LISTĂ DE LUCRĂRI

Prof. dr. Leonard AZAMFIREI

A. TEZA DE DOCTORAT

Raţiunea rezecţiilor multivicerale în tratamentul cancerelor supramezocolice - confirmat prin Ordinul Ministrului Învăţământului nr. 4325/28 iunie 1995.

B. MANUALE ȘI SUPORTURI DE CURS (format tipărit/electronic)

1. Purcărea VL, **Azamfirei L**, Iacob G, Jinga V. *Aparatură și dispozitive medicale.* Editura Universitară Carol Davilla București, 2013; 383 p; ISBN 978-973-708-633-4.
2. **Azamfirei L.** Grigorescu B. *Aparatură pentru terapie intensivă - Note de curs pentru studenții de la Inginerie medicală* - format electronic.

C. MATERIAL DIDACTIC (DEZVOLTARE LABORATOARE ȘI APLICAȚII)

C1. Standuri laborator

1. Stand de laborator pentru analiza biomecanică a țesuturilor
2. Stand de tehnologii fotomecanice
3. Stand de laborator de tehnologii medicale de frontieră

C2. Îndrumar laborator/carte aplicații

1. **Azamfirei L.** Grigorescu B. *Aparatură și dispozitive medicale pentru anestezie și terapie intensivă - Aplicații practice pentru studenții de la Inginerie Medicală* - format electronic

C3. Aplicații informatice educaționale

1. Platforma UniX - platforma informatică educațională pentru evaluarea electronică a studenților și susținerea examenelor digitale în cadrul UMFST

D. ARTICOLE ȘTIINȚIFICE PUBLICATE IN EXTENSO

D1. Articole indexate în Web of Science - Clarivate Analytics (All Databases)

1. **Azamfirei L,** Bica D, Dragomir AC, Almasy E. *Healthcare Digital Twins Across Scales: From Precision Medicine to Health System Intelligence.*

Healthcare 2026, *14*, 2445; doi: 10.3390/healthcare14162445; **FI: 3,4/Q1.** Indexat Web of Science Thomson Reuters (WoS).

2. **Azamfirei L,** Oiaga MC, Pui MC. *From Intelligent Operating Room to Smart ICU: Digital Continuity, AI-Supported Decision-Making and CRRT as a Model of Pharmacokinetic Personalization in Critical Care.* Healthcare 2026; 14, 2834; doi: 10.3390/healthcare14172834; **FI: 3,4/Q1;** Indexat Web of Science Thomson Reuters (WoS).
3. **Azamfirei L,** Bica D, Maier M, Balla B, Bănescu C. *Oxford Nanopore Sequencing, a Promising Technology for Precision Diagnostics in Intensive Care Units: A Narrative Review.* Biomedicines 2026, 14, 1910; https://doi.org/10.3390/biomedicines14091910; **FI: 4.5/Q2;** Indexat Web of Science Thomson Reuters (WoS).
4. **Azamfirei L,** Vereș M. Bora S, Oiaga MC, Butiulca M, Lazăr AE, Szederjesi J, Grigorescu BL. *Smart Cardiac ICU: Digital Integration, Predictive Analytics, and Perioperative Inflammation.* Bioengineering - Artificial Intelligence for Computer-Aided Detection in Biomedical Applications 2026; 13, 921; https://doi.org/10.3390/bioengineering13080921; **FI: 4,4/Q2;** Indexat Web of Science Thomson Reuters (WoS).
5. **Azamfirei L.** *Technology Integration in Intensive Care Medicine Through Clinical Engineering and Convergent Biotechnology.* Journal of Critical Care Medicine 2026; 12(3):309-2312; DOI: 10.62838/jccm-2026-0035; **FI: 1,2/Q4;** Indexat Web of Science Thomson Reuters (WoS).
6. **Azamfirei L,** Cehan VD, Cehan AR, Pui M, Lazar AE**.** *Systems Bioengineering of Septic Shock Metabolism: Citrulline, Beta-Hydroxybutyrate and Plasma Biomarker-Based Phenotyping.* Biomolecules 2026, 16, 1189; https://doi.org/10.3390/biom16081189; **FI: 5,6/Q1;** Indexat Web of Science Thomson Reuters (WoS).
7. Frandeș O, **Azamfirei L*,** Branea OE, Frandeș SI, Lazăr AE. *Artificial Intelligence and Bioengineering Approaches for Antimicrobial Resistance Prediction.* Medicina 2026; 62, 1651; https://doi.org/10.3390/medicina62091651; **FI: 2,9/Q1;** Indexat Web of Science Thomson Reuters (WoS).
8. Săplăcan I, **Azamfirei L**, Grigorescu BL, Branea I, Fodor RS. *Machine Learning in One-Lung Ventilation: From Static Risk Scores to Dynamic Prediction of Severe Hypoxemia and Prolonged Extubation.* Biomed Informatics 2026; 6 (64); https://doi.org/10.3390/biomedinformatics6050064;

