Lista de lucrări

Funcție, NUME, Prenume
Conferențiar BATALU Nicolae Dan

I. TEZA DE DOCTORAT (A)

T1. **Teza de doctorat (T) cu titlul** "*Cercetări privind echilibrele fazice, structura și proprietățile unor aliaje de titan cu memoria formei, aplicabile în ingineria medicală*", *Universitatea Politehnica din București*, diploma cu seria D, nr. 0002622, din 06.05.2005, emisă conform Ordin de Ministru nr. 3956/25.04.2005

II. CĂRŢI PUBLICATE (B)

B – Cărţi / cursuri (manuale) pentru uzul studenților, publicate la edituri recunoscute

B1. N. Popescu, **Dan Batalu**. *Introducere în știința materialelor. Elemente de teoria științei materialelor (I)*, Politehnica Press, 2009, 127 p, ISBN: 978-606-515-066-9.

B2. N. Popescu, **Dan Batalu**. *Introducere în știința materialelor. Materiale ceramice, carbonice, polimerice și compozite (II)*, Politehnica Press, 2011, 149 p, ISBN: 978-606-515-271-7.

B3. **Dan Batalu**. *Proiectare asistată de calculator cu AutoCAD. Aplicații în proiectarea implanturilor medicale,* Politehnica Press, 2014, 259 p, ISBN: 978-606-515-561-9.

B4. **Dan Batalu.** *Proiectare avansată 3D cu Inventor Professional.* Politehnica Press, 2021, 195 p, ISBN: 978-606-515-985-3.

B5. **Dan Batalu.** *Analiza cu element finit în Inventor Nastran.* Politehnica Press, 2022, 177 p, ISBN: 978-606-515-996-9.

III. ALTE MATERIALE PUBLICATE

I - Culegeri şi îndrumare de laborator publicate la edituri cu ISBN

I1. **Dan Batalu**. *Ghid de proiectare a implanturilor medicale*, Politehnica Press, 2015, 119 p, ISBN: 978-606515-601-2.

IV. ARTICOLE / STUDII IN EXTENSO PUBLICATE (C) Reviste de specialitate de circulaţie internaţională recunoscute (cotate / indexate WoS)

C1. **D. Batalu**, H. Guoqiu, A. Aloman, L. Xioashan, Z. Zhihua **(5)**. *Determination of some mechanical properties of TiNi (50.6 at. % Ni) shape memory alloy using dynamic mechanical analysis and tensile tests.* Journal of Optoelectronics and Advanced Materials. Vol. 8, nr. 2, 2006, p. 694 – 698: WOS:000237001000062 (FI 2021 = 0.5, Q4).

C2. C. NASTASE, A. DUMITRU, F. NASTASE, A. MOROZAN, S. VULPE, **D. Batalu (6)**. *Comparative study of deep-coating and plasma processing PMMA thin films.* Journal of Optoelectronics and Advanced Materials. Vol. 12, nr. 4, 2010, p. 944 – 947: WOS:000278330500032 (FI 2021 = 0.5, Q4).

C3. **D. Batalu**, D. Bojin, B. Ghiban, G. Aldica, P. Badica (5). *Corrosion behavior of pristine and added MgB_2 in Phosphate Buffered Saline Solution*. 2012, IOP Conf. Ser.: Mater. Sci. Eng., vol. 40, #012032: p. 1-6, ISSN 1757-899X: WOS:000312413700032 (FI=0).

C4. G. Aldica, **D. Batalu**, S. Popa, I. Ivan, P. Nita, Y. Sakka, O. Vasylkiv, L. Miu, I. Pasuk, P. Badica **(10)**. *Spark plasma sintering of MgB_2 in the two-temperature route.* Physica C, vol. 477, 2012, p. 43-50: WOS:000303113200008 (FI 2021 = 1.534, Q4).

C5. A.C. Nechifor, V. Panait, L. Naftanaila, **D. Batalu**, S.I. Voicu **(5)**. *Simmetrically polysulfone membranes obtained by solvent evaporation using carbon nanotubes as additives. Synthesis, characterization and applications.* Digest journal of nanomaterials and

biostructures, vol. 8, no. 2, 2013, p. 875-884: WOS:000322737500042 (FI 2021 = 0.899, Q4).

C6. **D. Batalu**, G. Aldica, S. Popa, L. Miu, M. Enculescu, R.F. Negrea, I. Pasuk, P. Badica **(8)**. *High magnetic field enhancement of the critical current density by Ge, GeO_2 and $Ge_2C_6H_{10}O_7$ additions to MgB_2.* Scripta Materialia, vol. 82, 2014, p. 61-64: WOS:000336702500016 (FI 2021 = 6.291, Q1).

C7. G. Aldica, S. Popa, M. Enculescu, **D. Batalu**, L. Miu, M. Ferbinteanu, P. Badica **(7)**. *Addition of Ho_2O_3 of different types to MgB_2 in the ex-situ Spark Plasma Sintering: Simultaneous control of the critical current density at low and high magnetic fields*. Materials Chemistry and Physics, vol. 146, no. 3, 2014, p. 313-323: WOS:000336694300017 (FI 2021 = 4.778, Q2).

C8. **D. Batalu**, A.M. Stanciuc, L. Moldovan, G. Aldica, P. Badica **(5)**. *Evaluation of pristine and Eu_2O_3-added MgB_2 ceramics for medical applications: hardness, corrosion resistance, cytotoxicity and antibacterial activity*. Materials Science and Engineering: C, vol. 42, 2014, p. 350-361: WOS:000340687400045 (FI 2021 = 8.457, Q1).

C9. Batalu D., Aldica G., Badica P. (3) *Composites of MgB_2 - rare-earth-oxides: fabrication by spark plasma sintering and functional properties*. 20th INTERNATIONAL CONFERENCE ON COMPOSITE MATERIALS, 2015, WOS:000614628003094 (FI=0).

C10. **D. Batalu**, G. Aldica, M. Burdusel, S. Popa, M. Enculescu, I. Pasuk, D. Miu, P. Badica **(8)**. *Ge-Added MgB_2 Superconductor Obtained by Ex Situ Spark Plasma Sintering.* Journal of Superconductivity and Novel Magnetism, vol. 28, nr. 2, 2015, p. 531-534: WOS:000349350100048 (FI 2021 = 1.675, Q4).

C11. **D. Batalu**, G. Aldica, S. Popa, A. Kuncser, V. Mihalache, P. Badica **(6)**. *GeO_2-added MgB_2 superconductor obtained by Spark Plasma Sintering.* Solid State Sciences, vol. 48, 2015, p. 23–30: WOS:000363347800006 (FI 2021 = 3.752, Q2).

C12. **D. Batalu**, G. Aldica, P. Badica **(3)**. $Ge_2C_6H_{10}O_7$-added MgB_2 *Superconductor Obtained by Ex-Situ Spark Plasma Sintering*. IEEE Transactions on Applied Superconductivity, vol. 26, no. 3, 2016, #7100104: p. 1-4: WOS:000372783600001 (FI 2021 = 1.949, Q3).

C13. **D. Batalu**, A. Paun, M. Ferbinteanu, G. Aldica, A.M. Vlaicu, V.S. Teodorescu, P. Badica (**7**). *Thermal analysis of repa-germanium (Ge-132)*. Thermochimica Acta, vol. 644, 2016, p. 20-27: WOS:000389116100004 (FI 2021 = 3.378, Q2).

C14. Burdușel M, Ionescu AM, Grigoroșcuță M, **Batalu D**, Enculescu M, Popa S, Mihalache V, Aldica G, Badica P **(9)**. Powder-in-tube tapes of MgB_2 in Fe-sheath processed by ex-situ spark plasma sintering. UPB Scientific Bulletin Series BChemistry and Materials Science, vol. 79, nr. 2, p. 155-172, 2017: WOS:000405523600015 (FI=0).

C15. G. Aldica, C. Matei, A. Paun, **D. Batalu**, M. Ferbinteanu, P. Badica **(6)**. *Thermal analysis on $Ge_2C_6H_{10}O_7$-doped MgB_2.* Journal of Thermal Analysis and Calorimetry, vol. 127, issue 1, 2017, pp. 173-179: WOS:000392337000019 (FI 2021 = 4.755, Q1).

C16. Monica Ilis, **Dan Batalu**, Iuliana Pasuk, Viorel Circu **(4)**. *Cyclometalated Palladium (II) metallomesogens with Schiff bases and N-benzoyl thiourea derivatives as co-ligands*. Journal of Molecular Liquids, vol. 233, issue 1, 2017, pp. 45-51: WOS:000401202500007 (FI 2021 = 6.633, Q1).

