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Nr...../.....

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ACADEMIA ROMANA

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PROGRAM DE CERCETARE
COMPUSI MACROMOLECULARI SI
MATERIALE POLIMERE AVANSATE
2021- 2027

RAPORT DE ACTIVITATE 2021

Director,

Secretar stiintific,

Dr. Valeria HARABAGIU

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RAPOARTE SUBPROGRAME

LABORATOR CENTRUL DE CERCETARI AVANSATE PENTRU BIONANOCONJUGATE SI BIOPOLIMERI

SUBPROGRAM 1: STRUCTURI SUPRAMOLECULARE BIO-INSPIRATE SI MATERIALE AVANSATE CU APLICATII IN TEHNOLOGII EMERGENTE

DIRECTOR SUBPROGRAM: DR. MARIANA PINTEALA

Proiect 1.1. Entitati nano- si micro-structurate pentru aplicatii biomedicale specifice

director proiect: Dr. Lilia CLIMA

Echipa (procent de timp alocat proiectului):

Dr. Lilia CLIMA, CSIII (100%)
 Dr. Mariana PINTEALA, CSI (50%)
 Dr. Ioan CIANGA, CSI (100%)
 Dr. Luminita CIANGA, CSIII (100%)
 Dr. Dragos PEPTANARIU, CS (100%)
 Dr. Cristina AL-MATARNEH, CS (100%)
 Dr. Anca-Dana BENDREA, CS (100%)

Dr. Andrei DASCALU, AC (100%)
 Dr. Adina COROABA, AC (50%)
 Dr. Bogdan Florin CRACIUN, AC (100%)
 Dr. Tudor VASILIU, AC (100%)
 Drd. Petru TARNOVAN, (100%)
 Isabela Andreea SANDU, AC (100%)

Activitati realizate

- Proiectarea, sinteza si caracterizarea fizico-chimica a unei biblioteci de precursori functionalizati cu grupari reactive specifice lipidelor, fluoroforilor, structurilor organice cu proprietati antiinflamatorii, anticanceroase, compusilor fluorurati
- Sinteze de intermediari organici si macromonomeri heterociclici pentru oligomeri/polimeri cu structura conjugata.
- Obtinerea sistemelor de livrare a principiilor active prin chimia combinatoriala din precursorii functionalizati
- Caracterizarea structurala prin spectroscopie RMN, IR, DSC cat si prin tehnici adiacente, ex. ESI-MS, TEM, AFM, DLS, Maldi-TOF, UV-Vis, Fluorescenta, Dicroism Circular
- Dezvoltarea strategiilor de crestere a specificitatii vectorilor, care sa tinteasca preferential anumite celule sau tesuturi
- Teste de determinare a capacitatii de incarcare (pADN) ale nano-conjugatelor functionale pentru terapia genica
- Studiul *in silico* al formarii poliplecsilor dintre un vector non-viral SQ-PEG-PEI si ADN-uri dublu-catenare cu secvente diferite pentru a determina specificitatea vectorului fata de o anumita secventa de ADN
- Formarea de structuri supramoleculare, prin SA, in solutie si in filme subtiri; Studiul in solutie si al

Documente

monitorizare propuse

- lucrari stiintifice publicate: **5**
- participari la manifestari stiintifice: **2**
- propuneri de proiecte: **2**

Documente

monitorizare realizate

- capitole de carte: **5**
- lucrari stiintifice publicate: **16**
- participari la manifestari stiintifice: **13**
- proiecte depuse: **8**

<p>suprafetelor filmelor rezultate din acestea prin AFM, SEM, TEM, XPS, unghi de contact)</p> <p>- Studiul interactiunii cu diverse tipuri de proteine/celule prin teste de biocompatibilitate sau masuratori fotofizice, DLS si/sau gravimetrice in timp real in vederea demonstrarii aplicatiilor biomedicale specifice, cum ar fi: imagistica celulara si livrare controlata a principiilor active; complexarea si livrarea acizilor nucleici in mod targetat; nanoparticule inteligente pentru transportul si eliberarea controlata a principiilor active</p>		
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Molecular Perspective on Solutions and Liquid Mixtures from Modelling and Experiment; L. V. Engelbrecht, F. Mocci, Y. Wang, S. Perepelytsya, **T. Vasiliu**, A. Laaksonen; *Soft Matter Systems for Biomedical Applications*; (Eds.) L. Bulavin, N. Lebovka; Springer, Cham 53-84 (2021)
2. DNA-Polyamine Interactions: Insight from Molecular Dynamics Simulations on the Sequence-Specific Binding of Spermidine³⁺; F. Mocci, A. Laaksonen, L. Engelbrecht, **T. Vasiliu**, S. Perepelytsya; *Systems for Biomedical Applications*; (Eds.) L. Bulavin, N. Lebovka; Springer, Cham 163-192 (2021)
3. Polymeric Carriers for Transporting Nucleic Acids—Contributions to the Field; **L. Clima, A. I. Dascalu, B. F. Craciun** and **M. Pinteala**; *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Eds.) M. Abadie, M. Pinteala, and A. Rotaru; Springer, pp 133-150 (2021)
4. Non-viral vectors and drug delivery: *in vitro* assessment; **D. Peptanariu**, M. Abadie and **M. Pinteala**; *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Eds.) M. Abadie, M. Pinteala, and A. Rotaru; Springer, pp 239-254 (2021)
5. Measuring Ionic Transport Through Lipid Bilayers; R. Zonda, S.-A. Ibanescu, M. Silion, **A. Coroaba**, D.-L. Isac, M. J. M. Abadie, **M. Pinteala**; *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Eds.) M. Abadie, M. Pinteala, and A. Rotaru; Springer pp 25-50 (2021)

Lucrari cu colaboratori angajati in proiecte de cercetare

- Design, synthesis, and biological evaluation of selective hCA IX inhibitors; F. Garta, D. Vullo, **A. Angeli**; pH-Interfering Agents as Chemosensitizers in Cancer Therapy, C. T. Supuran, S. Carradori, Eds., Academic Press, London, 63-78 (2021)

