

RESEARCH LABORATORY FOR MANUFACTURING PARTS FROM COMPETITIVE MATERIALS

Contact details

Name	Research Laboratory for Manufacturing Parts from Competitive Materials	
Acronym	CoMaRLaMP (RLMPCM)	
Logo		
Site	http://research.utcluj.ro/tl_files/research/Research%20Domain/Industrial%20Engineering%20and%20Management/12_lancau.pdf	
Address	103-105 Muncii Av., 400641, Cluj-Napoca, Romania	
Faculty Department	Faculty of Machine Building Manufacturing Engineering Department	
Telephone	+40 264 401709	
Fax	+40 264 415453	
Director	Prof. Dr. Eng. Sorin Grozav and Prof. Dr. Eng. Horatiu Iancau	
e-mail	Sorin.Grozav@tcm.utcluj.ro Iancau.Horatiu@tcm.utcluj.ro	

Areas of expertise

Composite and plastic material

- Conception, manufacturing and mechanical behavior of polymer composites, Mechanical behavior of materials at low and cryogenic temperature.

Design of cutting tools

- Cutting and cutting tools, Metalworking technology, Tools for machine tools.

Device design and maintenance

- Design devices, Technologies and equipment for reconditioning.

Processing machinery

- Forming machines, Forming Machines and technologies, Mechanization and automation of technological processes of cutting and forming, CNC machine tools.

Medical devices

- Osteosynthesis material, Intramedullary nailing

Team

Prof. Dr. Eng. Horatiu Iancau, Prof. Dr. Eng. Sorin Grozav, Prof. Dr. Eng. Ioan Vuscan, Prof. Dr. Eng. Marian Borzan, Prof. Dr. Eng. Liana Hancu, Assoc. Prof. Dr. Eng. Gheorghe Gligor, Assist. Prof. Dr. Eng. Adrian Trif, Assist. Prof. Dr. Eng. Paul Bere, Assist. Prof. Dr. Eng. Vasile Ceclan, Assist. Prof. Dr. Eng. Adrian Popescu

Representative projects

“Development of a Computer System for Assessing of Occupational Hazards Type Mechanical Vibrations and Impact on Human Operator Workplace”, VIBROM, (2008-2011)

“Advanced Solutions to Improve Performance in Bending with Active Plates of Elastomer”, CNCSIS, (2009-2012)

“Informatics Platform for Engineering Fluid PIIF”, POSDRU, (2010-2013)

Significant results

The most representative publications of the past 5 years:

1. E. Sabău, H. Iancău, L. Hancu, M. Borzan, "Failure model for unidirectional fiber reinforced composites", in *Journal of Plastic Materials*, vol. 47, no. 2, 2010

2. H. Iancău, P. Bere, M. Borzan, L. Hancu, A. Crai, "The influence of Reinforced Materials and Manufacturing Procedures on the Mechanical Characteristics of Polymeric Composite Materials", in *Journal of Plastic Materials*, vol. 45, no. 3, 2008, pp. 251-256
3. G. Ianus, S. Grigoraș, C. L. Hanganu, M. Borzan, "The Effects of the Damaged Structure of Grease's Soaps on Ball Bearings Vibration" in *Rev. Plastic Materials Elastomers Syntetic Fibres*, vol. 44, no. 1, 2007, pp. 269-362
4. O. Nemes, F. Lachaud, A. Mojtabi, M. Borzan, S. Grigoras, "Stress Analysis in Adhesive Cylindrical Assemblies made by Hybride Materials" in *Rev. Plastic Materials Elastomers Syntetic Fibres*, vol. 45, no. 4, 2008
5. L. C. Hanganu, S. Grigoras, G. Ianus, V. Stamate, M. Borzan, D. Ionescu, "Considerations Concerning the Oil Viscosity Influence on Textile Spindles Dynamic Response" in *Rev. Plastic Materials Elastomers Syntetic Fibres*, vol. 46, no. 1, 2009, pp. 67-73
6. S. Grozav, N. Ungureanu, G. Gligor, O. Oprea, "Cam system for Modelling, Design and Simulate the Process of Extrusion for Small Pieces Used in Mining Industry" in *Archives of Mining Science*, vol. 56, no. 1, 2011, pp. 213-222
7. N. Ungureanu, M. Ungureanu, R. Cotetiu, S. Grozav, M. Risteiu, "Contributions Regarding the Mining Tribo-System", in *Archives of Mining Sciences*, vol. 56, no. 3, 2011, pp. 527-536
8. V. A. Ceclan, N. Bâlc, S. Grozav, P. Bere, C. S. Borzan, "Quality of the hydroformed tubular parts", in *Advanced Engineering Forum*, vol. 8-9, 2013, pp. 215-224
9. V. Ceclan, P. Bere, M. Borzan, S. Grozav, C. Borzan, "Development of environmental technology for carbon fibre reinforced materials recycling", in *Journal of Plastic Materials*, vol. 50, nr. 2, 2013
10. S.-D. Grozav, G. Onețiu, M. Bejan, M. Suci, O.-V. Oprea, "A model to obtain the relative spiral feed during cold orbital deformation", in *Revista Metalurgia International*, vol. XVI, 2011, no. 1, pp. 38-44

Products and technologies:

1. Seat passenger rail industry.
2. Industrial plant RTM for SC VRG Bistrita Company.
3. Self-locking intramedullary nail for majors trauma, such as when intramedullary nailing.

Patents:

1. **S. Grozav**, Coste Camilio, "Self-locking intramedullary nail" patent: RO127480, 30.01.2014, Excellence Award and Gold Medal with special mention at the salon PROINVENT 2014
2. **I. Vuscan** - Patent: no. 123184 OSIM, 2011; Diploma of excellence and gold medal for the group of inventions PROINVENT edition a-VIII-a, Cluj-Napoca 2010; Diploma and silver medal – EUROINVENT ,Iași, 2011; Diploma and medal AGEPI from the State Agency for Intellectual Property from Republica Moldova, - PROINVENT, Cluj-Napoca, 2011.
3. **P. Bere**, P. Berce, **H. Iancău**, "Method and device for obtaining bent tubular parts with variable section of fiber reinforced polymer composites", Request invention no. A 2011 1004/05.02.2011, Excellence Award and Silver Medal with special mention at the salon PROINVENT 2014

The offer addressed to the economic environment

Research & development	<p>Study regarding the mechanical behavior of polymer composite structures. Micromechanics and mechanical of high performance composite structures.</p> <p>Study of phenomena that accompany the process of orbital forming metal matrix composite materials.</p> <p>Applied research regarding the influence of process parameters on the mechanical characteristics of composite structures.</p> <p>Determination of mechanical characteristics by testing tensile, compression, bending and delamination specific the composites.</p> <p>Experimental research regarding the manufacture of on polymer composite.</p> <p>Manufacturing of automotive gears by orbital forming.</p>
Consulting	<p>This collective provides consultancy in the field of replacing metal parts with composite structures based on fiberglass, carbon, Kevlar and so on, used in top fields such as aeronautics, aerospace and transportation.</p>
Training	<p>It provides training in the application materials and competitive technologies.</p> <p>The research structure proposed has the potential to provide economic environment training in a highly dynamic field, but relatively new in our country, as is the use of competitive material in peak areas in order to increase the quality and competitiveness of industrial products.</p>