C17. Miculescu F., Mocanu A.C., Dascalu C.A., Maidaniuc A., **Batalu D.**, Berbecaru A., Voicu S.J., Miculescu M., Thakur V.K., Ciocan L.T. **(10)**. *Facile synthesis and characterization of hydroxyapatite particles for high value nanocomposites and biomaterials*. VACUUM, vol. 146, 2017, pp. 614-622: WOS:000416184600080 (FI 2021 = 4.11, Q2).

C18. Solodky I, Bogomol I, Loboda P, **Batalu D**, Vlaicu AM, Badica P **(6)**. *Floating zone partial re-melting of B_4C infiltrated with molten Si*. Ceramics International, vol. 43, nr. 17, 2017, p. 14718-14725: WOS:000413175300022 (FI 2021 = 5.532, Q1).

C19. Miculescu F, Maidaniuc A, Miculescu M, **Batalu ND**, Ciocoiu RC, Voicu SI, Stan GE, Thakur VK (**8**). *Synthesis and Characterization of Jellified Composites from Bovine Bone-*

Derived Hydroxyapatite and Starch as Precursors for Robocasting. ACS OMEGA, 2018, vol. 3, nr. 1, p. 1338-1349: WOS:000427933200143 (FI 2021 = 4.132, Q2).

C20. **Dan Batalu**, T. Nakamura, M. Enculescu, S. Popa, I. Pasuk, G. Aldica, Alina M. Ionescu, P. Badica (**8**). *A Comparative Study of Ge-Based Organometallic Additions to MgB_2*. IEEE Transactions on Applied Superconductivity, vol. 28, nr. 4, 2018, #7100104, p. 1-4 (FI 2021 = 1.949, Q3).

C21. P. Badica, **D. Batalu**, M. Burdusel, M.A. Grigoroscuta, G.V. Aldica, M. Enculescu, R.A. Gabor, Z.Y. Wang, R.X. Huang, P.F. Li (**10**). *Compressive properties of pristine and SiC-Te-added MgB_2 powders, green compacts and spark-plasma-sintered bulks*, CERAMICS INTERNATIONAL, 2018, vol. 44, nr. 9, p. 10181-10191: WOS:000431470200021 (FI 2021 =5.532, Q1).

C22. **BATALU D**. et al (**5**). *NiTi coated with oxide and polymer films in the in vivo healing processes*, JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY-JMR&T, vol. 8, nr. 1, p. 914-922, 2019: WOS: 000467081300099 (FI 2021 = 6.267, Q1).

C23. Gozzelino L, Gerbaldo R, Ghigo G, Laviano F, Torsello D, Bonino V, Trucatto M, **Batalu D**, Grigoroscuta MA, Burdusel M, Aldica GV, Badica P (**12**). *Passive magnetic shielding by machinable MgB2 bulks: measurements and numerical simulations.* SUPERCONDUCTOR SCIENCE & TECHNOLOGY, vol. 32, nr. 3, #034004, 2019: WOS: 000458129500002 (FI 2021 = 3.482, Q2).

C24. LI X., […], **BATALU D.** (**5**) *Microstructure and Magnetic Properties of Mn55Bi45 Powders Obtained by Different Ball Milling Processes*, METALS, vol. 9, nr. 4, #441, 2019: WOS: 000467637000058 (FI 2021 = 2.695, Q2).

C25. Xiang Z, Wang X, Song YM, Yu LZ, Cui EB, Den BW, Batalu D, Lu W (**8**). *Effect of cooling rates on the microstructure and magnetic properties of MnAl permanent magnetic alloys.* JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol. 475, p. 479-483, 2019: WOS: 000458152000069 (FI 2021 = 3.097, Q2).

