

L I S T A

lucrărilor științifice în domeniul disciplinelor din postul didactic

A. Teza de doctorat

2007 - PhD in Biophysics – Theoretical Medical Sciences, University of Szeged, Szeged, HU

2015 – Habilitation in Biophysics and Medical Physics – Department of Radiology, Medical University of Graz, Graz, Austria

B. Cărți și capitole în cărți publicate în ultimii 10 ani

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C. Lucrări indexate ISI/BDI publicate în ultimii 10 ani

1. Manole, S., Pintican, R., Budurea, C., Pop, S., Iancu, S. D., Popa, L., Coman, M., Schiau, C., Coman, V., Schiau, S., & **Bálint, Z.** (2025). Increased Left Ventricular Mass Index and Atrial Volume Index Are Associated with Atrial Fibrosis in Patients with Atrial Fibrillation. *Journal of Clinical Medicine*, 14(18), 6432. <https://doi.org/10.3390/jcm14186432>
2. Andreea C. Ciobanu, Virgil Sivoglo, Diana Maican, Ferenc Járαι-Szabó, **Zoltán Bálint**. Reply to: Correspondence by Kleebayoon and Wiwanitkit. *Technical Innovations & Patient Support in Radiation Oncology*, 2025, 100342, ISSN 2405-6324, <https://doi.org/10.1016/j.tipsro.2025.100342>.
3. Andreea C. Ciobanu, Virgil Sivoglo, Diana Maican, Ferenc Járαι-Szabó, **Zoltán Bálint**. Custom-made, 3D-printed bolus cap for a case of scalp metastasis: A single-institution study, *Technical Innovations & Patient Support in Radiation Oncology*, Volume 35, 2025, 100332, ISSN 2405-6324, <https://doi.org/10.1016/j.tipsro.2025.100332>.
4. Andreea C. Ciobanu, Lucian Cristian Petcu, Ferenc Járαι-Szabó and **Zoltán Bálint**. 2025. Validation of a 3D printed bolus for radiotherapy: a proof-of-concept study. *Biomedical Physics & Engineering Express*. 2025 Feb 12;11(2). DOI 10.1088/2057-1976/adb15d
5. Telecan, Teodora, Cosmin Caraiani, Bianca Boca, Roxana Sipos-Lascu, Laura Diosan, **Zoltan Bálint**, Raluca Maria Hendea, Iulia Andras, Nicolae Crisan, and Monica Lupsor-Platon. 2025. Automatic Characterization of Prostate Suspect Lesions on T2-Weighted Image Acquisitions Using Texture Features and Machine-Learning Methods: A Pilot Study *Diagnostics* 15(1): 106. <https://doi.org/10.3390/diagnostics15010106>.
6. Orzan Filip , Ștefania D Iancu , Laura Dioșan and **Zoltán Bálint**. 2025. Textural Analysis and Artificial Intelligence as Decision Support Tools in the Diagnosis of Multiple Sclerosis -A Systematic Review. *Front. Neurosci. - Brain Imaging Methods* 18:1457420. doi: 10.3389/fnins.2024.1457420.
7. G.A.M. Salagean, D. Portik, **Z. Bálint**, P. Poortmans. Can the daily position of bolus material influence radiotherapy treatment? 2024. *Reports of Practical Oncology and Radiotherapy*. 29(6):732-739. DOI:10.5603/rpor.104013

8. A.C. Ciobanu, L.C. Petcu, F. J  rai-Szab  , **Z. B  lint**. Exploring the impact of filament density on the responsiveness of 3D-Printed bolus materials for high-energy photon radiotherapy. 2024. *Physica Medica* 127(3):104849. DOI: 10.1016/j.ejmp.2024.104849
9. G.A.M. Salagean, K. Varga, **Z. B  lint**, D. Portik. In Vivo Lens Dosimetry in a Case of En Face Electron Adjuvant Radiotherapy for Cutaneous Nasal Bridge Basal Cell Carcinoma: A Case Report. *Journal of Medical and Radiation Oncology* 2023, II, 2, 1 October 2023, 71 - 77 DOI: 10.53011/JMRO.2023.02.09
10. Bianca Boca, Cosmin Caraiani, Teodora Telecan, Roxana Pintican, Andrei Lebovici, Iulia Andras, Nicolae Crisan, Alexandru Pavel, Laura Diosan, **Zoltan Balint**, Monica Lupsor-Platon, Mircea Marian Buruian. MRI-Based Radiomics in Bladder Cancer: A Systematic Review and Radiomics Quality Score Assessment. *Diagnostics* 2023, 13(13), 2300; <https://doi.org/10.3390/diagnostics13132300>
11. Larisa-Gabriela Coroam  , Laura Dio  an, Teodora Telecan, Iulia Andras, Nicolae Cri  an, Anca Andreica, Cosmin Caraiani, Andrei Lebovici, **Zolt  n B  lint**, Bianca Boca. A light, 3D UNet based architecture for fully automatic segmentation of prostate lesions from T2-MRI images. *Current Medical Imaging* 2023. 20: e220523217208. DOI: 10.2174/1573405620666230522151445
12. Diana M. Coroama, Laura Dio  an, Teodora Telecan, Iulia Andras, Nicolae Crisan, Paul Medan, Anca Andreica, Cosmin Caraiani, Andrei Lebovici, Bianca Boca and **Zolt  n B  lint**. Fully automated bladder tumor segmentation from T2 MRI images using 3D U-Net algorithm. *Front. Oncology. Sec. Genitourinary Oncology* 2023. 13:1096136. doi: 10.3389/fonc.2023.1096136
13. Foris V, Kovacs G, Avian A, **B  lint Z**, Douschan P, Ghanim B, Klepetko W, Olschewski A and Olschewski H. Apelin-17 to diagnose idiopathic pulmonary arterial hypertension: A biomarker study. *Front. Physiol.* 2023. 13:986295. doi: 10.3389/fphys.2022.986295
14. Cosimo Bruni, Mariaelena Occhipinti, Michael Pienn, Gianna Camiciottoli, Maurizio Bartolucci, Silvia Bosello, Christian Payer, **Zolt  n B  lint**, Anna Rita Larici, Alessandra Tottoli, Lorenzo Tofani, Enrico De Lorenzis, Gemma Lepri, Silvia Bellando-Randone, Amelia Spinella, Dilia Giuggioli, Francesco Masini, Giovanna Cuomo, Federico Lavorini, Stefano Colagrande, Horst Olschewski, Marco Matucci-Cerinic. Lung vascular changes as early biomarkers of systemic sclerosis-related interstitial lung disease. *Rheumatology – (Oxford)* 2023. 62(2):696-706. doi: 10.1093/rheumatology/keac311.
15. Telecan, T.; Andras, I.; Crisan, N.; Giurgiu, L.; Cata, E.D.; Caraiani, C.; Lebovici, A.; Boca, B.; **B  lint, Z.**; Diosan, L.; Lupsor-Platon, M. More than Meets the Eye: Using Textural Analysis and Artificial Intelligence as Decision Support Tools in Prostate Cancer Diagnosis - A Systematic Review. *J. Pers. Med.* 2022, 12, 983. <https://doi.org/10.3390/jpm12060983>
16. Tudor Moisoiu, Mihnea P. Dragomir, Stefania D. Iancu, Simon Schallenberg, Giovanni Birolo, Giulio Ferrero, Dan Burghilea, Andrei Stefancu, Ramona G. Cozan, Emilia Licarete, Alessandra Allione, Giuseppe Matullo, Gheorghita Iacob, **Zolt  n B  lint**, Radu I. Badea, Alessio Naccarati, David Horst, Barbara Pardini, Nicolae Leopold, Florin I. Elec. 2022. Combined miRNA and SERS urine liquid biopsy for the point-of-care diagnosis and molecular stratification of bladder cancer. *Molecular Medicine* – 28, 39; doi.org/10.1186/s10020-022-00462-z
17. Tudor Moisoiu, Stefania D. Iancu, Dan Burghilea, Mihnea P. Dragomir, Gheorghita Iacob, Andrei Stefancu, Ramona G. Cozan, Oana Antal, **Zolt  n B  lint**, Valentin Muntean, Radu I. Badea, Emilia Licarete, Nicolae Leopold, Florin I. Elec. 2022. SERS liquid biopsy profiling of serum for the point-of-care diagnosis of kidney cancer. *Biomedicines* 10(2), 233; doi.org/10.3390/biomedicines10020233
18. Andrei Stefancu, Vlad Moisoiu, Minodora Desmirean, Stefania D Iancu, Adrian B Tigu, Bobe Petrushev, Ancuta Jurj, Ramona G Cozan, Liviuta Budisan, Bogdan Fetica, Andrei Roman, Gina Dobie, Cristina Turcas, Mihnea Zdrengeha, Patric Teodorescu, Sergiu Pasca, Doina Piciu, Delia Dima, **Zolt  n B  lint**, Nicolae Leopold, Ciprian Tomuleasa. 2022. SERS-based DNA methylation

- profiling allows the differential diagnosis of malignant lymphadenopathy. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 264, 120216. doi.org/10.1016/j.saa.2021.120216
19. Simona Manole, Claudia Budurea, Sorin Pop, Alin M. Iliescu, Cristiana A. Ciortea, Stefania D. Iancu, Loredana Popa, Mihaela Coman, Laszlo Szabo, Vasile Coman, **Zoltán Bálint**. 2021. Correlation between Volumes Determined by Echocardiography and Cardiac MRI in Controls and Atrial Fibrillation Patients. *Life* 11(12), 1362; doi.org/10.3390/life11121362
 20. Vlad Moisoiu, Stefania D Iancu, Andrei Stefancu, Tudor Moisoiu, Barbara Pardini, Mihnea P Dragomir, Nicolae Crisan, Lucretia Avram, Dana Crisan, Iulia Andras, Daniela Fodor, Loredana F Leopold, Carmen Socaciu, **Zoltán Bálint**, Ciprian Tomuleasa, Florin Elec, Nicolae Leopold. 2021. SERS liquid biopsy: an emerging tool for medical diagnosis. *Colloids and Surfaces B: Biointerfaces*, 208, 112064. doi.org/10.1016/j.colsurfb.2021.112064
 21. Dumitru, A. Andreica, L. Dioşan, **Z. Bálint**. 2021. A Transfer Learning Approach on the Optimization of Edge Detectors for Medical Images Using Particle Swarm Optimization. *Entropy*, 23(4), 414. doi.org/10.3390/e23040414
 22. R.R. Galea, L. Dioşan, A. Andreica, L. Popa, S. Manole, **Z. Bálint**. 2021. Region-of-interest-based cardiac image segmentation with deep learning. *Applied Sciences*, 11, 1965. doi.org/10.3390/app11041965
 23. Dumitru, A. Andreica, L. Dioşan, **Z. Bálint**. 2020. Robustness analysis of transferable cellular automata rules optimized for edge detection. *Procedia Computer Science* 176, 713-722
 24. D. Dumitru, A. Andreica, L. Dioşan, **Z. Bálint**. 2020. Evolutionary curriculum learning approach for transferable cellular automata rule optimization. In: *The Genetic and Evolutionary Computation Conference 2020 – GECCO*. pp.63-64
 25. R. Mărginean, A. Andreica, L. Dioşan, **Z. Bálint**. 2020. Butterfly Effect in Chaotic Image Segmentation. *Entropy* 22:1028. doi:10.3390/e22091028
 26. R. Mărginean, A. Andreica, L. Dioşan, **Z. Bálint**. 2020. Feasibility of Automatic Seed Generation Applied to Cardiac MRI Image Analysis. *Mathematics*. 8(9):1511. https://doi.org/10.3390/math8091511
 27. I.Sz. Tódor, O.T. Marişca, D. Rugină, Z. Diaconeasa, L. F. Leopold, C. Coman, E. Antonescu, L. Szabó, S.D. Iancu, **Z. Bálint**, N. Leopold. 2020. Photothermal property assessment of gold nanoparticle assemblies obtained by hydroxylamine reduction. *Colloid and Polymer Science*. 298: 1369–1377. https://doi.org/10.1007/s00396-020-04721-5
 28. S.D. Iancu, C. Albu, L. Chiriac, R. Moldovan, A. Stefancu, V. Moisoiu, V. Coman, L. Szabo, N. Leopold, **Z. Bálint**. 2020. Assessment of gold-coated iron oxide nanoparticles as negative T2 contrast agent in small animal MRI studies. *International Journal of Nanomedicine*. 15:4811—4824. https://doi.org/10.2147/IJN.S253184
 29. Stefancu, V. Moisoiu, C. Bocsa, **Z. Bálint**, D. T. Cosma, I. A. Veresiu, V. Chis, N. Leopold and F. Elec. 2018. SERS-based quantification of albuminuria in the normal-to-mildly increased range. *Analyst* 143:5372-5379. doi:10.1039/C8AN01072B
 30. V. Biasin, M. Wygrecka, T. Bärnthaler, K. Jandl, P. Jain, **Z. Bálint**, G. Kovacs, G. Leitinger, D. Kolb-Lenz, K. Kornmueller, F. Peters, K. Sinn, W. Klepetko, A. Heinemann, A. Olschewski, C. Becker-Pauly, G. Kwapiszewska. 2018. Docking of meprin α to heparan sulphate protects the endothelium from inflammatory cell extravasation. *Thrombosis and Haemostasis* - 118(10): 1790-1802. doi: 10.1055/s-0038-1670657
 31. Fazakas C, Nagaraj C, Zabini D, Vegh GA, Marsh LM, Wilhelm I, Krizbai IA, Olschewski H, Olschewski A and **Bálint Z**. 2018. Rho-kinase inhibition ameliorates dasatinib-induced endothelial dysfunction and pulmonary hypertension. *Frontiers in Physiology* 9:537. https://doi.org/10.3389/fphys.2018.00537

