ACADEMIA TEHNICĂ MILITARĂ „FERDINAND I”
Facultatea de Sisteme Integrate de Armament, Geniu și Mecatronică
Mr. prof. univ. dr. ing. Florina BUCUR

LISTA DE LUCRĂRI ŞTIINŢIFICE

1. Lista celor mai relevante 10 lucrări științifice

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.
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2. **BUCUR**, **F.**, MATACHE, L.-C.,
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   Experimental tests related to the multi-layered ballistic panel behaviour under blast and fragments impact,
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4. CHIRIAC, O.-G., **BUCUR**, **F.**, ROTARIU, A.-N., TRANĂ, E.,
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5. ROTARIU, A., TRANĂ, E., MATACHE, L., CIRMACI-MATEI, M.-V., SANDU, S., MOLDOVEANU, C.-E., **BUCUR**, **F.***,
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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,
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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,
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8. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A.,
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9. GAVRUȘ, A., **BUCUR**, **F.**, ROTARIU, A., CĂNĂNĂU, S.,
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10. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A., GAVRUȘ, A., BARBU, C., GUINES, D.,
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2. Teza de doctorat

1. ***„Contribuţii la îmbunătăţirea factorului de protecţie a blindajelor pentru autovehicule militare”,*** Școala Doctorală de Sisteme Mecanice şi Aerospaţiale pentru Apărare și Securitate, Inginerie Civilă și Industrială, Academia Tehnică Militară, 2015.

3. Brevete de invenție și alte titluri de proprietate industrială

4. Cărţi și capitole în cărţi publicate în ultimii 10 ani

1. **Florina BUCUR**, Cristian-Emil MOLDOVEANU, Adrian-Nicolae ROTARIU, *Modelarea și simularea fenomenelor aerodinamice cu aplicații în domeniul sistemelor de armament*, Editura Academiei Tehnice Militare „Ferdinand I", ISBN 978-973-640-324-8, 140 pg., 2020.
2. Cristian-Emil MOLDOVEANU, **Florina BUCUR**, Pamfil ȘOMOIAG, *Aerodinamica proiectilelor, bombelor și rachetelor*, Editura Academiei Tehnice Militare „Ferdinand I", ISBN 978-973-640-325-5, 180 pg., 2020.
3. Amado ȘTEFAN, **Florina BUCUR**, Andrei INDREȘ, *Rezistența Materialelor. Îndrumar pentru efectuarea lucrărilor de laborator în domeniul elastic,* Editura Academiei Tehnice Militare „Ferdinand I", ISBN 978-973-640-314-9, 148 pg., 2020.
4. Pamfil ȘOMOIAG, Cristian-Emil MOLDOVEANU, **Florina BUCUR**, Andrei MANDACHE, *Calculul și construcția armamentului de artilerie. Îndrumar de laborator pentru proiectarea legăturilor elastice,* Editura Academiei Tehnice Militare „Ferdinand I", ISBN 978-973-640-318-7, 84 pg., 2020.
5. **Florina BUCUR**, *Testarea și evaluarea la scară redusă a structurilor supuse încărcărilor prin explozie*, Editura Academiei Tehnice Militare, ISBN 978-973-640-242-5, 150 pg., 2015.

5. Articole publicate în reviste din fluxul științific internațional principal

A. Articole publicate în reviste internaţionale cotate ISI

- *1 articol publicat în revista cotată WOS, de rang JCR - Q2, Materials:*

1. CHIRIAC, O., **BUCUR, F.**, ROTARIU, A.-N., TRANĂ, E., *The Application of Mott's Distribution in the Fragmentation of Steel Coaxial Cylinders*,
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- *1 articol publicat în revista cotată WOS, de rang JCR - Q1, 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,*
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- *1 articol publicat în revista cotată WOS, 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*,
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- 6 articole publicate în revista cotată WOS, Materiale Plastice:

1. **BUCUR**, **F.**, MATACHE, L.-C., *Assessment of Multilayered Plates with Hyperelastic Coatings Subjected to Dynamic Loadings by Impact at Low Velocities*,
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4. TRANĂ, E., **BUCUR**, **F.**, ROTARIU, A., *On the fragmentation of explosively-driven plastic/steel layered cylinders,*
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5. **BUCUR**, **F.**, TRANĂ, E., ROTARIU, A., *Numerical and experimental study on the locally blast loaded polyurea coated steel plates*,
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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*,
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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.
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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,*
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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,*
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2. CHIRIAC, O., ROTARIU, A.-N., **BUCUR**, **F.**, *The application of Mott's distribution in the fragmentation of steel coaxial cylinders,*
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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*,
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7. MATACHE, L., PUICĂ, C., ROTARIU, A., TRANĂ, E., **BUCUR**, **F.**, *Numerical simulation of military ground vehicle's response to mine-blast load*,
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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*,
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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),
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- 5 articole publicate în revista Revista Academiei Tehnice Militare, indexată E B S C O, Ulrich's Periodicals Directory și 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. Publicații apărute în volumele ale principalelor conferințe internaționale de specialitate

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*
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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),
Brașov, 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,*
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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),
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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,*
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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,*
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11. DUMITRU, I.-M., **BUCUR**, **F.***, ȘTEFAN, A., *On the analysis method for pressure tubes failure produced by environmental conditions,*
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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,*
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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,*
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17. GRIGORE, L.-Ș., ȘTEFAN, A., **BUCUR**, **F.**, VLĂDESCU, B., *Collision avoidance considerations by a maritime robot,*
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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,*
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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,*
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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,*
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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,*
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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,*
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23. ROTARIU, A.-N., **BUCUR**, **F.**, PUICĂ, C., MALCIU, A., *Considerations regarding the potential of add-on armour with perforated plates,*
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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,*
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25. BUCUR, **F.**, ROTARIU, A., TRANĂ, E., TOADER, G., *Assessment of the impact loads measurement methods for bilayer thin targets,*
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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,*
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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,*
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7. Alte lucrări și contribuții științifice

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