FI: 3,6/Q1; Indexat Web of Science Thomson Reuters (WoS).

9. Portan DV, Kontaxis LC, Tselepidi A, Papanicolaou GC, **Azamfirei L***, *Structure–property evolution of cubic and gyroid PLA scaffolds during in vitro degradation under physiologically relevant conditions.* Polymers - Advances in Biodegradable Polyester-Based Materials 2026; 18, 1984; https://doi.org/10.3390/polym18161984; **FI: 5,8/Q1;** Indexat Web of Science Thomson Reuters (WoS).
10. Maier M, **Azamfirei L***, Bica D, Grigorescu BL. *Artificial and biological membranes in acute kidney injury: a biomedical engineering framework on renal replacement therapy in critical care.* Journal of Critical Care Medicine 2026; 12(3):313-327; DOI: 10.62838/jccm-2026-0038; **FI: 1,2/Q4;** Indexat Web of Science Thomson Reuters (WoS).
11. Grigorescu BL, **Azamfirei L*,** Bora S, Bica D, Saplacan I, Gergo R, Veres M. *Physiological Data Integration and Predictive Modeling in Intensive Care.* Life 2026, 16 (8), 1254; doi: 10.3390/life16081254; **FI: 3,9/Q1;** Indexat Web of Science Thomson Reuters (WoS).
12. Keresztes M. **Azamfirei L,** Almasy E, Szederjesi J. *Target-Controlled Infusion for Caesarean Delivery Under General Anesthesia: From Conventional Pharmacokinetic Models to Physiologically Based Pharmacokinetic Modeling.* Life 2026, 16, 739; doi: 10.3390/life16050739; **FI: 3,9/Q1;** Indexat Web of Science Thomson Reuters (WoS).
13. Butiulca M, Farczadi L, Veres M, **Azamfirei L**. *Analytical Methods for Melatonin Quantification: Advances, Challenges, and Clinical Applications.* Pharmaceuticals 2026; 19:3,439; doi: 10.3390/ph19030439; **FI: 5,7/Q1;** Indexat Web of Science Thomson Reuters (WoS).
14. Coman O, **Azamfirei L,** Frandes O, Grigorescu BL. *Biosensing Platforms and Multimodal Monitoring of Sepsis-Associated Cell Death.* Biosensors 2026; *16*; 531; https://doi.org/10.3390/bios16100531; **FI: 6,2/Q1;** Indexat Web of Science Thomson Reuters (WoS).
15. Portan DV, Zoumpoulakis P, KostopouloV, Pitterou I, Tsiantas K, Michalopoulos E, **Azamfirei L*.** *Toward dynamic biomimetic biomaterials: temporal coupling of flavonoid-induced cellular responses and 3D-Printed PLA scaffold evolution.* Biomimetics - Biomimetic Three-Dimensional (3D) Scaffolds from Sustainable Biomaterials 2026; 11, 654; https://doi.org/10.3390/biomimetics11090654; **FI: 4,2/Q1;** Indexat Web of Science Thomson Reuters (WoS).

16. Stoian M, **Azamfirei L**, Bândilă SR, Stoian A, Babă FB, Bănescu C. *Circulating microRNAs and Plasma Gelsolin as Biomarkers of Sepsis: Molecular Insights and Prospects for Precision Medicine.* Biomolecules 2025, 15, 1621. https://doi.org/10.3390/ biom15111621; **FI:5,6/Q1;** Indexat Web of Science Thomson Reuters (WoS).
17. Butiulca M, Farczadi L, Imre S, Vari CE, Vlase L, **Azamfirei L**, Lazar A. *Evaluation of Ropivacaine and 3-OH-Ropivacaine Pharmacokinetics Following Interpectoral Nerve Block via LC-MS/MS - a pilot study*. International Journal of Molecular Sciences 2025, 26, 14:6696. https://doi.org/10.3390/ijms26146696; **FI: 5,6/Q1;** Indexat Web of Science Thomson Reuters (WoS).
18. Portan DV, Koliadima A, Kapolos, J, **Azamfirei L**. *Biomimetic Design and Assessment via Microenvironmental Testing: From Food Packaging Biomaterials to Implantable Medical Devices*. Biomimetics 2025, 10, 370. https:// doi.org/10.3390/biomimetics10060370; **FI:4,2/Q1;** Indexat Web of Science Thomson Reuters (WoS).
19. Tătaru OS, Ferro M, Marchioni M, Veccia A, Coman O, Lasorsa F, Brescia A, Crocetto F, Barone B, Catellani M, Lazar A, Petrisor M, Vartolomei MD, Lucarelli G, Antonelli A, Schips L, Autorino R, Rocco B, **Azamfirei L.** *HoloLens® platform for healthcare professionals simulation training, teaching, and its urological applications: an up-to-date review.* Therapeutic Advances in Urology 2024, 8;16:17562872241297554. doi: 10.1177/17562872241297554; **FI: 3,5/Q1;** Indexat Web of Science Thomson Reuters (WoS).
20. Butiulca M, Farczadi L, Vari CE, Imre S, **Azamfirei L**, Lazar A. *The study of ropivacaine pharmacokinetics in a clinical setting: a critical scoping review from the perspective of analytical methodologies.* International Journal of Molecular Sciences 2025, 25 (24), 13487. https://doi.org/10.3390/ijms252413487; **FI: 4,9/Q1;** Indexat Web of Science Thomson Reuters (WoS).
21. Heidari N, Olgiati S, Meloni D, Parkin J, Fish B, Slevin M, **Azamfirei L**. *A Gender-Bias-Mitigated, Data-Driven Precision Medicine System to Assist in the Selection of Biological Treatments of Grade 3 and 4 Knee Osteoarthritis: Development and Preliminary Validation of precisionKNEE.* Cureus Journal of Medical Science 2024; 16(3): e55832; DOI: 10.7759/cureus.55832; **FI: 1,3/Q2;** Indexat Web of Science Thomson Reuters (WoS).
22. Heidari N, Olgiati S, Meloni D, Slevin M, Noorani A, Pirovano F, **Azamfirei L**. *A Quantum-Enhanced Precision Medicine Application to Support Data-Driven*

Clinical Decisions for the Personalized Treatment of Advanced Knee Osteoarthritis: The Development and Preliminary Validation of precisionKNEE_QNN. Cureus Journal of Medical Science 2024; 16(1): e52093; DOI: 10.7759/cureus.52093; **FI: 1,3/Q2;** Indexat Web of Science Thomson Reuters (WoS).

23. Slevin M, Heidari N, **Azamfirei L**. *Monomeric C-Reactive Protein: current perspectives for utilization and inclusion as a prognostic indicator and therapeutic target*. Frontiers in Immunology 2022; 4(13):866379; DOI: 10.3389/fimmu.2022.866379; **FI: 7,561/Q1**; Indexat Web of Science Thomson Reuters (WoS).

D2. Articole publicate in extenso, în reviste indexate BDI

1. Dragomir AC, Cocuz IG, Cotoi OS, **Azamfirei L.** *Artificial intelligence based model for establishing the histopatological diagnostic of the cutaneous basal cell carcinoma.* Acta Marisiensis - Seria Medica 2022; 68:164-17; indexat SCOPUS.
2. Marginean CO, Branzaniuc K, Marginean C, **Azamfirei L**, Pitea AM. *Elastography, progression factor in liver ultrasound.* Revista Medico-Chirurgicală a Societății de Medici și Naturaliști din Iași 2010; 114 (3); 764-770; indexat SCOPUS.
3. Coman L, Szderjesi J, **Azamfirei L**, Copotoiu SM, Copotoiu R, Ionescu D. *Bispectral Index changes in general anaesthesia induced by TIVA and TCI.* Acta Medica Marisiensis 2010; 56 (6):512-516.