32. Pienn M, Burgard C, Payer C, Avian A, Urschler M, Stollberger R, Olschewski A, Olschewski H, Johnson T, Meinel FG, **Bálint Z**. 2018. Healthy Lung Vessel Morphology Derived From Thoracic Computed Tomography. *Frontiers in Physiology* 9:346. doi: 10.3389/fphys.2018.00346
33. Payer C, Pienn M, **Bálint Z**, Shekhovtsov A, Talakic E, Nagy E, Olschewski A, Olschewski H, Urschler M. 2016. Automated integer programming based separation of arteries and veins from thoracic CT images. *Medical image analysis* 34:109-122. doi: 10.1016/j.media.2016.05.002.
34. Foris V, Kovacs G, Marsh LM, **Bálint Z**, Tötsch M, Avian A, Douschan P, Ghanim B, Klepetko W, Olschewski A, Olschewski H. 2016. CD133+ cells in pulmonary arterial hypertension. *Eur Respir J*. 2016 Aug;48(2):459-69. doi: 10.1183/13993003.01523-2015.
35. Kovacs G, Kleinschek D, Kwapiszewska G, **Bálint Z**, Olschewski H and Olschewski A. 2016 [Research in Austria - the Ludwig Boltzmann Institute for Lung Vascular Research]. *Pneumologie* 70(5):331-335. doi: 10.1055/s-0042-104767
36. Jandl K, Stacher E, **Bálint Z**, Sturm E, Maric J, Peinhaupt M, Luschnig P, Aringer I, Fauland A, Konya V, Dahlen SE, Wheelock CE, Kratky D, Olschewski A, Marsche G, Schuligoi R, Heinemann A. 2016. Activated prostaglandin D2 receptors on macrophages enhance neutrophil recruitment into the lung. *Journal of Allergy Clinical Immunology* 137(3): 833-843.

D. Lucrări publicate în ultimii 10 anii în reviste și volume de conferințe cu referenți (neindexate)

- Reviste

- Selecție cu maximum 20 lucrări în volume de conferințe

1. The Effect of Filament Density on the Build-Up Region Responsiveness of 3D Printed Boluses in High-Energy Photon Radiotherapy. A.C. Ciobanu, M. Dumitru, L. Rebegea, F. Járαι-Szabó, Z. Bálint. 2023. International Journal of Radiation Oncology - Biology - Physics (IJROBP). Volume 117, Issue 2, Supplement, 1 October 2023, Page e657
2. Concentration dependent effect of bivalent cations on the stability of double-stranded DNA fragments. Lugojanu, Maria; Iancu, Stefania; Leopold, Nicolae; Balint, Zoltan. Jul 2023 | EUROPEAN BIOPHYSICS JOURNAL WITH BIOPHYSICS LETTERS 52(S1):S92-S92
3. Daily Bolus Position Variability with Dosimetric Implications in Adjuvant Breast Cancer Radiotherapy. G.A.M. Salagean, K. Varga, L. Kun-Balint, D. Cojocar, R. Neag, M. Cojocar-Laboncz, A. Cudlici, C. Duran, Z. Balint, D. Portik. PO-2306 ESTRO2023. May 2023. Radiotherapy and Oncology. 182(S1):S2073-S2074
4. Effect of the combined use of proton radiation and AraC on morphological changes and apoptosis in the liver of rats. Ignat, E; Severiukhin, Y; (...); Pasca, H. Jul 2021 | EUROPEAN BIOPHYSICS JOURNAL WITH BIOPHYSICS LETTERS 50(S1):175-175
5. Dumitru Delia, Andreica Anca, Dioșan Laura, Bálint Zoltán. Evolutionary Curriculum Learning Approach for Transferable Cellular Automata Rule Optimization. 2020. GECCO 2020 Proceedings of the Genetic and Evolutionary Computation Conference Companion
6. Mărginean Radu, Popa Loredana, Coman Mihaela, Manole Simona, Coman Vasile, Dioșan Laura, Andreica Anca, Bálint Zoltán. Initial validation of an automatic algorithm for whole heart segmentation from cardiac MRI images using atrial volume determination. 2020. European Congress of Radiology (ECR 2020)
7. Dumitru Delia, Andreica Anca, Dioșan Laura, Bálint Zoltán. Particle Swarm Optimization of Cellular Automata Rules for Edge Detection. 2019. International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2019).

8. Mărginean Radu, Popa Loredana, Coman Mihaela, Manole Simona, Coman Vasile, Dioşan Laura, Andreica Anca, Bálint Zoltán. Extended region growing algorithm for whole heart segmentation from cardiac MRI images. 2019. European Society of Cardiovascular Radiology Congress (ESCR 2019)
9. Mărginean Radu, Dioşan Laura, Andreica Anca, Bálint Zoltán: Autonomous Image Segmentation by Competitive Unsupervised GrowCut. 2019. International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2019)
10. Maria Lugoianu, Ştefania D. Iancu, Nicolae Leopold, Zoltán Bálint. SybrGreen Fluorescence can detect low concentrations of double-stranded DNA at different Ca²⁺ and Cl⁻ concentration. 2022. 17th National Conference of Biophysics with International Participation, 23-25 September 2022, Târgu Mureş, Romania
11. Vlad Gurchian, Ştefania D. Iancu, Nicolae Leopold, Zoltán Bálint. Spectral differences of salmon oil aging determined by hyperspectral imaging. 2022. 17th National Conference of Biophysics with International Participation, 23-25 September 2022, Târgu Mureş, Romania
12. Luoana Brădean, Ştefania D. Iancu, Nicolae Leopold, Zoltán Bálint. Hyperspectral analysis of acacia honey. 2022. 17th National Conference of Biophysics with International Participation, 23-25 September 2022, Târgu Mureş, Romania

E. Brevete obţinute în întreaga activitate

1. M. Pienn, H. Olschewski, G. Kovacs, **Z. Bálint**. Erfahren und Vorrichtung zur detektion einer Pulmonalen Hypertonie basierend auf Impedanzkardiogrammen – Method and device for detecting a pulmonary hypertension based on impedance cardiograms. Patent Application No. AT 518396/2017 filed 5th August 2016, issued 15th October 2017. PCT/AT2017/060198 filed 4th August 2017. Published: 8th February 2018 No.: WO/2018/023146.
2. M. Pienn, **Z. Bálint**, H. Olschewski, R. Stollberger, G. Kovacs. *Methode z. Nichtinvasiven Diagnose von Pulmonaler Hypertonie* – Patent Application No. AT 512393/2013 filed 29th June 2012, issued 13th August 2013; PCT/AT2013/050127 filed 25th June 2013.
 - M. Pienn, **Z. Bálint**, H. Olschewski, R. Stollberger, G. Kovacs. *Method for Processing Images of Pulmonary Circulation and Device for Performing the Method* – Patent Publication No. US 2015/0206303-A1, issue date 23rd July 2015.
 - M. Pienn, **Z. Bálint**, H. Olschewski, R. Stollberger, G. Kovacs. *Methode z. Nichtinvasiven Diagnose von Pulmonaler Hypertonie* – Patent Application No. EU 13737520.0 filed 19th December 2014; EU Patent 2867856 issue date 6th May 2015.
3. SD Iancu, A. Stefancu, V. Moisoiu, L. Szabo, N. Leopold, **Z. Bálint**. *Procedeu de obtinere de nanoparticule cu miez de magnetita si invelis de aur stabilizate cu glucoza*. Patent Application 2019-09-16 Priority to ROA201900571A, 2020-07-30 - Publication of RO134304A0
4. R. Marginean, L. Diosan, A. Andreica, L. Popa, S. Manole, L. Szabo, **Z. Bálint**. *Dispozitiv pentru detectarea si localizarea automata a fibrozei pe imagini de IRM cardiac*, Patent Application - 2020-09-02 - Priority to RO202000551A, 2021-09-30 - Publication of RO135197A0

Data:

Semnătura: