

LISTA DE LUCRĂRI

Prof. **BATALU Nicolae-Dan**

I. TEZE DE DOCTORAT și ABILITARE (T)

- T1. Teză de doctorat. *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 Ordinului de Ministru nr. 3956/25.04.2005.
- T2. Teză de abilitare. *Abordarea avansată a materialelor pe bază de MgB_2 pentru aplicații emergente*, Universitatea Politehnica din București, atestat de abilitare, Ordin de ministru 4028 din 20.04.2023.

II. CĂRȚI PUBLICATE (Ca, Cb)

Ca. Cărți sau cursuri (manuale) pentru uzul studenților, publicate în edituri recunoscute

- Ca1. N. Popescu, **Dan Batalu**. *Introducere în știința materialelor. Elemente de teoria științei materialelor (I)*. Politehnica Press, București, 2009, 127 p, ISBN: 978-606-515-066-9.
- Ca2. N. Popescu, **Dan Batalu**. *Introducere în știința materialelor. Materiale ceramice, carbonice, polimerice și compozite (II)*. Politehnica Press, București, 2011, 149 p, ISBN: 978-606-515-271-7.
- Ca3. **Dan Batalu**. *Proiectare asistată de calculator cu AutoCAD. Aplicații în proiectarea implanturilor medicale*. Politehnica Press, București, 2014, 259 p, ISBN: 978-606-515-561-9.

Cb. Cărți de specialitate publicate în edituri recunoscute (autor, coautor, editor)

- Cb1. **Dan Batalu**. *Proiectare avansată 3D cu Inventor Professional*. Politehnica Press, București, 2021, 195 p, ISBN: 978-606-515-985-3.
- Cb2. **Dan Batalu**. *Analiza cu element finit în Inventor Nastran*. Politehnica Press, București, 2022, 177 p, ISBN: 978-606-515-996-9.

III. ALTE MATERIALE PUBLICATE (I, D)

I. Culegeri și îndrumare publicate (separate în edituri cu ISBN și în tipografii locale/de instituții sau de uz intern).

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

D. Alte lucrări publicate: capitole publicate în volume colective, capitole teoretice redactate, sisteme de laborator funcționale etc.

- D1. **Capitol de carte: Dan Batalu, G. Aldica, P. Badica (3). Cap. 4. Materiale cu destinație specială. Nanocompozite supraconductoare de MgB_2 cu adaosuri pe bază de pământuri rare obținute prin metoda "Spark Plasma Sintering". Publicat în:** N. Ghiban, M. Cojocaru (Ed.), *Tratat de Știința și Ingineria Materialelor Metalice (Vol. VI), Proiectare - calitatea produselor - materiale speciale - inginerie economică metalurgică*, **AGIR**, București, 2014, p. 1041-1064 (24 p), ISBN 978-973-720-533-9.

- D2. **Capitol de carte:** F. Miculescu, A. Maidaniuc, G.E. Stan, M. Miculescu, S.I. Voicu, A. Cîmpean, V. Mitran, **Dan Batalu (8). Cap. 7. Tuning hydroxyapatite particles' characteristics for solid freeform fabrication of bone scaffolds. Publicat în:** A. Tiwari, M.R. Alenezi, S.C. Jun (Eds.), Advanced composite materials, **Scrivener Publishing & Wiley**, New Jersey, 2016, p. 321-397 (77 p.), ISBN 978-1-119-24253-6.
- D3. **Capitol de carte:** P. Badica, G. Aldica, A.M. Ionescu, M. Burduşel, **D. Batalu (5). Cap. 4. The influence of different additives on MgB₂ superconductor obtained by ex-situ Spark Plasma Sintering: pinning force aspects, 75-116 (42 p). Publicat în:** Nishikawa H, Iwata N, Endo T, Takamura Y, Lee G-H, Mele P (Eds.). Correlated Functional Oxides. Nanocomposites and Heterostructures, **Springer**, 2016, 232 p, ISBN: 978-3-319-43777-4.
- D4. **Capitol de carte:** Amélie Tribot, **Dan Batalu**, Clément Brasselet, Cédric Delattre, Lu Wei, Jonathan Lao, Petre Badica, Philippe Michaud, Hélène de Baynast **(9). Cap. 20. Green polymer filaments for 3D printing, 463-516 (54 p). Publicat în:** Tariq Altalhi, Inamuddin (Ed.). Green sustainable process for chemical and environmental engineering and science, **Elsevier**, 2022, 570 p, ISBN: 978-0-323-99643-3.

IV. ARTICOLE / STUDII IN EXTENSO PUBLICATE

Ris. Reviste de specialitate de circulație internațională recunoscute (cotate/indexate în Baza de date ISI, sau indexate în alte Baze de Date Internaționale - BDI specifice domeniului, care fac un proces de selecție a revistelor pe baza unor criterii de performanță). Se menționează la fiecare lucrare includerea în Baza ISI [Accession Number, WOS, ultimul Factor Impact, ISSN] și/sau denumirea altei BDI.

