

Tematica și bibliografia

Nr. crt.	Tema propusă	Conducătorul de doctorat	Bibliografia	Forma de finanțare
1	Influențele parametrilor de printare 3D a materialelor composite hibride asupra structurii și proprietăților unor componente ale încălțămintei de protecție	Prof. univ. dr. ing. Constantin BACIU	- Andrzejewski, J., Mohanti, Amar, Development of hybrid composites reinforced with biocarbon/carbon fiber system, The comparative study for PC, ABC and PC/ABS based materials - Bianchi, I, Forcellese, A, ș.a. Lyfe cycle impact assessment of safety shoes toe caps realized with reclaimed composite materials, Journal of Cleaner Production, vol. 347, 1 May 2022, 131321 - ***The guide to shoe made of steel aluminium composite, fiberglass and carbon, <a href="https://uniwork.it">https://uniwork.it</a>	Buget cu bursă / Buget fără bursă / Taxă
2	Cercetări asupra structurii și proprietăților unor materiale polimerice destinate construcției tălpilor echipamentelor de protecție individuală	Prof. univ. dr. ing. Constantin BACIU	-*** Material development status of safety shoes soles MKsafetyshoes, <a href="https://liketotomk.live">https://liketotomk.live</a> -*** Poliurethane Raw Materials for Safety Shoes Soles, <a href="https://kimpur.com">https://kimpur.com</a> -*** Introduction of different material of shoe sole, <a href="https://www.tpupolymer.com">https://www.tpupolymer.com</a>	Buget cu bursă / Buget fără bursă / Taxă
3	Obținerea și caracterizarea de noi straturi fosfatate cu proprietăți anticorozive	Prof. univ. dr. ing. Costică BEJINARIU	-Sandu A.V., Bejinariu, C., Sandu I.G., Abdullah M.M.B. Modern Technologies of Thin Films Deposition. Chemical Phosphatation. Published by Materials Research Forum LLC. Millersville, PA 17551, United States of America, 2018. Published as part of the book series. Materials Research Foundations. Volume 39 (2018). ISSN 2471-8890 (Print). ISSN 2471-8904 (Online). Print ISBN 978-1-945291-90-6. ePDF ISBN 978-1-945291-91-3. 158 p. doi: <a href="http://dx.doi.org/10.21741/9781945291913">http://dx.doi.org/10.21741/9781945291913</a> .	Buget cu bursă / Buget fără bursă / Taxă
4	Studii și cercetări privind îmbunătățirea proprietăților materialelor metalice din cadrul echipamentelor de muncă și	Prof. univ. dr. ing. Costică BEJINARIU	-Burduhos-Nergis, D.P., Bejinariu, C., Sandu A.V. Phosphate Coatings Suitable for Personal Protective Equipment. Published by Materials	Buget cu bursă / Buget

	echipamentelor individuale de protecție		Research Forum LLC. Millersville, PA 17551, United States of America, 2020. Published as part of the book series. Materials Research Foundations. Volume 89 (2021). ISSN 2471-8890 (Print). ISSN 2471-8904 (Online). Print ISBN 978-1-64490-110-6. ePDF ISBN 978-1-64490-111-3. 188 p. doi: <a href="https://doi.org/10.21741/9781644901113">https://doi.org/10.21741/9781644901113</a>	fără bursă / Taxă
5	Studiul efectelor de prelucrare termomecanică asupra structurii și proprietăților materialelor cu memoria formei	Prof. univ. dr. ing. Leandru-Gheorghe BUJOREANU	-Sun, L.; Huang, W.M.; Ding, Z.; Zhao, Y.; Wang, C.C.; Purnawali, H.; Tang, C. Stimulus-responsive shape memory materials: A review, Mater Design, 2012, 33, 577–640. -Ma, J.; Karaman, I. Expanding the repertoire of shape memory alloys. Science 2010, 327, 1468–1469. doi: 10.1126/science.1186766 -L.G.Bujoreanu, Materiale Inteligente, Editura Junimea 2022	Buget cu bursă / Buget fără bursă / Taxă
6	Studiul efectului elastocaloric din aliajele cu memoria formei	Prof. univ. dr. ing. Leandru-Gheorghe BUJOREANU	- M. Imran, X. Zhang, Reduced dimensions elastocaloric materials: A route towards miniaturized refrigeration, Mater Design, 206, 2021, 109784, <a href="https://doi.org/10.1016/j.matdes.2021.109784">https://doi.org/10.1016/j.matdes.2021.109784</a> . - Junyu Chen , Liping Lei , Gang Fang, Elastocaloric cooling of shape memory alloys: A review, Materials Today Communications 28 (2021) 102706. - Shuyao Wang, Yongjun Shi *, Ying Li, Hai Lin, Kaijun Fan, Xiangjie Teng, Solid-state refrigeration of shape memory alloy-based elastocaloric materials: A review focusing on preparation methods, properties and development, Renewable and Sustainable Energy Reviews 187 (2023) 113762	Buget cu bursă / Buget fără bursă / Taxă
7	Studiul efectelor orientării cristalografice asupra fenomenelor de memoria formei	Prof. univ. dr. ing. Leandru-Gheorghe BUJOREANU	- Y. Tanaka, Y. Himuro, R. Kainuma, Y. Sutou, T. Omori, and K. Ishida, Ferrous Polycrystalline Shape-Memory Alloy Showing Huge Superelasticity, Science, 2010, 327, p 1488–1490.	Buget cu bursă / Buget fără bursă / Taxă

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8	Obținerea, procesarea și investigarea materialelor biodegradabile pe bază de Zn și Fe	Prof. univ. dr. ing. Nicanor CIMPOEȘU	<p>- Hongtao Yang, Bo Jia, Zechuan Zhang, Xinhua Qu, Guannan Li, Wenjiao Lin, Donghui Zhu, Kerong Dai &amp; Yufeng Zheng, Alloying design of biodegradable Zinc as promising bone implants for load-bearing applications Nature Communications volume 11, Article number: 401 (2020), <a href="https://doi.org/10.1038/s41467-019-14153-7">doi.org/10.1038/s41467-019-14153-7</a></p> <p>-G. Manivasagam &amp;S. Suwas Biodegradable Mg and Mg based alloys for biomedical implants; Materials Science and Technology Volume 30, 2014 - Issue 5: Biodegradable <a href="https://doi.org/10.1179/1743284713Y.000000500">materialsdoi:10.1179/1743284713Y.000000500</a></p> <p>- Xiao Lin,Saijilafu,Xiexing Wu,Kang Wu,Jianquan Chen,Lili Tan, et. al, Biodegradable Mg-based alloys: biological implications and restorative opportunities, International Materials Reviews, Volume 68, 2023 - Issue 4; <a href="https://doi.org/10.1080/09506608.2022.2079367">https://doi.org/10.1080/09506608.2022.2079367</a></p> <p>- Yunfei Ding,a Cuie Wen,b Peter Hodgsona and Yuncang Li, Effects of alloying elements on the corrosion behavior and biocompatibility of biodegradable magnesium alloys: a</p>	Buget cu bursă / Buget fără bursă / Taxă

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9	Obținerea, prelucrarea și caracterizarea materialelor ceramice sub forma de straturi	Prof. univ. dr. ing. Nicanor CIMPOEȘU	<p>- Meunier, C.; Zuo, F.; Peillon, N.; Saunier, S.; Marinel, S.; Goeuriot, D. In situ study on microwave sintering of ZTA ceramic: Effect of ZrO<sub>2</sub> content on densification, hardness, and toughness. J. Am. Ceram. Soc. 2017, 100, 929–936.</p> <p>- Dejang, N.; Limpichaipanit, A.; Watcharapasorn, A.; Wirojanupatump, S.; Niranatlumpong, P.; Jiansirisomboon, S. Fabrication and Properties of Plasma-Sprayed Al<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> Composite Coatings. J. Therm. Spray Technol. 2011, 20, 1259–1268.</p> <p>- Jia X., Chen y., Liu l., Wang C. and Duan J., Advances in Laser Drilling of Structural Ceramics, 2022, Nanomaterials, 12, 230, <a href="https://doi.org/10.3390/nano12020230">https://doi.org/10.3390/nano12020230</a>.</p> <p>- Zhao Y., Ge Y., Jin X., Koch D., Vaßen R., Chen Y., Fan X., Oxidation behavior of doubleceramic-layer thermal barrier coatings deposited by atmospheric plasma spraying and suspension plasma spraying, 2022, Ceramics International, 48, 23938–23945.</p>	Buget cu bursă / Buget fără bursă / Taxă
10	Modelarea structurii și proprietăților materialelor metalice la deformarea/sudarea electromagnetică	Prof. univ. dr. ing. Dorin LUCA	<p>1. DENG, F.; CAO, Q.; HAN, X. et al., Electromagnetic pulse spot welding of aluminum to stainless steel sheets with a field shaper. The International Journal of Advanced Manufacturing Technology, 2018, vol. 98, nr. 5, p. 1903-1911.</p>	Buget cu bursă / Buget fără bursă / Taxă

