

Universitatea Babeș Bolyai

Facultatea Fizică

Catedra

**Conf. dr. ing. Turcu R.V. Flaviu**

## L I S T A

### lucrărilor științifice în domeniul disciplinelor din postul didactic

#### **A. Teza de doctorat**

Studiul materialelor policristaline prin Rezonanță Magnetică Nucleară

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

1. Experimente de bază în spectroscopia RMN a sistemelor solide, Volumul I - 978-606-37-0123-8, Presa universitară Clujeană (2017)

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

1. A. Stanciu, A.S. Farcasan, G. Caracostea, R.V.F. Turcu, S. Simon, F.V. Stamatian, Contribution of post-mortem MRI to evaluate the renal anomalies in a first trimester fetus with Down syndrome; *Journal of Obstetrics and Gynaecology*, 36 (2016) 359-360, DOI: 10.3109/01443615.2015.1065232.:
2. M. Todea, R.V.F. Turcu, B. Frentiu, S. Simon, FTIR and NMR evidence of aluminosilicate microspheres bioactivity tested in simulated body fluid; *Journal of Non Crystalline Solids*, 432 (2016) 413-419, DOI: 10.1016/j.jnoncrysol.2015.10.039.
3. M. Todea, R.V.F. Turcu, M. Vasilescu, D.-L. Trandafir, S. Simon, Structural characterization of heavy metal SiO<sub>2</sub>-Bi<sub>2</sub>O<sub>3</sub> glasses and glass-ceramics; *Journal of Non Crystalline Solids*, 432 (2016) 271-276, DOI: 10.1016/j.jnoncrysol.2015.10.021.
4. R.V.F. Turcu, A. Samoson, M. Maier, D.L. Trandafir, S. Simon, High fraction of pentacoordinated aluminum and gallium in lanthanum-aluminum-gallium borates; *Journal of the American Ceramic Society*, 99 (8) (2016) 2795-2800, DOI: 10.1111/jace.14265.
5. L.B. Chiriac, R.V.F. Turcu, D.L. Trandafir, M. Todea, S. Simon, Synthesis, structural characterization and in vitro testing of dysprosium containing silica particles as potential MRI contrast enhancing agents; *Applied Surface Science*, 385 (2016) 569-577, DOI: 10.1016/j.apsusc.2016.05.169.
6. A. Jurjiu, M. Galiceanu, A.S. Farcasanu, L.B. Chiriac, R.V.F. Turcu, Relaxation dynamics of Sierpinski hexagon fractal polymer: Exact analytical results in the Rouse-type approach and numerical results in the Zimm-type approach; *The Journal of Chemical Physics*, 145 (21) (2016) 214901, DOI: 10.1063/1.4968209.

