

LISTA DE LUCRĂRI

Prof. Univ. Dr. Ing. Adrian-Nicolae ROTARIU

A. Listă de lucrări reprezentative

1. **Rotariu, Adrian-Nicolae**, Eugen Trană, and Liviu Matache. "Young's Modulus Calculus Using Split Hopkinson Bar Tests on Long and Thin Material Samples, Materials, 15, no. 9: 3058. <https://doi.org/10.3390/ma15093058>, 2022.
2. **Adrian Rotariu** , Eugen Trana, Liviu Matache , Marius-Valeriu Cirmaci-Matei, Simona Sandu, Cristian-Emil Moldoveanu, Florina Bucur, Experimental Study on the Dynamic Response of Polyurethane/fly Ash Ceramic Foam, Mater. Plast., 58 (1), 2021, 106-112
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, ISSN 1454-2331, Volume 82, Issue 1, pp 167-178, 2020
4. **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, IOP Conference Series Journal of Physics 1507:022025, 2020, doi:10.1088/1742-6596/1507/2/022025,
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6. Eugen TRANĂ, Florina BUCUR, **Adrian N. ROTARIU**, On the fragmentation of explosively-driven plastic/steel layered cylinders, Materiale Plastice, ISSN 0025-5289 (On-line ISSN 2668-8220), vol.55 (4), pp 521-523, 2018
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, Volume 80, Issue 4, 2018, pp 153-162
8. Gabriela Toader, Edina Rusen, Mircea Teodorescu, Aurel Diacon, Paul O. Stanescu, Celina Damian, Traian Rotariu, **Adrian Rotariu**, New polyurea MWCNTs nanocomposite films with enhanced mechanical properties, Journal of Applied Polymer Science, ISSN 0021-8995, eISSN: 1097-4628, vol.134, nr. 28, 2017
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10. **Adrian ROTARIU**, Florina BUCUR, Gabriela TOADER, Marin LUPOAE, Alin SAVA, Pamfil ȘOMOIAG, Marius CIRMACHI-MATEI, Experimental Study on Polyurea Coating Effects on Deformation of Metallic Plates Subjected to Air Blast Loads, Materiale Plastice, ISSN 0025-5289 (On-line ISSN 2668-8220), vol. 53, no. 4, pp 670-674, 2016

B. Teza de doctorat

DETERMINAREA EXPERIMENTALĂ A PROPRIETĂȚILOR MECANICE ALE MATERIALELOR ÎN REGIM DINAMIC, Academia Tehnică Militară, 2007

C. Cărți publicate în edituri naționale recunoscute

1. L.C. Matache, **A.N. Rotariu**, Simularea numerică a fenomenelor dinamice cu viteze mari de deformare. Aplicații de balistică terminală, București, Editura Academiei Tehnice Militare, 2021, ISBN 978-973-640-328-6. 138 p.
2. 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, 2020, ISBN 978-973-640-324-8
3. Eugen Trană, **Adrian-Nicolae Rotariu**, Bogdan Pulpea, „Calculul și construcția munițiilor. Îndrumar de laborator”, Editura Academiei Tehnice Militare, 2019, ISBN 978-973-640-302-6
4. **Adrian-Nicolae Rotariu**, „Balistică Terminală”, Editura Academiei Tehnice Militare, București 2017, ISBN 978-973-640-270-8.
5. **Adrian-Nicolae Rotariu**, Liviu-Cristian Matache, Metode de calcul în balistica interioară, Ed. Academiei Tehnice Militare, 2017, ISBN 978-973-640-241-8
6. **Adrian-Nicolae Rotariu**, Comportamentul materialelor la viteze mari de deformare. Modelare și Testare, Ed.Univers Științific, 2008, ISBN 978-973-8936-95-9

D. Articole publicate în reviste din fluxul științific internațional principal

1. Mircioaga, RM; Reynier, B; Prisecaru, T; **Rotariu, AN**; Dîrloman, FM; Matache, LC; Haller, L, *Advancing ignition techniques for energetic materials: A comparative study of direct laser ignition and laser-driven flyer methods*, Defence Technology, Volume 55, Page 180-192, 2026
2. Ropotoae, AI, Munteanu, C, Lupu, FC, Istrate, B, Benchea, M, **Rotariu, AN**, Spoiala, A, *Resulted Mechanical and Microstructural Properties of Ballistic Protection Materials for Bulletproof Vest Applications Using Plasma Jet Thermal Spray Coatings*, CRYSTALS, Volume15, Issue11, DOI10.3390/cryst15110977, 2025
3. Trana, E, Haller, L, Dirloman, FM, Dobrin, G, Toader, G, **Rotariu, A**, Brincoveanu, O, *Experimental and numerical evaluation of REGUPOL E43 mechanical and ballistic properties*, Scientific Reports, Volume15, Issue1, DOI10.1038/s41598-025-08210-z, 2025
4. Alexandru, M, Iorga, OG, Toader, G, Epure, C, Munteanu, M, **Rotariu, AN**, Marmureanu, M, Noja, GF, Diacon, A, Tiganescu, TV, Dirloman, FM, *FDM-3D printing of thermoplastic composites with high energetic solids content designed for gun propellants*, Defence Technology, Volume 49, Page165-179, DOI10.1016/j.dt.2025.02.024, 2025
5. Dîrloman FM, **Rotariu AN**, Rotariu T, Noja GF, Ginghină RE, Zvîncu ND, *Ballistic and thermal characterisation of greener composite solid propellants based on phase stabilized ammonium nitrate*, Case Studies in Thermal Engineering, 54, 103987, 2024
6. Chiriac O-G, Bucur F, **Rotariu A-N**, Trană E, *The Application of Mott's Distribution in the Fragmentation of Steel Coaxial Cylinders*, Materials, 2023; 16(17):5783. <https://doi.org/10.3390/ma16175783>

7. **Rotariu, Adrian-Nicolae**, Eugen Trană, Homutescu Tiberiu and Liviu Matache, 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, May 2023, 102928
8. Puica, CC, Trana, E, Pupaza, C, Turtoi, P, **Rotariu, AN**, Pana, IF, Experimental and Numerical Study on Perforated Plate Mitigation Capacity to Near-Field Blasts, Materials, Volume 16, Issue 12, DOI 10.3390/ma16124255, 2023
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13. **Adrian Rotariu**, Eugen Trana, Liviu Matache, Marius-Valeriu Cirmaci-Matei, Simona Sandu, Cristian-Emil Moldoveanu, Florina Bucur, Experimental Study on the Dynamic Response of Polyurethane/fly Ash Ceramic Foam, Mater. Plast., 58 (1), 2021, 106-112
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16. 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, ISSN 2067-3604, Vol. XII, No. 1/2020, pp 7-15,
17. Bucur F., **Rotariu A.**, Matache L., Baciuc F., Jiga G., Trană E., Experimental and Numerical Study on the Behavior of HB26 Dyneema Composite in Compression, Materiale Plastice, ISSN 0025-5289 (On-line ISSN 2668-8220), vol. 57 (2), pp. 113-122), 2020,

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19. Florina BUCUR, Eugen TRANĂ, **Adrian ROTARIU**, Numerical and experimental study on the locally blast loaded polyurea coated steel plates, *Materiale Plastice*, ISSN 0025-5289 (On-line ISSN 2668-8220), Vol.56 (3), pp. 492-499, 2019
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33. Florina Bucur, Cristian Barbu, Vasile Năstăsescu, **Adrian Rotariu**, Eugen TRANĂ, Numerical Analysis Concerning the Behavior of Metallic Plates Subjected to Blast Load, MTA review, vol. XXIV, no.4/2014, pp 159-176, ISSN 1843-3391
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40. Tudor Cherecheș, Olimpiu Maier, **Adrian Rotariu**, Eugen Trană, Experimental analysis of penetration mechanism of high velocity projectiles (APFSDS), Buletinul Institutului Politehnic din Iași 2004, Tomul L (LIV), Fasc. V b, 2004, pp 289-292, ISSN 1011-2855
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E. Publicații în extenso, apărute în lucrări ale principalelor conferințe internaționale de specialitate

