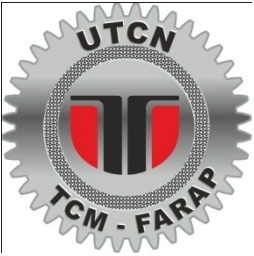


RAPID PROTOTYPING LABORATORY

Contact details

Name	Rapid Prototyping Laboratory
Acronym	FARAP
Logo	
Site	http://www.tcm.utcluj.ro
Address	103-105 Muncii Av., Room: B05, B06, G15, C 03, 400641, Cluj-Napoca, Romania
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Areas of expertise

Industrial Engineering (Rapid Prototyping of complex parts and master models for Rapid Tooling)
CAD/CAM Systems
Biomedical engineering (Prototypes, customized implants, new biocompatible materials)

Team

Prof. Dr. Eng. Petru Berce, Assoc. Prof. Dr. Eng. Mihai Damian, Prof. Dr. Eng. Marius Bulgaru, Assoc. Prof. Dr. Eng. Cristian Caizar, Assist. Prof. Eng. Horea Chezan, Assist. Prof. Dr. Eng. Răzvan Păcurar, Assist. Dr. Eng. Dan Leordean, Assist. Prof. Dr. Eng. Radu Sever Adrian, Assist. Dr. Eng. Ancața Păcurar

Representative projects

OP3MET, “Optical 3D Metrology - Automated in-line metrology for quality assurance in the manufacturing industry”, European FP6 Project, (2006-2008)
Adm-ERA, “Reinforcing Additive Manufacturing research cooperation between the Central Metallurgical Research and Development Institute and the European Research Area”, European FP7 Project, (2011-2013)
BIOMAPIM, “New Biocompatible Materials for personalized implants made by SLS and SLM”, PCCE, (2010-2013)
“Innovative Manufacturing Network”, (2005-2008)
“AMaTUC - Boosting the scientific excellence and innovation capacity in additive manufacturing of the Technical University of Cluj-Napoca”, HORIZON 2020 – twinning, 2016-2018

Significant results

The most representative publications of the past 5 years:

1. Petru Berce, et. al. Medical applications of Additive Manufacturing technologies, Romanian Academy Publishing House, Bucharest, 2015
2. Leordean, Dan; Dudescu, Cristian; Marcu, Teodora; P. Berce et al Customized implants with specific properties, made by selective laser melting RAPID PROTOTYPING JOURNAL Volume: 21 Issue: 1 Pages: 98-104, Published: 2015

3. Leordean, Dan; Radu, S. A.; Fratila, D.; P. Berce. Studies on design of customized orthopedic endoprotheses of titanium alloy manufactured by SLM INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING TECHNOLOGY Volume: 79 Issue: 5-8 Pages: 905-920 Published: JUL 2015
4. Petru Berce, et.al., Additive Manufacturing Technologies and their applications, Academy Publishing House, Bucharest, 2014.
5. Brie, Ioana-Carmen; Soritau, Olga; Dirzu, Noemi; P. Berce et al. Comparative in vitro study regarding the biocompatibility of titanium-base composites infiltrated with hydroxyapatite or silicatitanate JOURNAL OF BIOLOGICAL ENGINEERING Volume: 8 Article Number: 14 Published: JUN 19 2014
6. 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.
7. Todea, M.; Vanea, E.; Bran, S., P. Berce; et al XPS analysis of aluminosilicate microspheres bioactivity tested in vitro APPLIED SURFACE SCIENCE Volume: 270 Pages: 777-783 Published: APR 1 2013
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. M. Todea, B. Frentiu, R.F.V. Turcu, P. Berce, S. Simon, "Surface Structure Changes on Aluminosilicate Microspheres at the Interface With Simulated Body Fluid", Corrosion Science 54 (1), pp. 299-306 (2012)
10. T. Marcu, M. Todea, I. Gligor, P. Berce, C., Popa, "Effect of Surface Conditioning on the Flowability of Ti6Al7Nb Powder for Selective Laser Melting Applications", Journal of Applied Surface Science
11. M. Ancău, "On Solving Flowshop Scheduling Problems", in *Proceedings of the Romanian Academy*, series A, vol. 13, no. 1, 2012, pp. 71-79
12. M. Ancău, "Main Aspects Concerning PCB Manufacturing Optimization", in *Circuit World (Emerald)*, vol. 38, no.2, 2012, pp.75-82
13. P. Bere, P. Berce, Phenomenological fracture model for biaxial fibre reinforced composite, - Composites Part B: Engineering An International Journal, Vol. 43B, Issue 5, (2012), ISSN 1359-8368, p. 2237 – 2243
14. R. Păcurar, A. Păcurar, P. Berce, N. Bâlc, O. Nemeş, "Porosity change by resin impregnation in structures obtained by selective laser sintering technology" in *Studia Universitatis Babes-Bolyai Chemia*, vol. 57, no. 3, pp. 5-13, 2012

The offer addressed to the economic environment

Research & development	Develop new materials, suitable for Rapid Prototyping using the SLS and SLM equipment. Rapid Prototyping using the well known CNC machines, available within DME-TUCN
Consulting	Select the optimal RP technological route
Training	Training for people from industry, in the following fields: <ul style="list-style-type: none"> - Using the modern RP equipment; - CNC machining; - Metrology and Quality Engineering.