Ris 1.	D. Batalu , G. Cosmeleata, A. Aloman (3) . <i>Critical analysis of the Ti-Al phase diagrams</i> . UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 68 (4), 2006, p. 77-90, [WOS:000440182900008, FI 2006/2022 = 0/0,5 (Q4), ISSN 1454-2331].
Ris 2.	D. Batalu , H. Guoqiu, A. Aloman, L. Xioashan, Z. Zhihua (5) . <i>Determination of some mechanical properties of TiNi (50.6 at. % Ni) shape memory alloy using dynamic mechanical analysis and tensile tests</i> . Journal of Optoelectronics and Advanced Materials. Vol. 8, nr. 2, 2006, p. 694 – 698, [WOS:000237001000062, FI 2006/2022 = 1,106/0,5 (Q4), ISSN 1454-4164].
Ris 3.	D. Batalu , H. Guoqiu (2) . <i>Improvement of the corrosion resistance of equiatomic NiTi shape memory alloy for medical implants by the electropolishing method</i> . UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 71 (1), 2009, p. 91-100, [WOS: 000440202400010, FI 2006/2022 = 0/0,5 (Q4), ISSN 1454-2331].
Ris 4.	G. Jicmon, G. Cosmeleata, D. Batalu (3) . <i>Investigation of some electrical properties of NiTi wires presenting the shape memory effect</i> . UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 71 (4), 2009, p. 131-138, [WOS: 000440209600014, FI 2006/2022 = 0/0,5 (Q4), ISSN 1454-2331].
Ris 5.	C. NASTASE, A. DUMITRU, F. NASTASE, A. MOROZAN, S. VULPE, D. Batalu (6) . <i>Comparative study of deep-coating and plasma processing PMMA thin films</i> . Journal of Optoelectronics and Advanced Materials. Vol. 12, nr. 4, 2010, p. 944 – 947, [WOS:000278330500032, FI 2010/2022 = 0,412/0,5 (Q4), ISSN 1454-4164].
Ris 6.	F. Miculescu, I. Antoniac, L.T. Ciocan, M. Miculescu, M. Branzei, A. Ernuteanu, D. Batalu , A. Berbecaru (8) . <i>Complex analysis on heat treated human compact bones</i> , UPB Scientific Bulletin, Series B: Chemistry and Materials Science, 73 (4), 2011, p. 203-212, [WOS:000440229700022, FI 2006/2022 = 0/0,5 (Q4), ISSN 1454-2331].
Ris 7.	G. Aldica, D. Batalu , S. Popa, I. Ivan, P. Nita, Y. Sakka, O. Vasylykiv, L. Miu, I. Pasuk, P. Badica (10) . <i>Spark plasma sintering of MgB₂ in the two-temperature route</i> . Physica C, vol. 477, 2012, p. 43-50, [WOS:000303113200008, FI 2012/2022 = 0,718/1,7 (Q3), ISSN 0921-4534].
Ris 8.	A.C. Nechifor, V. Panait, L. Naftanaila, D. Batalu , S.I. Voicu (5) . <i>Symmetrically polysulfone membranes obtained by solvent evaporation using carbon nanotubes as</i>