Raportate la alte subprograme

- Molecular Dynamics Simulations and *in silico* Analysis of Supramolecular Self-assembled Structures C. Cojocar, A. Neamtu, **T. Vasiliu**, D. Lucian Isac, **M. Pinteala**; *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Eds) M. Abadie, M. Pinteala, A. Rotaru; Springer; Cham, 357-371 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. *In silico* study of PEI-PEG-squalene-dsDNA polyplex formation: the delicate role of the PEG length in the binding of PEI to DNA; **T. Vasiliu, B.F. Craciun**, A. Neamtu, **L. Clima**, D. L. Isac, S. S. Maier, **M. Pinteala**, F. Mocci, A. Laaksonen; *Biomaterials Science* 9(19), 6623-6640 (2021) FI=6,843
2. Manganese doped N-Hydroxyphthalimide derived Carbon Dots – Theranostics applications in experimental breast cancer models; A. Tiron, C. S. Stan, G. Luta, C. M. Uritu, I. C. Vacarean-Trandafir, G. D. Stanciu, **A. Coroaba**, C. E. Tiron; *Pharmaceutics* 13, Article 1982/1-17 (2021) FI=6,321
3. Synthesis and properties of new fused 1,10-phenanthroline derivatives; **M. C. Al-Matarneh**, I. Rosca, S. Shova, R. Danac; *Journal of the Serbian Chemical Society* 86 (0), 1–15 (2021) FI = 1,24
4. Synthesis, crystal structure and luminescent properties of isorecticular lanthanide–organic frameworks based on a tetramethyl-substituted terphenyldicarboxylic acid; **I. A. Dascalu**, E. A. Mikhalyova, S. Shova, B.I. Bratanovici, R. N. Marangoci, V. Lozan, G. Roman; *Polyhedron* 194, 114929 (2021) FI =3,052
5. 3,4-Ethylenedioxythiophene (EDOT) end - group functionalized poly-ε-caprolactone (PCL): Self-assembly in organic solvents and its coincidentally noticed peculiar behaviour in thin film and protonated media; **A. D. Bendrea, L. Cianga**, G.-L. Ailiesei, E.-L. Ursu, D. Göen-Colak, **I. Cianga**; *Polymers* 13(16), art. no. 2720 (2021) FI=4,329
6. MnAl-Layered Double Hydroxide Nanosheets Infused with Fluorouracil for Cancer Diagnosis and Therapy; B. Dragoi, C. M. Uritu, L. Agrigoroaie, D. Lutic, V. Hulea, G. Postole, **A. Coroaba**, E. Carasevici; *ACS Applied Nano Materials* 4, 2061-2075 (2021) FI = 5,097
7. Electrochemically driven efficient enzymatic conversion of CO₂ to formic acid with artificial cofactors; Z. Zhang, **T. Vasiliu**, F. Li, A. Laaksonen, F. Mocci, X Ji; *Journal of CO₂ Utilization* 52, 101679 (2021) FI=7,132

8. Chiral organic-inorganic lead halide perovskites based on α -alanine; V.Y. Sirenko, O. I. Kucheriv, D. D. Naumova, I. V. Fesykh, R. P. Linnik, **I. A. Dascalu**, S. Shova, I. O. Fritsky, I. A. Gural'skiy; *New Journal of Chemistry* 45, 12606–12612 (2021) FI= 3,591
9. Hair EDX Analysis-A Promising Tool for Micronutrient Status Evaluation of Patients with IBD?; G. E. Gilca-Blanariu, **A. Coroaba**, M. Ciocoiu, A. Trifan, G. Dimofte, S. Diaconescu, V. A. Afrasanie, G. G. Balan, T. Pinteala, G. Stefanescu; *Nutrients* 13, Article Number 2572 (2021) FI = 5,717
10. Theoretical and Experimental Study of the Excess Thermodynamic Properties of Highly Nonideal Liquid Mixtures of Butanol Isomers+ DBE; L. D. V. Engelbrecht, R. Farris, **T. Vasiliu**, M. Demurtas, A. Piras, F. Cesare Marincola, A. Laaksonen, S. Porcedda, F. Mocci; *The Journal of Physical Chemistry B* 125(2), 587-600 (2021) FI=2,991
11. Tellurides bearing benzenesulfonamide as carbonic anhydrase inhibitors with potent antitumor activity; **A. Angeli**, **M. Pinteala**, S. S. Maier, A. Toti, L. di Cesare Mannelli, C. Ghelardini, S. Selleri, F. Carta, C. T. Supuran; *Bioorganic and Medicinal Chemistry Letters* 45, Article 128147/1-4 (2021) FI = 2,823
12. Chromene-containing aromatic sulfonamides with carbonic anhydrase inhibitor properties; **A. Angeli**, V. Kartsev, A. Petrou, **M. Pinteala**, V. Brovarets, S. Slyvchuk, S. Pilyo, A. Geronikaki, C. T. Supuran; *International Journal of Molecular Sciences* 22, Article 5082/1-15 (2021) FI = 5,923
13. Structural insights into Schistosoma mansoni carbonic anhydrase (SmCA) inhibition by selenoureido-substituted benzenesulfonamides; **A. Angeli**, M. Ferraroni, A. A. Dadara, S. Selleri, **M. Pinteala**, F. Carta, P. J. Skelly, C. T. Supuran; *Journal of Medicinal Chemistry* 64, 10418-10428 (2021) FI = 7,446
14. Carbonic Anhydrase Inhibition with Sulfonamides Incorporating Pyrazole- and Pyridazinecarboxamide Moieties Provides Examples of Isoform-Selective Inhibitors; **A. Angeli**, V. Kartsev, A. Petrou, **M. Pinteala**, V. Brovarets, R. Vydzhak, S. Panchishin, A. Geronikaki, C. T. Supuran; *Molecules* 26(22), 7023 (2021) FI=4,411
15. New sulfanilamide derivatives incorporating heterocyclic carboxamide moieties as carbonic anhydrase inhibitors; **A. Angeli**, V. Kartsev, A. Petrou, **M. Pinteala**, R. M. Vydzhak, S. Y. Panchishin, V. Brovarets, V. De Luca, C. Capasso, A. Geronikaki, C. T. Supuran; *Pharmaceuticals* 14, Article 828/1-19 (2021) FI = 5,863
16. A sensitive method for saliva detection in forensics using salivary amylase coupled with amplex red oxidation; S. Bunesco, B. A. Stoica, **D. Peptanariu**, L. Foia; *Journal of Experimental and Molecular Biology* 21(2), 41-46 (2020) (neraportat 2020)