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11	Evoluția microstructurii la procesarea cuprului prin extrudare multiplă și laminare ulterioară	Prof. univ. dr. ing. Dorin LUCA	<p>1. MONTAZERI-POUR, M. et al., Microstructural and mechanical properties of AA1100 aluminum processed by multi-axial incremental forging and shearing. Materials Science and Engineering A, Vol. 639, 2015, 705-716. DOI: 10.1016/j.msea.2015.05.066.</p> <p>2. LI, F., SHI, W., BIAN, N., WU, H.-B., Effect of accumulative strain on grain refinement and strengthening of ZM6 magnesium alloy during continuous variable cross-section direct extrusion. Acta Metallurgica Sinica (English Letters), Vol. 28, Issue 5, 2015, 649-655. DOI: 10.1007/s40195-015-0245-5.</p> <p>3. MONTAZERI-POUR, M., PARSA, M.H., MIRZADEH, H., Multi-axial incremental forging and shearing as a new severe plastic deformation</p>	Buget cu bursă / Buget fără bursă / Taxă

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12	Efectul vitezei de deformare asupra microstructurii și proprietăților mecanice ale unor aliaje ușoare deformate plastic cu viteze ridicate	Prof. univ. dr. ing. Dorin LUCA	<p>1. COLE, B.N. et al., High speed impact extrusion of metals. Proc Instn Mech Engrs, 1965, Vol. 180, Pt. 1, No. 8, 191-215.</p> <p>2. WÄLDER, J. et al., Numerical investigations for simultaneously processing metal and plastic using impact extrusion. MATEC Web of Conf 80: 16003, 2016, 618-625. DOI: 10.1051/mateconf/20168016003.</p> <p>3. MAGLIARO, J., ALTENHOF, W., Energy absorption mechanisms and capabilities for magnesium extrusions under impact. Int J Mech Sci 2020; 179:105667. <a href="https://doi.org/10.1016/j.ijmecsci.2020.105667">https://doi.org/10.1016/j.ijmecsci.2020.105667</a></p> <p>4. ZHU, G., LIAO J., SUN, G., LI, Q., Comparative study on metal/CFRP hybrid structures under static and dynamic loading. Int J Impact Eng 2020; 141:103509.</p> <p>5. ANDRÉ, N., DOS SANTOS, J., AMANCIO-FILHO, S., Impact resistance of metal-composite hybrid joints produced by frictional heat. Compos Struct 2020; 233:111754.</p> <p>6. DU, Y. et al., The effect of double extrusion on the microstructure and mechanical properties of Mg-Zn-Ca alloy. Mater Sci Eng: A 2013; 583:69-77.</p> <p>7. SONG, G., ATRENS, A., Understand magnesium corrosion - A framework for improved alloy performance. Adv Eng Mater 2003; 5(12):837-58.</p>	Buget cu bursă / Buget fără bursă / Taxă

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13	Nanocolloids: from experiment to real life applications	Prof. univ. dr. ing. Alina Adriana MINEA	<p>- A. A. Minea, State of the Art in PEG-Based Heat Transfer Fluids and Their -- Suspensions with Nanoparticles, Nanomaterials 11 (2021) 86.</p> <p>- K. Yapici, N. K. Cakmak, N. Ilhan, Y. Uludag, Rheological characterization of polyethylene glycol based TiO2 nanofluids, Korea-Australia Rheol. J. 26 (2014) 355–363.</p> <p>- M. A. Marcos, L. Lugo, S. V. Ageev, N. E. Podolsky, D. Cabaleiro, V. N. Postnov, K. N. Semenov, Influence of molecular mass of PEG on rheological behaviour of MWCNT-based nanofluids for thermal energy storage. J Mol Liq (2018) 318, 113965.</p> <p>- M. I. Chereches, E. I. Chereches, D. Bejan, A. A. Minea, A morphology study on several PEG 400 based nanocolloids, Acta of the International Symposia on Thermodynamics of Metal Complexes, ISMEC Conference, June 16th – 18th, Białystok (Poland) 10 (2021) 18–19.</p> <p>- M. Chereches, D. Bejan, E. I. Chereches, A. Alexandru, A. A. Minea, An Experimental Study on Electrical Conductivity of Several Oxide Nanoparticle Enhanced PEG 400 Fluid, Int. J. Thermophys. 42 (2021) 104.</p> <p>- M. Chereches, C. Ibanescu, M. Danu, E. I. Chereches, A. A. Minea, PEG 400-Based phase change materials Nano-Enhanced with Alumina: An experimental approach, Alexandria</p>	Buget cu bursă / Buget fără bursă / Taxă