C26. YOKOYAMA K, OKA T, BERGER K, DORGET R, KOBLISCHKA M, GRIGOROSCUTA MA, BURDUSEL M, **BATALU ND**, ALDICA GV, BADICA P, SAKAI N, MURALIDHAR M, MURAKAMI M (**13**). *Investigation of flux jumps during pulsed field magnetization in graphene-added MgB_2 bulks*, JOURNAL OF PHYSICS CONFERENCE SERIES, vol. 1559, #012080, 2020: WOS: 000558737600080 (FI = 0)

C27. FRONE Adriana Nicoleta, **BATALU DAN**, CHIULAN IOANA, OPREA Madalina, GABOR Raluca Augusta, NICOLAE Cristian Andi, RADITOIU Valentin, TRUSCA Roxana-Doina, PANAITESCU Denis Mihaela (**9**). *Morpho-Structural, Thermal and Mechanical Properties of PLA/PHB/Cellulose Biodegradable Nanocomposites Obtained by Compression Molding, Extrusion, and 3D Printing*, NANOMATERIALS, vol. 10, nr. 1, #51, 2020: WOS: 000516825600051 (FI 2021: 5.719, Q1).

C28. **BATALU ND**, ALDICA GV, BURDUSEL M, GRIGOROSCUTA MA, PASUK I, KUNCSER A, IONESCU AM, P. BADICA (**8**). *Enhanced critical current density at high magnetic fields in MgB_2 with Ga/In acetylacetonate processed by spark plasma sintering*, JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY – JMR&T, vol. 9, nr. 3, p. 3724-3733, WOS: 000557894400004 (FI 2021: 6.267, Q1)

C29. BADICA P, ALDICA GV, GRIGOROSCUTA MA, BURDUSEL M, PASUK I, **BATALU ND**, BERGER K, KOBLISCHKA VA, KOBLISCHKA MR (**9**). *Reproducibility of small $Ge_2C_6H_{10}O_7$-added MgB_2 bulks fabricated by ex situ Spark Plasma Sintering used in compound bulk magnets with a trapped magnetic field above 5 T*, SCIENTIFIC REPORTS, vol. 10, nr. 1, #10538, 2020: WOS: 000548359400011 (FI 2021: 4.996, Q2).

C30. MIU L, IONESCU AM, MIU D, BURDUȘEL M, BADICA Petre, **BATALU ND**, CRIȘAN A. (**7**) *Second magnetization peak, rhombic-to-square Bragg vortex glass transition, and intersecting magnetic hysteresis curves in overdoped BaFe2(As1-xPx)(2) single crystals*, SCIENTIFIC REPORTS, vol. 10, nr. 1, #17274, 2020: WOS: 000582679600008 (FI 2021: 4.996, Q2).

C31. XIANG Zhen, HUANG C, SONG YM, DENG BW, ZHANG X, ZHU XJ, **BATALU DAN**, TUTUNARU O, LU Wei (**9**). *Rational construction of hierarchical accordion-like Ni@porous carbon nanocomposites derived from metal-organic frameworks with enhanced microwave absorption*, CARBON, vol. 167, pp. 364-377, 2020: WOS: 000565276400002 (FI 2021: 11.307, Q1).

C32. Wang TL, Lin C, **Batalu D**, Hu JZ, Lu W (5). *Tunable Microstructure and Morphology of the Self-Assembly Hydroxyapatite Coatings on ZK60 Magnesium Alloy Substrates Using Hydrothermal Methods*, Coatings, vol. 11, nr. 1, #8, 2021: WOS:000610006100001 (FI 2021: 3.236, Q2).

C33. I. Gheorghe, I. Avram, **D. Batalu** et al. (**24**). *In vitro evaluation of MgB_2 powders as novel tools to fight fungal biodeterioration of heritage buildings and objects*. Frontiers in Materials, vol. 7, 2021, #601059: WOS:000615911800001 (FI 2021: 3.985, Q2).

C34. P. Badica, A. Alexandru-Dinu, M. Grigoroscuta, C. Locovei, A. Kuncser, C. Bartha, G. Aldica, M. Negru, **D. Batalu**, N. Cruceru, I. Savulescu (11). *Kaolin clay pottery discovered in the Roman city of Romula (Olt County, Romania)*. Journal of Archaeological Science – Reports, vol. 36, 2021, #102899: WOS:000639285000005 (FI = 0).

C35. P. Badica, **N.D. Batalu**, M.C Chifiriuc et al. (**19**). *MgB_2 powders and bioevaluation of their interaction with planktonic microbes, biofilms, and tumor cells*. JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY – JMR&T, vol. 12, p. 2168-2184, 2021: WOS: 000557894400004 (FI 2021: 6.267, Q1)**.**

C36. P. Badica, **N.D. Batalu**, M. Burdusel et al. (**18**). *Antibacterial composite coatings of MgB2 powders embedded in PVP matrix*. SCIENTIFIC REPORTS, vol. 10, nr. 1, #17274, 2020: WOS:000656453000036 (FI 2021: 4.996, Q2).

