



Școala Doctorală de Chimie

Nr. 151/10.02.2025/23.06.2025

TEMATICA PENTRU CONCURSUL DE ADMITERE LA DOCTORAT sesiunea iulie 2025

Prof. univ. dr. habil. Cecilia ARSENE

1. Metode moderne de analiză utilizate în caracterizarea unor arhitecturi organice cu fragment indolizinic pentru diverse aplicații (ro)

Modern analyses methods involved in the characterization of organic architectures with indolizine moiety for various applications (en)

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5. Tabibi T., Esmaili A. A., Mague J. T., An efficient diastereoselective synthesis of novel fused 5H-furo[2,3-d]thiazolo[3,2-a]pyrimidin-5-ones via one-pot three-component reaction, *Mol. Diversity*, 26(1), 183-190, **2022**. DOI: 10.1007/s11030-020-10173-4
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8. Fundamentals and applications of chromatography and related differential migration methods, Heftmann, E., Elsevier, **2004**.
9. Hyphenated and alternative methods of detection in chromatography, Shalliker, R.A., CRC Press, Taylor & Francis, **2012**.

2. Abordări analitice moderne în prospectarea unor soluții ecologice pentru managementul deșeurilor medicamentoase (ro)

Modern analytical approaches in prospecting ecological solutions for pharmaceutical waste management (en)

Bibliografie/References

1. Shi, C., Xie, P., Ding, Z., Niu, G., Wen, T., Gu, W., Lu, Y., Wang, F., Li, W., Zeng, J., Shen, Q., Yuan, J., Inhibition of pathogenic microorganisms in solid organic waste via black soldier fly larvae-mediated management, *Science of The Total Environment*, 913, 169767, **2024**. DOI: 10.1016/j.scitotenv.2023.169767



2. Bohm, K., Hatley, G.A., Robonson, B.H., Gutierrez-G., M.J., Black Soldier Fly-based bioconversion of biosolids creates high-value products with low heavy metal concentrations, *Resources, Conservation and Recycling*, 180, 106149, **2022**. DOI: 10.1016/j.resconrec.2021.106149
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8. Olariu, R.I., Vione, D., Grinberg, N., Arsene, C., Sample preparation for trace analysis by chromatographic methods, *Journal of Liquid Chromatography & Related Technologies*, 33, 1174-1207, **2010**. DOI: 10.1080/10826076.2010.484371.

3. Investigarea impactului bioaerosolilor atmosferici asupra potențialului oxidativ a materiei particulare din zona metropolitană Iași (ro)

Investigations of the atmospheric bioaerosols impact on the oxidative potential of particulate matter from Iasi metropolitan area (en)

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2. Estillore, A., Trueblood, V., Grassian, V.H., Atmospheric chemistry of bioaerosols: heterogeneous and multiphase reactions with atmospheric oxidants and other trace gases, *Chemical Science*, 7, 6604–6616, **2016**. DOI: 10.1039/c6sc02353c
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7. Olariu, R.I., Vione, D., Grinberg, N., Arsene, C., Sample preparation for trace analysis by chromatographic methods, *Journal of Liquid Chromatography & Related Technologies*, 33, 1174-1207, **2010**. DOI: 10.1080/10826076.2010.484371.

**Prof. univ. dr. Ionel MANGALAGIU**

1. **Heterociclici cu azot de șase atomi cu schelet acetofenonic sau analogi: sinteză, structură, aplicații (ro)**
Six member ring azaheterocyclic compounds with acetophenonic skeleton: synthesis, structure, applications (en)
2. **Azaheterociclici de șase atomi hibridi sau chimerici: sinteză, structură, aplicații (ro)**
Six member ring hybrid or chimeric azaheterocyclic derivatives: synthesis, structure, applications (en)
3. **Sinteza și studiul unor azaheterocicluri funcționalizate cu potential terapeutic (ro)**
Synthesis and study of functionalized azaheterocycles with therapeutic potential (en)

Bibliografie/References

1. Diaconu, D.; Savu, M.; Ciobanu, C.; Mangalagiu, V.; Mangalagiu, I.I.* Current strategies in design and synthesis of antifungals hybrid and chimeric diazine derivatives. *Bioorganic & Medicinal Chemistry* **2025**, *119*, 118069
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5. Diaconu, D.; Mangalagiu, V.; Dunca, S.; Amăriucăi-Mantu, D.; Antoci, V.; Roman, T.; Mangalagiu, I.I. Ultrasound assisted synthesis of hybrid quinoline anchored with 4-R-benzenesulfonamide moiety with potential antimicrobial activity. *Heliyon* **2023**, *9*, e21518.
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8. Diaconu, D.; Antoci, V.; Mangalagiu, V.; Amariuca-Mantu, D.; Mangalagiu, I.I. Quinoline - imidazole/benzimidazole derivatives as dual- / multi- targeting hybrids inhibitors with anticancer and antimicrobial activity. *Scientific Reports* **2022**, *12*, 16988
9. Diaconu, D.; Amariuca-Mantu, D.; Mangalagiu, V.; Antoci, V.; Zbancioc, Ghe.; Mangalagiu, I.I. Ultrasound assisted synthesis of hybrid quinoline-imidazole derivatives: a green synthetic approach. *RSC Advanced* **2021**, *11*, 38297–38301.
10. Amariuca-Mantu, D.; Mangalagiu, V.; Mangalagiu, I.I. [3 + n] Cycloaddition Reactions: A Milestone Approach for Elaborating Pyridazine of Potential Interest in Medicinal Chemistry and Optoelectronics. *Molecules* **2021**, *26*, 3359.

