 October 1998, pag. 21-22, Cluj-Napoca, Romania, ISBN 3-901509-08-9.
38. Berce, P., **Bâlc**, N. How Design Dimension could be extended to Rapid Prototyping. Proceedings of the 9th International DAAAM Symposium, 22-24 October 1998, pag. 23-24. Cluj-Napoca, Romania, ISBN 3-901509-08-9.
39. **Bâlc**, N., Campbell, I. Development of the First Rapid Prototyping Centre in Romania, Supported by the European Union. Proceedings of the 10th International DAAAM Symposium, 21-23 October 1999, pag. 25-26, Viena, Austria, ISBN 3-901 509-10-0.
40. Campbell, R.I., **Bâlc**, N. Concurrent Engineering with DFMA and RP&M. Proceedings of the 10th International DAAAM Symposium, 21-23 October 1999, pag. 77-78, Viena, Austria, ISBN 3-901 509-10-0.
41. Campbell, R.I., **Bâlc**, N. Does RP&M Rewrite the Rules of DFMA? Proceedings of the 1999 International Forum on Design for Manufacture and Assembly. Newport, Rhode Island, 7-8 June 1999, SUA.
42. Berce, P., **Bâlc**, N. Studies and Comparative Results for two Non-traditional RP Methods (LOM and FDM). Proceedings of the 12th International DAAAM Symposium: "Intelligent Manufacturing & Automation: Focus on Precision Engineering", 24-27th October 2001, Jena, Germany, ISBN 3-901 509-19-4.
43. Gyenge, C., Mera, M. & **Bâlc**, N. Researches on Calculating the Parameters Value for Modification the Longitudinal Profile of the Cylindrical Gears. Proceedings of the 12th International DAAAM Symposium: "Intelligent Manufacturing & Automation: Focus on Precision Engineering", 24-27th October 2001, Jena, Germany, ISBN 3-901 509-19-4.
44. Campbell, R.I., **Bâlc**, N. Using Rapid Prototyping to Verify Design for Assembly. Proceedings of the 12th International DAAAM Symposium: "Intelligent Manufacturing & Automation: Focus on Precision Engineering", 24-27th October 2001, Jena, Germany, ISBN 3-901 509-19-4.
45. **Bâlc**, N., Chereches, B. Rapid Tooling by Electrical Discharge Wire Cutting (EDWC). Proceedings of the 12th International DAAAM Symposium: "Intelligent Manufacturing & Automation: Focus on Precision Engineering", 24-27th October 2001, Jena, Germany, ISBN 3-901 509-19-4.
46. **Bâlc**, N., Berce, P., Mera, M. The accuracy and efficiency of 3 non-conventional manufacturing technologies (LOM, FDM and SLA). Proceedings of the 5th International MTeM Symposium: "Modern Technologies and Machine-tools", 4th-6th October 2001, Cluj-N., Romania, ISBN 973-85354-1-7.
47. **Bâlc**, N., Campbell, I. Design for assembly verification using rapid prototyping. Proceedings of the 5th International MTeM Symposium: "Modern Technologies and Machine-tools", 4th-6th October 2001, Cluj-N., Romania, ISBN 973-85354-1-7.
48. Mera, M., Gyenge, Cs., **Bâlc**, N. Researches on parameters value calculation for modification the gear teeth profile. Proceedings of the 5th International MTeM Symposium: "Modern Technologies and Machine-tools", 4th-6th October 2001, Cluj-N, Romania, ISBN 973-85354-1-7.
49. Mera, M., Gyenge, Cs., **Bâlc**, N. Researches on cylindrical gear stiffness calculation. Proceedings of the 5th International MTeM Symposium: "Modern Technologies and Machine-tools", 4th-6th October 2001, Cluj-N., Romania, ISBN 973-85354-1-7.
50. **Bâlc**, N., Research on possible errors when manufacturing complex parts by laser cutting, on LOM-1015 machine. Proceedings of the 5th International MTeM Symposium: "Modern Technologies and Machine-tools", 4th-6th October 2001, Cluj-N, Romania, ISBN 973-85354-1-7.