	<i>additives. Synthesis, characterization and applications.</i> Digest Journal of Nanomaterials and Biostructures, vol. 8, no. 2, 2013, p. 875-884 [WOS:000322737500042, FI 2013/2022 = 1,123/0,9 (Q4), ISSN 1842-3582].
Ris 9.	D. Batalu , G. Aldica, S. Popa, L. Miu, M. Enculescu, R.F. Negrea, I. Pasuk, P. Badica (8) . <i>High magnetic field enhancement of the critical current density by Ge, GeO₂ and Ge₂C₆H₁₀O₇ additions to MgB₂.</i> Scripta Materialia, vol. 82, 2014, p. 61-64, [WOS:000336702500016, FI 2014/ 2022 = 3,224/ 6 (Q1), ISSN 1359-6462].
Ris 10.	G. Aldica, S. Popa, M. Enculescu, D. Batalu , L. Miu, M. Ferbinteanu, P. Badica (7) . <i>Addition of Ho₂O₃ of different types to MgB₂ in the ex-situ Spark Plasma Sintering: Simultaneous control of the critical current density at low and high magnetic fields.</i> Materials Chemistry and Physics, vol. 146, no. 3, 2014, p. 313-323, [WOS:000336694300017, FI 2014/ 2022 = 2,259/ 4,6 (Q2), ISSN 0254-0584].
Ris 11.	D. Batalu , A.M. Stanciuc, L. Moldovan, G. Aldica, P. Badica (5) . <i>Evaluation of pristine and Eu₂O₃-added MgB₂ ceramics for medical applications: hardness, corrosion resistance, cytotoxicity and antibacterial activity.</i> Materials Science and Engineering: C, vol. 42, 2014, p. 350-361, [WOS:000340687400045, FI 2014/ 2022 = 3,088/ 7,9 (Q1), ISSN 0928-4931].
Ris 12.	D. Batalu , G. Aldica, M. Burdusel, S. Popa, M. Enculescu, I. Pasuk, D. Miu, P. Badica (8) . <i>Ge-Added MgB₂ Superconductor Obtained by Ex Situ Spark Plasma Sintering.</i> Journal of Superconductivity and Novel Magnetism, vol. 28, nr. 2, 2015, p. 531-534, [WOS:000349350100048, FI 2015/ 2022 = 1,1/ 1,8 (Q4), ISSN 1557-1939].
Ris 13.	D. Batalu , G. Aldica, S. Popa, A. Kuncser, V. Mihalache, P. Badica (6) . <i>GeO₂-added MgB₂ superconductor obtained by Spark Plasma Sintering.</i> Solid State Sciences, vol. 48, 2015, p. 23–30, [WOS:000363347800006, FI 2015/ 2022 = 2,041/ 3,5 (Q2), ISSN 1293-2558].
Ris 14.	D. Batalu , G. Aldica, P. Badica (3) . <i>Ge₂C₆H₁₀O₇-added MgB₂ Superconductor Obtained by Ex-Situ Spark Plasma Sintering.</i> IEEE Transactions on Applied Superconductivity, vol. 26, no. 3, 2016, #7100104: p. 1-4, [WOS:000372783600001, FI 2016/ 2022 = 1,235/ 1,8 (Q3), ISSN 1051-8223].
Ris 15.	Semenescu A., Radu F.I., Mates I., Badica P., Batalu N.D. (5). <i>Finite element analysis of a modified short hip endoprosthesis.</i> Romanian Journal of Military Medicine, vol. 119, nr. 2, p. 27-31, 2016, [WOS:000372783600001, FI 2016/2022 = 0/ 0,3 (Q4), ISSN 1051-8223].
Ris 16.	D. Batalu , A. Paun, M. Ferbinteanu, G. Aldica, A.M. Vlaicu, V.S. Teodorescu, P. Badica (7) . <i>Thermal analysis of repa-germanium (Ge-132).</i> Thermochemica Acta, vol. 644, 2016, p. 20-27, [WOS:000389116100004, FI 2016/ 2022 = 2,236/ 3,5 (Q2), ISSN 0040-6031].
Ris 17.	G. Aldica, C. Matei, A. Paun, D. Batalu , M. Ferbinteanu, P. Badica (6) . <i>Thermal analysis on Ge₂C₆H₁₀O₇-doped MgB₂.</i> Journal of Thermal Analysis and Calorimetry, vol. 127, issue 1, 2017, pp. 173-179, [WOS:000392337000019, FI 2017/2022 = 2,209/ 4,4 (Q1), 1388-6150].
Ris 18.	Burdusel M, Ionescu AM, Grigoroșcuță M, Batalu D , Enculescu M, Popa S, Mihalache V, Aldica G, Badica P (9) . <i>Powder-in-tube tapes of MgB₂ in Fe-sheath processed by ex-situ spark plasma sintering.</i> UPB Scientific Bulletin Series B, Chemistry and Materials Science, vol. 79, nr. 2, p. 155-172, 2017, [WOS:000405523600015, FI 2017/ 2022 =0/ 0,5 (Q4), ISSN 1454-2331].
Ris 19.	Monica Ilis, Dan Batalu , Iuliana Pasuk, Viorel Circu (4) . <i>Cyclometalated Palladium (II) metallomesogens with Schiff bases and N-benzoyl thiourea derivatives as co-ligands.</i> Journal of Molecular Liquids, vol. 233, issue 1, 2017, pp. 45-51, [WOS:000401202500007, FI 2017/ 2022 = 3,648/ 6 (Q1), ISSN 0167-7322].
Ris 20.	Solodky I, Bogomol I, Loboda P, Batalu D, Vlaicu AM, Badica P (6). <i>Floating zone partial re-melting of B₄C infiltrated with molten Si.</i> Ceramics International, vol. 43, nr. 17, 2017, p. 14718-14725, [WOS:000413175300022, FI 2017/2022 = 2,758/ 5,2 (Q1), 0272-8842].
Ris 21.	Miculescu F., Mocanu A.C., Dascalu C.A., Maidaniuc A., Batalu D. , Berbecaru A., Voicu S.I., Miculescu M., Thakur V.K., Ciocan L.T. (10) . <i>Facile synthesis and characterization</i>

	<i>of hydroxyapatite particles for high value nanocomposites and biomaterials</i> . VACUUM, vol. 146, 2017, pp. 614-622, [WOS:000416184600080, FI 2017/ 2022 = 2,067/4 (Q2), ISSN 0042-207X].
Ris 22.	Miculescu F, Maidaniuc A, Miculescu M, Batalu ND , Ciocoiu RC, Voicu SI, Stan GE, Thakur VK (8). <i>Synthesis and Characterization of Jellified Composites from Bovine Bone-Derived Hydroxyapatite and Starch as Precursors for Robocasting</i> . ACS OMEGA, 2018, vol. 3, nr. 1, p. 1338-1349, [WOS:000427933200143, FI 2018/ 2022 = 2,584/4,1 (Q2), ISSN 2470-1343].
Ris 23.	Dan Batalu , T. Nakamura, M. Enculescu, S. Popa, I. Pasuk, G. Aldica, Alina M. Ionescu, P. Badica (8). <i>A Comparative Study of Ge-Based Organometallic Additions to MgB₂</i> . IEEE Transactions on Applied Superconductivity, vol. 28, nr. 4, 2018, #7100104, p. 1-4, [WOS:000426643300001, FI 2018/ 2022 = 1,583/1,8 (Q3), ISSN 1051-8223].
Ris 24.	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). <i>Compressive properties of pristine and SiC-Te-added MgB₂ powders, green compacts and spark-plasma-sintered bulks</i> , CERAMICS INTERNATIONAL, 2018, vol. 44, nr. 9, p. 10181-10191, [WOS:000431470200021, FI 2018/ 2022 = 3,057/5,2 (Q1), ISSN 0272-8842].
Ris 25.	BATALU D. et al (5). <i>NiTi coated with oxide and polymer films in the in vivo healing processes</i> , JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY-JMR&T, vol. 8, nr. 1, p. 914-922, 2019, [WOS: 000467081300099, FI 2019/ 2022 = 5,289/6,4 (Q1), ISSN 2238-7854].
Ris 26.	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). <i>Passive magnetic shielding by machinable MgB₂ bulks: measurements and numerical simulations</i> . SUPERCONDUCTOR SCIENCE & TECHNOLOGY, vol. 32, nr. 3, #034004, 2019, [WOS: 000458129500002, FI 2019/ 2022 = 3,067/3,6 (Q2), ISSN 0953-2048].
Ris 27.	Xiang Z, Wang X, Song YM, Yu LZ, Cui EB, Den BW, Batalu D, Lu W (8). <i>Effect of cooling rates on the microstructure and magnetic properties of MnAl permanent magnetic alloys</i> . JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol. 475, p. 479-483, 2019, [WOS:000458152000069, FI 2019/2022 = 2,717/2,7 (Q3), ISSN 0304-8853].
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Ris 29.	FRONE Adriana Nicoleta, BATALU DAN , CHIULAN IOANA, OPREA Madalina, GABOR Raluca Augusta, NICOLAE Cristian Andi, RADITOIU Valentin, TRUSCA Roxana-Doina, PANAITESCU Denis Mihaela (9). <i>Morpho-Structural, Thermal and Mechanical Properties of PLA/PHB/Cellulose Biodegradable Nanocomposites Obtained by Compression Molding, Extrusion, and 3D Printing</i> , NANOMATERIALS, vol. 10, nr. 1, #51, 2020, [WOS:000516825600051, FI 2019/ 2022 : 4,324/5,3 (Q1), eISSN 2079-4991].
Ris 30.	BATALU ND , ALDICA GV, BURDUSEL M, GRIGOROSCUA MA, PASUK I, KUNCSE A, IONESCU AM, P. BADICA (8). <i>Enhanced critical current density at high magnetic fields in MgB₂ with Ga/In acetylacetonate processed by spark plasma sintering</i> , JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY – JMR&T, vol. 9, nr. 3, p. 3724-3733, [WOS: 000557894400004, FI 2019/ 2022 = 5,289/6,4 (Q1), ISSN 2238-7854].
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Ris 32.	MIU L, IONESCU AM, MIU D, BURDUŞEL M, BADICA Petre, BATALU ND ,