C37. S.K. Padhi, N. Baglieri, **N.D. Batalu** et al. (**14**). *Antimicrobial Activity of MgB_2 Powders Produced via Reactive Liquid Infiltration Method*. Molecules, vol. 26, nr. 16, #4966, 2021: WOS:000689976100001 (FI 2021 = 4.927, Q2).

C38. P. Badica, **N.D. Batalu**, M.C. Chifiriuc et al. (**14**). *Sintered and 3D-Printed Bulks of MgB_2-Based Materials with Antimicrobial Properties*. Molecules, vol. 26, nr. 19, #6045, 2021: WOS:000709840900001 (FI 2021 = 4.927, Q2).

C39. T. Wang, C. Lin, D. Batalu, L. Zhang, J. Hu, W. Lu (**6**). *In vitro study of the PLLA-$Mg_{65}Zn_{30}Ca_5$ composites as potential biodegradable materials for bone implants*. Journal of Magnesium and Alloys, vol. 9, nr. 6, 2021, p. 2009-2018: WOS:000753691400002 (FI 2021 = 11.813, Q1).

C40. A. Melinescu, E. Volceanov, M. Eftimei, **D. Batalu**, A. Volceanov, L.G. Popescu (**6**). *Hardenability of Electroless Chemical Ni-P-Tio2 Nanocomposite Coatings on Low Carbon Steel Substrates*. Revista Romana de Materiale – Romanian Journal of Materials, vol. 52, nr. 2, p. 99-107, 2022: WOS:000829023400001 (FI 2021 = 0.628, Q4).

C41. I. Chiulan, S.I. Voicu**, D. Batalu** (**3**). *The Use of Graphene and Its Derivatives for the Development of Polymer Matrix Composites by Stereolithographic 3D Printing*. Applied Science – Basel, vol. 12, nr. 7, #3521, 2022: WOS:000781250100001 (FI 2021 = 2.838, Q2).

C42. T.A. Badea, **D. Batalu***, N. Constantin, A. Paraschiv, D. Patroi, L.C. Ceatra (**6**). *Assessment of Hot Corrosion in Molten Na2SO4 and V2O5 of Inconel 625 Fabricated by Selective Laser Melting versus Conventional Technology*. Materials, vol. 15, nr. 12, #4082, 2022: WOS:000816400800001 (FI 2021 = 3.748, Q1).

C43. F. Pan, Y. Rao, **D. Batalu**, L. Cai, Y. Dong, X. Zhu, Y. Shi, Z. Shi, Y. Liu, W. Lu (10). *Macroscopic Electromagnetic Cooperative Network-Enhanced MXene/Ni Chains Aerogel-Based Microwave Absorber with Ultra-Low Matching Thickness*. Nano-Micro Letters, vol. 14, nr. 1, 2022, #140: WOS:000821031400002 (FI 2021 = 23.655, Q1).

Reviste de specialitate de circulaţie internaţională recunoscute (indexate în alte Baze de Date Internaționale - BDI specifice domeniului)

C1.1. **D. Batalu**, G.Q. He, C.S. Chen, X.S. Liu **(4)**. *Influence of heat treatment on properties of TiNi (atomic percent Ni = 50.6%) alloy*. Tongji Daxue Xuebao/Journal of Tongji University, 33 (3), 2005, p. 350-354.

C1.2. X.S. Liu, G.Q. He, **D. Batalu**, Z.X. Chen **(4)**. *Study of SME by using factorial design analysis in TiNi alloy*. Jianzhu Cailiao Xuebao/Journal of Building Materials, 8 (6), 2005, p. 714-717.

C1.3. **D. Batalu**, H. Guoqiu, A. Aloman, L. Xiaoshan, Z. Zhihua **(5)**. *A factorial design study of ageing heat treatment influence on phase transformation of Ti50.6 at. % Ni alloy*. UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 67 (1), 2005, p. 65-76.

C1.4. **D. Batalu**, G. Cosmeleata, A. Aloman **(3)**. *Critical analysis of the Ti-Al phase diagrams*. UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 68 (4), 2006, p. 77-90.

C1.5. **D. Batalu**, H. Guoqiu **(2)**. *Improvement of the corrosion resistance of equiatomic NiTi shape memory alloy for medical implants by the electropolishing method*. UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 71 (1), 2009, p. 91-100 (ISSN 1454-2331).

C1.6. G. Jicmon, G. Cosmeleata, **D. Batalu (3)**. *Investigation of some electrical properties of NiTi wires presenting the shape memory effect*. UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 71 (4), 2009, p. 131-138 (ISSN 1454-2331).

C1.7. F. Miculescu, I. Antoniac, L.T. Ciocan, M. Miculescu, M. Branzei, A. Ernuteanu, **D. Batalu**, A. Berbecaru **(8)**. *Complex analysis on heat treated human compact bones*, UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 73 (4), 2011, p. 203-212 (ISSN 1454-2331).

C1.8. **Dan Batalu**, D. Bojin, G. Aldica, S. Popa, P. Badica **(5)**. *Influence of La_2O_3 addition powders with different morphology on MgB_2 superconducting ceramic*. Proceeding of the 15th European Conference on Composite Materials (ECCM 2012), ISBN 978-88-88785-33-2, 2012, conference paper, p. 1-4.

C1.9. R. Bololoi, M. Burdusel, P. Badica, **Dan Batalu (4)**. *Total Elbow Implant. Computer Assisted Design And Simulation.* Key Engineering Materials, vol. 638, 2015, p. 161-164.

C1.10. **Dan Batalu**, G. Aldica, M. Burdusel, P. Badica **(4)**. *Short review on rare earth and metalloid oxide additions to MgB_2 as a candidate superconducting material for medical applications*. Key Engineering Materials, vol. 638, 2015, p. 357-362.

C1.11. Miculescu F, Maidaniuc A, Voicu SI, Miculescu M, **Batalu D (5)**. *Strategies for production of naturally-derived calcium phosphates particles*. Advanced Materials-TechConnect Briefs, 2016, p. 31-34.

C1.12. Semenescu A., Radu-Ioniță F., Mateș I.M., Bădică P., **Batalu N.D.**, Negoita O.D., Purcarea V.L. (**7**) *Finite element analysis on a medical implant*, Romanian journal of ophthalmology, vol. 60, nr. 2, 2016, p. 116-119.

C1.13. Semenescu A., Radu F.I., Mates I., Badica P., **Batalu N.D.** (**5**). Finite element analysis of a modified short hip endoprosthesis, Romanian Journal of Military Medicine, vol. 119, nr. 2, p. 27-31, 2016.

C1.14. **Batalu N.D.**, Semenescu A., Mates I.M., Negoita O.D., Purcarea V.L., Badica P. (**6**) *Computer assisted design and finite element analysis of contact lenses*, Romanian journal of ophthalmology, vol. 60, nr. 3, 2016, p. 132-137.

Contracte de cercetare ca responsabil sau director

Director de contract

1. Contract PN-III-P3-3.1-PM-RO-CN-2018-0113, Nr. 17/02.07.2018, Mecanisme de control al proprietăților magneților permanenți nanocristalini pe baza de MnBi fără adaosuri de pământuri rare

(1,5 ani: 02.07.2018-31.12.2019), Finanțat de UEFISCDI și National Natural Science Foundation of China (NSFC), 51671146.
2. Contract PN-III-P2-2.1-CI-2017-0652, 78CI/25.07.2017, Valorificarea avansată a rocii calcaroase de Buciumi - *Novumcalc* (1/2 ani: 25.07.2017-31.12.2017), Finanțat de UEFISCDI și S.C. Proconic S.R.L.

Responsabil de contract
1. Contract PN-II-CT-RO-UA-2013 – 1, 3BM/2016, *Noi materiale compozite ceramice dure pentru scule așchietoare* (Newcomposite; 30.06.2016-30.11.2017: 1,5 ani), Programul 3: Cooperare europeană și internațională, Subprogramul 3.1 Bilateral/multilateral, Finanțat de UEFISCDI și Ministry of Education and Science of Ukraine - 0117U004301.
2. Contract PN II 214/2014, Benzi supraconductoare pe baza de MgB_2 (**BENZISUPRA**), (3 ani, 2014-2017), Finanțat de UEFISCDI.
3. Contract COFUND-M-ERA.NET II-BIOMB, 74/2017 *Materiale avansate biodegradabile pe baza de MgB2 rezistente la colonizare microbiala* – Biomb (4 ani: 14.06.2017-31.07.2021), Finanțat de UEFISCDI și CE.
4. Contract PN-III-P2-2.1-PTE-2019-0655, 5PTE *Algoritm de valorificare a reziduurilor entomologice si de pielarie in sisteme multivalente pentru regenerare de tesut cutanat (BIOTEHKER)* (2 ani: 01.06.2020-01.06.2022), Finanțat de UEFISCDI.

Membru în echipe de cercetare

Contracte de cercetare internaționale
1. Research Grant of the National Foundation of Science and Nature (China, G. 50371063), TiNi Shape memory alloys used in biomedical engineering, Director He GUOQIU (2 ani, 2002 - 2004).
2. Contract MANUNET-ERANET 7-060/2012, Development of a new Cobalt based alloys modified with Titanium for dental applications (**DENTICO**), Director Brândușa GHIBAN (1 an, 2012-2013).

Contracte de cercetare naționale
1. Contract PN-III-P2-2.1-PED-2016-1741, 163PED din 03/01/2017**,** De la cărămizile romane de la Romula la materiale moderne pentru restaurare (**ROMBRICKS**), Director Mircea NEGRU (1,5 ani, 2017-2018).
2. Contract PN II 305/2014, Sisteme complexe cu structura deformabila destinate protecției balistice a vehiculelor blindate implicate în conflicte asimetrice (**ARMPROT**), Director Nicolae CONSTANTIN (3 ani, 2014-2017).
3. Contract CNMP 71-080/2007, Materiale multifuncționale cu efect bioactiv destinate implantologiei (**MULTIBIOMAT**), Responsabil Georgeta COȘMELEAȚĂ (3 ani, 2007-2010).
4. Contract CNMP 71-059/2007, Tehnologii inovative de realizare a unor produse din aliaje tip Permalloy, competitive la export (**PERMATECH**), Responsabil Rami ȘABAN (3 ani, 2007-2010).
5. Contract Inovare 115/2007, Tehnologii integrate pentru realizarea unor materiale biocompatibile complexe (**BIOCOMPLEXMAT**), Responsabil Georgeta COȘMELEAȚĂ (2 ani, 2007-2009).
6. Contract CEEX 4395/ 2006, Tehnologii integrate in vederea obținerii structurilor multistrat, pe suport de cupru, rezistente la temperaturi înalte, eroziune si contact cu metal lichid, cu destinație specială (**STECUSID**), Director Georgeta COȘMELEAȚĂ (2 ani, 2006 - 2008).
7. Contract CEEX 143/2006, Materiale complexe multifuncționale cu structura nanometrică și caracteristici controlate cu destinație specială (**NANOSTRUCT**), Director Georgeta COȘMELEAȚĂ (2 ani, 2006-2008).
8. Contract CEEX 194/2006, Cercetări fundamentale și experimentale privind biomaterialele cu memoria formei cu aplicabilitate în realizarea stenturilor vasculare (**ANGIOMAT**), Director Ion CIUCĂ (2 ani, 2006-2008).
9. Contrat CEEX 55/2005, Corelația dintre disfuncția endotelială și afectarea miocardică la pacienții cu diabet zaharat (**CARDIAB**), Responsabil Georgeta COȘMELEAȚĂ (3 ani, 2005-2008).

10. Contract CEEX 46/2005, Rețea tehnologică integrată de cercetare a structurilor avansate biocompatibile pentru implanturi dentare (**Rete-β-dent)**, Responsabil Mihai TÂRCOLEA (3 ani, 2005-2008, BIOMAT).

Premii

1. Medalia de aur la EuroInvent 14th Edition, Iași, România, 2022, pentru lucrarea ”Porous orthotic strucures functionalized with antimicrobial powders, polypeptide fragments and plant extracts used in orthopedics and traumatology”
2. Diploma de excelență și medalia de argint la Pro Invent, Ediția XIX, Cluj-Napoca, România, 2021, pentru lucrarea ”Sistem bicomponent compozit biodegradabil pentru materiale de osteosinteză cu control biomecanic”
3. Medalia de aur la The 14th International Fair of the Invention and Innovation INTARG, 2021, pentru lucrarea ”Total constricted elbow prosthesis made of shape-memory alloy with hinge-like fixation and coupling system based on shape-memory effect”
4. Medalia de argint la The 14th International Fair of the Invention and Innovation INTARG, 2021, pentru lucrarea ”Semiconstrained total elbow prosthesis made of shape-memory alloys, with coupling system based on shape-memory effect”
5. Medalia de aur la EuroInvent 13th Edition, Iași, România, 2021, pentru lucrarea ”Innovative combinations of renewable sources bioactive compounds with restoring action on dermal & epidermal homeostasis”
6. Medalia de aur la International Warsaw Invention Show, IWIS 2017, pentru invenția ”Total semi-constrained elbow implant, made of shape memory alloys, with a joint system based on shape memory effect”
7. Medalia de aur la Salon International des Inventions, Geneve, 2019, pentru invenția ”Prothese totale de coude constricte en alliage a memoire de la forme avec fixation analogue avec charniere et systeme de couplage base sur l’effet de mémoire de la forme ”
8. Diplomă de excelență și medalia Proinvent la Expoziția Internațională Pro Invent, Cluj-Napoca, Ediția XVI, 2019, pentru invenția ”TOTAL SEMI-CONSTRICTED ELBOW PROSTHESIS MADE OF SHAPE-MEMORY ALLOY WITH HINGE-LIKE FIXATION AND COUPLING SYSTEM BASED ON SHAPE-MEMORY EFFECT - RO 131379”
9. Medalia de aur și diplomă la The 45th International Exhibition of Inventions of Geneva 2017, pentru invenția ”Semiconstrained Total Elbow Prosthesis Made of Shape-Memory Alloys, with Coupling System Based on Shape-Memory Effect”
10. Medalia de aur la Innova Barcelona, The II-nd edition, Spain, 2017, pentru invenția ”Semiconstrained Total Elbow Prosthesis Made of Shape-Memory Alloys, with Coupling System Based on Shape-Memory Effect”

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Lucrări invitate la conferințe

1. P. Badica, G. Aldica, V. Sandu, L. Miu, M. Burdusel, **Dan Batalu** (6). *MgB_2-Based Composites*. 22nd Annual International Conference on Composites/Nano Engineering, July 1319, 2014, Saint Julian's, Malta.

2. D. Batalu, D. Bojin, C. Nastase, F. Nastase, T. Soare, M. Militaru, M. Gherghiceanu, P. Badica (8). *Biocompatible Oxide-Based Composite Protective Coatings for TiNi Stents*. 20th MRS-J Academic Symposium, December 20-22, 2010, Yokohama, Japan.

3. D. Batalu, F. Nastase, M. Militaru, M. Gherghiceanu, L. Moldovan, M. Bucur, G. Aldica, P. Badica (8). *New materials and devices for biomedical applications*. International Union of Materials Research Societies - The 15th International Conference on Advanced Materials, August 27-September 1, 2017, Kyoto, Japan.

4. Dan Batalu, P. Badica, G. Aldica, C. Nastase, F. Nastase, T. Soare, E. Ciobotaru, M.

Militaru, M. Gherghiceanu, A. Stanciuc, L. Moldovan, M. Bucur (12). *Different Approaches of Materials for Medical Applications.* Advanced Workshop in Nanophysics and Solar Energy Conversion, September 1-3, 2014, Magurele – Bucharest, Romania.

Brevete

1. **Batalu N.D.** et al (**12**). *Semiconstrained total elbow prosthesis made of shape memory-alloys, with coupling system based on shape-memory effect*, Patent number: RO131379A0 (B1), Derwent Primary Accession Number: 2016-61849C.
2. **Batalu N.D.** et al (**11**). *Total constricted elebow prosthesis made of shape memory alloys with hinge-like fixation and coupling system based on shape memory effect*, Patent number: RO131261A0 (B1), Derwent Primary Accession Number: 2016-52537M.

Laboratoare de cercetare dezvoltate

1. Laborator CAD/FEA/CAM
2. Laborator materiale și printare 3D

Recenzor la reviste

1. Journal of Alloys and Compounds
2. Materials Science and Engineering – C
3. Journal of Biomaterials Applications
4. Journal of Biomedical Materials Research
5. Scientific Bulletin, Series B: Chemistry and Material Science
6. Key Engineering Materials

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