Raportate la alte subprograme

- New heterogeneous catalysts containing platinum group metals recovered from a spent catalytic converter; C. Racles, M. F. Zaltariov, **A. Coroaba**, M. Sillion, C. Diac, **A. Dascalu**, M. Iacob, M. Cazacu; *Applied Organometallic Chemistry* Article Number 6417, (2021) FI = 4,105
- All-polysaccharide hydrogels for drug delivery applications: Tunable chitosan beads surfaces via physical or chemical interactions, using oxidized pullulan; I. A. Duceac, L. Verestiuc, **A. Coroaba**, D. Arotaritei, S. Coseri; *International Journal of Biological Macromolecules* 181, 1047-1062 (2021) FI = 6,953
- Amphiphilic chitosan-g-poly(trimethylene carbonate) –A new approach for biomaterials design; B.-I. Andreica, D. Ailincai, **A.-I. Sandu**, L. Marin; *International Journal of Biological Macromolecules* 93, 414-424 (2021) FI = 6,953
- Pegylation of phenothiazine – A synthetic route towards potent anticancer drugs; S. Cibotaru, V. Nastasa, **A.-I. Sandu**, A.-C. Bostanaru, M. Mares, L. Marin; *Journal of Advanced Research*, ISSN 2090-1232 (2021) FI = 10,479
- Silanol-functionalized tetranuclear copper complex and its nanoscale-heterogenization by immobilization on glass surface from solution; A.-C. Stoica, M. Damoc, V. Tiron, M. Dascalu, **A. Coroaba**, S. Shova, M. Cazacu; *Journal of Molecular Liquids* 344, Article Number 117742 (2021) FI = 6,165
- Processing of quaternized polysulfones solutions as tool in design of electrospun nanofibers: Microstructural characteristics and antimicrobial activity; A. Filimon, N. Olaru, F. Doroftei, **A. Coroaba**, S. Dunca; *Journal of Molecular Liquids* 330, Article Number 115664 (2021) FI = 6,165
- Raman Spectroscopy, X-ray Diffraction, and Scanning Electron Microscopy as Noninvasive Methods for Microstructural Alterations in Psoriatic Nails; A. E. Chiriac, D. Azoicai, **A. Coroaba**, F. Doroftei, D. Timpu, A. Chiriac, M. Pertea, E. L. Ursu, **M. Pinteala**; *Molecules* 26, Article Number 280 (2021) FI = 4,411
- *In situ* CaCO₃ mineralization controlled by carbonate source within chitosan-based cryogels; A. L. Vasiliu, M. V. Dinu, M. M. Zaharia, **D. Peptanariu**, M. Mihai; *Materials Chemistry and Physics* 272, 125025 (2021) FI = 4,094
- Double functionalization of chitosan based nanofibers towards biomaterials for wound healing; R. Lungu, A. Anisie, I. Rosca, **A.-I. Sandu**, D. Ailincai, L. Marin; *Reactive Functional Polymers* 167, 105028 (2021) FI = 3,975
- 1-(4-Carboxyphenyl)-5-methyl-1H-1,2,3-triazole-4-carboxylic acid – A versatile ligand for the preparation of coordination polymers and mononuclear complexes; B. I. Bratanovici, S. Shova, V. Lozan, **I. A. Dascalu**, R. Ardeleanu, G. Roman; *Polyhedron* 200, 115115 (2021) FI = 3,052
- Synthesis and Characterization of New Ferrite-Lignin Hybrids; I. Spiridon, **I. A. Dascalu**, **A. Coroaba**, I. Apostol, M. N. Palamaru, A. R. Iordan, A. I. Borhan; *Polymers* 13, 2495 (2021) FI = 4,239

Lucrari colaboratori angajati in proiecte

- Dynamic constitutional frameworks as antibacterial and antibiofilm agents; **A. Diaconu**, T. Coenye, M. Barboiu, S. P. Vincent; *Angewandte Chemie International Edition* 60, 22505-22512 (2021) FI = 15,336

- Effect of dimethyl carbonate on the behavior of water confined in carbon nanotube; Q. Cao, Y. Zhang, **A. Laaksonen**, Y. Zhu, X. Ji, S. Zhao, Y. Chen, X. Lu; *Chinese Journal of Chemical Engineering*, 31, 177-185 (2021) FI = 3,171
- Ionic liquids for CO₂ electrochemical reduction; F. Li, F. Mocci, X. Zhang, X. Ji, **A. Laaksonen**; *Chinese Journal of Chemical Engineering* 31, 75-93 (2021) FI = 3,171
- Chalcogenides – incorporating carbonic anhydrase inhibitors concomitantly reverted oxaliplatin - induced neuropathy and enhanced antiproliferative action; D. Tanini, S. Carradori, A. Capperuci, L. Lupori, S. Zara, M. Ferraroni, C. Ghelardini, L. Di Cesare Mannelli, L. Micheli, E. Lucarini, F. Carta, **A. Angeli**, C. T. Supuran; *European Journal of Medicinal Chemistry* 225, Article 113793/1-12 (2021) FI = 6,514
- Taurultams incorporating arylsulfonamide: First *in vitro* inhibition studies of α -, β - and γ class carbonic anhydrases from *Vibrio cholerae* and *Burkholderia pseudomallei*; O. Akgul, **A. Angeli**, S. Selleri, C. Capasso, C. T. Supuran, F. Carta; *European Journal of Medicinal Chemistry* 219, Article 113444/1-11 (2021) FI = 6,514
- Up State of the SARS-COV-2 Spike Homotrimer Favors an Increased Virulence for New Variants; C. C. Giron, **A. Laaksonen**, F.L. Barroso da Silva; *Frontiers in Medical Technology* 3:694347 (2021)
- Detecting confined fluid behavior by SFA: Past, present and future; Y. Dong, F. Huo, **A. Laaksonen**; *Green Energy and Environment* 6, 167-168 (2021) FI = 8,207
- Spectroscopic and *in silico* studies on the interaction of substituted pyrazolo[1,2-a]benzo[1,2,3,4]tetrazine-3-one derivatives with c-Myc G4-DNA; S. Mulliri, **A. Laaksonen**, P. Spanu, R. Farris, M. Farci, F. Mingoia, G. N. Roviello, F. Mocci; *International Journal of Molecular Sciences* 22, Article 6028/1-20 (2021) FI = 5,923
- Assembly of [Ni(Schiff)] films on an inert surface: A multiscale computational study; S. Hrom, V. V. Sizov, O. V. Levin, **A. Laaksonen**; *Journal of Physical Chemistry C* 125, 2926-2937 (2021) FI = 4,126
- Molecular mechanistic insight into the ionic-strength-controlled interfacial behavior of proteins onto a TiO₂ surface; Y. Dong, **A. Laaksonen**, Q. Gao, X. Ji; *Langmuir* 37, 11499-11507 (2021) FI = 3,882
- Hydrated ionic liquids boost the trace detection capacity of proteins on TiO₂ support; Y. Dong, **A. Laaksonen**, F. Huo, Q. Gao, X. Ji; *Langmuir* 37, 5012-5021 (2021) FI = 3,882
- Microscopic shear flow simulations of a biaxial smectic A liquid crystal based on the soft ellipsoid string-fluid; S. Sarman, **A. Laaksonen**; *Physical Chemistry Chemical Physics* 23, 15183-15195 (2021) FI = 3,676
- Coarse-grained simulations of ionic liquid materials: from monomeric ionic liquids to ionic liquid crystals and polymeric ionic liquids; Y. L. Wang, B. Li, **A. Laaksonen**; *Physical Chemistry Chemical Physics* 23, 19436-19456 (2021) FI = 3,676

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Fluorescent EDOT-Functionalized Poly- ϵ -Caprolactone: Synthesis, Photophysical and Self-Assembling Properties in Organic Solvents and Its Serendipitously Noticed Behaviour in Protonated Media; **A.-D. Bendrea, L. Cianga**, G.-L. Ailiesei, I. Cianga; *Proceedings (MDPI, Basel, Switzerland)* 69 (1), 13 (2021)
2. Thiophene end-group functionalized oligo(2-methyl-2-oxazoline) as an amphiphilic reactive macromonomer and as a non-conventional intrinsic luminescent material; **A.-D. Bendrea, L. Cianga, I. Cianga**, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds*, 83-84 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Conjugated polymers: a step forward to smarter and more advanced synthetic polymers biomaterials; **A.-D. Bendrea, L. Cianga, I. Cianga**; The International Congress of Apollonia University of Iasi, Iasi, Romania, 1-3.03.2021
2. Biomedical Applications of polymer-coated Metallic Nanoparticles; **M. Pinteala**, C.M.Uritu; International Conference on Polymer Science and Composite Materials, Barcelona, Spain, July 05-07.2021 (keynote)

Comunicari orale prezentate la manifestari stiintifice internationale

3. Thiophene end-group functionalized oligo(2-methyl-2-oxazoline) as an amphiphilic reactive macromonomer and as a non-conventional intrinsic luminescent material; **A.-D. Bendrea, L. Cianga, I. Cianga**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", Iasi, Romania, 7-9.10.2021
4. Supramolecular squalene based self-assembled entities as promising non-viral vectors for gene delivery; **L. Clima, B. Craciun, D. Peptanariu, M. Pinteala**, International Conference of Polymer Science and Composite Materials "Polymer Connect", Barcelona, Spania, 05-07.07.2021

Comunicari orale prezentate la manifestari stiintifice nationale

5. Nanoconjugate pentru terapia genica: Notiuni introductive, exemple; **M. Pinteala**, workshop: "Progrese recente in domeniul obtinerii de nanovectori pentru transfectia genica"; IBPCNS; Bucuresti, Romania, 22.04.2021

6. Vectori non-virali sintetizati prin chimie dinamica constitutională, utilizati in terapia genică, **L. Clima**; workshop: "Progrese recente in domeniul obtinerii de nanovectori pentru transfectia genică"; IBPCNS, Bucuresti, Romania, 22.04.2021
7. Abordarea transfectiei, o perspectiva biologica; **D. Peptanariu**; workshop: "Progrese recente in domeniul obtinerii de nanovectori pentru transfectia genică"; IBPCNS, Bucuresti, Romania, 22 aprilie. 2021
- Conducting conjugated polymers as biomaterials in the frame of 5DnanoP project, **I. Cianga, A.-D. Bendrea, L. Cianga**, G.-L. Ailiesiei; 5DnanoP Workshop, "Petru Poni" Institute of Macromolecular Chemistry; Iasi, Romania 11.10.2021
- Regarding some of the potential application uses of the unexpected scientific findings during the research of 5DnanoP, **A.-D. Bendrea, L. Cianga, I. Cianga**; 5DnanoP Workshop, "Petru Poni" Institute of Macromolecular Chemistry; Iasi, Romania 11.10.2021
- Multi-arm non-viral vectors for transfection; **D. Peptanariu, M. Pinteala**; 5DnanoP Workshop, "Petru Poni" Institute of Macromolecular Chemistry; Iasi, Romania 11.10.2021
- *In silico* analysis of the mechanism of interaction between PEG PEI and DNA at an atomistic level; **T. Vasiliu**, D. Isac, **A. Laaksonen**, F. Mocci, A. Neamtu, **M. Pinteala**; 5DnanoP Workshop, "Petru Poni" Institute of Macromolecular Chemistry; Iasi, Romania 11.10.2021
- *In silico* studies of amphiphilic block-copolymers for drug delivery; **P. Tirnovan, F. Mocci, A. Laaksonen, T. Vasiliu**; 5DnanoP Workshop, "Petru Poni" Institute of Macromolecular Chemistry; Iasi, Romania 11.10.2021

Postere prezentate la manifestari stiintifice internationale

8. Squalene functionalized with coumarines or benzenesulfonamides as hybrid inhibitors for carbonic anhydrase; **B. F. Craciun, L. Clima**, A. Angeli, A. Petreni, S. A. Ibanescu, **M. Pinteala**, C. T. Supuran; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
9. Towards robust metal-organic frameworks based on fluorinated linkers for gas storage; **I. A. Dascalu**, S. Shova, R. Ardeleanu, N. Marangoci, **M. Pinteala**, C. Janiak; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
10. *In silico* analysis of the mechanism of interaction between PEG PEI and DNA at an atomistic level; **T. Vasiliu**, D. Isac, **A. Laaksonen, M. Pinteala**; INTERFACES; Pula (CA), Sardinia, Italia, 21-25 septembrie 2021
11. Structural organization of spermidine³⁺ molecules around the DNA double helix and at the DNA-DNA interface; F. Mocci, **A. Laaksonen, L. Engelbrecht, T. Vasiliu**, S. Perepelytsya; INTERFACES; Pula (CA), Sardinia, Italia, 21-25.09.2021
12. *In silico* study on the aggregation of poly(L-histidine)-poly(ethylene glycol) copolymeric sequences at different protonation states. **T. Vasiliu**, R. Ghiarasim, G. Dimofte, **M. Pinteala**, A. Rotaru; 23rd International Conference Materials, Methods & Technologies; Burgas, Bulgaria, 19-22.08.2021

Postere prezentate la manifestari stiintifice nationale

13. Micronutrient deficiency in patients with inflammatory bowel disease - neglected entity?; G.-E. Gilca-Blanariu, **A. Coroaba**, M. Ciocoiu, A.-V. Trifan, G. Dimofte, T. Pinteala, G. Balan, G. Stefanescu, UEG (United European Gastroenterology) Week Virtual, 3-5.10.2021

Raportate la alte subprograme

- Lignin as source of new hybrid materials; I. Apostol, **I.-A. Dascalu, A. Coroaba**, I. Spiridon; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Synthesis of magnetic nanoparticles coated with pHEMA functionalized with folic acid and doxorubicin for cancer therapy; R. Ghiarasim, S.-A. Ibanescu, N.-L. Marangoci, **A. Coroaba, N. Simionescu, M. Pinteala**; 23rd International Conference Materials, Methods & Technologies, Burgas, Bulgaria, 19-22.08.2021
- Synthesis and characterization of magnetite nanoparticles coated with a double layer of polymer obtained by SI-ATRP functionalized with the targeting molecule and drug with the property of cleavage in acid pH; R. Ghiarasim, S.-A. Ibanescu, N.-L. Marangoci, **A. Coroaba, N. Simionescu, M. Pinteala**; 2nd International Conference on Polymer Science and Composite Materials, Barcelona, Spain, 05-07.07.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Contracte de cercetare internationale

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Contract Prestari Servicii incheiat cu Universitatea de stat din Moldova	Nr. ctr. 4350/2020 Coordonator Dr. Mariana PINTEALA	10.07.2020 - 31.12.2021	6304.50	3000

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Mimicking living matter mechanisms by five-dimensional chemistry (5D-nanoP)	PN-III-P4-ID-PCCF-2016-0050/ Dr. Ioan CIANGA- Responsabil partener	2018-2022	1.836.957	238.118
2.	Abordare modulara a proceselor de sinteza a nanoparticulelor acoperite cu polimeri multifunctionali destinate aplicatiilor nanomedicale (ModNanoMPol)	PN-III-P1-1.1-TE-2019-0922/ TE 108 / 09.09.2020 Director de proiect Dr. Sorin-Alexandru IBANESCU	2020-2022	95.745	45.329
3.	Retele metal-organice pe baza de liganzi aromatici fluorinati (FluoroMOF)	PN-III-P1-1.1-PD-2019-1303/ PD 211 / 2020. Dr. Ioan-Andrei DASCALU	2020-2022	50.000	25.377
4.	Platforme teranostice antitumorale pe baza de Carbon Dots si matrice polimerice (TERADOT)	37PCCDI/2018/ Responsabil P1 Dr. Mariana PINTEALA	2018-2021	230.000	12.238
5.	Vectori moleculari versatili, destinati transportului si eliberarii de gene si medicamente, in lupta impotriva cancerului (TM Vector)	PN-III-P4-ID-PCE-2020-1523 Dr. Mariana PINTEALA	2021-2023	242.425	79.730
6.	Terapii inteligente pentru boli non-comunicabile, bazate pe eliberarea controlata de compusi farmacologici din celulele incapsulate dupa manipulare genetica sau bionanoparticule vectorizate (INTERA)	PN-III-P1-1.2-PCCDI-2017-0697/ 13/PCCDI/2018 PC4 Dr. Mariana PINTEALA	2018-2021		

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Nano-transportori multifunctionali modulari pentru aplicatii biomedicale	PCE-2021	PN-III-P4-PCE-2021-1341 Director de proiect Dr. Lilia CLIMA
2.	Scualenizarea si incapsularea micelara ca metoda alternativa pentru imbunatatirea eficientei biologice a medicamentelor antitumorale si antimicrobiene	PD-2021	PN-III-P1-1.1-PD-2021-0606 Director de proiect Dr. Bogdan Florin CRACIUN
3.	Modelarea multi-dimensională a formării poliplecsilor dintre AND și plicationi. Dezvoltarea de modele la mezoscala pentru a replica experimentele	PD-2021	PN-III-P1-1.1-PD.2021-0564 Director de proiect Dr. Tudor VASILIU
4.	Noi nanostructuri de carbon magnetofluorescente ca potientiale nanomateriale bifunctionale pentru imagistica RMN si de fluorescenta	PD-2021	PN-III-P1-1.1-PD-2021-0612 Director de proiect Dr. Adina COROABA
5.	Formulari topice multifunctionale inovatoare, bioactive pentru gestionarea ranilor maligne	PED-2021	PN-III-P2-2.1-PED-2021-2193/ Director partener Dr. Mariana PINTEALA
6.	Kit-uri medicale pe baza de colagen si principii active pentru debridarea si ingrijirea ulcerului cu exces de fibrina	PTE-2021	PN-III-P2-2.1-PTE-2021-0390/ Director partener Dr. Mariana PINTEALA
7.	Sistem transdermic API-IL de eliberare a medicamentului, pe baza de colina, pentru tratamentul afectiunilor neurodegenerative	PCE-2021	PN-III-P4-PCE-2021-0943 Director de proiect Prof. Aatto LAAKSONEN

Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Plastic-Eating enzymes produced by engineered BACTERIA	IBISBA 5th Open Call Application	PEBAC_TNA5_ROU Director de proiect Dr. Adina COROABA

Manifestari stiintifice (congres, conferinta, simpozion) sau scoli de vara nationale organizate

1. 5DnanoP Workshop, "Petru Poni" Institute of Macromolecular Chemistry; Iasi, Romania, 11 octombrie 2021

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Lista conducatorilor de doctorat**

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1.	Dr. Mariana PINTEALA	Chimie	2010

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Petru TIRNOVAN	Chimie	2019	4 examene 2 referate	Prof. Dr. Aatto LAAKSONEN	Studii <i>in silico</i> a sistemelor dinamice autoasemblante in transportul si eliberarea principiilor active din medicamente
2.	Radu ZONDA	Chimie	2016	Prelungire fara bursa 2021	Dr. Mariana PINTEALA	Sisteme inteligente pentru transportul de specii chimice active. Obtinere. Caracterizare

Postdoctoranzi angajati in institut

Nr. crt.	Nume si prenume	Sursa de finantare	Perioada de angajare
1.	Dr. Sorin-Alexandru IBANESCU	PN-III-P1-1.1-TE-2019-0922/ TE 108 / 09.09.2020	Septembrie 2020 – Septembrie 2022

Stagii de cercetare

Nr. crt.	Nume si prenume	Sursa de finantare	Institutul in care s-a efectuat stagiul/ perioada
1.	Dr. Lilia CLIMA	H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Taras Shevchenko National University of Kyiv, Ucraina 22.08.2021-21.09.2021

V. PRESTIGIU STIINTIFIC**Cercetatori cu indice Hirsch peste 8**

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Dr. Mariana PINTEALA, CSI	22
2.	Dr. Ioan CIANGA, CSI	27
3.	Dr. Luminita CIANGA, CS III	13
4.	Dr. Adina COROABA, AC	13
5.	Dr. Lilia CLIMA, CSIII	11
6.	Dr. Anca-Dana BENDREA, CS	9
7.	Dr. Dragos PEPTANARIU, CS	9

Proiect 1.2. Sisteme supramoleculare micro- si nanostructurate: proiectare, sinteza si aplicatii

director proiect: Alexandru ROTARU

Echipa (procent de timp alocat proiectului): Dr. Narcisa-Laura MARANGOCI, AC (100%)

Dr. Alexandru ROTARU, CSII (100%) Dr. Elena-Laura URSU, CSIII (100%) Dr. Irina ROSCA, CS (30%)	Dr. Lucian BHRIN, AC (100%) Dr. Monica SARDARU, AC (100%) Drd. Razvan GHIARASIM, Drd (100%)
Activitati realizate	Documente monitorizare propuse
<ul style="list-style-type: none"> - Documentare privind sinteza moleculelor tip "core" capabile sa interactioneze cu secventele de ADN prin procesul de hibridizare; - Functionalizarea nanoparticulelor metalice cu secvente de ADN sintetic; - Interactiunea entitatilor functionalizate cu ADN cu unitati capabile sa genereze structuri supramoleculare functionale; -Sinteza si caracterizarea precursorilor pentru unitatile functionale; - Testarea interactiunii precursorilor cu formarea de retele supramoleculare; - Interactiunea componentelor functionale cu formarea de retele supramoleculare nano si microstructurate; - Caracterizarea materialelor preparate 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 2 - participari la manifestari stiintifice: 3 - propuneri de proiecte: 1
	Documente monitorizare realizate
	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 4 - carti: 1 - capitole de carti: 1 - participari la manifestari stiintifice: 4 - proiecte depuse: 6

I. ACTIVITATEA STIINTIFICA

Carti aparute in edituri consacrate din strainatate

1. New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications. Editors: M. J. M. Abadie, M. Pinteala, **A. Rotaru**. Springer Nature Switzerland, 371 p (2021).

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Supramolecular Guanosine-Quadruplex Hydrogels and Hydrogel Composites for Cell Growth Applications. **E. L. Ursu, A. Rotaru**. *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*, (Eds.) M. J. M. Abadie, M. Pinteala, A. Rotaru. Springer Nature Switzerland, 331-348 (2021)

Raportate la alte proiecte din cadrul subprogramului

- A microbiological epilogue - Nosocomial infections. **I. Rosca, E. L. Ursu**, A. Fifere. *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*, (Eds.) M. J. M. Abadie, M. Pinteala, A. Rotaru. Springer Nature Switzerland, 179-189 (2021)
- Inorganic nanoparticles as radical scavengers. A. Fifere, I. A. Turin Moleavin, A. L. Lungoci, **N. L. Marangoci**, M. Pinteala. *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*, (Eds.) M. J. M. Abadie, M. Pinteala, A. Rotaru, Springer Nature Switzerland, 295-329 (2021)