	CRİŞAN A. (7) <i>Second magnetization peak, rhombic-to-square Bragg vortex glass transition, and intersecting magnetic hysteresis curves in overdoped BaFe₂(As_{1-x}P_x)(2) single crystals</i> , SCIENTIFIC REPORTS, vol. 10, nr. 1, #17274, 2020, [WOS:000582679600008, FI 2020/2022: 4,38/4,6 (Q2), ISSN 2045-2322].
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Ris 34.	Wang TL, Lin C, Batalu D , Hu JZ, Lu W (5). <i>Tunable Microstructure and Morphology of the Self-Assembly Hydroxyapatite Coatings on ZK60 Magnesium Alloy Substrates Using Hydrothermal Methods</i> , Coatings, vol. 11, nr. 1, #8, 2021, [WOS:000610006100001, FI 2021/2022 = 3,236/3,4 (Q2), ISSN 2079-6412].
Ris 35.	I. Gheorghe, I. Avram, D. Batalu et al. (24). <i>In vitro evaluation of MgB₂ powders as novel tools to fight fungal biodeterioration of heritage buildings and objects</i> . Frontiers in Materials, vol. 7, 2021, #601059, [WOS:000615911800001, FI 2021/2022: 3,985/3,2 (Q3), ISSN 2296-8016].
Ris 36.	P. Badica, A. Alexandru-Dinu, M. Grigorescu, C. Locovei, A. Kuncser, C. Bartha, G. Aldica, M. Negru, D. Batalu , N. Cruceru, I. Savulescu (11). <i>Kaolin clay pottery discovered in the Roman city of Romula (Olt County, Romania)</i> . Journal of Archaeological Science – Reports, vol. 36, 2021, #102899, [WOS:000639285000005, FI 2021/2022 = -/1,6 (Q1), ISSN 2352-409X].
Ris 37.	P. Badica, N.D. Batalu , M.C Chifiriuc et al. (19). <i>MgB₂ powders and bioevaluation of their interaction with planktonic microbes, biofilms, and tumor cells</i> . JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY – JMR&T, vol. 12, p. 2168-2184, 2021, [WOS:000557894400004, FI 2021/2022 = 6,267/6,4 (Q1), ISSN 2238-7854].
Ris 38.	P. Badica, N.D. Batalu , M. Burdusel et al. (18). <i>Antibacterial composite coatings of MgB₂ powders embedded in PVP matrix</i> . SCIENTIFIC REPORTS, vol. 10, nr. 1, #17274, 2021, [WOS:000656453000036, FI 2021/2022: 4,997/4,6 (Q2), ISSN 2045-2322].
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Ris 41.	T. Wang, C. Lin, D. Batalu, L. Zhang, J. Hu, W. Lu (6). <i>In vitro study of the PLLA-Mg₆₅Zn₃₀Ca₅ composites as potential biodegradable materials for bone implants</i> . Journal of Magnesium and Alloys, vol. 9, nr. 6, 2021, p. 2009-2018, [WOS:000753691400002, FI 2021/2022 = 11,862/17,6 (Q1), ISSN 2213-9567].
Ris 42.	A. Melinescu, E. Volceanov, M. Eftimei, D. Batalu , A. Volceanov, L.G. Popescu (6). <i>Hardenability of Electroless Chemical Ni-P-TiO₂ Nanocomposite Coatings on Low Carbon Steel Substrates</i> . Revista Romana de Materiale – Romanian Journal of Materials, vol. 52, nr. 2, p. 99-107, 2022, [WOS:000829023400001, FI 2022 = 0,7 (Q4), ISSN 1583-3186].
Ris 43.	I. Chiulan, S.I. Voicu, D. Batalu (3). <i>The Use of Graphene and Its Derivatives for the Development of Polymer Matrix Composites by Stereolithographic 3D Printing</i> . Applied Science – Basel, vol. 12, nr. 7, #3521, 2022, [WOS:000781250100001, FI 2022 = 2,7 (Q2), ISSN 2076-3417].
Ris 44.	T.A. Badea, D. Batalu* , N. Constantin, A. Paraschiv, D. Patroi, L.C. Ceatra (6). <i>Assessment of Hot Corrosion in Molten Na₂SO₄ and V₂O₅ of Inconel 625 Fabricated by Selective Laser Melting versus Conventional Technology</i> . Materials, vol. 15, nr. 12, #4082, 2022, [WOS:000816400800001, FI 2022 = 3,4 (Q2), ISSN 1996-1944].