Prof. univ. dr. habil. Romeo-Iulian OLARIU

1. **Dezvoltarea unui sistem ring-down spectroscopy pentru determinarea radicalilor NO₃ într-o cameră de simulare a reacțiilor chimice din atmosferă (ro)**
Development of a ring-down spectroscopy system for the determination of NO₃ radicals in a simulation chamber of chemical reactions in the atmosphere (en.)

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2. Izolarea și caracterizarea compușilor psihoactivi din plantele utilizate în medicamentația tradițională (ro)

Isolation and characterization of psychoactive compounds from plants used in traditional medicine (en)

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3. Zeng, Y., et al., Application of HPLC in the Identification of Phytochemicals with Psychoactive Properties: A Review. *Journal of Chromatography A*, 1695, 463450, **2023**.

3. Metode avansate de analiză pentru evaluarea caracteristicilor unor noi triazoli chirali cu diverse aplicații (ro)

Advanced analyses methods to evaluate the characteristics of new chiral triazoles with various applications (en)

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4. QSAR, docking molecular, simulări dinamice și inteligența artificială în analiza relației structură-activitate a moleculelor cu potențial terapeutic metabolic (ro)

QSAR, Molecular Docking, Molecular Dynamics Simulations, and Artificial Intelligence in the Structure–Activity Relationship Analysis of Molecules with Metabolic Therapeutic Potential (en)

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2. Molecular Docking for Computer-Aided Drug Design: Fundamentals, Techniques, Resources and Applications – Editor: Mohane S. Coumar (Academic Press, **2021**).



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Prof. univ. dr. Aurel PUI

1. Oxizi metalici obtinuti prin tehnica ALD (Atomic Layer Deposition) pentru producerea de hydrogen (ro)

Metal oxides obtained by ALD (Atomic Layer Deposition) technique for hydrogen production

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Prof. univ. dr. habil. Gheorghiță ZBANCIOC

1. Sinteza de noi derivati 1,2-diazinici prin metode convenționale și neconvenționale (ro) *Synthesis of new 1,2-diazine derivatives by conventional and unconventional methods (en)*

Bibliografie/References

1. Zbancioc, G.; Mangalagiu, I.I.; Moldoveanu, C.: The Effective Synthesis of New Benzoquinoline Derivatives as Small Molecules with Anticancer Activity. *Pharmaceuticals*, **2024**, 17(1), 52,. DOI: 10.3390/ph17010052
2. Zbancioc, G.; Mangalagiu, I.I.; Moldoveanu, C. A Review on the Synthesis of Fluorescent Five- and Six-Membered Ring Azaheterocycles. *Molecules*, 2022, 27, 6321. DOI: 10.3390/molecules27196321
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6. Antoci, V.; Oniciuc, L.; Amariuca-Mantu, D.; Moldoveanu, C.; Mangalagiu, V.; Amarandei, A.M.; Lungu, C.N.; Dunca, S.; Mangalagiu, I.I.; Zbancioc, G.: Benzoquinoline Derivatives: A Straightforward and Efficient Route to Antibacterial and Antifungal Agents, *Pharmaceuticals*, **2021**, 14, 335. DOI: 10.3390/ph14040335.
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9. Al Matarneh, C.M.; Amarandi, R.M.; Craciun, A.M.; Mangalagiu, I.I.; Zbancioc, G.; Danac, R.: Design, Synthesis, Molecular Modelling and Anticancer Activities of New Fused Phenanthrolines, *Molecules*, **2020**, 25(3), 527. DOI: 10.3390/molecules25030527.

2. Compuși azaheterociclici cu potențial terapeutic: sinteză, proprietăți și activitate biologică (ro)

Azaheterocyclic compounds with therapeutic potential: synthesis, properties, and biological activity (en)

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1. Amariuca-Mantu, D.; Antoci, V.; Sardaru, M.C., Al Matarneh, C.M., Mangalagiu, I.; Danac, R.. Fused pyrrolo-pyridines and pyrrolo-(iso)quinoline as anticancer agents *Physical Sciences Reviews*, **2023**, vol. 8, no. 9, pp. 2583-2645.
2. Mangalagiu, V.; Danac, R.; Diaconu, D.; Zbancioc, G.; Mangalagiu, I.I. Hybrids Diazine: Recent Advancements in Modern Antimicrobial Therapy, *Curr. Med. Chem.*, **2024**, 31(19), 2687-2705.
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6. Al Matarneh, C.; Ciobanu, I.C.; Mangalagiu, V.; Zbancioc, G.; Danac, R.: Microwave Assisted Synthesis of Six Member Ring Azaheterocycles with Antimycobacterial and Anticancer Activity, *Rev. Chim. (Bucharest)*, **2020**, 71(3), 287-293.
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