51. M. Bulgaru, L. Bolboaca, A. Valean, **N. Bâlc**, Designing and Using the Virtual Coordinate Measuring Machine. Proceedings of the EVEN Conference on Virtual Engineering Applications for Design and Product Development, 4-5 Sept. 2003, Dublin, Ireland, ISBN 0-947974-15-6.
52. Dudas, I., Gyenge, Cs., Berce, P., **Bâlc, N.**, Rapid Prototyping Method by Lamination, Proceedings of the MicroCAD 2003 International Conference, pag. 41-46, 6-7 March 2003, Miskolc, Hungary, ISBN 963 661 5470.
53. **N. Bâlc**, Rapid Prototyping and Tooling, Proceedings of the EVEN Workshop on Virtual Engineering Applications on Rapid Product Development, 26-27 March 2003, Birmingham, England.
54. **Bâlc, N.**, Sterescu, B., BFD Method and Software Development for Feature Based Design, Proceedings of the 6th International MTeM Symposium: "Modern Technologies and Machine-tools", 3rd-4th October 2003, Cluj-N., Romania, ISBN 973-656-490-8.
55. **N. Bâlc**, The Application of Rapid Tooling, Proceedings of the "Layered Technologies" Workshop, 22-23 April 2004, pag. 30-45, The University of Maribor, Slovenia, ISBN 86 435 0616 8.
56. **N. Bâlc**, Medical Applications of Rapid Prototyping, Proceedings of the "Layered Technologies" Workshop, 22-23 April 2004, pag. 58-65, The University of Maribor, Slovenia, ISBN 86 435 0616 8.
57. **N. Bâlc**, Case Studies of Medical Applications, Proceedings of the "Layered Technologies" Workshop, 22-23 April 2004, pag. 116-117, The University of Maribor, Slovenia, ISBN 86 435 0616 8.
58. **N. Bâlc**, R.I. Campbell, *From CAD and RP to Innovative Manufacturing*, Computing and Solutions in Manufacturing Engineering, Braşov, 16-18 September 2004, pp. 68-78, ISBN 973-635-373-7
59. **N. Bâlc**, R. Păcurar, *Thermal Shrinkage Modeling in Selective Laser Sintering*, Computing and Solutions in Manufacturing Engineering, Braşov, 16-18 September 2004, pp. 57-67, ISBN 973-635-373-7
60. **N. Bâlc**, R. Păcurar, S. Comşa, *Rapid Tooling for Injection Molding, Using the SLS Technology*, Computing and Solutions in Manufacturing Engineering, Braşov, 16-18 September 2004, pp. 79-85, ISBN 973-635-373-7
61. P. Berce, H. Chezan, **N. Bâlc**, *The application of Rapid Prototyping Technologies for manufacturing the custom implants*, The 8th Esaform Conference on Material Forming, Cluj-Napoca, 27-29 April 2005, ISBN 973 27 1175 2.
62. **N. Bâlc**, P. Berce, R. Păcurar, *Active elements tools made by selective laser sintering*, The 8th Esaform Conference on Material Forming, Cluj-N., 27-29 April 2005, ISBN 973 27 1175 2.
63. **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", 6th-8th October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
64. **N., Bâlc, R.**, Păcurar, A., Crai, Research on how to decrease the porosity of the SLS metal parts, Proceedings of the 7th International MTeM Symposium: "Modern Technologies and Machine-tools", 6th-8th October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
65. P., Berce, C., Negru, **N., Bâlc**, From RP to manufacturing, using low melting point alloys spraying, Proceedings of the 7th International MTeM Symposium: "Modern Technologies and Machine-tools", 6th-8th October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
66. **N., Bâlc, C.**, Negru, Injection moulding using metal sprayed tools, Proceedings of the 7th International MTeM Symposium: "Modern Technologies and Machine-tools", 6th-8th October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
67. **N., Bâlc, P.**, Berce, C., Negru, Metal spray tooling for small batch production, Proceedings of the 7th International MTeM Symposium: "Modern Technologies and Machine-tools", 6th-8th October 2005, Cluj-N., Romania, ISBN 973 9087 83 3.
68. P. Berce, Cs. Gyenge, **N. Bâlc**, Using Rapid Prototyping for Medical Applications, Proceedings of the "Day of Hungarian Science", Conference, 10 November 2005, Kecskemet, Hungary.
69. P. Berce, Cs. Gyenge, **N. Bâlc**, Using Rapid Prototyping Technologies for Competitive Product Development, Proceedings of the MicroCAD 2006 International Scientific Conference – Miskolc, Hungary, ISBN 963-661-700-7.
70. P. Berce, H. Chezan, **N. Bâlc**, I. Drstvensek, Uporaba Postopkov Hitre Izdelave Prototipov Pri Izdelavi Vsadkov, ORODJARSTOVO 2006 Conference Proceedings, Portoroz 10-12 October 2006, pag. 145-148, Slovenia.
71. **Bâlc, N.**, Berce, P., Păcurar, R., 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
72. Rotaru, H., Zeilhofer, H.F., s.a., **Bâlc, N.**, Custom-Made Craniofacial Implants by Means of Rapid Prototyping, The 1-st DAAAM International Specialized Conference on Additive Technologies, pag. 45-48, Celje, Slovenia, April 2007, ISBN 3-901509-61-5
73. **Bâlc, N.**, Berce, P., Pacurar, R., Barisic, B., 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
74. Barisic, B., Gyenge, Cs., **Bâlc, N.**, Production Philosophy for Modern Manufacturing on Triumph Trumatic Presses in Computer Environment, The 8-th International MteM Conference Proceedings, pag. 47-50, Cluj-Napoca 4-5 October 2007, Romania, ISBN 973-9087-83-3

75. Berce, P., Pacurar R., Mera, M., **Balc, N.**, 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
76. Mera, M., **Balc, N.**, Mera, O., Research Concerning the Modification of the Gear's Teeth Profile in the Front Plane, The 8-th International MteM Conference Proceedings, pag. 275-278, Cluj-Napoca 4-5 October 2007, Romania, ISBN 973-9087-83-3
77. Pacurar, R., **Balc, N.**, Berce, P., 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
78. 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", 5th-7th July 2008, Crete., Greece, ISSN 1790-2769
79. **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, 14th-16th September 2008, Ptuj, Slovenia, ISSN 1726-9679.
80. P., Berce, **N., Bâlc**, R., Păcurar, SLS Parameters Optimization using the Taguchi Method, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14th-16th September 2008, Ptuj, Slovenia, ISSN 1726-9679.
81. R., Păcurar, **N., Bâlc**, P., Berce, Research on Improving the Mechanical Properties of the SLS Metal Parts, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14th-16th September 2008, Ptuj, Slovenia, ISSN 1726-9679
82. L., Cseki, **N., Bâlc**, s.a., Development of a Continuous Passive Motion Device for Post Surgical Rehabilitation of a Knee, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14th-16th September 2008, Ptuj, Slovenia, ISSN 1726-9679.
83. D. Dumitriu, **N., Bâlc**, s.a., The Development of a Custom Maxilofacial Implant by Means of RP, ISI Proceedings of the International Conference on Additive Technologies iCAT 2008, 14th-16th September 2008, Ptuj, Slovenia, ISSN 1726-9679
84. Pacurar, R., **Balc, N.**, Berce, P., 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
85. Pacurar, R., Berce, P., **Balc, N.**, 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
86. Donca, A., **Balc, N.**, Brajlil T., Valentan B., Drstvenšek I., Development of Stereotaxy Positioning and Fixturing Device, The 9-th International MteM Conference Proceedings, pag. 69-72, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
87. Milas, M., Balc, N., Brajlil T., Valentan B., Drstvenšek I., Development of Microdrive for neurosurgical procedures, The 9-th International MteM Conference Proceedings, pag. 173-176, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
88. Popan, A., Balc, N., Luca, A., Software solution for Accurate Water Jet Cutting, The 9-th International MteM Conference Proceedings, pag. 249-252, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
89. Luca, A., Balc, N., Popan, A., Studies on Improving the investment casting process, by optimising the gating and wax tree frame, The 9-th International MteM Conference Proceedings, pag. 157-160, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
90. Balas, M., Balc, N., Chezan, H., Studies on improving the EDM Wire Cutting Process, The 9-th International MteM Conference Proceedings, pag. 1-4, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
91. Leordean D., Berce P., Balc N., Pacurar R. Rapid Prototyping of Customised Implants, using SLS and SLM Processes, The 9-th International MteM Conference Proceedings, pag. 155-156, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
92. Păcurar R. A., Berce P., Balc, N., Materials Requirements to Manufacture Molds for the Food Industry, The 9-th International MteM Conference Proceedings, pag. 233-236, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
93. Panc N., Balc, N., RP of the Wax Models for Direct Metal Casting, The 9-th International MteM Conference Proceedings, pag. 313-316, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
94. Prem F., Balc, N., Rapid Manufacturing by Selective Laser Melting, The 9-th International MteM Conference Proceedings, pag. 253-256, Cluj-Napoca 8-10 October 2009, Romania, ISBN 973-7937-0704
95. **Balc, N.**, Popan, A., Luca, A., Rapid Prototyping by Abrasive Water Jet Cutting, The 4-th International Conference on Manufacturing Science and Education – MSE 2009, Proceedings, pag. 147-150, Sibiu, 4-6 June 2009, Romania, ISSN 1843-2522

96. Berce, P., **Balc, N.**, Panc, N., Luca, A., New Technology and Equipment for Rapid Metal Casting in Small Series, The 4-th International Conference on Manufacturing Science and Education – MSE 2009, Proceedings, pag. 155-158, Sibiu, 4-6 June 2009, Romania, ISSN 1843-2522
97. **Balc, N.**, Luca, A., Popan, A., Panc, N., Investment Casting for Small Volume Production of Aluminium Parts, The 4-th International Conference on Manufacturing Science and Education – MSE 2009, Proceedings, pag. 143-146, Sibiu, 4-6 June 2009, Romania, ISSN 1843-2522
98. **Balc, N.**, Balas M., Berce P., Chezan H., EDM Wire Cutting of Complex Parts, The 4-th International Conference on Manufacturing Science and Education – MSE 2009, Proceedings, pag. 139-142, Sibiu, 4-6 June 2009, Romania, ISSN 1843-2522.
99. **Balc N.**, Pacurar R., Berce P., Rapid Product Development Using the SLS Tooling Method , XXV- MicroCAD International Scientific Conference, Miskolc, Hungary, March, 2010, pg. 15-20, ISBN 978-963-661-918-3
100. Berce, P., **Balc, N.**, Pacurar R., Industrial Applications of Selective Laser Sintering Technology, XXIV-MicroCAD International Scientific Conference, Miskolc, Hungary, March, 2010, pg. 141-146, ISBN 978-963-661-918-3
101. Pacurar, R., Berce, P., **Balc N.**, Finite Element Analysis for Estimating the Shrinkage of Metal Parts During SLS Post-Processing Stage in the Oven , XXIV- MicroCAD International Scientific Conference, Miskolc, Hungary, March, 2010, pg. 153-156, ISBN 978-963-661-918-3
102. **Balc, N.**, Berce, P.& Păcurar, R., Comparison between SLM and SLS in Producing Complex Metal Parts , The 21st International DAAM Symposium, Proceedings pag. 0007-0008, Viena, Austria, 2010, ISSN 1726-9679
103. Luca, A.I., **Balc, N.**, Popan, I.A.& Panc, N., Dimensional Accuracy Analysis In Casting Using Easily Fusible Models, The 21st International DAAM Symposium, Proceedings pag. 1509-1510, Viena, Austria, 2010, ISSN 1726-9679
104. Popan, I.A. **Balc, N.**, Luca, A.I., & Curta, R., A Modeling Study of The Wjc Etching Process Of Steel And Stainless Steel Materials, The 21st International DAAM Symposium, Proceedings pag. 1345-1346, Viena, Austria, 2010, ISSN 1726-9679
105. Curta, R., **Balc, N.**, Carean, A.& Popan, I.A., Less Set Up Time And Higher Accuracy Using The CNC Multitasking Lathes To Machine Complex Parts, The 21st International DAAM Symposium, Proceedings pag. 1155-1157, Viena, Austria, 2010, ISSN 1726-9679.
106. **Balc, N.**, Balas, M., Popan, I.A Luca, A., Methods Of Improving The Efficiency of the EDM-Wire Cutting, The IMT-Oradea 2010, Proceedings pag. 4.69 – 4.72, Oradea, Romania, 2010, ISSN 1583-0691.
107. Popan, I.A., **Balc, N.**, Luca, A., Balas, M., Competitive 2D Machining Using The WJC Process, The IMT-Oradea 2010, Proceedings pag. 4.86-4.89, Oradea, Romania, 2010, ISSN 1583-0691.
108. Luca, A., **Balc, N.**, Popan, I.A., Balas, M., Competitive Manufacturing of 3D Complex Metal Parts, Made By Investment Casting, The IMT-Oradea 2010, Proceedings pag. 4.73-4.79, Oradea, Romania, 2010, ISSN 1583-0691.
109. Ceclan V.A. , **Bălc N.**, Achimas G., Cuc B., *Determination of the mechanical characteristics of tubular specimens used in the automotive industry*, XXIV- MicroCAD International Scientific Conference, Miskolc, Hungary, March, 2011, pg. 23-28, ISBN 978-963-661-964-0;
110. Ţerban F., **Bălc N.**, AchimaŢ G., Stoica L., *Finite element simulation of the free cylindrical bending process of metallic sheets*, XXV- MicroCAD International Scientific Conference, Miskolc, Ungaria, March 2011, pag. 153-158, ISBN 978-963-661-965-7; 2011
111. Sabău, E., **Bălc, N.**, Hancu, L., Bere, P., Prună, R., *Research regarding the influence of manufacturing of the mechanical characteristics of composite materials*, XXV- MicroCAD International Scientific Conference, Miskolc, Ungaria, March 2011, pag. 47-51, ISBN 978-963-661-964-0
112. Păcurar R., **Balc N.**, Prem, F., Research On How Improve The Accuracy Of The SLM Metallic Parts, The 14th International ESAFORM Conference ON Material Forming Proceedings, pag. 1356, 1385-1390, 2011, American Institute of Physics , ISBN 978-0-7354-0911-8
113. Balas, M., **Balc, N.**, Păcurar R., Research Regarding Heat Affected Zone After EDM-WC Process, The 10-th International MTeM Conference Proceedings, pag. 9-12, Cluj-Napoca 6-8 October 2011, Romania, ISBN 978-606-8372-02-0
114. Curta, R., **Balc, N.**, Carean, A., New Software To Generate The CNC Code For Turing Operations, The 10-th International MTeM Conference Proceedings, pag. 85-90, Cluj-Napoca 6-8 October 2011, Romania, ISBN 978-606-8372-02-0
115. Luca, A., **Balc, N.**, Drstvenssek, I., Popan, I.A., Mathematical Modeling of Aluminium Vacuum Casting Process, The 10-th International MTeM Conference Proceedings, pag. 190-193, Cluj-Napoca 6-8 October 2011, Romania, ISBN 978-606-8372-02-0
116. Muresan, S., **Balc, N.**, Pop, D., Fodorean, I., Influence of Process Parameters To Manufacture Titanium Parts By SLM, The 10-th International MTeM Conference Proceedings, pag. 210-213, Cluj-Napoca 6-8 October 2011, Romania, ISBN 978-606-8372-02-0

117. Popan, I.A., **Balc, N.**, Luca, A., Carean, A., A New Software Solution For Abrasive Water Jet Cutting, The 10-th International MTeM Conference Proceedings, pag. 271-274, Cluj-Napoca 6-8 October 2011, Romania, ISBN 978-606-8372-02-0
118. Prem, F., Leordean, D., **Balc, N.**, Pacurar, R., The Influence Of Working Parameters Of SLM Technology On Surface Quality And Precision Of Stainless Steel Parts, The 10-th International MTeM Conference Proceedings, pag. 283-283, Cluj-Napoca 6-8 October 2011, Romania, ISBN 978-606-8372-02-0
119. **Balc, N.**, Popan, A., Berce, P., Luca, A., Software Solution For Abrasive Water Jet Milling Process, The 15-th International Research/Expert Conference TMT 2011, Prague, Czech Republic 12-18 Sept.2011, Proceedings, pag. 77-80, ISSN 1840-4944
120. Păcurar R., **Balc, N.**, Căprar M., Finite Element Analysis to Compensate the Errors of the Selective Laser Melting Process, The 15-th International Research/Expert Conference TMT 2011, Prague, Czech Republic 12-18 Sept.2011, Proceedings, pag. 493-497, ISSN 1840-4944
121. Păcurar R., Berce P., **Balc, N.**, Goagăș L., Finite Element Simulation to Estimate the Durability of the Customized Implants made by Selective Laser Melting (SLM), The 15-th International Research/Expert Conference TMT 2011, Prague, Czech Republic 12-18 Sept.2011, Proceedings, pag. 497-501, ISSN 1840-4944
122. Deaky, B., Udroui, R., Lupulescu, N., **Balc, N.**, Cylindrical Gear Rapid Manufacturing Study, XXX - The ModTech International Conference, Iasi, Chisinau, Belgade, 25-27 May 2011, Chisinau, Republic of Moldova, Proceedings, pag. 1-4, ISSN 2066-3919.
123. Panc, N., Hancu, L., **Balc, N.**, Research Reading the Improvement of the Performance of Rubber Dies, World Congres on Engineering 2011, London, U.K., 6-8 July, 2011, Volume I, pag. 783-787, ISSN 2078-0958

C) Invited Speaker (Keynote Papers): Lucrări științifice invitate si prezentate în plen la Conferințe Internaționale

124. **N. Balc**, “*Considerations on Selecting the Rapid Tooling Technologies. Examples and Case Studies*”, The International Conference on Additive Manufacturing, Maribor University, 20-21 April 2007, Celje, Slovenia;
125. **N. Balc**, “*Rapid Prototyping Applications at Technical University of Cluj-Napoca*”, The CoSME 2008 International Conference, Transilvania University of Brașov, 25-27 September 2008, Brașov;
126. **N. Balc**, Engineering resources in CEE, including Romania, 2009, Dover Presidents meeting, Warsaw, 3-rd March 2009, <http://www.dovercorporation.com/>; <http://www.destaco.com/>, Poland;
127. **Balc, N.**, Innovative Manufacturing for Rapid Product Development, Plenary Session of The 4-th International Conference on Manufacturing Science and Education – MSE 2009, Sibiu, 4 June 2009, Romania ;
128. **N. Balc**, “*Non-traditional Technologies in Competitive Manufacturing*”, The IMT 2010 International Conference, Oradea University, 27-29 May 2010, Oradea.

D) Contracte câștigate în competiție internațională:

1. **Coordonator UTCN în Proiectul FP7 nr. 295016:** "Adm-ERA-Reinforcing Additive Manufacturing research cooperation between the Central Metallurgical Research and Development Institute and the European Research Area", aflat in derulare (01.10.2011 – 01.10.2013), valoare 496.634 €, valoare UTCN = 72.106 € (Coordonator UTCN– Prof. N. Balc).
2. **Partener în Proiectul FP6** “Optical 3D Metrology – Automated in-line metrology for quality assurance in the manufacturing industry” – OP3MET (Contract nr. 3721 / 2006) – **Co-operative Research Project**. Partener – Prof. N. Balc
3. **Coordonator al modului de fabricație al proiectului internațional** “Center for Innovative Manufacturing” – contract internațional– **2005** - finanțat de agenția KOICA (KOREAN INTERNATIONAL COOPERATION AGENCY), Director de proiect: Prof.dr.ing. Petru Berce (buget 325.000 USD), Coordonator modul fabricație: Prof. Nicolae Balc (buget modul fabricație: 160.000 USD) (finalizat 2007)
4. **Partener** (ca reprezentant al Universității din Loughborough - Anglia) în cadrul proiectului: "European Virtual Engineering Network", în care au participat 13 parteneri din 11 țări membre ale Uniunii Europene (cu derulare în 2002-2003 – <http://www.even.tcd.ie>);
5. **Contract de cercetare științifică post-doctorală, realizat prin contract de muncă la Universitatea Loughborough (Anglia), pe post de cercetător principal gradul 1, câștigat prin competiție internațională**

publicată în ziare și pe internet. La interviul final de selecție au participat și candidații din Anglia, care aveau doctoratul în domeniul respectiv. Câteva detalii privind acest contract internațional de cercetare sunt:

- a. Contractul s-a finalizat foarte bine (v. **Anexa 1** – Confirmare Loughborough University)
 - b. Title of Post (job): Post doctoral research associate – Grade 1A (v. **Anexa 2** – Contract of Employment); (v. **Anexele 3 și 4** – Work Permits (UK) -în Anglia)
 - c. Domeniul cercetării: Inginerie virtuală – cercetări în cadrul rețelei EVEN “European Virtual Engineering Network” (v. <http://www.even.tcd.ie>)
6. **Contractor al unui Proiect European de 3 ani:** "National Pilot Centre for Continuing Education in Rapid Prototyping", Tempus_S-JEP-12490-97, cu derulare în perioada 15.12.1997 - 14.03.2001 (proiect finalizat în 2001), valoare 252.000 €, Contractor – Prof. N. Bâlc

E) Contracte câștigate în competiție națională:

1. **Director Adject** al proiectului de cercetare de tip **Idei Complexe - PCCE** “Noi Materiale Biocompatibile destinate implanturilor personalizate fabricate prin SLS și SLM (BIOMAPIM)” – contract nr. 5/2010, aflat în derulare (**2010-2013**), buget 6.790.297 RON; Director – Prof. P. Berce, Director adjunct – Prof. N. Bâlc.
2. Contract CNCISIS - **PLATFORMA INTEGRATA DE CERCETARE SI FORMARE PENTRU PRODUCTIA INOVATIVA: FABRICA VIITORULUI**, Aprobata în 2006, Buget: 4.928.000 RON, Director de proiect: Prof. P. Berce, **Coordonator laborator de cercetare: Prof. N. Bâlc**
3. **Responsabil științific al proiectului de cercetare de excelență** “Rețea Inovativă de Fabricație” – Contract CEEEX nr. 41/2005 (**2005-2008**), buget 14,2 miliarde; Director – Prof. P. Berce, Responsabil științific: Prof. Nicolae Bâlc (<http://www.iman.utcluj.ro>) (finalizat 2008)
4. **Contract BCUM:** Bază de cercetare cu utilizatori multipli: “Centru Național de Fabricare Rapidă a Prototipurilor”. Director: Prof.dr.ing. Petru Berce / buget – 400.000 \$ / durata 3 ani/ finalizat în 2001 / **Coordonator grup de lucru: Prof. N. Bâlc**
5. **Director de proiect – Contract CNCISIS** - Cercetări privind utilizarea tehnicilor de FRP și a tomografiei computerizate la fabricarea implantelor ortopedice și maxilo-faciale (durata 3 ani: 1999-2001), **Director de proiect – Prof. N. Bâlc**
(Ref. 37118 / 2000, 37118 / 2001 - Cod CNCISIS – tema 26) (finalizat)
6. **Director de proiect – Contract CNCISIS** - Cercetări privind Fabricația prin Sinterizare Selectivă cu Laser, (durata 3 ani: 2002-2004), **Director de proiect - Prof. N. Bâlc**
(Ref. 33532 / 2003, 33385 / 2004 - Cod CNCISIS 406) (finalizat)

F) Director la alte contracte internaționale de cercetare (3 contracte încheiate de Universitatea Tehnică din Cluj-Napoca (UTC-N) cu terți:

1. **DE-STA-CO GmbH (Germania):** “Design a new version of the clamp and produce the physical prototype” – Contract nr. 3135/11.02.2010 (valoare: 14.000 Euro), **Director de contract: N. Bâlc**
2. **Compania ROTO d.o.o.** – Murska Sobota (**Slovenia**): “Rapid Prototyping by Selective Laser Sintering” - Nr. înreg. la UTC-N: 8345 / 13.06.2003 (valoare: 4.650 €), **Director de contract: N. Bâlc** (finalizat)
3. **Loughborough University (Anglia):** “Rapid Prototyping by Laminated Object Manufacturing”, Nr. înreg. la UTC-N: 8346 / 13.06.2003, **Director de contract: N. Bâlc**

G) Director la alte contracte naționale de cercetare (încheiate de UTC-N cu firme din România:

1. **SC Astriane Napocensis Cluj SRL** : “Cercetări teoretice și experimentale privind realizarea modelelor prin FRP (tăiere cu jet de apă)” - Contract nr. 804/20.01.2010 (valoare: 6.190 RON), **Director de contract: N. Bâlc** (finalizat)
2. **Universitatea Politehnica Timisoara:** “Fabricație prin Topire Selectivă cu Laser”, Nr. înreg. la UTC-N: 2770 / 31.08.2007, **Director de contract: N. Bâlc**
3. **ACAROM – Automobile Pitesti:** “Dezvoltarea de Produse și Tehnologii Noi în Sectorul de Componente Auto” – Contract nr. 10505/14.05.2007, **Director de contract: N. Bâlc**
4. **Universitatea Politehnica Timisoara:** “Prototipuri din pulbere de oțel”, Nr. înreg. la UTC-N: 1279 / 23.07.2008, **Director de contract: N. Bâlc**

H) Participare la alte 47 contracte de cercetare – în calitate de director de proiect sau membru în echipa de lucru, care a finalizat contracte cu terți. Câteva din acestea sunt:

- Ministerul Cercetării și Tehnologiei - contractele: 1308/1996 și 644/1997, 3 faze anuale, finalizat în 2000
- Ministerul Educației Naționale, Contract nr. 7003/1995, durata 4 ani, finalizat în 1999
- S.C. Autonova SA, Satu-Mare, Contract nr. 1/1998, Contract cadru cu etape anuale, **Director de contract: Prof. N. Bâlc**, finalizat în 2002
- S.C. Romles, Cluj-Napoca, Contract nr. 2/1998, Contract cadru cu etape anuale, **Director de contract: Prof. N. Bâlc**, finalizat în 2002
- S.C. UAMT, Oradea, Contract nr. 3/1998, Contract cadru cu etape anuale, **Director de contract: Prof. N. Bâlc**, finalizat în 2002
- S.C. Automobile, Pitesti, Contract nr. 4/1998, Contract cadru cu etape anuale, **Director de contract: Prof. N. Bâlc**, finalizat în 2002
- S.C. Elba, Timișoara, Contract nr. 6/1998, Contract cadru cu etape anuale, **Director de contract: Prof. N. Bâlc**, finalizat în 2002
- Ministerul Invățământului - contractele: 4003/1995, 5003/1996 și 7003/1997, 837118/2000, tema nr. 23
- ANSTI, Contract nr. 5217/1999 și 6079/2000 / Tema A2, Director Prof. M. Ancău
- CNCSIS, Contract nr. 837118/2000 și 34970/2001 (3 ani), Director Prof. M. Ancău
- ANSTI, Contract nr. 5217/2000 / Tema B5 și Tema B9, Director Prof. P. Berce
- ANSTI, Contract nr. 6113/2000 / Tema B37, Director Prof. P. Berce
- MEN – CNCSIS, Contract nr. 34970/2001 / Tema 45, Director Prof. P. Berce
- ALSTOM GENERAL TURBO S.A. București, contract nr.1/2004 (valoare – 340.000.000 Lei), Director P. Berce
- SC MatPlast S.A., Odorheiu Secuiesc, Contract nr.2/2004, Director P. Berce
- SC Plastor S.A., Oradea, Contract nr.3/2004, (valoare 215 milioane lei), Director P. Berce
- Programul Național Matnantech – contractul: 163 – 303 din 2003 (valoare- 1.000.000.000 Lei)
- CNCSIS, Contract nr. 33385/2004 și 34702/2005, Cod CNCSIS 851, (3 ani), Director Prof. M. Ancău
- CNCSIS, Contract nr. 33385/2004 / Tema A9 și 34702 / 2005, Cod CNCSIS 852, Director Prof. P. Berce
- ALSTOM GENERAL TURBO S.A, Contract nr. 1/2005, Director P. Berce
- S.C. HIDROTECH CLUJ-NAPOCA, Contract nr.2 / 2005, Director P. Berce
- Programul Național “INVENT”, PNCDI, Contract nr. 88/2003-2005, Director: Prof. P. Berce

I) Invited Professor – prelegeri susținute în străinătate:

1. **N. Bâlc**, “*Rapid Prototyping – a precise, efficient and economic modern technology*“, Vienna University of Technology – TU Wien, Interchangeable Manufacturing and Industrial Metrology, Univ. Prof. Herbert Osanna, 5-20 June 2007;
2. **N. Bâlc**, “*Research areas within the manufacturing engineering department from TUC-N*“, “*Rapid Tooling techniques and their advantages for competitive manufacturing*” and “*Using Rapid Prototyping for rapid product development, with industrial applications*”, Poznan University, Faculty of Mechanical Engineering and Management, “Ceepus Summer School 2007”, 15-30.08.2007 , Poland;
3. **N. Bâlc**, *Rapid Tooling for competitive manufacturing*, Maribor University, “Ceepus Summer School 2008”, 18-22.02.2008 , Slovenia

Data: 27.10.2011

Prof.dr.ing. Bâlc Nicolae