

# LISTA DE LUCRĂRI

## CS II dr. ing. Liviu Cristian MATACHE

### Listă de lucrări reprezentative

1. Rotariu, A.N., Trana, E., **Matache, L.C.**, Homutescu, T., „*A HiLo interior ballistic model based on the hypothesis of gases adiabatic transformation in the high pressure chamber*”, CASE STUDIES IN THERMAL ENGINEERING Volume 45, Article Number 102928, DOI 10.1016/j.csite.2023.102928, ISSN: 2214-157X.
2. Rotariu, AN, Trana, E, **Matache, L**, „*Young's Modulus Calculus Using Split Hopkinson Bar Tests on Long and Thin Material Samples*”, MATERIALS Volume 15, Issue 9, Article Number: 3058, DOI: 10.3390/ma15093058, ISSN: 1996-1944.
3. **Matache, LC**, Chereches, T, Lixandru, P, Mazuru, A, Mitrica, D, Trana, E, Somoiaș, P, Rotariu, AN, „*Determination of a methodology for formulating constituent models of high entropy alloys*”, IOP Conf. Series: Materials Science and Engineering Volum 591, Articol număr 012058, DOI: 10.1088/1757-899X/591/1/012058, ISSN 1757-8981.
4. **Matache, LC**, Lixandru, P, Chereches, T, Mazuru, A, Chereches, D, Geanta, V, Voiculescu, I, Trana, E, Rotariu, AN, „*Determination of material constants for high strain rate constitutive model of high entropy alloys*”, IOP Conf. Series: Materials Science and Engineering Volum 591, Articol număr 012057, DOI: 10.1088/1757-899X/591/1/012057, ISSN 1757-8981.
5. Petre, R, Zecheru, T, Petrea, N, Ginghina, R, Sandu, S, Muresan, M, **Matache, LC**, Sava, AC, Neatu, F, „*Synthesis and Mechanical Properties of Polyurea-Based Hybrid Composites for Ballistic Individual Protection*”, Materiale Plastice, Volume 55 Issue 5, Pages: 315-319, 2018, ISSN 2668-8220, ISSN 0025-5289.
6. Alil LC, Arrigoni M; Badea S; Ginghina R; **Matache LC**; Mostovykh P., „*Ballistic study of Tensylon (R)-based panels*”, EXPRESS POLYMER LETTERS Volume: 12 Issue: 6 Pages: 491-504 DOI:10.3144/expresspolymlett.2018.42, 2018, ISSN: 1788-618X.
7. V. Geantă, I. Voiculescu, R. Stefănoiu, T. Chereches, T. Zecheru, **L. Matache** and A. Rotariu, „*Dynamic Impact Behaviour of High Entropy Alloys Used in the Military Domain*”, IOP Conf. Series: Materials Science and Engineering Volume 374, Article number 012041, DOI: 10.1088/1757-899X/374/1/012041, ISSN 1757-8981.
8. **Matache, LC**, Alil, LC, Rotariu, T, Sandu, SM, Puica, C, Barbu, C, Zecheru, T, „*Numerical validation of a constitutive model for UHMWPE-based composites at high strain rates*”, UPB Scientific Bulletin, Series B: Chemistry and Materials Science Volume 80 Issue 3, Pages: 229-246, 2018, ISSN 1454-2331.
9. Geanta, V; Chereches, T; Lixandru, P.; Voiculescu, I.; Stefanoiu, R.; Dragnea, D.; Zecheru, T.; **Matache, L.**, „*Virtual testing of composite structures made of high entropy alloys and steel*”, METALS Volume: 7 Issue: 11 Article Number: 496 DOI: 10.3390/met7110496, 2017, ISSN: 2075-4701
10. Waldemar A. Trzcinski, Qi-Long Yan, Stanislaw Cudzilo, Eugen Trană, **Liviu Matache**, Traian Rotariu, Robert Matyas, Svatopluk Zeman, Michael Gozin, „*Thermobaric effects formed by aluminium foils enveloping cylindrical charges*”, Combustion and Flame, ISSN 0010-2180, vol. 166, pp 148-157, 2016, DOI 10.1016/j.combustflame.2016.01.010

## Teza de doctorat

Contribuții la studiul undelor de șoc în aer generate pe timpul tragerilor cu sisteme de armament cu țeavă, Academia Tehnică Militară, 2010

## Cărți publicate

1. **L.C. Matache**, A.N. Rotariu, T. Homutescu, F. Dîrloman, Simularea numerică în rezolvarea problemelor de balistică interioară, 2023, ISBN 978-973-640-339-2, 171 p.
2. **L.C. Matache**, A.N. Rotariu, Simularea numerica a fenomenelor dinamice cu viteze mari de deformare. Aplicatii de balistica terminală, 2021, ISBN 978-973-640-328-6, 138p.
3. A.N. Rotariu, **L.C. Matache**, Metode de calcul în balistica interioară. București, Editura Academiei Tehnice Militare, 2015, ISBN 978-973-640-241-8. 160 p.
4. G.B. Pulpea, D. Pulpea, **L.C. Matache**, Sisteme pirotehnice de mascare, 2019, ISBN 978-973-640-297-5.
5. M.V. Cîrmaci, **L.C. Matache**, Proiectarea sistemelor de armament: aplicații în balistica interioară și tranzițională. București, Editura Academiei Tehnice Militare, 2010, ISBN 978-973-640-192-3.

## Articole publicate în reviste din fluxul științific internațional principal

1. Rotariu, A.N., Trana, E., **Matache, L.C.**, Homutescu, T., „*A HiLo interior ballistic model based on the hypothesis of gases adiabatic transformation in the high pressure chamber*”, CASE STUDIES IN THERMAL ENGINEERING Volume 45, Article Number 102928, DOI 10.1016/j.csite.2023.102928, ISSN: 2214-157X.
2. Pulpea, D, Pulpea, BG, **Matache, L**, Rotariu, A, Toader G, Rotariu, T, Dirloman, F, Somoiaș, P, Podaru, A, Ungureanu, MI, „*Mechanical properties of peelable coatings employed for CBRN decontamination*”, UPB Scientific Bulletin, Series B: Chemistry and Materials Science Volume 85 Issue 1, Pages: 153-164, 2023, ISSN 1454-2331.
3. Rotariu, AN, Trana, E, **Matache, L**, „*Young's Modulus Calculus Using Split Hopkinson Bar Tests on Long and Thin Material Samples*”, MATERIALS Volume 15, Issue 9, Article Number: 3058, DOI: 10.3390/ma15093058, ISSN: 1996-1944.
4. Ungureanu, Mihai-Ionuț, **Matache, Liviu-Cristian**, Rotariu, Traian, Barbu, Cristian, Dîrloman, Florin-Marian, „*High blast explosive composition for annular thermobaric ammunitions*”, UPB Scientific Bulletin, Series B: Chemistry and Materials Science Volume 83 Issue 4, Pages: 263-272, 2021, ISSN 1454-2331.
5. Rotariu, A, Trana, E, **Matache, L**, Cirmaci-Matei, MV, Sandu, S, Moldoveanu, CE, Bucur, F, „*Experimental Study on the Dynamic Response of Polyurethane/fly Ash Ceramic Foam*”, Materiale Plastice, Volume 58 Issue 1, Pages: 106-112, 2021, DOI: 10.37358/MP.21.1.5450, ISSN 2668-8220, ISSN 0025-5289.
6. Mircioaga, RM, **Matache, LC**, Rotariu, A, Cirmaci, M, Somoiaș, P, Haller, L Rancea, A, „*Burning law determination using numerical simulation of propellants burning in the closed vessel*”, IOP Conf. Series: Materials Science and Engineering Volume 916, Article number 012067, DOI: 10.1088/1757-899X/916/1/012067, ISSN 1757-8981.

7. Bucur, F, Rotariu, A, **Matache, L**, Baciuc, F, Jiga, G, Trana, E, „*Experimental and Numerical Study on the Behavior of Dyneema (R) HB26 Composite in Compression*”, Materiale Plastice, Volume 58 Issue 1, Pages: 106-112, 2021, DOI: 10.37358/MP.21.1.5450, ISSN 2668-8220, ISSN 0025-5289.
8. Rotariu AN, Bucur F, Cirmaci-Matei MV, **Matache LC** and E Trana, „*Development of the analytic relations for the propellant grain geometrical characteristics required for a maximum pressure plateau feature*”, Journal of Physics: Conference Series Volume 1507, Issue 27, Article number 022025, DOI: 10.1088/1742-6596/1507/2/022025 ISSN 17426588.
9. Rotariu, AN, **Matache, L**; Bucur, F, Cirmaci-Matei, MV, Marmureanu, M, Trana, E, „*Implementation of a Gumbel distribution function in interior ballistic calculations for deterred propellants*”, UPB Scientific Bulletin, Series B: Chemistry and Materials Science Volume 82 Issue 1, Pages: 167-178, 2020, ISSN 1454-2331.
10. Trana, E, Rotariu, AN, Rotariu, T, Pulpea, BG, Moldoveanu, CE, Bucur, F, **Matache, LC**; Gozin, M, „*Experimental study on aluminum foils use in blast enhancement application*”, PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE Volume 20 Issue 3, Pages: 275-282, 2019, ISSN : 1454-9069.
11. Geanta, V, Voiculescu, I, Chereches, T, Zecheru, T, **Matache, L**, Rotariu, A, „*Behavior to Dynamic Loads of Multi-layer Composite Structures*”, Materiale Plastice, Volum 56 Issue 2, Pages: 460-465, 2019, ISSN 2668-8220, ISSN 0025-5289.
12. **Matache, LC**, Chereches, T, Lixandru, P, Mazuru, A, Mitrica, D, Trana, E, Somoia, P, Rotariu, AN, „*Determination of a methodology for formulating constituent models of high entropy alloys*”, IOP Conf. Series: Materials Science and Engineering Volum 591, Articol număr 012058, DOI: 10.1088/1757-899X/591/1/012058, ISSN 1757-8981.
13. **Matache, LC**, Lixandru, P, Chereches, T, Mazuru, A, Chereches, D, Geanta, V, Voiculescu, I, Trana, E, Rotariu, AN, „*Determination of material constants for high strain rate constitutive model of high entropy alloys*”, IOP Conf. Series: Materials Science and Engineering Volum 591, Articol număr 012057, DOI: 10.1088/1757-899X/591/1/012057, ISSN 1757-8981.
14. Petre, R, Zecheru, T, Petrea, N, Ginghina, R, Sandu, S, Muresan, M, **Matache, LC**, Sava, AC, Neatu, F, „*Synthesis and Mechanical Properties of Polyurea-Based Hybrid Composites for Ballistic Individual Protection*”, Materiale Plastice, Volume 55 Issue 5, Pages: 315-319, 2018, ISSN 2668-8220, ISSN 0025-5289.
15. Alil LC, Arrigoni M; Badea S; Ginghina R; **Matache LC**; Mostovykh P., „*Ballistic study of Tensylon (R)-based panels*”, EXPRESS POLYMER LETTERS Volume: 12 Issue: 6 Pages: 491-504 DOI:10.3144/expresspolymlett.2018.42, 2018, ISSN: 1788-618X.
16. V. Geantă, I. Voiculescu, R. Stefănoiu, T. Chereches, T. Zecheru, **L. Matache** and A. Rotariu, „*Dynamic Impact Behaviour of High Entropy Alloys Used in the Military Domain*”, IOP Conf. Series: Materials Science and Engineering Volume 374, Article number 012041, DOI: 10.1088/1757-899X/374/1/012041, ISSN 1757-8981.
17. **Matache, LC**, Alil, LC, Rotariu, T, Sandu, SM, Puica, C, Barbu, C, Zecheru, T, „*Numerical validation of a constitutive model for UHMWPE-based composites at high strain rates*”, UPB Scientific Bulletin, Series B: Chemistry and Materials Science Volume 80 Issue 3, Pages: 229-246, 2018, ISSN 1454-2331.
18. Geanta, V; Chereches, T; Lixandru, P.; Voiculescu, I.; Stefanoiu, R.; Dragnea, D.;