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Ris 47.	Badica P; Alexandru-Dinu A; Grigoroscuta MA; Burdusel M; Aldica GV; Sandu V; Bartha C; Polosan S; Galatanu A; Kuncser V; Enculescu M; Locovei C; Porosnicu I; Tiseanu I; Ferbinteanu M; Savulescu I; Negru M; Batalu ND (18). <i>Mud and burnt Roman bricks from Romula</i> . Scientific Reports, vol. 12, nr. 1, #15864, [WOS:000911222400001, FI 2022 = 4,6 (Q2), ISSN 2045-2322].
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Ris 50.	Pan F, Wu XF, Batalu D , Lu W, Guan HT. <i>Assembling of low-dimensional aggregates with interlaminar electromagnetic synergy network for high-efficient microwave absorption</i> . Advanced Powder Materials, 2023, Vol. 2, nr. 2, #100100 [WOS:001034500800001, FI 2022 = 0, ISSN 2772-834X].
Ris 51.	Pan F; Ning MQ; Li ZH; Batalu D ; Guo HT; Wang X; Wu HJ; Lu W (8). <i>Sequential Architecture Induced Strange Dielectric-Magnetic Behaviors in Ferromagnetic Microwave Absorber</i> . Advanced Functional Materials, 2023, vol. 33, nr. 27 [WOS:000952683500001, FI 2022 = 19 (Q1), ISSN 1616-301X].
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Ris 54.	Batalu D. , Nakamura T., Aldica G., Burdusel M., Grigoroscuta M., Popa S., Pasuk I., Kuncser A., Cretu N., Bezerghceanu A., Badica P. <i>Ex-situ spark plasma sintered MgB₂ with Ge-based organometallic additions: Key ingredients for superconductivity enhancement</i> . Solid State Sciences, 2024, vol. 148, #107429 [WOS:001165680700001, FI 2022 = 3,5 (Q2), ISSN 1385-8947].
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Ris 57.	Aldica G.; Batalu D.; Nakamura T.; Ferbinteanu M.; Locovei C.; Vlaicu M.A.; Pasuk I.; Badica P. <i>Structural and thermal analysis of the linear polygermoxane GeSP</i> . JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, nr. s10973-024-13962-3, 2025 (WOS: 001393056700001, FI 2023 = 3, Q2).
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Risb. Reviste de specialitate de circulație internațională recunoscute (cotate/indexate în alte Baze de Date Internaționale, BDI, specifice domeniului, care fac un proces de selecție a revistelor pe baza unor criterii de performanță). Se menționează la fiecare lucrare denumirea BDI.

- Risb 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 [SCOPUS, Q3].
- Risb 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 [SCOPUS, Q3].
- Risb 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 [SCOPUS, Q4].
- Risb 4 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 [SCOPUS, Q3].
- Risb 5 **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 [SCOPUS, Q3].

Rns. Reviste de specialitate de circulație națională recunoscute de CNCSIS.

- Rns1. **DAN BATALU**, G. Coșmeleață, A. Aloman. *Critical analysis of Al-Ni phase diagrams*. Metalurgia International, vol. 11, nr. 8, 2006, p. 36 – 45.
- Rns2. **DAN BATALU**, G. Coșmeleață, A. Aloman, I. Ciucă, H. Guoqiu, L. Xiaoshan, Z. Zhihua. *Critical analysis of some experimental Ti-Ni phase diagrams. Short review*. Metalurgia International, vol. 11, nr. 7, 2006, p. 32-39.
- Rns3. **BATALU DAN**, G. Coșmeleață, A. Aloman, H. Guoqiu, L. Xiaoshan, Z. Zhihua. *Studii privind îmbunătățirea rezistenței la coroziune a aliajului TiNi (50.6 % at. Ni) cu aplicații în ingineria medicală*. Metalurgia, vol. 58, nr. 11, 2006, p. 36 – 44.
- Rns4. **DAN BATALU**, G. COȘMELEAȚĂ, A. ALOMAN, H. GUOQIU, L. XIAOSHAN, Z. ZHIHUA. *A Review on TiNi Shape Memory Alloys (SMA) Used for Medical Applications. Recycling Aspects*. The Danube River Environment and Education. Year III, No. 5, 2005, p. 20 - 25.
- Rns5. A. Aloman, **DAN BATALU**. *Ecuatiile empirice ale curbei solidus TTi p1 și ale curbelor liquidus din diagrama de echilibru binară Ti-Al*. Metalurgia, vol. 50, nr. 7, p. 39-51, 1998.
- Rns6. A. Aloman, **DAN BATALU**. *Calculul termodinamic al curbelor liquidus și solidus pentru faza beta-Ti din diagrama de echilibru Ti-Al utilizând diferite modele ale soluțiilor*. Metalurgia, vol. 50, nr. 5, p. 40-52, 1998.
- Rns7. Ciobotaru E., Militaru M., Soare T., Ionașcu I., Gherghiceanu M., Vlăgioiu C., Dinescu G., **Batalu D.**, Bololoi R. *Histological and Electron Microscopy Features in Local Muscular Biocompatibility of TiNi Alloys Coated with Oxides and Polymers. Acute and Chronic Experimental Model in Rabbit*. Scientific Works. C Series: Veterinary Medicine. Vol. LIII, 2008, p. 69 - 79 (ISSN 1222-5304).
- Rns8. **DAN BATALU**, Georgeta Coșmeleață, Angel Aloman, Ion Ciucă, Robert Bololoi. *The optimal equations of the phase transformation curves from the Ti-Ni binary phase equilibrium diagram*. Metalurgia International, vol. 13, nr. special 3, 2008, p. 47–52.

Vis. Volumele unor manifestări științifice internaționale recunoscute, organizate în țară și străinătate, indexate ISI Thomson Reuters sau indexate în alte Baze de Date Internaționale - BDI specifice domeniului, care fac un proces de selecție a publicațiilor pe baza unor criterii de performanță. Se menționează la fiecare lucrare includerea în Baza ISI [ISI Proceedings, Accession Number, WOS, ISSN] sau denumirea altei BDI.

- Vis 1 **Batalu D.**, Bojin D, Aldica G, Stanciuc A, Moldovan L, Bucur M, Badica P. Evaluation of MgB₂-based nanocomposites for medical applications. 24th European Conference on Biomaterials (EBS 2011), 2011, conference paper [SCOPUS].
- Vis 2 **D. Batalu**, D. Bojin, B. Ghiban, G. Aldica, P. Badica **(5)**. *Corrosion behavior of pristine and added MgB₂ in Phosphate Buffered Saline Solution*. 2012, IOP Conf. Ser.: Mater. Sci. Eng., vol. 40, #012032: p. 1-6, [WOS:000312413700032, ISSN 1757-8981].
- Vis 3 **Dan Batalu**, D. Bojin, G. Aldica, S. Popa, P. Badica **(5)**. *Influence of La₂O₃ addition powders with different morphology on MgB₂ 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 [SCOPUS].
- Vis 4 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 [SCOPUS, Q4].
- Vis 5 **Dan Batalu**, G. Aldica, M. Burdusel, P. Badica **(4)**. *Short review on rare earth and metalloid oxide additions to MgB₂ as a candidate superconducting material for medical applications*. Key Engineering Materials, vol. 638, 2015, p. 357-362 [SCOPUS, Q4].
- Vis 6 **Batalu D.**, Aldica G., Badica P. **(3)** *Composites of MgB₂ - rare-earth-oxides: fabrication by spark plasma sintering and functional properties*. 20th INTERNATIONAL CONFERENCE ON COMPOSITE MATERIALS, 2015 [WOS:000614628003094].
- Vis 7 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 [SCOPUS].
- Vis 8 YOKOYAMA K, OKA T, BERGER K, DORGET R, KOBLISCHKA M, GRIGOROSCU 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 MgB₂ bulks*, JOURNAL OF PHYSICS CONFERENCE SERIES, vol. 1559, #012080, 2020, [WOS:000558737600080, ISSN 1742-6588].

Vn. Volumele unor manifestări științifice naționale.

- Vn1. Coșmeleață D., **Batalu D.** *Analiza critică a diagramei de echilibru Si-O*. Simpozionul național al tinerilor cercetători în domeniul ingineriei materialelor. Simpozionul național al tinerilor cercetători în domeniul ingineriei materialelor. Editura Printech, București, 2008, p. 37 - 42 (ISBN 978-606-521-018-9).
- Vn2. **Dan Batalu**, G. Coșmeleață, I. Ciucă, I. Bruckner, R. Siliște, C. Năstase, A. Morozan, A. Dumitru, T. Soare, E. Ciobotaru, M. Militaru. *Biocompatible TiO₂/ DL(PLG) protective coatings. Characterization and in vivo testing*. Conference Excellence Research - A Way to Innovation (Eds. N. Vasiliu, S. Lanyi). Editura Tehnică, Brașov, vol. 2, 2008, #194, p: 1-6. (ISSN 1844-7090).

V. BREVETE DE INVENȚIE (B)

B1. Batalu N.D. et al **(12)**. *Proteză totală de cot constrânsă, din aliaje cu memoria formei, cu fixare de tip balama și sistem de cuplare pe bază de efect al memoriei formei*. **Număr patent:** RO-131379-B1, Derwent Primary Accession Number: 2016-61849C.

B2. Batalu N.D. et al **(11)**. *Proteză totală de cot semiconstrânsă, din aliaje cu memoria formei, cu sistem de cuplare pe bază de efect al memoriei formei*. **Patent number:** RO-131261-B1, Derwent Primary Accession Number: 2016-52537M.

B3. Bădică Petre; **Batalu Nicolae-Dan**; Grigoroșcuță Mihai Alexandru; Burdușel Mihail; Aldica Gheorghe Virgil; Popa Marcela; Chifiriuc Mariana-Carmen (7). *Pulberi, corpuri sinterizate și acoperiri pe bază de MgB_2 rezistente la colonizarea microbiană și cu eficiență împotriva biofilmelor microbiene, și metodă de utilizare a acestora.* **Patent number:** RO-133974-B1, Derwent Primary Accession Number: 2020-27602Q.

B4. Bădică Petre; **Batalu Dan**; Grigoroșcuță Mihai Alexandru; Aldica Gheorghe Virgil; Săvulescu Ionuț; Negru Mircea (6). *Obținere și material ceramic pentru cărămizi, replică a celor romane.* **Patent number:** RO-133976-B1.

B5. Lupșa Mădălina; Popa Marcela; Chifiriuc Mariana Carmen; Măruțescu Luminița Gabriela; Bădică Petre; **Batalu Nicolae-Dan**; Grigoroșcuță Mihai Alexandru; Burdușel Mihail; Aldica Gheorghe Virgil (9). *Apă de gură pe bază de clorhexidină și MgB_2 ca ingrediente active, cu efect sinergic împotriva colonizării microbiene și formării plăcii dentare.* Patent number: RO-134808-B1, Derwent Primary Accession Number: 2021-36330A.

B6. Bădică Petre; **Batalu Nicolae-Dan**; Balint Emilia Florica; Tudor Niculae; Burdușel Mihail; Grigoroșcuță Mihai - Alexandru; Aldica Gheorghe Virgil; Trancău Ioan-Ovidiu; Chifiriuc Mariana-Carmen; Bărbuceanu Florica; Peteoacă Alexandra; Micșa Cătălin (12). *Sistem bicomponent compozit biodegradabil pentru materiale de osteosinteză cu control biomecanic.* Patent number: RO-135301-B1, Derwent Primary Accession Number: 2021-E81099.

B7. Badea Teodor; **Batalu Nicolae-Dan** (2). *Stand automatizat de testare a rezistenței la oxidare și șoc termic a straturilor depuse cu rol de barieră termică.* Patent number: RO-137569-B1, Derwent Primary Accession Number: 2025-73839A.

VI. CONTRACTE ȘTIINȚIFICE (P)

P. Proiecte de cercetare-dezvoltare-inovare obținute prin competiție, pe bază de contract/grant, în țară/ străinătate (Pn – naționale, Pi - internaționale).

Obs! A se menționa calitatea de responsabil/director sau coautor.

Pn-1 (membru). 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).

Pn-2 (membru). Contract CEEX 55/2005, Corelația dintre disfuncția endotelială și afectarea miocardică la pacienții cu diabet zaharat (**CARDIAB**), Responsabil Georgeta COȘMELEAȚĂ (3 ani, 2005-2008).

Pn-3 (membru). Contract CEEX 4395/ 2006, Tehnologii integrate în vederea obținerii structurilor multistrat, pe suport de cupru, rezistente la temperaturi înalte, eroziune și contact cu metal lichid, cu destinație specială (**STECUSID**), Director Georgeta COȘMELEAȚĂ (2 ani, 2006 - 2008).

Pn-4 (membru). Contract CEEX 143/2006, Materiale complexe multifuncționale cu structura nanometrică și caracteristici controlate cu destinație specială (**NANOSTRUCT**), Director Georgeta COȘMELEAȚĂ (2 ani, 2006-2008).

Pn-5 (coautor). 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).

Pn-6 (membru). Contract Inovare 115/2007, Tehnologii integrate pentru realizarea unor materiale biocompatibile complexe (**BIOCOMPLEXMAT**), Responsabil Georgeta COȘMELEAȚĂ (2 ani, 2007-2009).

Pn-7 (membru). Contract CNMP 71-080/2007, Materiale multifuncționale cu efect bioactiv destinate implantologiei (**MULTIBIOMAT**), Responsabil Georgeta COȘMELEAȚĂ (3 ani, 2007-2010).

Pn-8 (membru). 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).

Pn-9 (membru). 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).

Pn-10 (responsabil). Contract PN II 214/2014, Benzi supraconductoare pe baza de MgB_2 (**BENZISUPRA**), (3 ani, 2014-2017), Finanțat de UEFISCDI.

Pn-11 (coautor). 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).

Pn-12 (director UPB). 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.

Pn-13 (responsabil). 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.

Pn-14 (membru) Contract PN-III-P2-2.1-PED-2021-1650, 583 PED/2022, *Novel technology for implants manufacturing from 3D printable reinforced composite filaments for guided bone regeneration* (BoneGapFill, 2 ani, 2022-2024), Finanțat de UEFISCDI.

Pn-15 (membru) Contract PN-IV-P1-PCE-2023-1692, *Complex composites with organized structure* (CCOS, 3 ani, 2025-2028), Finanțat de UEFISCDI.

Pn-16 (membru) Contract PN-IV-P7-7.1-PED-2024-2569, *Sistem de livrare în timp a componentelor bioactive utilizate în restaurarea homeostazei enzimatică a rănilor cutanate* (SYDEL BIO, 2 ani, 2025-2026), Finanțat de UEFISCDI.

Pn-17 (membru) Contract PN-IV-P7-7.1-PED-2024-2569, *Sustainable Strategies for Preventing Biodeterioration of Cultural Heritage Objects and Churches* (9PED/2025, 2 ani, 2025-2026), Finanțat de UEFISCDI.

Pi-1 (membru). 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).

Pi-2 (membru). 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).

Pi-3 (responsabil). 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.

Pi-4 (responsabil). Contract COFUND-M-ERA.NET II-BIOMB, 74/2017 *Materiale avansate biodegradabile pe baza de MgB_2 rezistente la colonizare microbială* – Biomb (4 ani: 14.06.2017-31.07.2021), Finanțat de UEFISCDI și CE.

Pi-5 (director). 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.

Pi-6 (membru) Contract PN-III-CEI-BIM-PBE-2020-0014, Membrane pe bază de grafenă printate 3D pentru aplicații medicale (2 ani, 2021-2022, Finanțat de UEFISCDI și Belgia; GraphMem)

VII. COMUNICĂRI ȘTIINȚIFICE NEPUBLICATE (E)

E – Lucrări prezentate la diferite seminare/expoziții, conferințe etc.

E1. P. Badica, G. Aldica, V. Sandu, L. Miu, M. Burdusel, **Dan Batalu**. *MgB₂-Based Composites*. 22nd Annual International Conference on Composites/Nano Engineering, July 13-19, 2014, Saint Julian's, Malta.

E2. **Dan Batalu**, P. Badica, G. Aldica, C. Nastase, F. Nastase, T. Soare, E. Ciobotaru, M. Militaru, M. Gherghiceanu, A. Stanciuc, L. Moldovan, M. Bucur. *Different Approaches of Materials for Medical Applications. Advanced Workshop in Nanophysics and Solar Energy Conversion*, September 1-3, 2014, Magurele – Bucharest, Romania.

E3. **Dan Batalu**, F. Miculescu, P. Badica. *MgO whiskers prepared by vapor deposition*. 18th Romanian International Conference on Chemistry and Chemical Engineering (RICCCE 18), Sinaia, Romania, 4-7 September, 2013.

E4. M. Burdusel, G. Aldica, P. Badica, **Dan Batalu**. *Evaluation of GeO₂ added MgB₂ as a candidate superconducting material for MRI applications*. 6th International Conference "Biomaterials, Tissue Engineering and Medical Devices" (BiomMedD 2014), Constanta, Romania, September 17 - 20, 2014.

E5. G. Aldica, S. Popa, M. Enculescu, **Dan Batalu**, P. Badica. *MgB₂ obtained by ex-situ Spark Plasma Sintering: addition of Ho₂O₃ with different morphology*. European Conference on Applied Superconductivity (EUCAS 2013), Session for LTS and MgB₂ Bulk (3P-MA4-10), 15-19th September, 2013, Genova, Italy.

E6. **Dan Batalu**. *MgB₂ prin SPS: adaosuri de tip pământuri rare și evaluarea potențialului MgB₂ ca material pentru aplicații noi*, 2010, seminar INCDFM.

E7. **Dan Batalu**, D. Bojin, G. Aldica, P. Badica. *Evaluation of Eu₂O₃ added MgB₂ as a candidate superconducting material for NMR applications*. 5th International Conference of "Biomaterials, Tissue Engineering and Medical Devices", 29 September - 1 August, 2012, Constanta, Romania (Biommedd 2012). Abstract published in ISSN 2069-0193 (poster presentation, P5).

E8. **Dan Batalu**, D. Bojin, H.H. Huang, Y.S. Sun, G. Aldica, P. Badica. *Spark Plasma Sintered MgB₂-based Composites with Additions of La₂O₃ and Ho₂O₃: an Evaluation for Medical Applications*. 9th World Biomaterials Congress, Chengdu, China, June 1-5, 2012 (poster presentation P-SAT-C-087 and rapid fire session R1-03).

E9. **Dan Batalu**, D. Bojin, S. Popa, G. Aldica, L. Miu, M. Enculescu, P. Badica. *Spark Plasma Sintering of rare earth oxide added MgB₂*. Superconductivity Centennial Conference 2011 (EUCAS - ISEC- ICMC), Session for MgB₂ Bulk and Single Crystal (oral presentation, no. 4-MA-O2), 18th - 23th September, 2011, The Hague, Nederland.

E10. **Dan Batalu**, D. Bojin, C. Nastase, F. Nastase, T. Soare, M. Militaru, M. Gherghiceanu, P. Badica. *Biocompatible oxide-based composite protective coatings for TiNi stents*. 20th Materials Research Society of Japan (MRS-J) International Conference, Session E (Synthesis, Characterizations and Applications of Oxide Nanocomposites), Keynote Lecture 1, 18th -23th December, 2010, Yokohama, Japan.

E11. **Dan Batalu**, D. Bojin, M. Burdusel, G. Aldica, L. Miu, P. Nita, P. Badica. *MgB₂ Nanosized Ceramic as a Candidate for Medical Applications* (P7). 4th International Conference of "Biomaterials, Tissue Engineering and Medical Devices", 23-25 of September, 2010, Sinaia, Romania (Biommedd 2010). Abstract published in ISSN 2069-0193.

E12. **Dan Batalu**, D. Bojin, R. Bololoi, P. Badica, R. Siliste, C. Nastase, F. Nastase, T. Soare, E. Ciobotaru, M. Militaru, M. Gherghiceanu. *Biocompatible Oxide/ Polymer Composite Protective Coatings for TiNi Stents. Characterization and in vivo Testing* (P8). 4th International Conference of "Biomaterials, Tissue Engineering and Medical Devices", 23-25 of September, 2010, Sinaia, Romania (Biommedd 2010). Abstract published in ISSN 2069-0193.

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Data
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Semnătura