Europass Curriculum Vitae

Personal information

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Nationality	Romanian
Date of birth	27.10.1968

Work experience

Dates	1995-2003
Occupation or position held	Assistant Professor
Main activities and responsibilities	Teaching activity(Organic Chemistry) ;Research in organic synthesis,
Name and address of employer	University of Bucharest, 90-92 Panduri Sos., Bucharest
Dates	2003-2008
Occupation or position held	Lecturer PhD
Main activities and responsibilities	Teaching activity(Organic Chemistry) ;Research in organic synthesis,
Name and address of employer	University of Bucharest, 90-92 Panduri Sos., Bucharest
Dates	2008-present
Occupation or position held	Associate Professor
Main activities and responsibilities	Teaching activity(Organic Chemistry) ;Research in organic synthesis of the heterocyclic compounds
Name and address of employer	Department of Organic Chemistry, Biochemistry and Catalysis, Faculty of Chemistry, 90-92 Panduri Sos., Bucharest

Education and training

Dates	1996-2004
Title of qualification awarded	PhD
Principal subjects/occupational skills covered	Chemistry
Name and type of organisation providing education and training	University of Bucharest
Dates	**February-July 2001 and sept-oct 2023**
Principal subjects/occupational skills covered	Modern organic synthesis of nucleoside analogues directed against HIV replication**.**
Name and type of organisation providing education and training	University of Caen Basse-Normandie, Faculty of Pharmacy, Center for Drug Research and Studies of Normandy (CERMN)
Dates	**March-July 2002**
Principal subjects/occupational skills covered	Synthesis of compounds with biological activity; Modern organic synthesis of nucleoside analogues directed against HIV replication; Physical chemistry methods used for characterization of substances : FTIR, RMN spectroscopy, Mass Spectrometry, GC-MS
Name and type of organisation providing education and training	University of Caen Basse-Normandie, Faculty of Pharmacy, Center for Drug Research and Studies of Normandy (CERMN)
Dates	**August-October 2004**

Principal subjects/occupational skills covered	Synthesis of compounds with biological activity; Modern organic synthesis of nucleoside analogues directed against HIV replication; Physical chemistry methods used for characterization of substances : FTIR, RMN spectroscopy, Mass Spectrometry, GC-MS
Name and type of organisation providing education and training	University of Caen Basse-Normandie, Faculty of Pharmacy, Center for Drug Research and Studies of Normandy (CERMN)
Dates	**october 2006**
Principal subjects/occupational skills covered	Methods of analysis of biologically active compounds Methods of analysis used in food chemistry
Name and type of organisation providing education and training	University of Chisinau
Dates	**March 2013, sept-2016, juin 2018, juin 2023**
Principal subjects/occupational skills covered	Synthesis of compounds with biological activity; Modern organic synthesis of glycosides.
Name and type of organisation providing education and training	University of Orleans-ICOA-France
Social skills and competences	○ President of the Faculty union
Organisational skills and competences	○ President of Branch 1 Bucharest-Romanian Chemical Society ○ Organization committee member of the Francophone International Colloquium "COFrRoCA-2008".
Technical skills and competences	***Laboratory experience and main areas of research interests:*** -chemistry of tioamides, chemistry of heterocycle compounds; chemistry of nanomaterials -organic and analytical skills - synthesis of drugs - synthesis of nucleosides -experience with spectro-chemical and physico-chemical analysis (IR, UV-VIS, NMR); -chromatographic techniques (TLC, RPTLC);
Additional information	• Diploma of Honor, for contribution to the promotion of chemistry in Romania, given by the Society of Chemistry in Romania (2009, 2011, 2015, 2019) • Petru Poni Medal ○ Member of Society of Catalysis in Romania ○ Member of Society of PhD's of CERMN ○ Member of Europeen Federation of Biotehnology

RESEARCH INTEREST

Synthesis and structure determination of new heterocyclic compounds with potential biological activity (anticancer, antimicrobial, antiviral)

Synthesis, purification and characterization new heterocyclic compounds, particularly *oxadiazoles, thiadiazoles, triazoles* and also other molecules biologically active with antibacterial and antioxidant properties. Synthesis and characterization of new heterocyclic compounds with NMR, MS, UV-Vis, IR spectra.

Modern organic synthesis applied to obtain heterocyclic compounds with S, N and O, as well as tioamidelor α, β-unsaturated. Study the structure-reactivity relationships (photochemical properties, thermal stability, coordination properties, biological activity, etc.).

Study of antiviral compounds (anti-HIV) and methods of analysis of biologically active compounds.

Extraction of volatile oils from plants and determining of the composition, antioxidant activity, biological properties, applications in medicine and cosmetics.

List of selected publications

1. R. Roman, L. Pintilie, D. C. Nuță, M. T. Căproiu, F. Dumitrascu, **I. Zarafu**, P. Ioniță, I.– C. Marinaș, L. G. Marutescu, E. Kapronczai, S. A. Ardelean, C. Limban, *Contribution to the synthesis, characterization, separation and quantification of new N-acyl thiourea derivatives with antimicrobial and antioxidant potential,* Pharmaceutics **2023**, 15, 2501. https://doi.org/10.3390/pharmaceutics15102501.
2. F. Dumitrascu, Mino R. Caira, S. Avram, C. Buiu, A. M. Udrea, I. M. Vlad, **I. Zarafu**, P. Ioniță, D. C. Nuță, M. Popa, M. C. Chifiriuc, C. Limban, *Repurposing anti-inflammatory drugs for fighting bacterial biofilms. New carbazole derivatives based on the NSAID carprofen: synthesis, in silico and in vitro biological evaluation*, Frontiers in Cellular and Infection Microbiology **2023** (Front. Cell. Infect. Microbiol. 13:1181516.) doi: 10.3389/fcimb.2023.1181516
3. C. D. Bădiceanu, C. Sogor, D. C. Nuță, S. Avram, C. Drăghici, A.-M. Udrea, **I. Zarafu**, C. Chiriță, M. V. Hovaneț, C. Limban, „*N-Substituted (hexahydro)-1H-isoindole-1,3(2H)-dione deriva-tives: new insights into synthesis and characterization*", Processes **2023**, 11, 1616. https://doi.org/10.3390/pr11061616
4. R. Roman, L. Pintilie, M. T. C?proiu, F. Dumitra?cu, D. C. Nuta, I. Zarafu, P. Ionita, M.C. Chifiriuc, C. Chirita, A. Morosan, M. Popa, C. Bleotu, C. Limban, "The synthesis and in vitro evaluation of antimicrobial and antioxidant activity for a series of new N-acyl thiourea derivatives", Antibiotics, 2023, 12, 807, https://doi.org/10.3390/antibiotics12050807

5. I. M. Vlad, D. C. Nuta, R. V. Ancuceanu, T. Costea, M. Coanda, M. Popa, L. G. Marutescu, I. Zarafu, P. Ionita, C. E. Dinu Pirvu, C. Bleotu, M.-C. Chifiriuc, C. Limban, ,,Insights into the microbicidal, antibiofilm, antioxidant and toxicity profile of new O-aryl-carbamoyl-oxymino-fluorene derivatives", (International Journal Of Molecular Sciences), Int. J. Mol. Sci. 2023, 24, 7020. https://doi.org/10.3390/ijms24087020, pg 1-16, ISI
6. A. Bujor, A. Hanganu, V. Tecuceanu, A. M. Madalan, L. Marutescu, M. Popa, C.M. Chifiriuc, I. Zarafu, P. Ionita, Biological evaluation and structural analysis of some amino-diphenylamine derivatives, Antioxidants 2023, 12(3), 713; https://doi.org/10.3390/antiox12030713
7. A. T. (Telehoiu) Bordei, C. Limban, D. C. Nu??, I. Zarafu, E. Denes, L. M?ru?escu, M. C. Chifiriuc, M. Popa, C. Aram?, "Recent advances in the study of derivatives of (EZ)-N'-benzylidene-(2RS)-2-(6-chloro-9H-carbazol-2-yl)propanohydrazide", Farmacia, vol 70, 4, 2022, pg. 589-595. DOI https://doi.org/10.31925/farmacia.2022.
8. I. Zarafu, C. Limban, C. Radulescu, I. D. Dulama, D. C. Nu??, C. Chiri??, M. C. Chifiriuc, C. D. Badiceanu, M. Popa, C. Bleotu, L. D. Dragu, R. M. Stirbescu, I. A. Bucurica, S. G. St?nescu, P. Ioni??, "Novel structures of functionalized graphene oxide with hydrazide: characterization and bioevaluation of antimicrobial and cytocompatibility features", Coatings 2022, 12(1), 45 (19pgs); https://doi.org/10.3390/coatings12010045
9. M. Marinescu, A. Bercea, I. Ionita, L.-O. Cinteza, I. Zarafu, C. Petcu, A. Matei, C. Constantinescu,"Synthesis, structural properties and nonlinear optical response of some aromatic thioamides in bulk vs. laser-processed films", Research Square, 2022, BMC Chemistry, https://doi.org/10.21203/rs.3.rs-2128869/v1
10. I. M. Vlad, D. C. Nu??, R. V. Ancuceanu, M. T. Caproiu, F. Dumitrascu, I. C. Marinas, M. C. Chifiriuc, L. G. M?ru?escu, I. Zarafu, I. R. Papacocea, B. ?. Vasile, A. I. Nicoar?, C.-I. Ilie, A. Ficai and C. Limban, New O-Aryl-Carbamoyl-Oxymino-Fluorene Derivatives with MI-Crobicidal and Antibiofilm Activity Enhanced by Combination with Iron Oxide Nanoparticles*, Molecules 2021, 26, 3002.(19 pg), https://doi.org/10.3390/molecules26103002
11. D. C. Nu??, C. Limban, C. Chiri??, M. C. Chifiriuc, T. Costea, P. Ioni??, I. Nicolau and I. Zarafu, Contribution of Essential Oils to the Fight against Microbial Biofilms- A Review, Processes 2021, 9(3), 537 (19pgs); doi:10.3390/pr9030537. IF (2021)-2.85
12. I. Zarafu, Ali Abed Jebur Al Taweel, C. Limban, M. Popa, L. M?ru?escu, M. C. Chifiriuc, G. Gr?di?teanu Pircalabioru, D. Culi??, C. Ghica, P. Ionita, Aminopropyl-silica functionalized with halogen-reactive compounds for antimicrobial applications, Materials Chemistry and Physics, 241 122353, 2020. FI (2019)-4.10
13. I. Zarafu, L. Matei, C. Bleotu, P. Ionita, A. Tatibouët, A. Paun, I. Nicolau, A. Hanganu, C. Limban, D. C. Nuta, R. M. Nemes, C. C. Diaconu, C. Radulescu, "Synthesis, Characterization, and Biologic Activity of New Acyl Hydrazides and 1,3,4-Oxadiazole Derivatives", Molecules, vol 25, 3308, 2020; https://doi.org/10.3390/molecules25143308 (27pg) FI (2019)-4.412
14. M. Marinescu, L.-O. Cintez?, I. Zarafu, "Synthesis of some Heterocyclic Compounds with onlinear Optical Properties", Proceedings, vol 57(1), 3, 2020; doi:10.3390/proceedings2020057003 (ISSN 2504-3900).
15. S. Avramescu, S. Petrescu, D. C.Culita, M. Tudose, A. Hanganu, I. Zarafu, P. Ionita, "A mixed organic functionalized silica-graphene oxide as advanced material for pollutant removal", J Nanopart Res, (22), 194, 2020, https://doi.org/10.1007/s11051-020-04935-2,. FI(2020) -2.26
16. C. Limban, D. C. Nuta, A.V. Missir, R. Roman, M. T. Caproiu, F. Dumitrascu, L. Pintilie, A. Stefaniu, M.C. Chifiriuc, M. Popa, I. Zarafu, A.L. Arsene, C.E.Dinu Pirvu, D.-I. Udeanu, I.-R. Papacocea, ,,Synthesis and characterization of new fluoro/trifluoromethyl-substituted acylthiourea derivatives with promising activity against planktonic and biofilm-embedded microbial cells", Processes, 8, 503, 2020; doi:10.3390/pr8050503.(23pg)- FI (2020)-2.85
17. I. Zarafu, B. P?tra?cu, L. M?ru?escu, C. Bleotu, C. Limban, A. Tatibouet, M.-C. Chifiriuc, D.-C. Nu??, P. Ioni??, ,,Bioevaluation of the antimicrobial and anti-proliferative potential of some derivatives of 3,5-dinitro-4-methoxyamino-benzoic acid", Farmacia, vol 68, 1, 2020, pg. 8-14. DOI: https://doi.org/10.31925/farmacia.2020.1.2 FI (2019)-1.61
18. Alexandra T. Bordei Telehoiu, Diana C. Nu??, Miron T. Caproiu, Florea Dumitrascu, Irina Zarafu, Petre Ioni??, Carmellina D. Badiceanu, Speran?a Avram, Mariana C. Chifiriuc, Coralia Bleotu and Carmen Limban, ,, Design, synthesis and in vitro characterization of novel antimicrobial agents based on 6-chloro-9H-carbazol derivatives and 1,3,4-oxadiazole Scaffolds,, Molecules, vol 25 (2), 266, 2020; https://doi.org/10.3390/molecules25020266 (18 pg), FI (2019)-4.412
19. Caciuc I.-L., Nu?? D.C., Limban C., Zarafu I., Cazacu D.-C., Studiul aplica?iilor terapeutice ale glicanilor, Lucr?rile simpozionului interna?ional de comunic?ri ?tiin?ifice ,,Doctor Mioara Mincu,, V: 25-29 (2019). Ed. Funda?iei Umaniste ,,Dr. Mioara Mincu,,, Bucure?ti 2019, ISBN 978-606-942220-2-1. pg.25-29.
20. Bordei A., Nu?? D., Mu?at G., Missir A., C?proiu M., Dumitra?cu F., Zarafu I., Ioni?? P., B?diceanu C., Limban C., Ozon E. Microwave assisted synthesis and spectroscopic characterization of some novel Schiff bases of carprofen hydrazide, Farmacia, vol 67, 2019, pg. 955-962. DOI: 0.31925/farmacia.2019.6.4 -FI (2019)-1.61
21. Bérengère Claude, Giuliano Cutolo, Amal Farhat, Irina Zarafu, Petre Ionita, Marie Schuler, Arnaud Tatibouët, Philippe Morin, ReineNehmé, Capillary electrophoresis with dual detection UV/C4D for monitoring myrosinase-mediated hydrolysis of thiol glucosinolate designed for gold nanoparticle conjugation, Analytica Chimica Acta, Vol 1085, 28 November 2019, doi.org/10.1016/j.aca.2019.07.043, pg 117-125. FI (2019)-6.558
22. Irina Zarafu, Rodica Olar, Mariana Carmen Chi?riuc, Coralia Bleotu, Petre Ionita, Mihaela Multescu, Gabriela Ionita, Gratiela Gradisteanu, Arnaud Tatibouet, Mihaela Badea, Synthesis, thermal, spectral, antimicrobial and cytotoxicity profile of the Schiff bases bearing pyrazolone moiety and their Cu(II) complexes, Journal of Thermal Analysis and Calorimetry, vol 134, 2018, DOI 10.1007/s10973-018-7681-1, 1851-1861. FI-4.626
23. Irina Zarafu, Mihaela Badea, Gabriela Ionita, Mariana Carmen Chi?riuc, Coralia Bleotu, Marcela Popa, Petre Ionita, Arnaud Tatibouet, Rodica Olar, Thermal, spectral and biological characterisation of copper(II) complexes with isoniazid-based hydrazones, Journal of Thermal Analysis and Calorimetry, vol 136, 2019, DOI 10.1007/s10973-018-7853-z, pg1977-1987.FI-4.626
24. M. Bem, R. Baratoiu, C. Radutiu, C. Lete, S. Mocanu, G. Ionita, S. Lupu, M. T. Caproiu, A.M. Madalan, B. Patrascu, I. Zarafu, P. Ionita, Synthesis and structural characterization of some novel methoxyamino derivatives with acid-basa and redox behavior, Journal of Molecular Structure, iulie 2018, DOI 10.1016/j.mol.struc.2018.06.1140022-2860. FI-3.196

25. Irina Zarafu, Ioana Turcu, Daniela C. Culit?, Simona Petrescu, Marcela Popa, Mariana C. Chi?riuc, Carmen Limban, Alexandra Telehoiu and Petre Ionit?, Antimicrobial Features of Organic Functionalized Graphene-Oxide with Selected Amines, Materials, 2018, 11, 1704; doi:10.3390/ma11091704. FI-3.63
26. Ioana Turcu, Irina Zarafu, Marcela Popa, Mariana Carmen Chifiriuc, Coralia Bleotu, Daniela Culita, Corneliu Ghica, Petre Ionita, "Lipoic Acid Gold Nanoparticles Functionalized with Organic Compounds as Bioactive Materials", Nanomaterials, 2017, 7, 43: doi: 10.3390/nano7020043. FI-5.076
27. Irina Zarafu, Mihaela Badea, Gabriela Ionita, Petre Ionita, Anca Paun, Marcela Bucur, Mariana Carmen Chifiriuc, Coralia Bleotu, Rodica Olar, "Spectral, magnetic, thermal and biological studies on Ca(II) and Cu(II) complexes with a novel crowned Schiff base", J Therm Anal Calorim 2017, 127: 1511-1521, DOI 10.1007/s10973-016-5573-9. FI-4.626
28. A. Paun, M. Matache, F. Enache, I. Nicolau, C.C. Paraschivescu, P. Ionita, I. Zarafu, V.I. Parvulescu, G. Guillaumet, "Convenient synthesis of 2-alkynylbenzazoles through Sonogashira cross-coupling reaction between thioethers and terminal alkynes", Tetrahedon Lett, 56, 2015, 5349-5352. FI(2014)-2,415.
29. Madalina Tudose, Daniela C Culita, Cornel Munteanu, Jeanina Pandele, Elena Hristea, Petre Ionita, **Irina Zarafu**, Mariana Carmen Chifiriuc, „Antibacterial Activity Evaluation of Silver Nanoparticles Entrapped in Silica Matrix Functionalized with Antibiotics", *Journal of Inorganic and Organometallic Polymers and Materials*, **2015***,* pg 1-10.
30. Matei L., Bleotu C., Baciu I., Diaconu C.C., Hanganu A., Banu O., Ionita P., Paun A., **Zarafu I**., "The biological activities of some new isonicotinic acid (2-hydroxy-8-substituted-tricyclo[7.3.1.$0^{2,7}$]tridec-13-ylidene)-hydrazides", *Bioorganic and Medicinal Chem*, **2015**, 23, 401-410.
31. Lilia Matei, Coralia Bleotu, Ion Baciu, Constantin Draghici, Petre Ionita, Anca Paun, Mariana Carmen Chifiriuc, Adriana Sbarcea, **Irina Zarafu***, "Synthesis and Bioevaluation of Some New Isoniazid Derivatives", *Bioorganic and Medicinal Chemistry*, **2013**, 21, 5355-5361.
32. A. Paun, **I. Zarafu**, M. T. Caproiu, P. Ionita, „Synthesis and structural characterization of a betainic imino-nitroxide stable free diradical", *ARKIVOC*, **2013**(iv), 144-151.
33. A. Paun, **I. Zarafu**, M. T. Caproiu, C. Draghici, M. Maganu, P. Ionita, A. I. Cotar, M. C. Chifiriuc, „Synthesis and evaluation of several benzocaine derivatives", *Comptes Rendus Chimie,* **2013**, 16, 665-671.
34. C. Remes, A. Paun, **I. Zarafu**, M. Tudose, M.T. Caproiu, G. Ionita, C. Bleotu, L. Matei, P. Ionita, "Chemical and biological evaluation of some new antipyrine derivatives with particular properties", *Bioorganic Chemistry*, **2012**, 41-42, 6-12.
35. G. Ionita, I. Zarafu, A. Paun, P. Ionita, "EPR spectra of a mono- and a hetero di-radical in nematic and isotropic phases" *Mol. Cryst. Liq. Cryst*., **2012**.
36. Corina Toader, Ion Baciu, **Irina Zarafu** *„A new study on (2s,3s)-1,4-bis-sulfanylbutane-2,3-diol"*, Revista de Chimie, **2009**, 60 (9), 909-914.
37. Corina Toader, **Irina Zarafu** si Ion Baciu, "Note II. A new research on biological activity of (2s,3s)-1,4-bis-sulfanylbutane-2,3-diol", *Scientific Study and Research,* **2009**, vol. 10 (I), ISSN 1582-540 X.
38. **I. Zarafu**, L.-V. Ivan, I. Harasim, « Nota IV. Cercetări privind sinteza şi activitatea biologică a 1,2,4-tiadiazolilor-3,5-disubstituiţi utilizând ca precursori sărurile de ditiazoliu", *Revista de Chimie*, **2008**, 59(1), 101-105.
39. Christine Fossey, Anh-Hoang Vu, Anamaria Vidu, **Irina Zarafu**, Daniel Ladurée, Sylvie Schmidt, Géraldine Laumond, Anne-marie Aubertin, " Synthesis of Prodrug-type anti-HIV agents conjugating a Reverse Tanscriptase Inhibitor to a HIV-1 Integrase Inhibitor by a Spontaneously Cleavable Linker", *J. Enz. Inh. Med. Chem*., **2007**, 22(5), 591-607.
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