- Zecheru, T.; **Matache, L.**, „*Virtual testing of composite structures made of high entropy alloys and steel*”, METALS Volume: 7 Issue: 11 Article Number: 496 DOI: 10.3390/met7110496, 2017, ISSN: 2075-4701
19. Geanta, V; Chereches, T; Lixandru, P.; Voiculescu, I.; Stefanoiu, R.; Dragnea, D.; Zecheru, T.; **Matache, L.**, „*Simulation of Impact Phenomena on the Composite Structures Containing Ceramic Plates and High Entropy Alloys*”, IOP Conference Series-Materials Science and Engineering Volume: 209, Article Number: 012043, DOI: 10.1088/1757-899X/209/1/012043, 2017, ISSN: 1757-8981.
  20. Rotariu Adrian, Trană Eugen, Dima Cornel, Enache Constantin, Timplaru Florin, **Matache Liviu**, „*Uninstrumented measurement method for granular porous media blast mitigation assessment*”, Experimental Techniques, ISSN 0732-8818 (Online ISSN: 1747-1567), vol.40, issue 3, pp. 993-1003, 2016, DOI 10.1007/s40799-016-0099-4.
  21. Trzcinski, Waldemar A., Cudzilo, Stanislaw, Paszula, Jozef, Eugen, Trana, Liviu, Matache, Traian, Rotariu, Gozin, Michael, „*Thermobaric effects formed by aluminium foils enveloping cylindrical charges*”, Combustion and Flame, ISSN 0010-2180, vol. 166, pp 148-157, 2016, DOI 10.1016/j.combustflame.2016.01.010.
  22. Eugen TRANĂ, Adrian-Nicolae Rotariu, Paul Lixandru, **Liviu-Cristian Matache**, Constantin Enache, Teodora Zecheru, „*Experimental and numerical investigation on 6082 O temper aluminium alloy cartridge tubes drawing*”, Journal of Materials Processing Technology, ISSN 0924-0136, vol. 216, pp 59-70, 2015, DOI 10.1016/j.jmatprotec.2014.08.32
  23. ALIL, LC, **MATACHE, L**, BADEA, SM, ILIE, F, „*Small scale test method to determine the capacity of the ballistic protection materials to mitigate the blast overpressure*”, KNOWLEDGE BASED ORGANIZATION INTERNATIONAL CONFERENCE, Volume 21, Pages: 764-769, 2015.
  24. Zecheru T., Rotariu T., **Matache L.-C.**, Sava A.-C., Lungu R.-M., Voicu A., Coşereanu L., „*Synthesis and applications of 3-nitro-1,2,4-triazol-5-one based hybrid energetic compositions*”, Revista de Chimie, 65 (10), pp. 1186-1189, 2014, ISSN: 0034-7752.
  25. Țigănescu V., Rotariu T., Eşanu S.R., Zecheru T., Florea C., **Matache L.**, „*Studies regarding the effectiveness of stabilizer “revival” process on old propellants*”, Revista de Chimie, 65 (9), PP. 1042-1045, 2014.
  26. Alil, LC, **Matache, LC**, Rogoz, A, Safta, I, „*Simulation model of a vertically launched body and the propelling gas dynamics*”, 18TH INTERNATIONAL CONFERENCE - THE KNOWLEDGE-BASED ORGANIZATION: APPLIED TECHNICAL SCIENCES AND ADVANCED MILITARY TECHNOLOGIES, CONFERENCE PROCEEDING 3, Pages: 9-14, 2012.
  27. **Matache, L**, Rotariu, A, Paschia, L, Safta, I, „*A dimensional analysis of transducers mounts used in measurements of impulsive loads of structures*”, 17TH INTERNATIONAL CONFERENCE - THE KNOWLEDGE-BASED ORGANIZATION: APPLIED TECHNICAL SCIENCES AND ADVANCED MILITARY TECHNOLOGIES, CONFERENCE PROCEEDING 3, Pages: 110-114, 2011.
  28. Timplaru, F, Rotariu, A, Trana, E, **Matache, L**, „*Experimental researches on attenuation properties of blast wave through perlite*”, 16TH INTERNATIONAL CONFERENCE THE KNOWLEDGE-BASED ORGANIZATION: APPLIED TECHNICAL SCIENCES AND ADVANCED MILITARY TECHNOLOGIES, CONFERENCE PROCEEDINGS 3, Pages: 336-340, 2010.

29. Rotariu, A, Trana, E, Timplaru, F, **Matache, L**, Badea, S, Chereches, T, „*On attenuation properties of blast wave through perlite*”, MODTECH 2010: NEW FACE OF TMCR, PROCEEDINGS, Pages: 499-452, 2010.
30. **Matache L.**, Zecheru T., Iorga O., Enache Constantin, Şomoiaş P., „*Laboratory Scale Synthesis of Keto-RDX*”, MTA Review, vol. XXV, no. 2, Iunie 2015, ISSN: 1843-3391
31. **Liviu Matache**, Adrian Rotariu, Teodora Zecheru, Tudor-Viorel Țigănescu, Traian Rotariu, Constantin Enache, „*A solution for the interior ballistics fundamental problem of weapon systems equipped with new energetic materials*”, MTA Review, Vol. XXV, No. 3, Sep. 2015, ISSN: 1843-3391.
32. **Liviu Matache**, Constantin Puica, Adrian Rotariu, Eugen Trana, Florina Bucur, „*Numerical simulation of military ground vehicle's response to mine-blast load*”, UPB Scientific Bulletin, Series D: Mechanical Engineering Volume 80, Issue 4, 2018, ISSN 1454-2358.
33. Bogdan Pulpea, Andreea-Elena Voicu, **Liviu Matache**, Laviniu Haller, Andrei Mandache-Dodoiu, Raluca Ginghina *Numerical Simulation of Interior Ballistics for Pyrotechnics Systems*, MTA Review, Vol. XXVII, No. 1, Jun. 2017.
34. **L.-C. Matache**, T. Zecheru, A. Rotariu, T. Cherecheş, *Experimental determination of blast waves parameters generated by firing of large-caliber gun systems*, International Journal of Modern Manufacturing Technologies II (1), 49-54, 2010.
35. M. Bugaru, T. Cherecheş, **L. Matache**, A. Sava, T. Zecheru, *Dynamic Behavior of Helical Gear-Pair Systems with Backlash and Periodic Variation of Mesh Stiffness and Mesh Damping, Part I: Computation of Amplitude and Phase Angle*, Machine – Building and Technosphere of the XXI Century, 2008, Sevastopol, Ucraina.

**Publicații în extenso, apărute în lucrări ale principalelor conferințe internaționale de specialitate**

1. **Liviu MATACHE**, Adrian ROTARIU, Florina BUCUR, Eugen TRANĂ, Bogdan PULPEA, Raluca BORȘ, „*Thermal transfer analysis in classical weapon systems*”, 4<sup>th</sup> International Conference on Material and Structural Mechanics 2023, Marrakech, 24 – 26 mai 2023.
2. Adrian ROTARIU, **Liviu MATACHE**, Florina BUCUR, Florin DIRLOMAN, „*The influence of the elastic modulus on the simulation results of the polyurethane foam samples dynamic crush*” 4<sup>th</sup> International Conference on Material and Structural Mechanics 2023, Marrakech, 24 – 26 mai 2023.
3. Ioana Alexandra Dan, **Liviu Cristian Matache**, Florin Marian Dîrloman, Adrian Nicolae Rotariu, Razvan Marian Mircioaga, „*Design of solid composite propellants through modeling and numerical simulation*”, 25<sup>th</sup> International Seminar New trends in research of energetic materials, Pardubice, Czech Republic, 19 – 21 Aprilie, 2023.
4. Adrian Nicolae Rotariu, Octavian Chiriac, **Liviu Cristian Matache**, Florina Bucur, „*2D numerical simulation of two metallic concentric tubes explosively-driven*”, 25<sup>th</sup> International Seminar New trends in research of energetic materials, Pardubice, Czech Republic, 19 – 21 Aprilie, 2023.
5. **Liviu C. Matache**, Andrada M. Runceanu, Adrian N. Rotariu, Florin M. Dirloman, Răzvan M. Mircioagă, Cristian Moldoveanu, Pamfil Şomoiaş, „*Assesment of a new*