7. A. Stanciu, R. Popa-Stanila, D. Gheban, L.B. Chiriac, R.V.F. Turcu, G. Caracostea, F. Stamatian, Imagistic and histopathological description of a cystic nephroma during early second trimester of gestation. Case report; *Medical Ultrasonography*, 19 (3) (2017) 327-329, DOI: 10.11152/mu-930.
8. A. Jurjiu, T.L. Biter, R.V.F. Turcu, Relaxation dynamics of a multihierarchical polymer network; *The Journal of Chemical Physics*, 146 (2017) 34902, DOI: 10.1063/1.4973936.
9. A. Jurjiu, T.L. Biter, R.V.F. Turcu, Dynamics of a Polymer Network Based on Dual Sierpinski Gasket and Dendrimer: A Theoretical Approach; *Polymers*, 9 (2017) 245, DOI: 10.3390/polym9070245.
10. L.B. Chiriac, M. Todea, A. Vulpoi, M. Muresan-Pop, R.V.F. Turcu, S. Simon, Freeze-drying assisted sol-gel-derived silica-based particles embedding iron: synthesis and characterization; *Journal of Sol-Gel Science and Technology*, 87 (2018) 195-203, DOI: 10.1007/s10971-018-4702-2.
11. A. Jurjiu, R.V.F. Turcu, M. Galiceanu, Dynamics of a Complex Multilayer Polymer Network: Mechanical Relaxation and Energy Transfer; *Polymers*, 10 (2) (2018) 164, DOI: 10.3390/polym10020164
12. A. Staicu, C. Albu, R. Popa-Stanila, L.B. Chiriac, D. Boitor-Borza, V. Bondor, T. Kovacs, G. Caracostea, I.C. Rotar, R.V.F. Turcu, S. Simon, D. Muresan, F.V. Stamatian, Potential clinical benefits and limitations of fetal virtopsy using high-field MRI at 7 Tesla versus stereomicroscopic autopsy to assess first trimester fetuses; *Prenatal Diagnosis*, 39 (7) (2019) 505-518, DOI: 10.1002/pd.5457.
13. D. Cocan, V. Mireşan, F. Popescu, R. Constantinescu, A. Coroian, C. Laţiu, R.V.F. Turcu, A.S. Fărcăşanu, C. Martonos; MRI Investigations on Venomous Glands of Brown Bullhead, *Ameiurus nebulosus* (Lesueur, 1819)(Actinopterygii: Ictaluridae); *Pakistan Journal of Zoology* 52 (4), (2020), 1347-13-54
14. D. Lison, S. Iburaadaten, S. van den Brule, M. Todea, A. Vulpoi, R.V.F. Turcu, C. Ziemann, O. Creutzenberg, J.C. Bonner, M. Ameloot H. Bové, Femtosecond pulsed laser microscopy: a new tool to assess the in vitro delivered dose of carbon nanotubes in cell culture experiments; *Particle and Fibre Toxicology*, 18 (2021).
15. A. Simion, A., Pîrnău, R.V.F. Turcu, A. Vulpoi, M. Todea, M. Potara, M. Vasilescu, Stratified diffusion of HOD-D2O inside COOH-and NH2-functionalized multi-walled carbon nanotubes studied by NMR spectroscopy; *Journal of Molecular Structure*, 1249 (2022) 131653.
16. C. Albu, A. Staicu, R. Popa-Stanilă, C. Bondor, B. Pop, L. Chiriac, D. Gheban, R. Micu, R.V.F. Turcu, S. Simon, D. Crisan, F. Stamatian, The Evaluation of the Four-Chamber Cardiac Dissection Method of the Fetal Heart as an Alternative to Conventional Inflow–Outflow Dissection in Small Gestational-Age Fetuses; *Diagnostics*, 12 (1) (2022) 223.
17. R.V.F. Turcu, A. Lazar, V. Rednic, G. Rosca, C. Zamfirescu, E. Puschitaş Prediction of Electric Power Production and Consumption for the CETATEA Building Using Neural Networks; *Sensors*, 22 (16) (2022), 6259
18. C. Morari, L. Buimaga-Iarinca, R.V.F. Turcu; On the contribution of phonons to electrochemical potential of Li-ion metal-organic frameworks; *Electrochimica Acta* 439, (2023), 141734
19. A. Baloi, C. Costea, R. Gutt, O. Balacescu, R.V.F. Turcu, B. Belean; Hexagonal-grid-layout image segmentation using shock filters: computational complexity case study for microarray image analysis related to machine learning approaches; *Sensors* 23 (5), (2023) 2582

20. R. Nelega, D.I. Greu, E. Jecan, V. Rednic, C. Zamfirescu, E. Puschita, R.V.F. Turcu; Prediction of Power Generation of a Photovoltaic Power Plant Based on Neural Networks, *IEEE Access* 11, (2023), 20713 – 20724
21. A. Feraru, Z.R. Tóth, M. Mureşan-Pop, M. Baia, T. Gyulavári, E. Páll, R.V.F. Turcu, K. Magyar, L. Baia; Anionic Polysaccharide Cryogels: Interaction and In Vitro Behavior of Alginate–Gum Arabic Composites; *Polymers* 15 (8), (2023), 1744
22. R. Nelega, R.V.F. Turcu, B. Belean, E. Puschita; Radio frequency-based drone detection and classification using deep learning algorithms; *2023 International Conference on Software, Telecommunications and Computer Networks (SoftCOM)*
23. A. Oprea, G. Kovacs, R. Nelega, E. Surducan, V. Surducan, R.V.F. Turcu, E. Puschita; UAS-Based Antenna Radiation Pattern Measurement: A Practical Approach; *2023 International Conference on Software, Telecommunications and Computer Networks (SoftCOM)*
24. C. Morari, L. Buimaga-Iarinca, C. Tripon, R.V.F. Turcu; Comparative study of the vibrational contributions to electrochemical potential in Na-Mn-DOBDC and Li-Mn-DOBDC electrodes; *Electrochimica Acta* 473, (2024), 143493
25. A. Baloi, B. Belean, R.V.F. Turcu, D. Peptenatu; GPU-based similarity metrics computation and machine learning approaches for string similarity evaluation in large datasets; *Soft Computing* 28, (2024) 3465-3477
26. V. Rednic, R. Gutt, E. Bruj, B. Belean, T. Murariu, O. Raita, R.V.F. Turcu; Optimization and performance evaluation of a high-temperature solar receiver for concentrated solar power applications; *Applied Thermal Engineering* 250, (2024), 123407
27. R. Nelega, G. Kovacs, A. Oprea, R.V.F. Turcu, E. Puschita; Real-time monitoring system of photovoltaic power plant using UAV thermal images; *IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm)*, (2024), 372-377
28. G. Kovacs, R. Nelega, A. Oprea, R. Voina, R.V.F. Turcu, E. Puschita; Custom-Designed Signal Processing Application for RFSoc FPGA Platform; *IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm)*, (2024), 1-6
29. G. Kovacs, R. Nelega, A. Oprea, B. Kirei, E. Surducan, V. Surducan, R.V.F. Turcu, E. Puschita; Design, implementation, and RFSoc-based validation of a multi-path RF front-end for wideband spectrum analysis; *Results in Engineering* 28, (2025), 106967

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

**- Reviste**

1. A.M. Berar, D.v Preda, S. Iacob, C.V. Moraru, A.S. Farcasanu, R.V.F. Turcu, S. Simon, S. Buduru; Assessment of periapical lesions by 7T magnetic resonance imaging and micro-CT-experimental study, *Human and Veterinary Medicine* 14 (1), (2022), 10-15
2. C.A. Oprea, B.S. Kirei, R.V.F. Turcu; Exploring the feasibility of parallel I<sup>2</sup>C sensor interfacing on an educational FPGA board: resource utilization analysis and design consideration; *Studia Universitatis Babeş-Bolyai, Physica*, 68, (2023)

3. K Gergo, V. Rednic, R.V.F. Turcu; A comparison of computational fluid dynamics turbulence models for different Reynolds numbers flows; Physica, 68, (2023)

- **Selecție cu maximum 20 lucrări în volume de conferințe**

1.

**E. Brevete obținute în întreaga activitate**

1. D.W. Hoyt, J.A. Sears, R.V.F. Turcu, K.M. Rosso and J.Z. Hu; “**Method for High Pressure Magic Angle Spinning**” – US Patent and Trademarks Office, Patent Number: US 9,835,698 B2, 2017
2. D.W. Hoyt, J.A. Sears, R.V.F. Turcu, K.M. Rosso and J.Z. Hu; “**Method for High Pressure Magic Angle Spinning**” – US Patent and Trademarks Office, Patent Number: US 8,692,548 B2, 2014
3. E. Surducan, V. Surducan, C. Neamtu, R. Gutt, R.V.F. Turcu; “**Procedeu de descompunere a apei în oxigen și hidrogen în reactoare de microunde**” – OSIM, Patent numărul 137705 B1, 2025
4. I. Burda, R.V.F. Turcu, M. Vataavu; “**Circuit de amortizare multi-modală prin saltul frecvenței de rezonanță a șuntului RL**” – OSIM, Patent numărul RO134924 B1, 2025

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**Semnătura:**



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