1. A. Spoiala, **A. N. Rotariu**, L. C. Matache, E. Trana, F. Bucur, NUMERICALLY STUDY FOR ASSESSEMENT OF BALLISTIC EFFICIENCY OF HIGH HARDNES PERFORATED PLATES WITH UNCONVENTIONAL HOLES, *21st International Conference on Experimental Mechanics, Bologna, Italy, 6-11 July, 2025*
2. Alexandru MARIN, Ovidiu George IORGA, Gabriela TOADER, Cristiana EPURE, Mihail MUNTEANU, **Adrian Nicolae ROTARIU**, Marius Ionut MARMUREANU, Gabriel Flavius NOJA, Aurel DIACON, Tudor Viorel TIGANESCU, Florin Marian DIRLOMAN, **FDM - 3D PRINTING OF THERMOPLASTIC COMPOSITES WITH HIGH ENERGETIC SOLIDS CONTENT DESIGNED FOR GUN PROPELLANTS**, *Proceedings of the 34th International Symposium on Ballistics, Jacksonville, Florida, 19-23 mai 2025*
3. L. C. Matache, M. I. Marmureanu, **A. N. Rotariu**, A. Braic, F. I. Pana, D. A. A. Pirvoi, P. Somoiaș, *Numerical simulation assessment of erosive burning in solid propellant rocket engines*, 34th International Symposium On Ballistics, Jacksonville, USA
4. Enache Alexandru-Adrian, **Rotariu Adrian-Nicolae**, Matache Liviu-Cristian, Dirloman Florin-Marian, Bucur Florina, Dan Ioana-Alexandra, Chiriac Octavian-Gabriel, **MANUFACTURING AND TESTING OF A SMALL SIZE EXPLOSIVE CHARGE USED TO PROPELL STEEL BALLS ARRANGED IN PLANAR DOUBLE LAYERS**, Defence Technology Forum, Shumen, 2025
5. Andrei-Mihai Braic, Liviu-Cristian Matache, **Adrian Rotariu**, Dana A.-A. Pîrvoi, *Numerical study regarding the functioning of solid rocket motor using 3D printed grain*, 27th International Seminar- New Trends in Research of Energetic Materials - NTREM 2025
6. Ioana-Alexandra Dan, Florin-Marian Dirloman, **Adrian Rotariu**, Liviu-Cristian Matache, Traian Rotariu, *Study on performance and safety characteristics of multilayer composite propellants*, 27th International Seminar- New Trends in Research of Energetic Materials - NTREM 2025
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8. Razvan Marian Mircioaga, **Rotariu Adrian**, Bogdan Pulpea, Study of the gun powders ignition by laser beam in closed vessels, NTREM 2024
9. Cosmina Maria Aonicesei, Liviu Cristian Matache, **Adrian Nicolae Rotariu**, Andea Alexandra Pîrvoi, Razvan Marian Mircioaga, Assesment of a new solid thermobaric composition used for warheads loading, a 26-a conferință „New Trends in Research of Energetic Materials” (NTREM) în perioada 17 – 19.04.2024 la Universitatea din Pardubice, Cehia
10. Dan Andrea Alexandra Pîrvoi, Liviu Cristian Matache, **Adrian Nicolae Rotariu**, Cosmina Maria Aonicesei, Razvan Marian Mircioaga, The influence of magnesium liner on artillery shell explosive disposal, a 26-a conferință „New Trends in Research of Energetic Materials” (NTREM) în perioada 17 – 19.04.2024 la Universitatea din Pardubice, Cehia
11. Adrian Nicolae Rotariu, Florin Marian Dirloman, Bucur Florina, Matache Liviu, Trana Eugen, THE USE OF THE NECKING PROFILE ON THE DETERMINATION OF STRAINS IN A ROUND SPECIMEN, **3rd International Conference on Nonlinear Solid Mechanics 2024, Cagliari**
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13. Cristiana Epure, Ovidiu Iorga, **Adrian Rotariu**, Mihail Munteanu, Alexandru Marin, *Experimental research regarding the potential use of 1,3,5-Trinitro-1,3,5-triazinane (RDX) and (1,7)-Polyoxepan-2-one (PCL) mixture as a composite energetic material*

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14. **Rotariu Adrian**, Matache Liviu, Bucur Florina, Dirloman Florin, *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 2023 24-26.05.2023, Marrakech, Maroc
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22. Liviu C. Matache, Andrada M. Runceanu, **Adrian N. Rotariu**, Florin M. Dirloman, Răzvan M. Mircioagă, Cristian Moldoveanu, Pamfil Șomoiag, ASSESMENT OF A NEW THERMOMARIC SOLID COMPOSITION USED IN EFP-TB TANDEM AMMUNITION, Defense Technology Forum 2022, Bulgaria, Shumen, 2022
23. **Rotariu Adrian**, Trana Eugen, Bucur Florina, Matache Liviu, Petrica Turtoi Practical aspects of dynamic testing of the shock absorbing materials incorporable into individual combat equipment, Defense Technology Forum 2021, Bulgaria, Shumen, 2021

24. **Rotariu Adrian**, Bucur Florina, Constantin Puica, Adrian Malciu, Considerations regarding the potential of add-on armour with perforated plates, Defense Technology Forum 2021, Bulgaria, Shumen, 2021
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