Articole aparute in reviste recunoscute ISI

1. Injectable Thixotropic β -Cyclodextrin-functionalized Hydrogels Based on Guanosine Quartet Assembly. **M. C. Sardaru, I. Rosca**, S. Morariu, **E. L. Ursu, R. Ghiarasim, A. Rotaru**. *International Journal of Molecular Science* 22, 9179, (2021) FI = 5,92
2. Nitrogen-Based Linkers with a Mesitylene Core: Synthesis and Characterization. **L. G. Bahrin**, A. Nicolescu, S. Shova, **N. L. Marangoci**, M. L. Birsa, L. G. Sarbu. *Molecules* 26(19), 5952, (2021) FI = 4,41
3. Raman Spectroscopy, X-ray Diffraction, and Scanning Electron Microscopy as Noninvasive Methods for Microstructural Alterations in Psoriatic Nails. A. E. Chiriac, D. Azoicai, A. Coroaba, F. Doroftei, D. Timpu, A. Chiriac, M. Pertea, **E. L. Ursu***, M. Pinteala. *Molecules* 26(2), 280, (2021) FI = 4,41
4. Monomethine cyanine probes for visualization of cellular RNA by fluorescence microscopy. D. Aristova, V. Kosach, S. Chernii, Y. Slominsky, A. Balanda, V. Filonenko, S. Yarmoluk, **A. Rotaru**, H. G. Özkan, A. Mokhir, V. Kovalska. *Methods Applied Fluoresc.* 9, 045002, (2021) FI = 3,00

Raportate la alte subprograme

- Synthesis, crystal structure and luminescent properties of isorecticular lanthanide-organic frameworks based on a tetramethyl-substituted terphenyldicarboxylic acid. I. A. Dascalu, E. A. Mikhalyova, S. Shova, B. I. Bratanovici, R. Ardeleanu, **N. Marangoci**, V. Lozan, G. Roman. *Polyhedron*, 194, 114929/1-9 (2021) FI = 2,88
- Antibacterial polysiloxane polymers and coatings for cochlear implants. V. Cozma, **I. Rosca**, L. Radulescu, C. Martu, V. Nastasa, C. D. Varganici, **E. L. Ursu**, F. Doroftei, M. Pinteala, C. Racles. *Molecules*, 26, 4892/1-18. (2021) FI = 4,411
- Novel lanthanide (III) complexes derived from an imidazole-biphenyl-carboxylate ligand: synthesis, structure and luminescence properties; **M.C. Sardaru, N.L. Marangoci**, S. Shova, D. Bejan*; *Molecules*, 26(22), 6942 (2021) FI= 4,411

- 3,4-Ethylenedioxythiophene (EDOT) end-group functionalized poly- ϵ - caprolactone (PCL): Self - assembly in organic solvents and its coincidentally observed peculiar behavior in thin film and protonated media. A. D. Bendrea, L. Cianga, G. L. Ailiesei, **E. L. Ursu**, D. G. Colak, I. Cianga. *Polymers*, 13, 2720/1- 27, (2021) FI = 4,33
- Evaluation of local mechanical and chemical properties via AFM as a tool for understanding the formation mechanism of pulsed UV laser-nanoinduced patterns on azo-naphthalene-based polyimide films. I. Stoica, E. L. Epure, C. P. Constantin, M. D. Damaceanu, **E. L. Ursu**, I. Mihaila, I. Sava, *Nanomaterials*, 11, 812/1-23, (2021) FI = 3,50

Comunicari orale prezentate la manifestari stiintifice internationale

1. Synthesis and characterization of magnetite nanoparticles coated with a double layer of polymer obtained by SI-ATRP functionalized with the targeting molecule and drug with the property of cleavage in acid pH. **R. Ghiarasim**, S. Ibanescu, **N. Marangoci**, A. Coroaba, N. Simionescu, M. Pinteala. 2nd International Conference on Polymer Science and Composite Materials, Barcelona, Spain, 05-07.07.2021
2. Carbon based nanomaterials-DNA-gold nanoparticles hybrid assemblies for SERS bioimaging. **E.-L. Ursu**, A. F. Trandabat, **A. Rotaru**, *Progress in Organic and Macromolecular Compounds*, 28th Edition, Iasi, Romania, 07 - 09.10.2021

Postere prezentate la manifestari stiintifice internationale

3. Synthesis, characterization and preliminary testing of doxorubicin loaded poly(L-histidine)-PEG copolymer micelles as pH sensitive drug delivery systems. **R. Ghiarasim**, **L. Bahrin**, B. Craciun, C. Tiron, G. Dimofte, M. Pinteala. International Conference, Materials, Methods & Technologies. Burgas, Bulgaria, 19-22.08.2021
4. Synthesis of magnetic nanoparticles coated with pHEMA functionalized with doxorubicin and folic acid for cancer therapy. **R. Ghiarasim**, S. Ibanescu, **N. Marangoci**, A. Coroaba, N. Simionescu, M. Pinteala. 23rd International Conference, Materials, Methods & Technologies. Burgas, Bulgaria, 19-22.08.2021

Raportate la alte subprograme

- Assessment of antifungal activity of gold-chitosan and carbon nanoparticles against *Rhizoctonia solani* Küh. F. D. Lipsa, **E. L. Ursu**, A. M. Gafencu, M. A. Florea, A. Cazacu, International Conference "Agriculture for Life, Life for Agriculture", Tenth Anniversary Edition, Bucharest, Romania, 03 - 05.06.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice

Nr. Crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Restore Her2 dependent sensibility using AXL inhibitors packed in pH dependent nanostructures.	EEA-RO-NO-2018-0246/ Responsabil ICMPP Dr. Alexandru ROTARU	2021-2023	1.212.500	134.750
2.	Non-biased fluorescent dyes as markers of drugs for optical in cellulo and <i>in vivo</i> imaging.	Research and Innovation Staff Exchange (RISE) Call: H2020-MSCA-RISE-2019, Grant Agreement No. 872331/ Responsabil ICMPP Dr. Alexandru ROTARU	2020-2024	671.600	54.000
3	Infra SupraChem Lab Centru de cercetari avansate in domeniul chimiei supramoleculare (Infra SupraChem Lab)	POC/81/1/2/Crearea de sinergii cu actiunile de CDI ale programului-cadru ORIZONT 2020 al Uniunii Europene si alte programe CDI internationale - CATEDRE-ERA; cod MySmis 108983/Coordonator: Narcisa MARANGOCI	2021-2023	4488367	1346938

Propuneri de proiecte nationale

Nr. Crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Supramolecular frameworks based on the assembly of guanosine derivatives as novel approach for the preparation of the controllable porous materials	PCE 2021	PN-III-P4-PCE-2021-1320 /Director proiect Alexandru ROTARU

2.	Carbon Nanotubes Enhanced Supramolecular Guanosine-based Materials for Biosensing	PED 2021	PN-III-P2-2.1-PED-2021-1585/ Director proiect Alexandru ROTARU
3.	Tricyclic flavonoids as an alternative for duodenoscopy reprocessing.	PED 2021	PN-III-P2-2.1-PED-2021-1489/ Director proiect Lucian BAHNIN
4.	Novel DNA/ metallic nanoparticles/carbon based materials supramolecular platforms for SERS biosensing and bioimaging.	TE 2021	PN-III-P1-1.1-TE-2021-1129 /Director proiect Laura URSU
5.	β -Cyclodextrin functionalized guanosine-based supramolecular hydrogel matrixes as efficient carriers for antimicrobial applications	PD 2021	PN-III-P1-1.1-PD-2021-0528/Director proiect Monica SARDARU
6.	Rețele metal-organice noi cu liganzi tritropici pentru stocare de gaze.	TE 2021	PN-III-P1-1.1-TE-2021-1530/Director proiect Narcisa MARANGOCI

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Razvan GHIARASIM	Chimie	2020	4 examene 1 referat	Dr. Mariana PINTEALA	Sinteza sistemelor (macro) moleculare avansate, care produc agregate supramoleculare bine definite, structuri functionale (macro) moleculare si sisteme pentru aplicatii biomedicale

V. PRESTIGIU STIINTIFIC

Cercetatori cu indice Hirsch peste 8

Nr. Crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Dr. Alexandru ROTARU	15
2.	Dr. Bahrin LUCIAN	14
3.	Dr. Laura Elena URSU	13
4.	Dr. Narcisa Laura MARANGOCI	9
5	Dr. Irina ROSCA	8

Proiect 1.3. Senzori electrochimici: de la materiale nanostructurate electroactive pana la aplicatii specifice pentru sanatate si mediu

director proiect: Dr. Adina ARVINTE

Echipa (procent de timp alocat proiectului): Dr. Adina ARVINTE, CSIII (100%) Dr. Mariana PINTEALA, CSI (30%) Dr. Adrian FIFERE, CS (100%) Dr. Anca PETROVICI, CS (50%) Dr. Irina ROSCA, CS (40%) Dr. Adina COROABA, AC (30%)			Dr. Florica DOROFTEI, Ing. Ch. (50%) Dr. Dana BEJAN, AC (100%) Dr. Ioana-Andreea TURIN-MOLEAVIN, AC (100%) Drd. Ana Lacramioara LUNGOCI, AC (100%) Drd. Oana-Elena CARP (RACHITA) (100%) Drd. Alexandra IACOBESCU (100%)		
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate			
- Sintetiza prin electrodepunere a particulelor bimetalice Fe-Cu, Fe-Mo, Fe-Au, Au-Mo, caracterizare electrochimica si morfologica a electrozilor modificati cu particulele bimetalice - Oxidarea electrochimica a nitritului utilizand particulele Au-Mo. Optimizare si calibrare a metodei de detectie - S-a optimizat determinarea electrochimica a colesterolului utilizand reactia Lieberman-Bouchard	- lucrari stiintifice publicate: 3 - participari la manifestari stiintifice: 2 - propuneri de proiecte: 1	- lucrari stiintifice publicate: 10 - capitole de carte: 2 - participari la manifestari stiintifice: 6 - propuneri de proiecte: 8			

<p>adaptata tehnicilor electrochimice, determinarea colesterolului din probe de sange utilizand metoda electrochimica dezvoltata</p> <ul style="list-style-type: none"> - S-au obtinut si evaluat compozite pe baza de nanotuburi de carbon si nafion pentru oxidarea electrochimica a bilirubinei - Prepararea nanoparticulelor magnetice cu structura miez-coaja, acoperite cu dextran biosintetizat; caracterizare morfologica si structurala; evaluarea proprietatilor magnetice prin trasarea curbelor histerezis - Incarcarea nanoparticulelor cu acid protocatehuic si determinarea spectrofotometrica a eficientei de inglobare - Determinarea capacitatii antioxidante/inactivare a radicalilor liberi folosind radicalii DPPH si DMPO prin metoda colorimetrica (spectrofotometrica) si spectroscopia de rezonanta electronica de spin (RES) - Evaluarea biocompatibilitatii nanoparticulelor pe celule NHDF (normal human dermal fibroblasts) si a proprietatilor antitumorale pe linii celulare de cancer hepatic (HEPG2) si de san (MCF7) - Analiza proprietatilor antimicrobiene a nanoparticulelor pe trei tulpini bacteriene: S. aureus, E. coli, P. aeruginosa - Dezvoltarea de metode de analiza prin HPLC-ESI/MS pentru caracterizarea nanostructurilor/nanocarrier/ substante biologice active - Dezvoltarea unor strategii de obtinere a unor noi liganzi in vederea obtinerii de noi cadre metalice (MOFs) cu potentiale proprietati poroase si diseminarea rezultatelor; 		
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. A Microbiological Epilogue—Nosocomial Infections. **I. Rosca**, E. L. Ursu, **A. Fifere**. In: New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications; J.M. Abadie M., Pinteala, A. Rotaru; Eds. Springer Nature Switzerland, 179-189, ISBN 978-3-030-57456-7, (2021)
2. Inorganic nanoparticles as radical scavengers; **A. Fifere**, **I. A. Turin Moleavin**, **A. L. Lungoci**, N. L. Marangoci, **M. Pinteala**. In New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications, J. M. Abadie, M. Pinteala, A. Rotaru, Eds., Springer Nature Switzerland, 295-329 (2021)

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Electrochemical behaviour of piperine. Comparison with control antioxidants; **O.E. Carp**, A. Moraru, **M. Pinteala**, **A. Arvinte**; *Food Chemistry* 339, 128110, (2021) FI = 7,514
2. Development of Dextran-Coated Magnetic Nanoparticles Loaded with Protocatechuic Acid for Vascular Inflammation Therapy; M. Anghelache, M. Turtoi, **A. R. Petrovici**, **A. Fifere**, **M. Pinteala**, M. Calin; *Pharmaceutics*, 13, 1414, (2021) FI = 6,321
3. The Implication of Reactive Oxygen Species and Antioxidants in Knee Osteoarthritis; N. B. Tudorachi, E. E. Totu, **A. Fifere**, V. Ardeleanu, V. Mocanu, C. Mircea, I. Isildak, K. Smilkov, E. M. Carausu; *Antioxidants* 10, 985, (2021) FI = 6,312
4. Antibacterial polysiloxane polymers and coatings for cochlear implants; V. Cozma, **I. Rosca**, L. Radulescu, C. Martu, V. Nastasa, C.-D. Varganici, E.-L. Ursu, **F. Doroftei**, **M. Pinteala**, C. Racles. *Molecules*, 26(16), 4892, (2021) FI = 4,411
5. Novel lanthanide (III) complexes derived from an imidazole-biphenyl-carboxylate ligand: synthesis, structure and luminescence properties; M.C. Sardaru, N.L. Marangoci, S. Shova, **D. Bejan**; *Molecules*, 26(22), 6942 (2021) FI= 4,411
6. New Insights on Hemp Oil Enriched in Cannabidiol: Decarboxylation, Antioxidant Properties and *In Vitro* Anticancer Effect; **A. R. Petrovici**, N. Simionescu, A. I. Sandu, V. Paraschiv, M. Silion, **M. Pinteala**; *Antioxidants* 10(5), 738, (2021) FI= 6,312

7. The Multifaceted Role of Extracellular Vesicles in Glioblastoma: microRNA Nanocarriers for Disease Progression and Gene Therapy; N. Simionescu, R. Zonda, **A. R. Petrovici**, A. Georgescu; *Pharmaceutics* 13, 988, (2021) FI = 6,321
8. Bioactive Collagen Hydrolysate - Chitosan/Essential Oils Electrospun Nanofibers Designed for Medical Wound Dressings; M. Rapa, C. Gaidau, L. Mititelu-Tartau, M.-D. Berechet, A. C. Berbecaru, **I. Rosca**, A. P. Chiriac, E. Matei, A.-M. Predescu, C. Predescu; *Pharmaceutics* 13(11), 1939 (2021) FI = 6,321
9. Ionanofluids specific heat and electrical conductivity; E. I. Cereches, **D. Bejan**, C. Ibanescu, M. Danu, A. A. Minea; *Chemical Engineering Science* 229, 116140 (2021) FI = 4,311
10. An Experimental Study on Electrical Conductivity of Several Oxide Nanoparticle Enhanced PEG 400 Fluid, M. Chereches, **D. Bejan**, E. I. Chereches, A. Alexandru, A. A. Minea, *International Journal of Thermophysics*, 42(7), 104, (2021) FI=0,794

Raportate la alte subprograme:

- Double functionalization of chitosan based nanofibers towards biomaterials for wound healing. R. Lungu, A. Anisie, **I. Rosca**, A.-I. Sandu, D. Ailincăi, L. Marin; *Reactive and Functional Polymers* 167, 105028, (2021) FI = 3,975
- Multifunctional composites of zwitterionic resins and silver nanoparticles for point-of-demand antimicrobial applications; M.-M. Zaharia, C.-A. Gheorghita, M.-A. Trofin, **F. Doroftei**, **I. Rosca**, M. Mihai; *Materials Chemistry and Physics* 275, 125225, (2022) FI = 4,094
- Alginate enriched with phytic acid for hydrogels preparation. Therapeutic applications; L. E. Nita, A. P. Chiriac, A. Ghilan, A. G. Rusu, D. Pamfil, **I. Rosca**, L. Mititelu-Tartau; *International Journal of Biological Macromolecules*, 189, 335-345 (2021) FI = 6,953
- Iminoboronate - Chitooligosaccharides Hydrogels with strong antimicrobial activity for biomedical applications; D. Ailincăi, **I. Rosca**, S. Morariu, L. Mititelu-Tartau, L. Marin; *Carbohydrate Polymers*, <https://doi.org/10.1016/j.carbpol.2021.118727> (2021) FI = 9,381
- Comparative Investigation of Collagen-Based Hybrid 3D Structures for Potential Biomedical Applications; G. David, A. I. Bargan, M. Drobeta, A. Bele, **I. Rosca**; *Materials*, 14, 3313, (2021) FI = 3,623
- Synthesis of poly(ethylene brassylate-co-squaric acid) as potential essential oil carrier; A. P. Chiriac, A. G. Rusu, L. E. Nita, A.-M. Macsim, N. Tudorachi, **I. Rosca**, I. Stoica, D. Tampu, M. Aflori, **F. Doroftei**; *Pharmaceutics*, 13(4), 477, (2021) FI = 6,321
- Innovative Ag-TiO₂ Nanofibers Offering Excellent Photocatalytic and Antibacterial Action; P. Pascariu, C. Cojocaru, A. Airinei, N. Olaru, **I. Rosca**, E. Koudoumas, M. P. Sucheai; *Catalysts* 11, 1234, (2021) FI = 4,146

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. PLA nanocomposites with antimicrobial action, based on olive fruit polyphenols and citrus fruit extracts encapsulated in Maltodextrin; I. V. Tudose, **I. Rosca**, C. Romanitan, O. N. Ionescu, K. Petrotos, S. Zaoutsos, M. P. Sucheai, E. Koudoumas; Proceedings of International Semiconductor Conference, ISBN 978-0-7381-2665-4, 269-272

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Bimetallic Based Nanostructures for Electrochemical Sensing Applications; **A. Arvinte**; 6th International Congress on Biomaterials and Biosensors (BIOMATSEN), Oludeniz, Turkey, 17-23.10.2021

Comunicari orale prezentate la manifestari stiintifice internationale

2. Evaluation of antioxidant properties using electrochemistry combined with *in vitro* peroxidation and reducing assays; **O. E. Carp**, **M. Pinteala**, **A. Arvinte**; 6th International Congress on Biomaterials and Biosensors (BIOMATSEN), Oludeniz, Turkey, 17-23.10.2021
3. Hybrid nanostructured systems based on metal oxides with magnetic and antioxidant properties for biomedical applications; **A. Fifere**; International Conference on Polymer Science and Composite Materials, Polymer Connect, 05-07.07.2021

Comunicari orale prezentate la manifestari stiintifice nationale

4. Simionescu N, Nechifor S, Buga R, Dabija M, Eva L, **Petrovici AR**, Georgescu A. Subtipuri moleculare ale tumorilor de glioblastom la pacienti din nord-estul Romaniei. Comunicare orala (lector invitat) la editia a III-a a Congresului National de Neurostiinte Moderne din Romania, Iasi, 12 - 16.10.2021
- Conjugated metal oxides nanoparticles as inorganic antioxidants; **A. Fifere**, **I. A. Turin-Moleavin**, **A. Iacobescu**, **A. L. Lungoci**, **I. Rosca**, **M. Pinteala**; 5DNanoP Workshop October, 11.10.2021

Raportate la alte subprograme

- Hydrophobic biocompatible CaCO₃/cellulose material with potential application in wound dressing; A.-L. Vasiliu, M.-M. Zaharia, M.-M. Bazarghideanu, **I. Rosca**, D. Peptanariu, M.-A. Lungu, M. Mihai; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

- Biocompatible hydrogels with broad-spectrum antimicrobial activity; D. Ailincăi, **I. Rosca**, S. Morariu, L. Mititelu-Tartau, M. Angheloiu, L. Marin. The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Postere prezentate la manifestari stiintifice internationale

5. Simionescu N, Nechifor S, Buga R, Dabija M, Eva L, Zonda R, **Petrovici AR**, Georgescu A.; Microvesicle-associated microRNA signature in glioblastoma: preliminary results from OpenArray profiling. Poster online la Conferinta Internationala sub egida Academiei Romane: cel de-al 42-lea Simpozion Aniversar al Institutului de Biologie si Patologie Celulara "Nicolae Simionescu" si cea de-a 38-a Sesiune Anuala a Societatii Romane de Biologie Celulara, eveniment hibrid, Bucuresti, Romania, 4 - 6.11.2021
6. A morphology study on several PEG 400 based nanocolloids, M. I. Chereches, E. I. Chereches, **D. Bejan**, A. A. Minea, Acta of the International Symposium on Thermodynamics of Metal Complexes, ISMEC 2021, Bialystok, Poland, 16-18.06.2021

Postere prezentate la manifestari stiintifice nationale

Raportate la alte subprograme

- PLA nanocomposites with antimicrobial action, based on olive fruit polyphenols and citrus fruit extracts encapsulated in Maltodextrin; I. V. Tudose, **I. Rosca**, C. Romanitan, O.N. Ionescu, K. Petrotos, S. Zauotsos, M. P. Sucheai, E. Koudoumas. CAS 2021 International Semiconductor Conference Bucuresti, Romania, 06-08.10.2021
- Double-functionalized chitosan nanofibers for wound healing; R. Lungu, A. