Curriculum Vitae

Personal information

First name(s) / Surname(s) **Florina BUCUR**

Address(es) Military Technical Academy "Ferdinand I",
39-49, George COŞBUC Avenue, Sector 5, 050141, Bucharest, ROMANIA

1. PROFESIONAL EXPERIENCE AND RELEVANT WORKPLACES:

Dates: **1st June 2022 – present**
Occupation or position held: **Vice Dean for Scientific Research**, Faculty of Integrated Weapon Systems, Engineering, and Mechatronics
Main activities and responsibilities: Scientific Research and education:
▪ Coordination of scientific research activities within the Faculty and the Center of Excellence in Integrated Weapon and Engineering Systems (CESIAG);
▪ President of the Scientific Council of the Faculty of Integrated Weapon Systems, Engineering, and Mechatronics.
Name and address of employer: Military Technical Academy "Ferdinand I", Bucharest, Romania
Type of business or sector: Higher military education (undergraduate and postgraduate), Education and Scientific research

Dates: **29 September 2025 – present**
Occupation or position held: **Professor,** Faculty of Integrated Weapon Systems, Engineering, and Mechatronics
Main activities and responsibilities: Education and Scientific research
Name and address of employer: Military Technical Academy "Ferdinand I", Bucharest, Romania
Type of business or sector: Higher military education (undergraduate and postgraduate), Education and Sientific research

Dates: **15 February 2021 – 28 September 2025**
Occupation or position held: **Associate Professor,** Faculty of Integrated Weapon Systems, Engineering, and Mechatronics
Main activities and responsibilities: Education and Scientific research
Name and address of employer: Military Technical Academy "Ferdinand I", Bucharest, Romania
Type of business or sector: Higher military education (undergraduate and postgraduate), Education and Scientific research

Dates: **1st October 2015 – 14 February 2021**
Occupation or position held: **University Lecturer**, Faculty of Mechatronics and Integrated Armament Systems
Main activities and responsibilities: Education and Scientific research
Name and address of employer: Military Technical Academy "Ferdinand I", Bucharest, Romania
Type of business or sector: Higher military education (undergraduate and postgraduate), Education and Scientific research

Dates: **1st October 2012 – 30 September 2015**
Occupation or position held: **Assistant Professor (PhD student)**, Faculty of Mechatronics and Integrated Armament Systems,
Main activities and responsibilities: Scientific Research and education
Name and address of employer: Military Technical Academy, Bucharest, Romania
Type of business or sector: Higher military education (undergraduate and postgraduate), Education and Scientific research

Dates: **1st October 2010 – 30 September 2012**
Occupation or position held: **Head of Laboratory** at the Department of Armament Systems Engineering and Mechatronics
Main activities and responsibilities: Laboratory activities, educational activities (seminars, laboratories) and scientific research at laboratories of Department of Armament Systems Engineering and Mechatronics
Name and address of employer: Military Technical Academy, Bucharest, Romania
Type of business or sector: Higher military education (undergraduate and postgraduate), Education and Scientific research

Period: **July 2010 – present**
Position: **Officer**
Work place: Military Technical Academy "Ferdinand I", Bucharest, Romania

Type of the activities: Military training

2. Education and training: Studies, Diplomas and Degrees

Dates:	**07.11.2024**
Title of qualification awarded:	**Habilitation Certificate** in the field of Mechanical Engineering (Doctoral Studies)
Principal subjects/occupational skills covered:	▪ Title of Habilitation Thesis: *Experimental Research and Numerical Simulations Regarding the Specific Phenomena of Explosion Mechanics and Terminal Ballistics*
Name and type of organization providing education and training:	Military Technical Academy "Ferdinand I", Doctoral School "Defense and security systems engineering"
Dates:	**2012 - 2015**
Title of qualification awarded:	**Ph.D. Degree** in Mechanical Engineering
Principal subjects/occupational skills covered:	▪ Ph.D. Thesis title: *Contributions to improve protection factor of military vehicles armor* Scientific advisor: Professor Ph.D. Eng. Cristian BARBU
Name and type of organization providing education and training:	Military Technical Academy, Doctoral School of Mechanical and aerospace systems for defense and security, civil and industrial engineering, Bucharest, Romania
Dates:	**2010 - 2012**
Title of qualification awarded:	**Master Degree**
Principal subjects/occupational skills covered:	Master Program "Integrated Design in Mechanical Engineering" ▪ Master Thesis title: *Technical and scientific studies regarding projecting and automatisation improvement of experimental device Split Hopkinson Pressure Bar for impact tests. Physical measurements, numerical and experimental validation* Master Thesis realized at National Institute of Applied Sciences - INSA Rennes, France under the supervision of Associate Professor (Maître de Conférences des Universités HC) Adinel GAVRUS
Name and type of organization providing education and training:	University "POLITEHNICA" of Bucharest – Faculty of Mechanical Engineering and Mechatronics
Dates:	**2010 - 2012**
Title of qualification awarded:	**Master Degree**
Principal subjects/occupational skills covered:	Master Program "Information Technology Security" ▪ Master Thesis title: *Specific attacks in terms of database servers* Scientific advisor: Lecturer Ph.D. Eng. Cezar PLEȘCA
Name and type of organization providing education and training:	Military Technical Academy – Faculty of Electronic and Military Informatic Systems
Dates:	**14 March - 29 June 2012**
Title of qualification awarded:	**Training Certificate**
Principal subjects/occupational skills covered:	Scientific Research Internship scientific advisor: Assoc. Prof. Habil. Ph.D. Adinel GAVRUS
Name and type of organization providing education and training:	National Institute of Applied Sciences – INSA Rennes, France
Dates:	**September 2006 - July 2010**
Title of qualification awarded:	**Diploma engineer**
Principal subjects/occupational skills covered:	Mechanical engineering – *Specialization* "*Armaments, artillery equipment and fire control systems*" ▪ Diploma Project Title: *Study regarding the determination of aerodynamic and ballistic characteristics of 122 mm caliber projectile* Scientific advisor: Associate Professor Ph.D. Eng. Cristian MOLDOVEANU
Name and type of organization providing education and training:	Military Technical Academy – *Faculty of Mechatronics and Integrated Armament Systems*
Dates:	**April 1st - July 1st 2009**
Title of qualification awarded:	**Training Certificate**
Principal subjects/occupational skills covered:	Scientific Research Internship report title: *Experimental study of decoupling in aerodynamic wind tunnel* Internship scientific advisor: Director of Research Henri-Claude BOISSON
Name and type of organization providing education and training:	Institute of Fluid Mechanics, Toulouse, France
Dates:	**September 2002 - July 2006**
Title of qualification awarded:	**High School Graduation Diploma**
Principal subjects/occupational skills covered:	Military Profile - specialty Mathematics and Computer Science
Name and type of organization providing education and training:	Military College "Dimitrie Cantemir", Breaza, Romania

3. Personal skills and competences

Mother tongue(s) **Romanian**

Other language(s)

Self-assessment	Understanding		Speaking		Writing
European level (*)	Listening	Reading	Spoken interaction	Spoken production	
French	C1	C1	C1	C1	B2
English	C1	C1	C1	C1	B2

Social skills and competences: Demonstrated adaptability, professionalism, responsibility, and dynamism, with strong analytical skills and an open-minded approach to problem-solving;
Proven team spirit and effective communication skills, with experience both as a collaborative team member and in leadership roles.

Organisational skills and competences: Strong organizational and coordination skills, with experience in managing teaching and research activities, along with effective research project planning and oversight;
Proficient in data synthesis, technical report writing, and the application of scientific methodologies in research and development.

Technical skills and competences: Ability to use research/laboratory apparatus and equipment and teaching in specialization field.

Digital skills and competences: Proficient in computer-aided design and simulation software: Abaqus, LS-DYNA, Autodyn, CAST3M, SolidWorks, Fluent, ANSYS, MSC Patran, MSC Nastran;
Skilled in mathematical and engineering analysis tools such as Mathcad;
Experienced in data acquisition and analysis systems, including LabVIEW and LMS Test.Lab.;
Competent in using office productivity tools, particularly the Microsoft Office suite.

Professional Experience:
- **Member of the Council of the Doctoral School** "Defense and Security Systems Engineering" (2025 – present);
- **ARACIS Expert Evaluator**, Field of Engineering Sciences (2024 – present);
- **Co-chair of the *9th International Conference on Materials Science and Technologies* – RoMat 2022**, Bucharest, November 24–25, 2022;
- **Member of the Steering and Scientific Committees**, RoMat 2022 International Conference;
- **Chairman and Keynote Speaker**, *Materials for Defense and Security Application* section at the RoMat 2022 International Conference;
- **Director of the Master's Program** *Engineering for Special Mechanical Systems in Defense and Security* at the Military Technical Academy "Ferdinand I" (2022 – present);
- **President of the Scientific Council**, Faculty of Integrated Armament Systems, Engineering and Mechatronics (2022 – present);
- **Member of the Scientific Council**, Military Technical Academy "Ferdinand I" (2022 – present).
- **Erasmus Responsible**, Faculty of Integrated Armament Systems, Engineering, and Mechatronics (2022 – 2024);
- **Associated Teaching Staff,** Fire Officers Faculty, "Alexandru Ioan Cuza" Police Academy, Course taught: Strength of Materials (2018 – present);
- **Scientific Reviewer** for the journals: Materiale Plastice and Journal of Military Technology;
- **Member** of the Tensometry and Metallic Testing Association – Artens;
- **Member** of the Romanian Association of Fracture Mechanics;
- **Scientific Supervisor** for student groups in bachelor's and master's programs at the Military Technical Academy "Ferdinand I";
- **Member of Admission and Graduation Committees** for bachelor's and master's programs at the Military Technical Academy "Ferdinand I";
- **Member of Doctoral Supervision Committees** at the Military Technical Academy "Ferdinand I" and National University of Science and Technology POLITEHNICA Bucharest;

Awards and Honors:
- **Honor Emblem** of the Department for Relations with Parliament and the Quality of Personnel Life – March 1, 2024;
- **Special Award „Ioana Csaki"** for outstanding contributions to the field of Materials Science and Engineering, awarded to young researchers during the RoMat 2022 International Conference (2022);
- **Air Force Honor Emblem**, May 17, 2019;
- **Excellence Award**, Scientific Session Secosaft, National Land Forces Academy "Nicolae Bălcescu", Sibiu 2007, Section "Foreign Languages - French", June 2007;
- **Mention at National Physics Competition "Perpetuum impulse",** August 2022 - National Phase.

Training and Certifications:
- **Participation in the Workshop** on *Trends and Innovative Research in Materials Engineering and Bioengineering*, University POLITEHNICA of Bucharest, April 4-5, 2019;
- **Liaison Officer**, NATO Summit, Bucharest, April 2008;
- **Internship Training,** École Spéciale Militaire de Saint-Cyr, Coëtquidan, France (November 3 – December 3, 2006)
- **Certification of Computer Skills**, May 2006.

Scientific Research:
- **Scholarship funded through a project co-financed by the European Social Fund under the Human Capital Operational Program (Priority Axis Education and Skills)** titled *Academic Excellence and Entrepreneurial Values - A Scholarship System for Ensuring Training and Development Opportunities for the Entrepreneurial Skills of PhD Students and Post-Docs* – ANTREPRENORDOC, Contract no. 36355/23.05.2019 POCU/380/6/1-SMIS Code: 123847, under the authority of the *University POLITEHNICA of Bucharest* (2019-2020).
- **Scholarship funded through the European Program for Doctoral and Postdoctoral Studies Horizon 2020**: *Promoting National Interest through Excellence, Competitiveness, and Responsibility in Romanian Fundamental and Applied Scientific Research*, Contract POSDRU/159/1.5/S/140106, under the authority of the *Technical Military Academy* (2014-2015).
- **Scientific events organized by educational and/or research institutions, both national and international.**

Scientific research projects:
• 24 scientific research projects, serving as project director for one and as a team member in 23. These include two international projects, 14 projects under the National Research, Development and Innovation Plan, four projects funded through the Sectorial Research-Development Plan of the Ministry of National Defense, one supported by a business entity, and three projects by industry partners.

Teaching activities (courses/seminars/laboratories):
• Terminal ballistics of weapon systems, Aerodynamics of projectiles and missiles, Fluid Mechanics, Strength of materials, Design and construction of artillery mechanisms, Mechanics and mechanisms theory, Technologies and materials used in the manufacture of special mechanical systems', Modelling and numerical simulation of aerodynamic phenomena, Unconventional technologies for armament systems, Analysis of mechanical structures by FEM, Technology of manufacturing and repair for armament systems, Armament systems maintenance, Integrated armament systems.

Scientific dissemination:
- **27** articles ISI/BDI indexed;
- **47** papers in proceedings of international conferences;
- **3** specialized books and **2** laboratory guides in mechanical engineering field;
- Citations: 80 (Web of Science), 105 (Scopus)
- Hirsch Index (H-index): **5** (Web of Science), **6** (SCOPUS)

Driving licence: B Category

4. Additional information

References can be acquired from the following persons:

• Brigadier General Prof. Ph.D. Eng. Constantin-Iulian VIZITIU, Rector, Military Technical Academy "Ferdinand I"

• Prof. Ph.D. Eng. Anton HADĂR, Vice President of the Senate, Faculty of Industrial Engineering and Robotics, National University of Science and Technology POLITEHNICA of Bucharest

• Colonel Assoc. Prof. Ph.D. Eng. Manuel ȘERBAN, Director, Department of Engineering and Emergency Situations, Fire Officers Faculty, "Alexandru Ioan Cuza" Police Academy

• Assoc. Prof. Ph.D. Eng. Adinel GAVRUȘ, ACD, National Institute of Applied Sciences (INSA, RENNES)

20.02.2026

Military Technical Academy "Ferdinand I"
Prof. PhD Eng. Florina BUCUR

LIST OF SCIENTIFIC PUBLICATIONS

1. List of the 10 Most Relevant Scientific Publications

1. **BUCUR**, **F.**, MATACHE, L.-C., LUPOAE, M.,
   A numerical study on explosively formed projectiles in low density environments for typical metallic liners materials,
   UPB Scientific Bulletin, Series B: Chemistry and Materials Science, vol. 86, no. 3, pp. 213-226, 2024.
   https://www.scientificbulletin.upb.ro/rev_docs_arhiva/rez3cf_283842.pdf
   Indexat Web of Science, WOS:001301114000017
2. **BUCUR**, **F.**, MATACHE, L.-C.,
   Assessment of Multilayered Plates with Hyperelastic Coatings Subjected to Dynamic Loadings by Impact at Low Velocities,
   Materiale Plastice, vol. 61, no. 1, pp. 170-184, 2024.
   https://doi.org/10.37358/MP.24.1.5712
   Indexat Web of Science, WOS:001198444200010
3. IFTIMIE, B., CASAPU, A.C., LUPOAE, M., **BUCUR**, **F.**, TRANĂ, E.,
   Experimental tests related to the multi-layered ballistic panel behaviour under blast and fragments impact,
   UPB Scientific Bulletin, Series B: Chemistry and Materials Science, vol. 86, no. 1, pp. 273-289, 2024.
   https://www.scientificbulletin.upb.ro/rev_docs_arhiva/fullcd9_209760.pdf
   Indexat Web of Science, WOS:001196525500006
4. CHIRIAC, O.-G., **BUCUR**, **F.**, ROTARIU, A.-N., TRANĂ, E.,
   The Application of Mott's Distribution in the Fragmentation of Steel Coaxial Cylinders,
   Materials, vol. 16, no. 17: 5783, 2023.
   https://doi.org/10.3390/ma16175783
   Indexat Web of Science, WOS:001062513900001
5. ROTARIU, A., TRANĂ, E., MATACHE, L., CIRMACI-MATEI, M.-V., SANDU, S., MOLDOVEANU, C.-E., **BUCUR**, **F.***,
   Experimental study on the dynamic response of polyurethane/fly ash ceramic foam,
   Materiale Plastice, vol. 58, no. 1, pp. 106-112, 2021.
   https://doi.org/10.37358/MP.21.1.5450
   Indexat Web of Science, WOS:000637398100010

6. TOADER, G., DIACON, A., RUSEN, E., RIZEA, F., TEODORESCU, M., STĂNESCU, P., DAMIAN, C., ROTARIU, A., TRANĂ, E., **BUCUR**, **F.**, GINGHINĂ, R.,
A facile synthesis route of hybrid polyurea-polyurethane-MWCNTs nanocomposite coatings for ballistic protection and experimental testing in dynamic regime,
Polymers, vol. 13, no. 10: 1618, 2021.
https://doi.org/10.3390/polym13101618
Indexat Web of Science, WOS:000655163400001
7. **BUCUR**, **F.**, ROTARIU, A., MATACHE, L., BACIU, F., JIGA, G., TRANĂ, E.,
Experimental and Numerical Study on the Behavior of Dyneema® HB26 Composite in Compression,
Materiale Plastice, vol. 53, no. 2, pp. 670-674, 2020.
https://doi.org/10.37358/MP.20.2.5357
Indexat Web of Science, WOS: 000579451200012
8. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A.,
Numerical and experimental study on the locally blast loaded polyurea coated steel plates,
Materiale Plastice, vol. 56, no. 3, pp. 492-499, 2019.
https://doi.org/10.37358/MP.19.3.5216
Indexat Web of Science, WOS: 000487764000005
9. GAVRUȘ, A., **BUCUR**, **F.**, ROTARIU, A., CĂNĂNĂU, S.,
Mechanical behavior analysis of metallic materials using a Finite Element modeling of the SHPB test, a numerical calibration of the bar's elastic strains and an inverse analysis method,
International Journal of Material Forming, vol. 8, no. 4, pp. 567-579, 2015.
https://doi.org/10.1007/s12289-014-1180-0
Indexat Web of Science, WOS:000360829700007
10. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A., GAVRUȘ, A., BARBU, C., GUINES, D.,
Experimental and numerical analysis concerning the behaviour of OL50 steel specimens coated with polyurea layer under dynamic conditions,
EPJ Web of Conferences, EDP Sciences, vol. 94: 04044,
11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading, DYMAT 2015.
https://doi.org/10.1051/epjconf/20159404044
Indexat Web of Science, WOS:000372587700156

2. PhD Thesis

1. ***„Contributions to improve protection factor of military vehicles armor"***,
Doctoral School of Mechanical and aerospace systems for defense and security, civil and industrial engineering, Military Technical Academy, 2015.

3. Patents and Other Industrial Intellectual Property Titles

4. Books and Book Chapters Published in the Last 10 Years

1. Florina BUCUR, Cristian-Emil MOLDOVEANU, Adrian-Nicolae ROTARIU, *Modeling and Simulation of Aerodynamic Phenomena with Applications in Armament Systems*, Military Technical Academy "Ferdinand I" Publishing House, ISBN 978-973-640-324-8, 140 pp., 2020.

2. Cristian-Emil MOLDOVEANU, **Florina BUCUR**, Pamfil ȘOMOIAG, *Aerodynamics of Projectiles, Bombs, and Rockets*, Military Technical Academy "Ferdinand I" Publishing House, ISBN 978-973-640-325-5, 180 pp., 2020.

3. Amado ȘTEFAN, **Florina BUCUR**, Andrei INDREȘ, *Strength of Materials. Laboratory Guide for Experiments in the Elastic Domain,* Military Technical Academy "Ferdinand I" Publishing House, ISBN 978-973-640-314-9, 148 pp., 2020.

4. Pamfil ȘOMOIAG, Cristian-Emil MOLDOVEANU, **Florina BUCUR**, Andrei MANDACHE, *Calculation and Design of Artillery Weapons. Laboratory Guide for the Design of Elastic Elements of the Recoil System,* Military Technical Academy "Ferdinand I" Publishing House, ISBN 978-973-640-318-7, 84 pp., 2020.

5. Florina BUCUR, *Testing and Small-Scale Evaluation of Structures Subjected to Blast Loading*, Military Technical Academy Publishing House, ISBN 978-973-640-242-5, 150 pp., 2015.

5. Articles Published in Mainstream International Scientific Journals

A. Articles Published in ISI-Indexed International Journals

- *1 article published in a WoS-indexed, JCR Q2-ranked journal, Materials:*

1. CHIRIAC, O., **BUCUR, F.**, ROTARIU, A.-N., TRANĂ, E., *The Application of Mott's Distribution in the Fragmentation of Steel Coaxial Cylinders*,
Materials, vol. 16, no. 17: 5783, 2023.
Indexat Web of Science, WOS: 001062513900001

- *1 article published in a WoS-indexed, JCR Q1-ranked journal, Polymers:*

1. TOADER, G., DIACON, A., RUSEN, E., RIZEA, F., TEODORESCU, M., STĂNESCU, P.O., DAMIAN, C., ROTARIU, A., TRANĂ, E., **BUCUR**, **F.**, GINGHINĂ, R., *A Facile Synthesis Route of Hybrid Polyurea-Polyurethane- MWCNTs Nanocomposite Coatings for Ballistic Protection and Experimental Testing in Dynamic Regime,*
Polymers, vol. 13, no. 10: 1618, 2021.
Indexat Web of Science, WOS: 000655163400001

- *1 article published in a WoS-indexed journal, International Journal of Material Forming:*

1. GAVRUȘ, A., **BUCUR**, **F.**, ROTARIU, A., CĂNĂNĂU, S., *Mechanical behavior analysis of metallic materials using a Finite Element modeling of the SHPB test, a numerical calibration of the bar's elastic strains and an inverse analysis method*,
International Journal of Material Forming, vol. 8, no. 4, pp. 567-579, 2014.
Indexat Web of Science, WOS: 000360829700007

- 6 articles published in a WoS-indexed journal, Materiale Plastice:

1. **BUCUR**, **F.**, MATACHE, L.-C., *Assessment of Multilayered Plates with Hyperelastic Coatings Subjected to Dynamic Loadings by Impact at Low Velocities*,
   Materiale Plastice, vol. 61, no. 1, pp. 170-184, 2024.
   Indexat Web of Science, WOS: 001198444200010
2. ROTARIU, A., TRANĂ, E., MATACHE, L., CIRMACI-MATEI, M.-V., SANDU, S., MOLDOVEANU, C.-E., **BUCUR**, **F.***, *Experimental study on the dynamic response of polyurethane/fly ash ceramic foam,*
   Materiale Plastice, vol. 58, no 1, pp. 106-112, 2021.
   Indexat Web of Science, WOS: 000637398100010
3. **BUCUR**, **F.**, ROTARIU, A., MATACHE, L., BACIU, F., JIGA, G., TRANĂ, E., *Experimental and Numerical Study on the Behavior of Dyneema® HB26 Composite in Compression*,
   Materiale Plastice, vol. 53, no. 2, pp. 670-674, 2020.
   Indexat Web of Science, WOS: 000579451200012
4. TRANĂ, E., **BUCUR**, **F.**, ROTARIU, A., *On the fragmentation of explosively-driven plastic/steel layered cylinders,*
   Materiale Plastice, vol. 55, no. 4, pp. 521-523, 2018.
   Indexat Web of Science, WOS: 000454987400013
5. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A., *Numerical and experimental study on the locally blast loaded polyurea coated steel plates*,
   Materiale Plastice, vol. 56, no. 3, pp. 492-499, 2019.
   Indexat Web of Science, WOS: 000487764000005
6. ROTARIU, A., **BUCUR**, **F.***,TOADER, G., LUPOAE, M., SAVA, A., ȘOMOIAG, P., CIRMACI-MATEI, M.V., *Experimental study on polyurea coating effects on deformation of metallic plates subjected to air blast loads,*
   Materiale Plastice, vol. 53, no. 4, pp. 670-674, 2016.
   Indexat Web of Science WOS: 000395047100020

- 1 article published in a WoS-indexed journal, Proceedings of the Romanian Academy:

1. TRANĂ, E., ROTARIU, A.N., ROTARIU, T., PULPEA, B., MOLDOVEANU, C.-E., **BUCUR**, **F.**, MATACHE, L.C., GOZIN, M., *Experimental study on aluminum foils use in blast enhancement application*,
   Proceedings of the Romanian Academy, Series A, vol. 20, no. 3, pp. 275-283, 2019.
   Indexat Web of Science, WOS: 000485880200008

- 3 articles published in WoS-indexed journal, UPB Scientific Bulletin, Series B: Chemistry and Materials Science:

1. **BUCUR**, **F.**, MATACHE, L.-C., LUPOAE, M., *A numerical study on explosively formed projectiles in low density environments for typical metallic liners materials,*
   UPB Scientific Bulletin, Series B: Chemistry and Materials Science, vol. 86, no. 3, pp. 213-226, 2024.
   Indexat Web of Science, WOS: 001301114000017

2. IFTIMIE, B., CASAPU, A.-C., LUPOAE, M., **BUCUR**, **F.**, TRANĂ, E., *Experimental tests related to the multi-layered ballistic panel behaviour under blast and fragments impact*, UPB Scientific Bulletin, Series B: Chemistry and Materials Science, vol. 86, no. 1, pp. 273-289, 2024.
Indexat Web of Science, WOS: 001196525500006

3. ROTARIU, A.N., MATACHE, L., **BUCUR**, **F.**, CIRMACI-MATEI, M.V., MĂRMUREANU, M., TRANĂ, E., *Implementation of a Gumbel distribution function in interior ballistic calculations for deterred propellants,*
UPB Scientific Bulletin, Series B: Chemistry and Materials Science, vol. 82, no. 1, pp. 167-178, 2020.
Indexat Web of Science, WOS: 000550837300014

B. Articles Published in Scopus-Indexed Journals and ISI Proceedings-Indexed Conference Volumes

1. VLĂDESCU, B., ȘTEFAN, A., VEDINAȘ, I., **BUCUR**, **F.**, *Experimental and numerical determination of the hydrodynamic characteristics for a small-scale model of a submersed vehicle,*
UPB Scientific Bulletin, Series D: Mechanical Engineering, vol. 86, no. 3, pp. 77-86, 2024.
Indexat SCOPUS
https://www.scopus.com/pages/publications/85210234829

2. CHIRIAC, O., ROTARIU, A.-N., **BUCUR**, **F.**, *The application of Mott's distribution in the fragmentation of steel coaxial cylinders,*
Proceedings - 33rd International Symposium on Ballistics, BALLISTICS 2023, vol. 1: 194571, pp. 711-716, 2013.
Indexat SCOPUS
https://www.scopus.com/record/display.uri?eid=2-s2.0-85179000043&origin=resultslist

3. **BUCUR**, **F.**, ROTARIU, A., JIGA, G., BACIU, F., TRANĂ, E., *On the experimental testing procedures for ultra-high molecular weight polyethylene (UHMWPE) behaviour evaluation in static and dynamic regime*,
Scientific Bulletin of Naval Academy, vol. 23, no. 2, pp. 53-58, 2020.
Indexat SCOPUS
https://www.scopus.com/record/display.uri?eid=2-s2.0-85100707111&origin=resultslist

4. **BUCUR**, **F.**, ROTARIU, A., TRANĂ, E., ȘTEFAN, A., *Experimental and numerical study on the mitigation capability of some special design structures,*
International Journal of Modern Manufacturing Technologies, vol. XII, no. 1, pp. 7-15, 2020.
https://www.scopus.com/record/display.uri?eid=2-s2.0-85090720405&origin=resultslist
Indexat SCOPUS

5. ȘTEFAN, A., NEGRU, A., **BUCUR**, **F.**, *On the analytical, numerical and experimental models for determining the mode shapes of transversal vibrations of a cantilever beam,*
UPB Scientific Bulletin, Series D: Mechanical Engineering, vol. 82, no. 4, pp. 169-178, 2020.
https://www.scopus.com/record/display.uri?eid=2-s2.0-85097110024&origin=resultslist
Indexat SCOPUS

6. ROTARIU, A.N., **BUCUR**, **F.**, CIRMACI-MATEI, M.V., MATACHE, L.C., TRANĂ, E., *Development of the analytic relations for the propellant grain geometrical characteristics required for a maximum pressure plateau feature*,
Journal of Physics: Conference Series, vol. 1507, no. 2: 022025, 2020.
https://www.scopus.com/record/display.uri?eid=2-s2.0-85088503776&origin=resultslist
Indexat SCOPUS
7. MATACHE, L., PUICĂ, C., ROTARIU, A., TRANĂ, E., **BUCUR**, **F.**, *Numerical simulation of military ground vehicle's response to mine-blast load*,
UPB Scientific Bulletin, Series D: Mechanical Engineering, vol. 80, no. 4, pp. 153-162, 2018.
https://www.scopus.com/record/display.uri?eid=2-s2.0-85059291865&origin=resultslist
Indexat SCOPUS
8. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A., GAVRUS, A., BARBU, C., GUINES, D., *Experimental and numerical analysis concerning the behaviour of OL50 steel grade specimens coated with polyurea layer under dynamics loadings*,
EPJ Web of Conferences, vol. 94: 04044, 2015.
Indexat Web of Science, WOS: 000372587700156
9. GAVRUȘ, A., **BUCUR**, **F.**, ROTARIU, A., CĂNĂNĂU, S., *Analysis of metallic materials behavior during severe loadings using a FE modeling of the SHPB test based on a numerical calibration of elastic strains with respect to the raw measurements and on the inverse analysis principle*, Trans Tech Publication (TTP),
Periodical Journal ISI Proceedings: Key Engineering Materials, vol. 554-557, pp. 1133-1146, 2013.
Indexat Web of Science, WOS: 000322092100128

C. Articles Published in National Journals Indexed in International Databases or Accredited by CNCSIS

- 5 articles published in the journal Revista Academiei Tehnice Militare, indexed in EBSCO, Ulrich's Periodicals Directory, and Google Scholar:

1. GRIGORE, L., ȘTEFAN, A., **BUCUR**, **F.**, VLĂDESCU, B., MOLDER, C., GORGOTEANU, D., *Considerations of Collision Avoidanceby a Maritime Robot,* Journal of Military Technology, vol. 6, no. 1, pp. 5-8, ISSN-L: 2601-6613, Jun. 2023.
2. **BUCUR**, **F.**, BARBU, C., ȚIGĂNESCU, T., *A research study regarding the determination and rating of the protection factor for tactical field autovehicles*, MTA Review, vol. XXV, no. 3, pp. 217-224, ISSN 1843-3391, Sept. 2015.
3. **BUCUR**, **F.**, ROTARIU, A., TRANĂ, E., RENCHEZ, B., *Numerical study of small-scale structures response on blast loadings*, MTA Review, vol. XXV, no. 3, pp. 321-330, ISSN 1843-3391, Sept. 2015.
4. TRANĂ, E., ROTARIU, A., **BUCUR**, **F.**, *Numerical simulation study on the ring fragmentation*, MTA Review, vol. XXV, no. 2, pp. 179-189, ISSN 1843-3391, Iun. 2015.
5. **BUCUR**, **F.**, BARBU, C., NĂSTĂSESCU, V., ROTARIU, A., TRANĂ, E., *Numerical analysis concerning the behavior of metallic plates subjected to blast load*, MTA Review, vol. XXIV, no. 4, pp. 159-176, ISSN 1843-3391, Dec. 2014.

6. Publications in the Proceedings of Leading International Conferences in the Field

1. ENACHE, A., ROTARIU, A.-N., MATACHE, L.-C., DÎRLOMAN, F.-M., **BUCUR, F**., DAN, A-I., CHIRIAC, O., *Manufacturing and testing of a small size explosive charge used to propell steel balls arranged in planar double layers,*
International Scientific Conference "Defense Technologies" DefTech 2025,
Shumen, Bulgaria, 24-25 September, 2025.

2. HURMUZACHE, A., **BUCUR, F.***, PUICĂ C., ROTARIU A., *Numerical Study on the Performance of a Ceramic/Kevlar 29 Fiber Ballistic Package Against Small-Caliber Kinetic Threats*,
The 12th International Conference on Structural Analysis of Advanced Materials (ICSAAM 2025),
Braşov, Romania, September 15-18, 2025.

3. SPOIALĂ, A., ROTARIU, A.N., MATACHE, L.C., TRANĂ, E., **BUCUR**, **F.**, *Numerically study for assessement of ballistic efficiency of high hardnes perforated plates with unconventional holes,*
21st International Conference on EXPERIMENTAL MECHANICS,
Italy – Bologna, 6-11th, July 2025.

4. BUCUR, **F.**, HALLER, L.-O., DIMA, S.-E., ROTARIU, A.-N., CÎRMACI-MATEI, M.-V., MIRCIOAGĂ, R., *Experimental assessment of ballistic protection configurations used to ensure the operational safety of outdoor shooting ranges,*
Provocări și Strategii în Ordinea și Siguranța Publică − Ediția a X-a, Academia De Poliție „Alexandru Ioan Cuza",
București, România, 12-13 December 2024.

5. BUCUR, **F.**, CÎRMACI-MATEI, M.-V., ROTARIU, A.-N., MATACHE, L.-C., HALLER, L., DIMA, S.-E., MIRCIOAGĂ, R., *Experimental and numerical study of high velocity impacts on ballistic protection configurations,*
International Scientific Conference "Defense Technologies" DefTech 2024,
Shumen, Bulgaria, 20-22 September, 2024.

6. ROTARIU, A., **BUCUR**, **F**., DÎRLOMAN, F., MALCIU A., SPOIALĂ A., *Using of the pre-notched composite plates in the delamination tests at low impact velocity,*
Joint event of the International Conference on the Dynamic Behaviour of Composites – DyCOMP and European Conference on Crashworthiness of Composite Structures – ECCCS,
Enna, Sicily, Italy, 3-5 September, 2024.

7. ROTARIU, A., MATACHE, L., **BUCUR**, **F**., TRANĂ, E., DÎRLOMAN, F., *The use of the necking profile on the determination of strains in a round specimen,*
3rd International Conference on Nonlinear Solid Mechanics (ICoNSoM 2024),
Cagliari, Sardinia, Italy, June 11-14, 2024.

8. MATACHE, L.C., ROTARIU, A.N., **BUCUR**, **F**., TRANĂ, E., *The dynamic response to low-velocity impact of thin aluminum plates coated with polyurea,*
3rd International Conference on Nonlinear Solid Mechanics (ICoNSoM 2024),
Cagliari, Sardinia, Italy, June 11-14, 2024.

9. CHIRIAC, O., ROTARIU, A.-N., **BUCUR**, **F.**, TRANĂ, E., *The application of Mott's distribution in the fragmentation of steel coaxial cylinders,*
33rd International Symposium on Ballistics, BALLISTICS 2023,
Bruges, Belgium, 16-20 October, 2023.

10. BURDUCEA, I., **BUCUR**, **F.***, PUICĂ, C., ROTARIU, A., *Numerical study on ballistic impact performance of bulletproof vest inserts,*
International Scientific Conference "Defense Technologies" DefTech 2023,
Shumen, Bulgaria, 27-29 September, 2023.

11. DUMITRU, I.-M., **BUCUR**, **F.***, ȘTEFAN, A., *On the analysis method for pressure tubes failure produced by environmental conditions,*
4th International Conference on Material and Structural Mechanics,
Marrakesh, Maroc, 24-26 May, 2023.

12. ROTARIU, A.-N., MATACHE, L-C., **BUCUR**, **F.**, DÎRLOMAN, F., *The influence of the elastic modulus on the simulation results of the polyurethane foam samples dynamic crush,*
4th International Conference on Material and Structural Mechanics,
Marrakesh, Maroc, 24-26 May, 2023.

13. MATACHE, L-C., ROTARIU, A.-N., **BUCUR**, **F.**, TRANĂ, E., PULPEA, B., BORȘ, R., *Thermal transfer analysis in classical weapon systems,*
4th International Conference on Material and Structural Mechanics,
Marrakesh, Maroc, 24-26 May, 2023.

14. VLĂDESCU, B., ȘTEFAN, A., **BUCUR**, **F**., *Aspecte legate de dinamica vehiculelor imersate tractate cu cablu*,
Provocări și Strategii în Ordinea și Siguranța Publică − Ediția a IX-a, Academia De Poliție „Alexandru Ioan Cuza",
Bucharest, Romania, May 24-25, 2023.

15. ROTARIU, A.-N., CHIRIAC, O., MATACHE, L.-C., **BUCUR**, **F.**, *2D numerical simulation of two metallic concentric tubes explosively-driven,*
25th Seminar New trends in research of energetic materials,
Pardubice, Czech Republic, 19-21 April, 2023.

16. **BUCUR**, **F.**, SPOIALĂ, A., ȘOMOIAG, P., *Review and performance analysis of the novel materials used in ballistic protection,*
9th International Conference on Materials Science and Technologies – RoMat 2022
Bucharest, Romania, November 24-25, 2022.

17. GRIGORE, L.-Ș., ȘTEFAN, A., **BUCUR**, **F.**, VLĂDESCU, B., *Collision avoidance considerations by a maritime robot,*
9th International Conference on Materials Science and Technologies – RoMat 2022
Bucharest, Romania, November 24-25, 2022.

18. ROTARIU, A.N., MATACHE, L.C, **BUCUR**, **F.**, PUICĂ, C., MALCIU, A., PULPEA, B., PREDESCU, I., *5.56 mm small-caliber bullet interaction with multilayered targets,*
9th International Conference on Materials Science and Technologies – RoMat 2022
Bucharest, Romania, November 24-25, 2022.

19. SAVASTRE, A., SAVA, A.-C., SURDU, G., MOLDOVEANU, C.-E., **BUCUR**, **F.**, *Experimental evaluation on the performances of shock wave absorption modules based on polyurethane foam composites,*
9th International Conference on Materials Science and Technologies – RoMat 2022
Bucharest, Romania, November 24-25, 2022.

20. ROTARIU, A.-N., CIRMACI-MATEI, M.-V., **BUCUR**, **F.**, MATACHE, L.-C., PULPEA, B., DÎRLOMAN, F., MALCIU, A., SAVA, A., *The conception of a non-standardized test for assessing the efficiency of the inner layer of the ballistic helmets,*
International Scientific Conference "Defense Technologies" DefTech 2022,
Shumen, Bulgaria, 28-30 September, 2022.

21. ROTARIU, A.-N., MATACHE, L., **BUCUR**, **F.**, PULPEA, B., DÎRLOMAN, F., TRANĂ, E., *Investigation on the delaminationof pre-notched UHMWPE composite plates at the low impact velocity,*
23rd European Conference on Fracture, (ECF23)
Funchal, Madeira, Portugal, 27 June-1 July, 2022.

22. ROTARIU, A., MATACHE, L., **BUCUR**, **F.**, DÎRLOMAN, F., TURTOI, P., ENESCU, C., TRANĂ, E., *Assessment of the Non-Newtonian Liquid Filled Cell Potential to Mitigate the Impact Force,*
19th International Conference on Experimental Mechanics,
Kraków, Poland, 17-21 July, 2022.

23. ROTARIU, A.-N., **BUCUR**, **F.**, PUICĂ, C., MALCIU, A., *Considerations regarding the potential of add-on armour with perforated plates,*
International Scientific Conference "Defense Technologies" DefTech 2021,
Shumen, Bulgaria, 6-8 October, 2021.

24. ROTARIU, A.-N., TRANĂ, E., **BUCUR, F.**, MATACHE, L., TURTOI, P., *Practical aspects of dynamic testing of the shock absorbing materials incorporable into individual combat equipment,*
International Scientific Conference "Defense Technologies" DefTech 2021
Shumen, Bulgaria, 6-8 October, 2021.

25. BUCUR, **F.**, ROTARIU, A., TRANĂ, E., TOADER, G., *Assessment of the impact loads measurement methods for bilayer thin targets,*
5th International Conference on Structural Integrity and Durability, **ICSID 2021,**
Dubrovnik, Croatia (online), September 7-10, 2021.

26. ROTARIU, A.-N., MATACHE, L., **BUCUR**, **F.**, DÎRLOMAN, F., *Adaptation of the compression shpb test for the Young's modulus calculus,*
5th International Conference on Structural Integrity and Durability, ICSID 2021,
Dubrovnik, Croatia (online), September 7-10, 2021.

27. BUCUR, **F.**, HADĂR, A., JIGA, G., BACIU, F., *Încercări experimentale privind comportamentul unor materiale compozite stratificate din UHMWPE/Experimental tests on the behavior of UHMWPE layered composites,*
Conferința Științifică de Toamnă a Academiei Oamenilor de Știință din România,
București, România (online), 23-27 Noiembrie, 2021.

28. ROTARIU, A.-N., MATACHE, L.-C., TRANĂ, E., **BUCUR**, **F.**, CIRMACI-MATEI, M.V., MITRICĂ, D., GEANTĂ, V., *Determination of the compression strength of HEA in high strain rates tests,*
International Scientific Conference Defense Technology Forum 2020,
Shumen, Bulgaria, 7-9 October, 2020.

29. ROTARIU, A.-N., TRANĂ, E., MATACHE, L., **BUCUR**, **F.**, *On determination of strain field in the necking section of a round specimen based on the measurement of the exterior necking profile,*
4th International Conference on Structural Integrity and Durability, ICSID 2020,
Dubrovnik, Croatia, September 15-18, 2020.

30. BUCUR, **F.**, ROTARIU, A., JIGA, G., BACIU, F., TRANĂ, E., *On the experimental testing procedures for ultra-high molecular weight polyethylene (UHMWPE) behaviour evaluation in static and dynamic regime*,
The 6th International Conference SEA-CONF,
Constanța, Romania (online), May 22-23, 2020.

31. ROTARIU, A.N., **BUCUR**, **F**., CIRMACI-MATEI, M.V., MATACHE, L.C., TRANĂ, E., *Development of the analytic relations for the propellant grain geometrical characteristics required for a maximum pressure plateau feature,*
The 2020 Spring International Conference on Defence Technology,
Nanjing, China (online), 20-24 April, 2020.

32. ȘTEFAN A., NEGRU A., **BUCUR F**., *Analytical Models for Determining the Normal Modes of Transversal Vibrations of a Cantilever Beam,*
TECHNIUM International Conference,
Constanța, România (online), December 15, 2019.

33. ROTARIU, A.-N., MATACHE, L., **BUCUR**, **F.**, CIRMACI-MATEI, M.V., MĂRMUREANU, M., TRANĂ, E., *Implementation of a Gumbel distribution function in interior ballistic calculations for deterred propellants,*
31st International Symposium on Ballistics, HICC,
Hyderabad, India, 4-8 November, 2019.

34. ROTARIU, A.-N., MATACHE, L., **BUCUR**, **F.**, *The mechanical characterization of light weight entropy alloys,*
29th International Workshop on Computational Mechanics of MATERIALS,
Dubrovnik, Croatia, September 15-18, 2019.

35. BUCUR, **F.,** ROTARIU, A.-N., TRANĂ, E., MATACHE, L.-C., *Experimental study regarding transferred impulse mitigation by perlite layer*,
ISER-33rd International Conference on Nanoscience, Nanotechnology & Advanced Materials (IC2NAM),
Dubai, United Arab Emirates, 5-6 June, 2016.

36. ROTARIU, A.-N., TRANĂ, E., ROTARIU, T., **BUCUR**, **F.**, *On the effect of reactive granular envelopes on blast parameters,*
The 2nd Conference Greener and Safer Energetic and Ballistic Systems,
Bucharest, Romania, May 26th-27th, 2016.

37. ȚIGĂNESCU, V., TRANĂ, E., LUPOAE, M., **BUCUR**, **F.**, VOICU, A., TOADER, G., *Numerical simulation of blast loaded Ti/Steel foam/Ti Sandwich Plate*,
19th International Seminar – New Trends in Research of Energetic Materials,
Pardubice, Czech Republic, April 20-22, 2016.

38. ROTARIU, A. TRANĂ, E., ROTARIU, T., **BUCUR**, **F.**, MATACHE, L., IORGA, O., BADEA, S., *The effect of an annular boric acid layer on the blast wave generated at explosive charge detonation*,
19th International Seminar – New Trends in Research of Energetic Materials,
Pardubice, Czech Republic, April 20-22, 2016.

39. BUCUR, **F.**, BARBU, C., *Unele aspecte privind factorul de protecție al autovehiculelor cu destinație pentru apărare și securitate,*
Conferința regională: impactul transformărilor socio-economice şi tehnologice la nivel naţional, european şi mondial,
Pitești, România, 25 Iunie 2015.

40. BUCUR, **F.**, ROTARIU, A., TRANĂ, E., MATACHE, L., BARBU, C. *Experimental study on blast effect upon small scalle structure,*
The 1st Conference Greener and Safer Energetic and Ballistic Systems,
Bucharest, Romania, May 22nd-23rd, 2015.

41. TRANĂ, E., ROTARIU, A., **BUCUR**, **F.**, *Numerical simulation study on the ring*, **The 1st Conference Greener and Safer Energetic and Ballistic Systems**, Bucharest, Romania, May 22nd-23rd, 2015.

42. ROTARIU, A., **BUCUR**, **F.**, TRANĂ, E., CÎRMACI-MATEI, M., MATACHE, L., *FEM analysis of material strain rate sensitivity influence on usability of small-scale structures in blast loads analysis*, **8th International Conference on Finite Differences, Finite Elements, Finite Volumes, Boundary Elements**, Rome, Italy, November 7-9, 2015.

43. ȚIGĂNESCU, V., ROTARIU, T., **BUCUR**, **F.**, VOICU, A., *Advances in the area of greener munitions*, **International Scientific Conference Defence Technology Forum 2015**, Shumen, Bulgaria, October 22-23, 2015.

44. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A., GAVRUS, A., BARBU, C., GUINES, D., *Experimental and numerical analysis concerning the behaviour of OL50 steel grade specimens coated with polyurea layer under dynamics loadings,* **DYMAT 2015 - 11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading**, Lugano, Switzerland, September 7-11, 2015.

45. **BUCUR**, **F.**, BARBU, C., NĂSTĂSESCU, V., *Numerical Modeling and Simulation of the Air Blast and its Effects on the Structures*, **The 1st International Conference NEW CHALENGES IN AEROSPACE SCIENCES,** Bucureşti, Romania, 7-8 November, 2013.

46. **BUCUR**, **F.**, *Numerical Study Regarding Behavior of Mettalic Plates with Different Shapes Subjected to Blast Load*, **The 19th International Conference The Knowledge-Based Organization (KBO)**, Sibiu, Romania, 13th-15th June, 2013.

47. GAVRUȘ, A., **BUCUR**, **F.**, ROTARIU, A., CĂNĂNĂU, S., *Analysis of metallic materials behavior during severe loadings using a FE modeling of the SHPB test based on a numerical calibration of elastic strains with respect to the raw measurements and on the inverse analysis principle*, **The 16th ESAFORM Conference on Material Forming (ESAFORM 2013)**, Aveiro, Portugal, April 22-24, 2013.

7. Alte lucrări și contribuții științifice

1. *Habilitation Thesis:* ***Experimental Research and Numerical Simulations Regarding the Specific Phenomena of Explosion Mechanics and Terminal Ballistics***

Doctoral School "Defense and security systems engineering, Military Technical Academy "Ferdinand I", 2024.

8. Research Projects

1. Project Director

Terminal Ballistics Research on Ballistic Impact Phenomena for Materials Used in Outdoor Shooting Ranges,

Contract No. A1844/05.03.2024, Beneficiary: Tactical Life S.R.L., 2024.

2. Project Team Member

• PN IV Programme – Solutions

Digital Combatant,
Contract No. 24 SOL/2024, UEFISCDI, 2024.

• European Funded Projects

Digital Competences for Improving Security and Defence Education (DIGICODE), Project Code: 2020-1-PL01-KA226-HE-096192-2023, Erasmus+ Strategic Partnership (KA226),
Coordinating Institution: Military University of Technology, Warsaw, Poland, 2020–2023.

European Common Technical Semester for Defence and Security (EuCTSDS), Project Code: 2020-1-RO01-KA203-0803752022, Erasmus+ Strategic Partnership (KA203),
Coordinating Institution: "Ferdinand I" Military Technical Academy, 2020–2022.

• PN IV – Innovation Partnership

Extended-Range Tandem Reactive Anti-Tank Ammunition (Thorn),
Contract No. 19 PTE/2025, UEFISCDI, 2025.

• PN III – Demonstrative Experimental Projects (PED)

High-Energy Solid Propellants Obtained by Additive Manufacturing (PropAM), Contract No. 668 PED/2022, UEFISCDI, 2022.

Multilayer Add-On Armor with Thick Obliquely Perforated Plates for Countering Small-Caliber Kinetic Threats (Armortrop),
Contract No. 402 PED/2020, UEFISCDI, 2020.

Explosive Fragmentation Combat Component with Enhanced Effect (BEHEWC), Contract No. 28 PED/2017, UEFISCDI, 2017.

• PN III – Transfer to Economic Operator (PTE)

Tandem Reactive EFP/TB Round for Portable Launchers (EFP/TB-RPG), Contract No. 84 PTE/2022, UEFISCDI, 2022.

Protective Helmets with Damping Components Made of Porous Materials Impregnated with Nanofluids (DAMPCEL),
Contract No. 44 PTE/2020, UEFISCDI, 2020.

• PNCDI 2017 – Complex Consortium Projects (PCCDI)

Individual and Collective Protection Systems for the Military Domain Based on High-Entropy Alloys (HEAPROTECT),
Contract No. 20 PCCDI/2018, UEFISCDI, 2018.

• PN III – Innovation Vouchers (CI)

Intelligent Monitoring System for Shielded Welding Processes Integrated in IoT Environments (SIWOT),
Contract No. 143 CI/2018, UEFISCDI, 2018.

• PN II – Partnerships Competition (2013–2014)

Anti-Explosion Protection System for Vehicle Equipment (CREWPROTECT), Contract No. 278/2014, UEFISCDI.

Small-Caliber Ballistic System Rapidly Convertible for Lethal and Non-Lethal Actions (CONPOSE),
Contract No. 297/2014, UEFISCDI.

Modular Composite Structures for Protection Against Improvised Explosive Devices (IEDPROTECT),
Contract No. 283/2014, UEFISCDI.

Deformable Structure Systems for Ballistic Protection of Armored Vehicles in Asymmetric Conflicts (ARMPROT),
Contract No. 305/2014, UEFISCDI.
Unconventional Solution for Reducing Risks Associated with Accidental Ammunition Activation During Transport (RTEXMUN),
Contract No. 193 CI/2013, UEFISCDI.

• Ministry of National Defence – Sectoral R&D Plan
Electromagnetic Pulse Ammunition,
Contract No. 2845/15.04.2024, 2024–2027.
Inverse Calculation Methods in Interior Ballistics and Improvement of Existing Numerical Methods (RECBALL), 2023–2026.
Research on the Behaviour of the 100 mm Anti-Tank Gun Model 1977 when Firing Slow-Rotation Cumulative Projectiles, 2019.
Technical Study on the Development of a 250 kg Guided Aerial Bomb for F-16, MiG-21 Lancer and IAR-99 Aircraft, 2019.

• Industrial / Third-Party Contracts
Thermobaric Bomb for 120 mm Mortar Launcher,
Contract No. A9055/03.10.2024, Beneficiary: Carfil S.A., Brașov.
120 mm Dual-Effect Mortar Bomb (EFP and Explosive) with LASER Guidance Module Integration,
Contract No. A9056/03.10.2024, Beneficiary: Carfil S.A., Brașov.
Enhancement of Fragmentation Effect for Cylindrical Mortar Bombs Equipped with Proximity Fuze,
Contract No. A9057/03.10.2024, Beneficiary: Carfil S.A., Brașov.

20.02.2026

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