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14	Phase change materials for heat transfer	Prof. univ. dr. ing. Alina Adriana MINEA	<p>- D. Cabaleiro, S. Hamze, J. Fal, M.A. Marcos, P. Estellé, G. Zyla, Thermal and Physical Characterization of PEG Phase Change Materials Enhanced by Carbon-Based Nanoparticles. Nanomaterials 10 (2020) 1168.</p> <p>- M. Zafarani-Moattar, R. Majdan-Cegincara, Stability, rheological, magnetorheological and volumetric characterizations of polymer based magnetic nanofluids. Colloid Polym. Sci. 291 (2013) 1977–1987.</p> <p>- N. B. Girhe, S. N. Botewad, C. V. More, S. B. Kadam, P. P. Pawar, A. B. Kadam, Development of water-based CuO, TiO<sub>2</sub> and ZnO nanofluids and comparative study of thermal conductivity and viscosity, Pramana – J. Phys. 97 (2023) 68</p> <p>- E. I. Chereches, A. A. Minea, Experiments on the Electrical Conductivity of PEG 400 Nanocolloids Enhanced with Two Oxide Nanoparticles. Nanomaterials 13 (2023) 1555.</p>	Buget cu bursă / Buget fără bursă / Taxă

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15	Dezvoltarea de noi fluide, ca tehnică de intensificare a transferului termic	Prof. univ. dr. ing. Alina Adriana MINEA	<p>- E.-B. S. Mettawee, G.M.R. Assassa, Experimental study of a compact PCM solar collector, Energy 31 (2006) 2958–2968.</p> <p>- M.A. Fazilati, A.A. Alemrajabi, Phase change material for enhancing solar water heater, an experimental approach, Energy Conversion and Management 71 (2013) 138-145.</p> <p>- W. Wu, S. Dai, Z. Liu, Y. Dou, J. Hua, M. Li, X. Wang, X. Wang, Experimental study on the performance of a novel solar water</p>	Buget cu bursă / Buget fără bursă / Taxă

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17	Obținerea și caracterizarea de noi materiale compozite ecologice cu aplicații pe mediu	Conf. univ. dr. ing. Andrei Victor SANDU	<p><a href="https://doi.org/10.3390/ma16114103">https://doi.org/10.3390/ma16114103</a></p> <p><a href="https://doi.org/10.3390/app13042643">https://doi.org/10.3390/app13042643</a></p> <p><a href="https://doi.org/10.3390/ma16031096">https://doi.org/10.3390/ma16031096</a></p> <p><a href="https://doi.org/10.3390/ma16030954">https://doi.org/10.3390/ma16030954</a></p> <p><a href="https://doi.org/10.1016/j.cscm.2022.e01428">10.1016/j.cscm.2022.e01428</a></p>	Buget cu bursă / Buget fără bursă / Taxă



18	Studii si cercetari in vederea obtinerii de noi aliaje metalice cu aplicatii speciale	Conf. univ. dr. ing. Andrei Victor SANDU	<a href="https://doi.org/10.3390/ma16010096">https://doi.org/10.3390/ma16010096</a> <a href="https://doi.org/10.3390/coatings12121842">https://doi.org/10.3390/coatings12121842</a> 10.24425/amm.2022.137499 10.3390/coatings11080935	Buget cu bursă / Buget fără bursă / Taxă
19	Proiectarea obtinerea si caracterizarea straturilor functionale	Prof. univ. dr. ing. Ștefan-Lucian TOMA	<a href="http://www.sciencedirect.com/science/article/pii/S0257897212011450">http://www.sciencedirect.com/science/article/pii/S0257897212011450</a>	Buget cu bursă / Buget fără bursă / Taxă
20	Studii si cercetări privind obținerea filmelor subtiri prin procedee PVD	Prof. univ. dr. ing. Ștefan-Lucian TOMA	<a href="http://www.sciencedirect.com/science/article/pii/S0257897212012418">http://www.sciencedirect.com/science/article/pii/S0257897212012418</a> <a href="https://iopscience.iop.org/article/10.7567/JJAP.53.116202">https://iopscience.iop.org/article/10.7567/JJAP.53.116202</a> <a href="http://dx.doi.org/10.5772/intechopen.94748">http://dx.doi.org/10.5772/intechopen.94748</a>	Buget cu bursă / Buget fără bursă / Taxă
21	Studii si cercetari privind obtinerea si caracterizarea straturilor rezistente la frecare, uzura si la coroziune	Prof. univ. dr. ing. Ștefan-Lucian TOMA	<a href="https://doi.org/10.3390/coatings12070877">https://doi.org/10.3390/coatings12070877</a> <a href="http://dx.doi.org/10.5772/intechopen.94605">http://dx.doi.org/10.5772/intechopen.94605</a>	Buget cu bursă / Buget fără bursă / Taxă
22	Obtinerea si caracterizarea straturilor composite cu proprietati protective utilizate in constructia echipamentelor individuale de protectie	Prof. univ. dr. ing. Ștefan-Lucian TOMA	<a href="https://doi.org/10.3390/coatings12070877">https://doi.org/10.3390/coatings12070877</a> <a href="https://doi.org/10.1051/mateconf/2021343">https://doi.org/10.1051/mateconf/2021343</a>	Buget cu bursă / Buget fără bursă / Taxă
23	Obtinerea si caracterizarea straturilor functionale cu activitate fotocatalitica	Prof. univ. dr. ing. Ștefan-Lucian TOMA	<a href="https://www.mdpi.com/2073-8994/12/8/1356">https://www.mdpi.com/2073-8994/12/8/1356</a> . doi:10.4028/www.scientific.net/KEM.660.86 .	Buget cu bursă / Buget fără bursă / Taxă
24	Proiectarea obtinerea si caracterizarea depunerilor de biomateriale, de materiale antiseptice si antimicrobiene utilizate in medicina	Prof. univ. dr. ing. Ștefan-Lucian TOMA	<a href="https://www.mdpi.com/1648-9144/59/5/830">https://www.mdpi.com/1648-9144/59/5/830</a> <a href="https://doi.org/10.37358/MP.18.1.4969">https://doi.org/10.37358/MP.18.1.4969</a> , <a href="https://doi.org/10.37358/MP.20.2.5371">https://doi.org/10.37358/MP.20.2.5371</a>	Buget cu bursă / Buget fără bursă / Taxă
25	Proiectarea, obținerea și caracterizarea materialelor metalice și nemetalice	Prof. univ. dr. ing. Petrică VIZUREANU	1. Vitureanu P., Burduhos-Nergis D.D., Green Materials Obtained by Geopolymerization for a Sustainable Future, editura Materials Research Forum LLC, vol. 90 (2021) ISBN 978-1-64490-112-0. 2. Petrica Vitureanu (Editor), Mohd Mustafa Al Bakri Abdullah (Editor), Rafiza Abdul Razak (Editor), Dumitru Doru Burduhos-Nergis (Editor), Liew	Buget cu bursă / Buget fără bursă / Taxă

			Yun-Ming (Editor), Andrei Victor Sandu, Geopolymers: Properties and Applications 1st Edition, CRC Press; 1st edition (November 22, 2023), ISBN-10 : 1032486716, ISBN-13 : 978-1032486710, 152 pages.	
26	Proiectarea, obținerea și caracterizarea biomaterialelor metalice	Prof. univ. dr. ing. Petrică VIZUREANU	1. Minciună M.G., Vizureanu P., Materiale metalice avansate pentru aplicații medicale, editura PIM, Iași, 2016, 178pg., ISBN 978-606-13-3529-9. 2. Vizureanu P., Baltatu M.S., Titanium-Based Alloys for Biomedical Applications, editura Materials Research Forum LLC, volume 74, 2020, ISSN 2471-8890.	Buget cu bursă / Buget fără bursă / Taxă