- thermomaric solid composition used in EFP-TB tandem ammunition*", Defense Technology Forum 2020, Bulgaria, Shumen, 2022.
6. Rotariu Adrian-Nicolae, Cirmaci-Matei Marius-Valeriu, Bucur Florina, **Matache Liviu**, Pulpea Bogdan, Florin Dirloman, Adrian Malciu, Sava Alin, „*The conception of a non-standardized test for assessing the efficiency of the inner layer of the ballistic helmets*”, Defense Technology Forum 2020, Bulgaria, Shumen, 2022.
  7. **L. C. Matache**, A. N. Rotariu, F. Dîrloman, M. Ungureanu, F. I. Pană, The influence of metal discs inserted in explosives on EFP's generation, 6th International Conference on Structural Integrity and Durability, September 19–23, 2022, Dubrovnik.
  8. **L. C. Matache**, A. N. Rotariu, E. Trană, M. Ungureanu, F. Dîrloman and F. I. Pană, „*Assesment of a new thermomarc-EFP tandem charge concept*”, 19th International Conference on Experimental Mechanics, Cracovia, Polonia, 17-21 Iulie, 2022.
  9. A. Rotariu, **L. Matache**, F. Bucur, F. Firloman, P. Turtoi, C. Enescu and E. Trană, „*Assesment of the non-newtonian liquid filled cell potential to mitigate the impact force*”, 19th International Conference on Experimental Mechanics, Cracovia, Polonia, 17-21 Iulie, 2022.
  10. **Matache Liviu-Cristian**, Rotariu Adrian-Nicolae, Dîrloman Florin-Marian, Pană Florina-Iuliana, „*Numerical simulation of EFP impact on armored steel plate*”, 23<sup>rd</sup> European Conference on Fracture, Funchal, Madeira, Portugalia 27 iunie – 1 iulie, 2022.
  11. Rotariu Adrian, **Matache Liviu**, Bucur Florina, Pulpea Bogdan, Dirloman Florin Trană Eugen, „*Investigations on the delamination of pre-notched UHMWPE composite plates at the low impact velocity*”, 23<sup>rd</sup> European Conference on Fracture, Funchal, Madeira, Portugalia 27 iunie – 1 iulie, 2022.
  12. R M Mircioagă, **L C Matache**, A Rotariu, M Cîrmaci, P Şomoiaş, L Haller, A Rancea, „*Burning law determination using numerical simulation of propellants burning in the closed vessel*”, ModTech 2020 International Conference, România (on-line).
  13. Rotariu Adrian-Nicolae, **Matache Liviu-Cristian**, Trana Eugen, Bucur Florina, Cirmaci-Matei Marius-Valeriu, Mitrică Dumitru, Geantă Victor, „*Determination of the compression strength of HEA in high strain rates tests*”, Defense Technology Forum 2020, Bulgaria, Shumen, 2020.
  14. Rotariu A.N., Bucur F., Cirmaci-Matei M.V., **Matache L.C.** and Trana E., *Development of the analytic relations for the propellant grain geometrical characteristics required for a maximum pressure plateau feature*, 2020 International Conference on Defence Technology, China, (on-line).
  15. A. Rotariu, E. Trana, **L. Matache**, F Bucur, *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, Croația, Dubrovnik, 2020.
  16. Rotariu Adrian-Nicolae, **Matache Liviu**, Bucur Florina, Marius Cirmaci, Marmureanu Marius, Trana Eugen, „*Implementation of a Gumbel distribution function in interior ballistic calculations for deterred propellants*”, 31<sup>st</sup> International Symposium on Ballistics, India, Hyderabad, 2019
  17. A. Rotariu, **L. Matache**, F. Bucur, *The mechanical characterization of light weight high entropy alloys*, 29th International Workshop on Computational Mechanics of Materials, Dubrovnik, Croatia, 2019.

18. **Matache, LC**, Chereches, T, Lixandru, P, Mazuru, A, Mitrica, D, Trana, E, Somoiaș, P, Rotariu, AN, „*Determination of a methodology for formulating constituent models of high entropy alloys*”, ModTech 2019 International Conference, România, Iași, 2019.
19. **LC, Matache**, P. Lixandru, T. Cherecheș, A. Mazuru, D. Cherecheș, V. Geantă, I. Voiculescu, E. Trană, A.N. Rotariu, „*Determination of material constants for high strain rate constitutive model of high entropy alloys*”, ModTech 2019 International Conference, România, Iași, 2019.
20. V Geantă, I Voiculescu, R Ștefănoiu, T Chereches, T Zecheru, L Matache, **A Rotariu**, *Dynamic Impact Behaviour of High Entropy Alloys Used in the Military Domain*, International Conference on Innovative Research - ICIR EUROINVENT, 2018.
21. Ovidiu IORGA, Octavian ORBAN, **Liviu MATACHE**, Cristiana EPURE, „*Design and Testing of an Unguided Rocket with Thermobaric Warhead for Multiple Launcher System*”, 23th International Conference KNOWLEDGE-BASED ORGANIZATION, Sibiu 2017.
22. Laurențiu Anghel, Teodora Zecheru, **Liviu-Cristian Matache**, Gabriel Epure, Gabriel Iosif, Eugen Trană, Traian Rotariu, Edina Rusen, „*Flexible liner shaped charges for underwater cutting*”, New trends in research of energetic materials Pardubice, Czech Republic, 2017
23. Bucur Florina, Rotariu Adrian, Trană Eugen, **Matache Liviu**, „*Experimental study regarding transferred impulse mitigation by perlite layer*”, Greener ISER-33rd International Conference on Nanoscience, Nanotechnology & Advanced Materials (IC2NAM), Dubai UAE, 5-6 iunie 2016.
24. Rotariu Adrian, Trană Eugen, Rotariu Traian, Bucur Florina, **Matache Liviu**, Iorga Ovidiu, Badea Simona, „*The effect of an annular boric acid layer on the blast wave generated at explosive charge detonation*”, New Trends in Research of Energetic Materials 2016, Pardubice, Republica Ceha, 2016.
25. Ovidiu Iorga, **Liviu Matache**, Gabriel Epure, Adrian Rotariu, Tudor V. Tiganescu, Traian Rotariu, „*Experimental techniques for measuring the overpressure generated by thermobaric devices*”, New trends in research of energetic materials Pardubice, Czech Republic, 2016.
26. O. Iorga, **L. Matache**, N. Petrea, O. Orban, T.-V. Țigănescu, T. Rotariu, „*Theoretical and experimental aspects regarding aero-dispersed explosive systems*”, International Conference Greener and Safer Energetic and Ballistic Systems GSEBS 2016, Military Technical Academy, Bucharest, Romania, 26-27 May 2016.
27. **L. Matache**, T. Zecheru, S. Badea, R. Ștefănoiu, „*Physical model of ceramic-high entropy alloys-based layered structures for ballistic protection*”, International Conference Greener and Safer Energetic and Ballistic Systems, Military Technical Academy, Bucharest, ROMANIA, 22-23 May 2015.
28. **L.-C. Matache**, T. Zecheru, C. Enache, A. Rotariu, T. Rotariu, E. Trană, „*A theoretical method of propellants ballistic parameters calculus*”, International Conference Greener and Safer Energetic and Ballistic Systems, Military Technical Academy, Bucharest, ROMANIA, 22-23 May 2015.
29. Luminița-Cristina Alil, **Liviu Matache**, Simona Maria Badea, Florin Ilie, „*Small Scale Test Method To Determine The Capacity Of The Ballistic Protection Materials To Mitigate The Blast Overpressure*”, 21th International Conference KNOWLEDGE-BASED ORGANIZATION, Sibiu 2015.

30. A. Rotariu, F. Bucur, E. Trană, M. Cîrmaci-Matei, **L. Matache**, „*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, Italia, Roma, 2015.
31. Badea Simona, **Matache Liviu**, Rotariu Adrian, Ilie Florin, „*Numerical simulation of explosion in an enclosure open to design an appropriate protective structures*”, International Conference Knowledge Based Organization, 2015.
32. Simona Maria BADEA, **Liviu Cristian MATACHE**, Mihaela MUREȘAN, „*Multi-Layer Structures Based on Polymers, Designed to Blast and Ballistic Protection*”, 19th International Scientific Conference, Knowledge Based Organization, Sibiu 2013.
33. **Liviu-Cristian Matache**, Ioan Safta, Adrian Rotariu, Eugen Trana, Teodora Zecheru, „*Munitions neutralisation using EFP-generating devices*”, New trends in research of energetic materials Pardubice, Czech Republic, 2013.
34. Teodora Zecheru, Traian Rotariu, **Liviu-Cristian Matache**, Ioan Safta, Petrisor-Zamora Iordache, Rodica-Mihaela Lungu, Razvan Petre, „*NTO-graphene nanocomposites*”, New trends in research of energetic materials Pardubice, Czech Republic, 2013.
35. Alil LC., **Matache L.C.**, Rogoz A., Safta I., „*Simulation model of a vertically launched body and the propelling gas dynamics*,” 18th International Conference - The Knowledge-Based Organization: Applied Technical Sciences And Advanced Military Technologies, 2012.
36. **Matache L.**, Rotariu A., Trana E., Paschia L., Timplaru F., Badea S., Safta I., „*A dimensional analysis of transducer mounts used in measurements of impulsive loads of structures*”, Proceedings of the 17th International Scientific Conference Knowledge-Based Organization, România, Sibiu, 2011.
37. Rotariu A., Trana E., Timplaru F., **Matache L.**, Badea S., Chereches T., „*On attenuation properties of blast wave through perlite*”, International Conference ModTech: NEW FACE OF TMCR, 2010.
38. Timplaru, F.; Rotariu, A.; Trana, E.; **Matache, L.**, „*Experimental researches on attenuation properties of blast wave through perlite*”, 16th International Conference The Knowledge-Based Organization: Applied Technical Sciences And Advanced Military Technologies, 2010.
39. **Liviu MATACHE** Simona BADEA Cristina ALIL, Ioan SAFTA „*Characterization of the ballistic protection materials behavior, within development phase, to dynamic loads*”, Conference ModTech 2010.
40. Luminița-Cristina Alil, **Liviu Cristian Matache**, Simona Maria Badea, „*Ballistic characterization of ceramic matrix composite armour materials*”, Conference ModTech 2010.
41. **Matache L.**, Cherecheș T., Zecheru T., Rotariu A., „*Experimental determination of blast waves generated during firings large-caliber gun systems*”, International Conference „Modern Technologies in Machine Manufacturing Technology – TMCM”, 20-22 May, 2010 Slanic-Moldova, Romania.
42. **Matache L.**, Cherecheș T., Rotariu A., Sava A. „*Modeling flow into the barrel – a method of solving the directly problem of the inner ballistics*”, Construcțiile de mașini și tehnosfera în secolul al XXI-lea – A XVI Conferință cu participare internațională, 14-19 septembrie 2009, Sevastopol, Ucraina.



43. **Matache L.**, Rotariu A., Cîrmaci M., „*Determination of ballistic features for the gun powders*”, International Scientific and Technical Conference, Donetsk-Sevastopol, Ukraine, September 2005
44. **L. Matache**, „*The Fifth Generation Warfare – a Possibility for the Future*”, NATO project SfP-982063 International Conference „Business and Science for Security and Defence Industrial R&D”, Sofia, Bulgaria, 14-15 May 2009.
45. Cherecheș T., Trană E., Rotariu A., **Matache L.**, *Mathematic models and computing programs regarding internal ballistics*, The XII International Conference „Machine building and technosphere of the XXI century”, Ucraina, Donetsk, 2005.

#### Alte lucrări

1. Tiganescu Tudor Viorel, Costache Victor, **Matache Liviu**, Trană Eugen, Ciobanu Emanuela, Leatu Cristina, Florea Catalin, Vitalaru Alexandru, „*Numerical simulation of fluid flow in CoCr multilayer modulators and the impact of flow lamination on the blood vessel wall affected by aneurism*”, Journal of Biotechnology, vol.208 supplement, pp.S25, 2015 (European Biotechnology Congress, 2015, Bucharest), dx.doi.org/10.1016/j.jbiotec.2015.06.065.
2. **L.-C. Matache**, T. Zecheru, A. Rogoz, PG-7TB thermobaric grenade rocket for AG-7 grenade launcher, Rev. Tehnica Militară nr. 1, 55-59, 2012.
3. M. Petrișor, **L. Matache**, T. Zecheru, R. Dumitrescu, G. Iosif, C. Epure, F. Ciochină, Produse de camuflaj, Revista Tehnica Militară 2016.
4. M. Petrișor, **L. Matache**, T. Zecheru, R. Dumitrescu, G. Iosif, C. Epure, F. Ciochină, Analize în infraroșu prin metode spectrofotometrice pentru elemente de mediu natural, Revista Tehnica Militară 2016.

