

L I S T A

lucrărilor științifice în domeniul disciplinelor din postul didactic

A. Teza de doctorat

Processes of Ordered Structure Formation in Polypeptide Thin Film Solutions. Teza a fost susținută în 4 decembrie 2007 la Universitatea Haute Alsace din Mulhouse (Franța).

B. Teza de abilitare

“Ordering of conjugated polymers - a versatile approach to alter materials properties”, susținută în 07/2016 la Universitatea Babeș-Bolyai (România).

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

1. M. Potara, A. Campu, D. Maniu, M. Focsan, **I. Botiz**, S. Astilean: “Advanced nanostructures for microbial contaminants detection by means of spectroscopic methods” - *Advanced Nanostructures for Environmental Health*, Elsevier (2019).
2. M. Potara, M. Focsan, A.-M. Craciun, **I. Botiz**, S. Astilean: “Polymer-coated plasmonic nanoparticles for environmental remediation: synthesis, functionalization and properties” - *New Polymer Nanocomposites for Environmental Remediation*, Elsevier, 361-387 (2018)
3. **I. Botiz**, C. Leordean, N. Stingelin: “Structure Control in Polymeric Semiconductors Applied to the Manipulation of Light-Emission Properties” - *Semiconducting Polymers: Controlled Synthesis and Microstructure*, Royal Society of Chemistry, 187-218 (2016).
4. M. Potara, C. Farcau, **I. Botiz**, S. Astilean: “Detection of environmental pollutants by surface-enhanced Raman spectroscopy” - *Advanced Environmental Analysis: Applications of Nanomaterials*, Royal Society of Chemistry (2017).

D. Lucrări indexate ISI publicate în ultimii 10 ani

Review article

1. M. Pop, **I. Botiz**. Carrier Mobility, Electrical Conductivity, and Photovoltaic Properties of Ordered Nanostructures Assembled from Semiconducting Polymers. *Materials* **18**, 4580 (2025).
2. M. Pop, O. Todor-Boer, **I. Botiz**. Visualization of Single Polymer Chains with Atomic Force Microscopy: A Review. *Polymers* **17**, 1397 (2025).
3. **I. Botiz**. Single Crystals of Established Semiconducting Polymers. *Polymers* **16**, 761 (2024).
4. B.-A. Andone, M. Handrea-Drăgan, **I. Botiz**, S. Boca. State-of-the-art and future perspectives in infertility diagnosis: conventional versus nanotechnology-based assays. *Nanomedicine: Nanotechnology, Biology and Medicine* **54**, 102709 (2023).
5. **I. Botiz**. Prominent processing techniques to manipulate semiconducting polymer microstructure. *Journal of Materials Chemistry C* **11**, 364 (2023).
6. I. M. Handrea-Drăgan, **I. Botiz**, A.-S. Tatar, S. Boca. Patterning at the micro/nano-scale: polymeric scaffolds for medical diagnostic and cell-surface interaction applications. *Colloids and Surfaces B: Biointerfaces* **218**, 112730 (2022).

7. R. Tudoreanu, I. M. Handrea-Dragan, S. Boca, **I. Botiz**. Insight and recent advances into the role of topography on the cell differentiation and proliferation on biopolymeric surfaces. *International Journal of Molecular Sciences* **23**, 7731 (2022).
8. **I. Botiz**, M. M. Durbin, N. Stingelin. Providing a Window into the Phase Behavior of Semiconducting Polymers. *Macromolecules* **54**, 5304 (2021).
9. I. Babutan, A.-D. Lucaci, **I. Botiz**. Antimicrobial Polymeric Structures Assembled on Surfaces. *Polymers* **13**, 1552 (2021).
10. I. M. Handrea-Dragan, **I. Botiz**. Multifunctional Structured Platforms: From Patterning of Polymer-Based Films to Their Subsequent Filling with Various Nanomaterials. *Polymers* **13**, 445 (2021).
11. R. Tarcan, O. Todor-Boer, I. Petrovai, C. Leordean, S. Astilean, **I. Botiz**. Reduced graphene oxide today. *Journal of Materials Chemistry C* **8**, 1198 (2020).
12. **I. Botiz**, S. Astilean, N. Stingelin: "Altering the Emission Properties of Conjugated Polymers" - *Polym. Int.* **65**, 157-163 (2016). This paper was *highlighted* in "Towards More Efficient OLEDs; Enhancing the Emission Properties of Polymeric Semiconductors" published in *Materials Views*.
13. **I. Botiz**, Natalie Stingelin: "Influence of Molecular Conformations and Microstructure on the Optoelectronic Properties of Conjugated Polymers" - *Materials* **7**, 2273 (2014).

Article

14. A. Bustihan, R. Hirian, **I. Botiz**. Reusable 3D-Printed Thermoplastic Polyurethane Honeycombs for Mechanical Energy Absorption. *Polymers* **17**, 3035 (2025).
15. C. Pintilii, M. Baia, E. Alexa, K. Magyari, **I. Botiz**, M. Muresan-Pop, L. Barbu-Tudoran, C. Nicula, A. Peter, Z. Szakács, A. Mihaly Cozmata, L. Mihaly Cozmata. Comparative study on starch and protein secondary structures in brown, red, and black rice influenced by microwave treatment. *Food Chemistry: X* **32**, 103224 (2025).
16. A. Bustihan, **I. Botiz**, R. Branco, R. F. Martins. Enhancing mechanical energy absorption of honeycomb and triply periodic minimal surface (TPMS) lattice structures produced by fused deposition modelling in reusable polymers. *Polymers* **17**, 1111 (2025).
17. R. G. Hategan, A. Aldea, R. D. Miclea, R. Hirian, **I. Botiz**, R. Dudric, L. Rasabathina, O. Hellwig, G. Salvan, D. Zahn, R. Tetea, C. Tiusan. Magnetic, electronic structure and micromagnetic properties of ferrimagnetic DyCo₃ as platform for ferrimagnetic skyrmions. *Nanomaterials* **15**, 606 (2025).
18. I. Babutan, L. I. Atanase, **I. Botiz***. Self-assembly of lamellar/micellar block copolymers induced through their rich exposure to various solvent vapors: an AFM study. *Materials* **18**, 1759 (2025).
19. Y. Cotoarbă, O. Todor-Boer, **I. Botiz***. Crystals of non-fullerene acceptors generated by rich exposure to solvent vapors. *Crystal Growth & Design* **25**, 2337 (2025).
20. R. Tarcan, I. M. Handrea-Dragan, **I. Botiz**. Synthesis of concentrated aqueous dispersions of reduced graphene oxide. *Journal of Optoelectronics & Advanced Materials* **26**, 413 (2024).
21. O. Todor-Boer, C. Farcau, **I. Botiz**. Large Enhancement of Photoluminescence Obtained in Thin Polyfluorene Films of Optimized Microstructure. *Polymers* **16**, 2278 (2024).
22. M. Băbuțan, **I. Botiz**. Morphological Characteristics of Biopolymer Thin Films Swollen-Rich in Solvent Vapors. *Biomimetics* **9**, 396 (2024).
23. L. Senila, **I. Botiz**, C. Roman, D. Simedru, M. Dan, I. Kacso, M. Senila, O. Todor-Boer. Processing of Thin Films Based on Cellulose Nanocrystals and Biodegradable Polymers by Space-Confined Solvent Vapor Annealing and Morphological Characteristics. *Materials* **17**, 1685 (2024).
24. B.-A. Andone Rotaru, M. Girlovanu, A. Vulpoi, **I. Botiz**, S. Boca. P-018 Structural and biocompatibility analysis of gold nanoparticle integrated polymeric scaffolds for infertility diagnosis. *Human Reproduction* **38**, dead093.385 (2023).
25. I. Babutan, O. Todor-Boer, L. I. Atanase, A. Vulpoi, S. Simon, **I. Botiz**. Self-assembly of block copolymers on surfaces exposed to space-confined solvent vapor annealing. *Polymer* **273**, 125881 (2023).

26. I. Petrovai, O. Todor-Boer, L. David, **I. Botiz**. Growth of Hybrid Perovskite Crystals from $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$ Solutions Subjected to Constant Solvent Evaporation Rates. *Materials* **16**, 2625 (2023).
27. I. Babutan, O. Todor-Boer, L. I. Atanase, A. Vulpoi, **I. Botiz**. Self-Assembly of Block Copolymers in Thin Films Swollen-Rich in Solvent Vapors. *Polymers* **15**, 1900 (2023).
28. L. Máthé, Z. Kovács-Krausz, **I. Botiz**, I. Grosu, K. El Anouz, A. El Allati, L. P. Zârbo. Phonon-Assisted Tunneling through Quantum Dot Systems Connected to Majorana Bound States. *Nanomaterials* **13**, 1616 (2023).
29. I. Babutan, O. Todor-Boer, L. I. Atanase, A. Vulpoi, **I. Botiz**. Crystallization of Poly(ethylene oxide)-Based Triblock Copolymers in Films Swollen-Rich in Solvent Vapors. *Coatings* **13**, 918 (2023).
30. I. Petrovai, O. Todor-Boer, A. Vulpoi, L. David, **I. Botiz**. Generation of Hybrid Lead Halide $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$ Perovskite Crystals via Convective Self-Assembly. *Coatings* **13**, 1130 (2023).
31. I. Petrovai, O. Todor-Boer, L. David, **I. Botiz**. Enhancing the Photoluminescence of Polyfluorene-Based Thin Films via Illumination. *Studia Universitatis Babes-Bolyai Physica* **67**, 79-90 (2022).
32. R. Tarcan, M. Handrea-Dragan, C.-I. Leordean, R. C. Cioban, G.-Z. Kiss, D. Zaharie-Butucel, C. Farcau, A. Vulpoi, S. Simon, **I. Botiz**. Development of PMMA/RGO Composite Films as Thermal Interface Materials. *Journal of Applied Polymer Science* **139**, e53238 (2022).
33. I. M. Handrea-Dragan, A. Vulpoi, C. Farcau, **I. Botiz**. Spheres-In-Grating Assemblies with Altered Photoluminescence and Wetting Properties. *Nanomaterials* **12**, 1084 (2022).
34. A. Stefancu, O. M. Biro, O. Todor-Boer, **I. Botiz**, E. Cortés, N. Leopold. Halide-Metal complexes at plasmonic interfaces create new decay pathways for plasmons and excited molecules. *ACS Photonics* **9**, 895 (2022).
35. S. Chen, B. Haehnle, X. Van der Laan, A. J. C. Kuehne, **I. Botiz**, P. N. Stavrinou, N. Stingelin. Understanding Hierarchical Spheres-in-grating Assembly for Bio-Inspired Colouration. *Materials Horizons* **8**, 2230 (2021).
36. T. Nagy-Simon, O. Diaconu, M. Focsan, A. Vulpoi, **I. Botiz**, A.-M. Craciun. Pluronic stabilized conjugated polymer nanoparticles for NIR fluorescence imaging and dual phototherapy applications. *Journal of Molecular Structure* **1243**, 130931 (2021).
37. R. Tarcan, M. Handrea-Dragan, O. Todor-Boer, I. Petrovai, C. Farcau, M. Rusu, A. Vulpoi, M. Todea, S. Astilean, **I. Botiz**. A new, fast and facile synthesis method for reduced graphene oxide in *N,N*-dimethylformamide. *Synthetic Metals* **269**, 116576 (2020).
38. O. Todor-Boer, I. Petrovai, R. Tarcan, L. David, S. Astilean, **I. Botiz**. Control of microstructure in polymer: Fullerene active films by convective self-assembly. *Thin Solid Films* **697**, 137780 (2020).
39. O. Todor-Boer, I. Petrovai, R. Tarcan, A. Vulpoi, L. David, S. Astilean, **I. Botiz**. Enhancing Photoluminescence Quenching in Donor-Acceptor PCE11:PPCBMB Films through the Optimization of Film Microstructure. *Nanomaterials* **9**, 1757 (2019).
40. O. Todor-Boer, I. Petrovai, R. Tarcan, A.-M. Craciun, L. David, S. B. Angyrus, S. Astilean, **I. Botiz**. Altering the optoelectronic properties of neat and blended conjugated polymer films by controlling the process of film deposition. *Journal of Optoelectronics & Advanced Materials* **21**, 367 (2019).
41. **I. Botiz**, M.-A. Codescu, C. Farcau, C. Leordean, S. Astilean, C. Silva, N. Stingelin: "Convective self-assembly of π -conjugated oligomers and polymers" - *J. Mater. Chem. C* **5**, 2513-2518 (2017).
42. B. Marta, C. Leordean, T. Istvan, **I. Botiz**, S. Astilean: "Efficient etching-free transfer of high quality, large-area CVD grown graphene onto polyvinyl alcohol films" - *Appl. Surf. Sci.* **363**, 613-618 (2016).
43. C. Leordean, B. Marta, A.-M. Gabudean, M. Focsan, **I. Botiz**, S. Astilean: "Fabrication of highly active and cost-effective SERS plasmonicsubstrates by electrophoretic deposition of gold nanoparticles on a DVD template" - *Appl. Surf. Sci.* **349**, 190 (2015).
44. **I. Botiz**, P. Freyberg, C. Leordean, A.-M. Gabudean, S. Astilean, A. C.-M. Yang, N. Stingelin: "Emission properties of MEH-PPV in thin films simultaneously illuminated and annealed at different temperatures" - *Synth. Met.* **199**, 33 (2015).

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

- Reviste NU ESTE CAZUL

- Selecție cu maximum 20 lucrări în volume de conferințe NU ESTE CAZUL

E. Brevete obținute în întreaga activitate

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Semnătura: