

P A P E R L I S T

1. Doctoral thesis

Contribuții privind îmbunătățirea proprietăților aliajelor Ti-Mo destinate aplicațiilor medicale

2. Books and chapters

1. Baltatu M.S., Vizureanu P., Materiale Biocompatibile, editura PIM, ISBN : 978-606-13-5168-8, 2019, 146 pagini – national book.
2. Minciuna M.G., Vizureanu P., **Baltatu M.S.**, Sisteme Moderne Pentru Aplicații Medicale, editura PIM, 2022, 135 pagini – national book.
3. Vizureanu P., **Baltatu M.S.**, Titanium-Based Alloys for Biomedical Applications, editura Materials Research Forum LLC, volume 74 (2020) ISSN 2471-8890 – **international book**.
4. Burduhos-Nergis D.P., Burduhos-Nergis D.D., **Baltatu M.S.**, Vizureanu P., Advanced Coatings for the Corrosion Protection of Metals, Materials Research Foundations, Vol 115 (2022) ISBN 978-1-64490-166-3, doi: 10.21741/9781644901670 – **international book**.
5. Burduhos-Nergis D.D., Burduhos-Nergis D.P., **Baltatu M.S.**, Vizureanu P., Ceramics and Composites, Preparation and Applications, Materials Research Foundations, vol. 117, ISBN 978-1-64490-170-0, doi: 10.21741/9781644901717 – **international book**.
6. **Baltatu M.S.**, Burduhos-Nergis D.D., Burduhos-Nergis D.P., Vizureanu P., Advanced Metallic Biomaterials, Materials Research Foundations Vol. 118, 162 Pages, 2022, Print ISBN 978-1-64490-176-2, DOI: 10.21741/9781644901779 – **international book**.
7. Vizureanu P., **Bălțatu M.S.**, Sandu A.V., Development of New Advanced Ti-Mo Alloys for Medical Applications, IntechOpen, 2020 DOI: <http://dx.doi.org/10.5772/intechopen.91906> – **book chapter**.
8. Vizureanu P., Burduhos Nergis D.D., Sandu A.V., Burduhos Nergis D.P., **Baltatu M.S.**, The Physical and Mechanical Characteristics of Geopolymers Using Mine Tailings as Precursors, IntechOpen, 2021, DOI: 10.5772/intechopen.97807 – **book chapter**.
9. Vizureanu P., **Bălțatu M.S.**, Sandu A.V., Achitei D.C., Burduhos Nergis D.D., Perju M.C., New Trends in Bioactive Glasses for Bone Tissue: A review, Current Concepts in Dental Implantology - From Science to Clinical Research, IntechOpen, 2021, DOI: <http://dx.doi.org/10.5772/intechopen.100567> – **book chapter**.
10. Vizureanu P., **Bălțatu M.S.**, Sandu A.V., Achitei D.C., Burduhos Nergis D.D., Perju M.C., Assessment of Solar Energy Potential Limits within Solids on Heating-Melting Interval, IntechOpen, 2022, DOI: 10.5772/intechopen.104847 – **book chapter**.

3. Paper list

3.1. Articles published in ISI indexed journals

1. **Baltatu, M.S.**; Vizureanu, P.; Sandu, A.V.; Solcan, C.; Hritcu, L.D.; Spataru, M.C. Research Progress of Titanium-Based Alloys for Medical Devices. *Biomedicines* **2023**, *11*, 2997. <https://doi.org/10.3390/biomedicines11112997>
2. Jiménez-Marcos C, Mirza-Rosca JC, **Baltatu MS**, Vizureanu P. Evaluation of New Titanium Alloys as Potential Materials for Medical Devices. *Microsc Microanal.* **2023** Jul 22;29(Supplement_1):196-201. doi: 10.1093/micmic/ozad067.088. PMID: 37613343
3. Jimenez-Marcos, C.; Mirza-Rosca, J.C.; **Baltatu, M.S.**; Vizureanu, P. Effect of Si Contents on the Properties of Ti15Mo7ZrxSi Alloys. *Materials* **2023**, *16*, 4906. <https://doi.org/10.3390/ma16144906>
4. Kong, L.; Heydari, Z.; Lami, G.H.; Saberi, A.; **Baltatu, M.S.**; Vizureanu, P. A Comprehensive Review of the Current Research Status of Biodegradable Zinc Alloys and Composites for Biomedical Applications. *Materials* **2023**, *16*, 4797. <https://doi.org/10.3390/ma16134797>
5. BURDUHOS-NERGIŞ D.D., VIZUREANU P., **BALTATU M.S.**, SANDU A.V., BURDUHOS NERGIŞ D.P., A BIBLIOMETRIC ANALYSIS OF RESEARCH ON FIBER REINFORCED GEOPOLYMER COMPOSITES. *U.P.B. Sci. Bull.* **2023**, Series B, Volume 85, Issue 1, Page 129-138
6. Istrate, B.; Munteanu, C.; **Băltatu, M.-S.**; Cimpoeşu, R.; Ioanid, N. Microstructural and Electrochemical Influence of Zn in MgCaZn Biodegradable Alloys. *Materials* **2023**, *16*, 2487. <https://doi.org/10.3390/ma16062487>
7. Ibrahim, W.M.A.W.; Abdullah, M.M.A.B.; Jamil, N.H.; Mohamad, H.; Salleh, M.A.A.M.; Sandu, A.V.; Vizureanu, P.; **Baltatu, M.S.**; Sukmak, P. Alkaline-Activation Technique to Produce Low-Temperature Sintering Activated-HAp Ceramic. *Appl. Sci.* **2023**, *13*, 2643. <https://doi.org/10.3390/app13042643>
8. Zhang, H.; Saberi, A.; Heydari, Z.; **Baltatu, M.S.** Bredigite-CNTs Reinforced Mg-Zn Bio-Composites to Enhance the Mechanical and Biological Properties for Biomedical Applications. *Materials* **2023**, *16*, 1681. <https://doi.org/10.3390/ma16041681>
9. Mydin, M.A.O.; Abdullah, M.M.A.B.; Razak, R.A.; Nawi, M.N.M.; Risdanareni, P.; Puspitasari, P.; Sandu, A.V.; **Baltatu, M.S.**; Vizureanu, P. Study on Polypropylene

- Twisted Bundle Fiber Reinforced Lightweight Foamed Concrete. *Buildings* **2023**, 13, 541. <https://doi.org/10.3390/buildings13020541>
10. Mubarokah, Z.R.; Mahmed, N.; Norizan, M.N.; Mohamad, I.S.; Abdullah, M.M.A.B.; Błoch, K.; Nabialek, M.; **Baltatu, M.S.**; Sandu, A.V.; Vizureanu, P. Near-Infrared (NIR) Silver Sulfide (Ag₂S) Semiconductor Photocatalyst Film for Degradation of Methylene Blue Solution. *Materials* **2023**, 16, 437. <https://doi.org/10.3390/ma16010437>.
 11. Roduan, S.F.; Wahab, J.A.; Salleh, M.A.A.M.; Mahayuddin, N.A.H.M.; Abdullah, M.M.A.B.; Halil, A.B.M.; Zaifuddin, A.Q.S.; Muhammad, M.I.; Sandu, A.V.; **Baltatu, M.S.**; Vizureanu, P. Effectiveness of Dimple Microtextured Copper Substrate on Performance of Sn-0.7Cu Solder Alloy. *Materials* **2023**, 16, 96. <https://doi.org/10.3390/ma16010096>.
 12. Mydin, M.A.O.; Abdullah, M.M.A.B.; Mohd Nawawi, M.N.; Yahya, Z.; Sofri, L.A.; **Baltatu, M.S.**; Sandu, A.V.; Vizureanu, P. Influence of Polyformaldehyde Monofilament Fiber on the Engineering Properties of Foamed Concrete. *Materials* **2022**, 15, 8984. <https://doi.org/10.3390/ma15248984>.
 13. **Baltatu, M.S.**; Chiriac-Moruzzi, C.; Vizureanu, P.; Tóth, L.; Novák, J. Effect of Heat Treatment on Some Titanium Alloys Used as Biomaterials. *Appl. Sci.* **2022**, 12, 11241. <https://doi.org/10.3390/app122111241>.
 14. Achitei, D.C.; **Baltatu, M.S.**; Vizureanu, P.; Sandu, A.V.; Benchea, M.; Istrate, B. Ni-Cr Alloys Assessment for Dental Implants Suitability. *Appl. Sci.* **2022**, 12, 12814. <https://doi.org/10.3390/app122412814>.
 15. Mohamad, I.S.; Norizan, M.N.; Mahmed, N.; Jamalullail, N.; Halin, D.S.C.; Salleh, M.A.A.M.; Sandu, A.V.; **Baltatu, M.S.**; Vizureanu, P. Enhancement of Power Conversion Efficiency with Zinc Oxide as Photoanode and Cyanococcus, Punica granatum L., and Vitis vinifera as Natural Fruit Dyes for Dye-Sensitized Solar Cells. *Coatings* **2022**, 12, 1781. <https://doi.org/10.3390/coatings12111781>.
 16. Zhao, J.; Haowei, M.; Saberi, A.; Heydari, Z.; **Baltatu, M.S.** Carbon Nanotube (CNT) Encapsulated Magnesium-Based Nanocomposites to Improve Mechanical, Degradation and Antibacterial Performances for Biomedical Device Applications. *Coatings* **2022**, 12, 1589. <https://doi.org/10.3390/coatings12101589>.

17. Jimenez-Marcos, C.; Mirza-Rosca, J.C.; **Baltatu, M.S.**; Vizureanu, P. Experimental Research on New Developed Titanium Alloys for Biomedical Applications. *Bioengineering* **2022**, *9*, 686. <https://doi.org/10.3390/bioengineering9110686>.
18. Jiménez-Marcos C., **Baltatu M.S.**, Florido-Suárez N.R., Socorro-Perdomo P.P., Vizureanu P., Mirza-Rosca J.C. Mechanical properties and corrosion resistance of two new titanium alloys for orthopaedics applications, *Materials Today: Proceedings*, **2022**. <https://doi.org/10.1016/j.matpr.2022.09.394>.
19. Baltatu, I.; Sandu, A.V.; Vlad, M.D.; Spataru, M.C.; Vizureanu, P.; **Baltatu, M.S.** Mechanical Characterization and In Vitro Assay of Biocompatible Titanium Alloys. *Micromachines* **2022**, *13*, 430. <https://doi.org/10.3390/mi13030430>.
20. Ikmal Hakem Azis, Mohd Mustafa Al Bakri Abdullah, Mohd Arif Anuar Mohd Salleh, Sorachon Yoriya, Rafiza Abd Razak, Rosnita Mohamed, **Madalina Simona Baltatu**, The Investigation of Ground Granulated Blast Furnace Slag Geopolymer at High Temperature by Electron Backscatter Diffraction Analysis. *Archives of Metallurgy and Materials* **2022**, *67*(1), 227-231. DOI 10.24425/amm.2022.137494.
21. Baltatu I., Sandu A.V., **Baltatu M.S.**, Benchea M., Achitei D.C., Perju M.C., Vizureanu P., Benea L., Structural and Physical Characterization of New Ti-Based Alloys, *Metall. Mater.* **67** (2022), *1*, 255-259, DOI: <https://doi.org/10.24425/amm.2022.137499>.
22. Spataru M.C, Cojocar F.D., Sandu A.V., Solcan C., Duceac I.A., **Baltatu M.S.**, Voiculescu I., Geanta V., Vizureanu P. Assessment of the Effects of Si Addition to a New TiMoZrTa System. *Materials* **2021**, *14*, 7610. <https://doi.org/10.3390/ma14247610>.
23. **Baltatu, M.S.**; Sandu, A.V.; Nabialek, M.; Vizureanu, P. Biomimetic Deposition of Hydroxyapatite Layer on Titanium Alloys. *Micromachines* **2021**, *12*, 1447. <https://doi.org/10.3390/mi12121447> .
24. **Baltatu M.S.**, Spataru M.C., Verestiuc I., Balan V., Solcan C., Sandu A.V., Geanta V., Voiculescu I., Vizureanu P., Design, Synthesis, and Preliminary Evaluation for Ti-Mo-Zr-Ta-Si Alloys for Potential Implant Applications, *Materials* **2021**, *14*(22), 6806; <https://doi.org/10.3390/ma14226806>.
25. **Baltatu M.S.**, Vizureanu P., Sandu A.V., Florido-Suarez N., Saceleanu M.V., Mirza-Rosca J.C., New Titanium Alloys, Promising Materials for Medical Devices, *Materials* **2021**, *14*(20), 5934; <https://doi.org/10.3390/ma14205934>.

26. Spataru M.C., Butnaru M., Sandu A.V., Vulpe V., Vlad M.D., **Baltatu M.S.**, Geanta V., Voiculescu I., Vizureanu P., Solcan C., In-depth Assessment of New Ti-based Biocompatible Materials, **Materials Chemistry and Physics** **2021**.
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28. **Baltatu, M.S.**, Vizureanu, P., Sandu, A.V., Munteanu, C., Istrate, B., Microstructural Analysis and Tribological Behavior of Ti-Based Alloys with a Ceramic Layer Using the Thermal Spray Method, **Coatings**, vol. 10, nr. 12, article number 1216, **2020**.
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31. **Baltatu M.S.**, Tugui C.A., Perju M.C., Benchea M., Spataru M.C., Sandu A.V., Vizureanu P., Biocompatible Titanium Alloys used in Medical Applications, **REV.CHIM.**(Bucharest),70, No. 4, **2019**, pag. 1302-1306.
32. Focsaneanu S.C., Vizureanu P., Sandu A.V., Ciobanu G., **Baltatu S.M.**, Vlad D., Experimental Study on the Influence of Zirconia Surface Preparation on Deposition of Hydroxyapatite, **Revista de Chimie**, vol. 70, nr.6, **2019**, pp. 2273-2275.
33. Sandu A.V., **Baltatu M.S.**, Nabialek M., Savin A., Vizureanu P., Characterization and Mechanical Properties of New TiMo Alloys Used for Medical Applications, **Materials** **2019**, 12(18), 2973.
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35. Savin A., Vizureanu P., Prevorovsky Z., Chlada M., Krofta J., **Baltatu M.S.**, Istrate B., Steigmann R., Noninvasive Evaluation of Special Alloys for Prostheses Using Complementary Methods, **Book Series: IOP Conference Series-Materials Science and Engineering**, Vol. 374, **2018**, Article Number: UNSP 012030.
36. Ariffin, N., Abdullah, M. M. A. B., Zainol, M.R.R. Mohd Arif, **Baltatu, M.S.**, Jamaludin, L., Effect of Solid to Liquid Ratio on Heavy Metal Removal by Geopolymer-Based Adsorbent, **Book Series: IOP Conference Series-Materials Science and Engineering**, Volume: 374, Article Number: UNSP 012045, **2018**.
37. **Baltatu, M. S.**, Vizureanu, P., Balan, T., Lohan, M., Tugui, C. A., Preliminary Tests for Ti-Mo-Zr-Ta Alloys as Potential Biomaterials, **Book Series: IOP Conference Series-Materials Science and Engineering**, Volume: 374, Article Number: UNSP 012023, **2018**.
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3.2. Articles published in Scopus indexed journals

42. Iustinian BALTATU, Lidia BENEĂ, Petrica VIZUREANU, **Madalina Simona BALTATU**, Marcin NABIALEK, BIOFUNCTIONALIZATION OF TITANIUM ALLOYS: METHODS

AND APPLICATIONS, **EUROPEAN JOURNAL OF MATERIALS SCIENCE AND ENGINEERING**, **2023**, Volume 8, Issue 4, 240-248, DOI: 10.36868/ejmse.2023.08.04.240

43. **Madalina Simona BALTATU**, Petrica VIZUREANU, Andrei Victor SANDU, Iustinian BALTATU, Doru Dumitru BURDUHOS-NERGIS, Marcelin BENCHEA, PROSPECTS ON TITANIUM BIOMATERIALS, **EUROPEAN JOURNAL OF MATERIALS SCIENCE AND ENGINEERING**, **2023**, Volume 8, Issue 4, 201-212, DOI: 10.36868/ejmse.2023.08.04.201
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45. Vizureanu P., Burduhos-Nergis D.D., Sandu A.V., Achitei D.C., Burduhos-Nergis D.P., **Baltatu M.S.** & Perju M.C. Mechanical Performance of Coal Ash - Mine Tailings Blended Geopolymer Designed by Taguchi Method, *Springer Proceedings in Materials*, **2023**, vol 38. Springer, Cham. https://doi.org/10.1007/978-3-031-45964-1_15
46. **Bălțatu M. S.**, Vizureanu P., Bălțatu I., Burduhos Nergis D.D., Achitei D.C., Perju M.C., Electrochemical Behaviour of Ti-Mo Alloys for Medical Application in Biological Solution, *IOP Conf. Series: Materials Science and Engineering* 877 (2020) 012031, IOP Publishing, doi:10.1088/1757-899X/877/1/012031.
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50. Bălțatu I., Vizureanu P., Ciolacu F., Achitei D.C., **Bălțatu M.S.**, Vlad D., In Vitro study for new Ti-Mo-Zr-Ta alloys for medical use, **IOP Conf. Ser.: Mater. Sci. Eng.** 572, **2019**, 012030.
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