E. BREVETE DE INVENȚIE

1. **Azamfirei L**, Bănescu C. Suzuki S, Radford MHB, Manta A. Chirilă T. *Treating dry eye disease comprises exposing palpebral conjunctiva of eye; applying to at least portion of exposed palpebral conjunctiva photosensitizer that initiates crosslinking in response to photo-activating radiation; and irradiating exposed palpebral conjunctiva with photo-activating radiation.* **Derwent Innovations Index** (Derwent Primary Accession No. 2026-47818Q); Patent Numbers: US2026131002-A1 (SUA), EP4744677-A1 (Europa - EPO), AU2025267447-A1 (Australia).
2. **Azamfirei L,** Chirilă T. Suzuki S, Radford MHB. *Inhibiting rupture of artery i.e. aorta in subject, involves applying to at least portion of arterial wall photosensitizer that initiates crosslinking in response to photo-activating radiation, and irradiating arterial wall with photo-activating radiation to initiate*

crosslinking in arterial wall. **Derwent Innovations Index** (Derwent Primary Accession No. 2024-48096W); Patent Numbers: US2024148940-A1 (SUA), AU2022268295-A1 (Australia).

3. **Azamfirei L**, Chirilă TV, Suzuki S, Radford MHB. *Metode de inhibare.* RO-Buletinul Oficial de Proprietate Industrială BOPI - secțiunea **Brevete de invenție** 5/2024, RO138180 A1/A61N 5/06.

F. PRODUSE, TEHNOLOGII, PLATFORME ȘI SERVICII INOVATIVE

1. Platforma ARENA - Platformă electronică instituțională pentru raportarea, evaluarea și monitorizarea activităților de cercetare și a performanței academice

G. MONOGRAFII/CĂRȚI DE SPECIALITATE

1. **Azamfirei L.** *Sisteme clinice inteligente. Tehnologii medicale, infrastructuri digitale și medicină bazată pe date.* Ed. University Press Târgu Mureș, 2026; ISBN 978-630-376-000-1, 142 p.
2. Szederjesi J, **Azamfirei L.** *Target-Controlled Infusion în anestezie. Modelare farmacocinetică, tehnologii de control și aplicații clinice.* Ed. University Press Târgu Mureș, 2026; ISBN 978-630-376-012-4, 260 p.
3. **Azamfirei L.** *Biotehnologii digitale pentru simularea clinică avansată.* Ed. University Press Târgu Mureș, 2026; ISBN 978-630-376-001-8, 111 p.
4. Moldovan C, Szederjesi J, **Azamfirei L.** *Introducere în simularea medicală - Tehnologii, scenarii și protocoale pentru educația clinică aplicată (ed.2).* Ed. University Press Târgu Mureș, 2026; ISBN 978-630-376-002-5; 211 p.

H. ATRAGERE RESURSE FINANCIARE PRIN GRANTURI/PROIECTE/ CONTRACTE TERȚI

H1. Director sau responsabil de proiect

1. *Tehnologii de inginerie tisulara pentru regenerarea valvelor cardiace* - VALVE-REGEN. Contract nr. 50/2016, finanțat prin POC; 2017-2021; 8.779.476 lei (2.630.600 Euro).
2. *Implementarea Total Intravenous Anesthesia - Target-Controlled Infusion (TIVA-TCI) in practica anestezica. Evaluarea influentei TIVA asupra nivelului seric de interleukine si al moleculelor de adeziune celulara I-cam si V-cam.* Contract CNMP P IV nr. 41-025/2007; 2007-2010; 300.000 lei (89.800 Euro).

H2. Membru în echipă

1. *Platforma tehnologica Europ_Ro - cadrul sinergetic național de promovare a participării cercetării si industriei românești la PC 7 si dezvoltare a parteneriatului european in domeniul roboticii* - coordonator: Universitatea Politehnica din București. Contract CEEX nr. 126/2006 (cod 12425), 2006-2008; 200.000 lei (56.800 Euro).

I. PREZENTAREA/DISEMINAREA REZULTATELOR: PREZENȚĂ LA MANIFESTĂRI ȘTIINȚIFICE ÎN CALITATE DE AUTOR/CO-AUTOR DE LUCRĂRI, PROFESOR INVITAT

1. *The University Smart Hospital concept: from, the vision to the reality.* Servico Nacional de Saude, Unidade de Saude, Santa Maria Innovation Days 2026 - From Innovation to Implementation - Lisbon, Portugal, 16 sept. 2026.
2. *Inteligența artificială și inovația digitală în predicția și prevenirea rezistenței antimicrobiene.* Conferința națională Managementul Pacientului Critic în Patologia Infecțioasă, ed. 8, 8-10 iulie 2026, Târgu Mureș.
3. *Building the Intelligent Health Technology Ecosystem*. Technology & IHealth Conference, 3rd edition, Târgu Mureș, 22-24 aprilie 2026.
4. *Artificial Intelligence in Perioperatively: Risk Prediction, Alerts, and Pitfalls during Implementations.* The IXth Perioperative Medicine and Intensive Care Conference, Cluj, 26-27 iunie 2026.
5. *Antimicrobial Resistance (AMR) in Intensive Care: Impact, Detection and Control - AI and Digital Innovation for AMR Prediction and Prevention*. National Congress of the Romanian Society of Anesthesia - Intensive Care (52nd edition), Sinaia, 13-17 mai 2026.
6. *Artificial Intelligence (AI) in Anaesthesia - from Data to Decision - The Intelligent Operating Room – Design and Function within an Integrated Digital Environment.* National Congress of the Romanian Society of Anesthesia - Intensive Care (52nd edition), Sinaia, 13-17 mai 2026.
7. *Digital Twinning in Intensive Care* - International Course on Guidlines and Protocols in Anesthesia, Intensive Care and Emergency Medicine, Timișoara,25-27 sept. 2025.
8. *Sepsis in Digital Era - Sepsis: Clinical Diagnostic or AI?* National Congress of the Romanian Society of Anesthesia - Intensive Care (51st edition), Sinaia,13-17 mai 2025.

9. *What is the added value to society that the industry can give, beyond access to modern technology?* Trailblazers in Healthcare, Siemens Healthineers Zurich, April 22–23, 2024.
10. *Translating Technology into Better Healthcare*. Technology & IHealth Conference, 2nd edition, Târgu Mureș, 17-19 aprilie 2024.
11. *The Innovative Hospital: Value-Driven Redesign for Quality Improvment* - 17- 20 iunie 2024, Imperial College, London.
12. *Romania's Leap into the Future: The First Smart Hospital.* International HealthTech Forum. Bucharest, 5-6 noiembrie 2024.
13. *Big Data and Data Science in ICU - The Role of Machine Learning in Critical Care Medicine.* National Congress of the Romanian Society of Anesthesia - Intensive Care (50th edition), Sinaia, 10-14 mai 2023.
14. *Medicine at the Crossroads of Technology*. Technology & IHealth Conference, 1st edition , Târgu Mureș, 6-9 iulie 2022.
15. *Profesor Invitado* - Universidad de Ciencias Medicas, de La Habana, Cuba, 2022.
16. *Quo Vadis Romanian Medical Research – Medical Sciences and Biotechnology.* Romanian–American Scientists Beyond the Limit of Innovation, April 2021, Los Angeles, San Francisco–Denver, Bucharest – Consulate General of Romania in Los Angeles, USA.
17. *Shaping the Future of Healthcare: Perspectives for Romania and the Region.* ASPEN HealthCare Forum, 10th ed, 19 oct. 2021, Bucharest.

J. CITĂRI ÎN PUBLICAȚII BDI (FĂRĂ AUTOCITĂRI)

71 citări WoS

Leonard Azamfirei 7 septembrie 2026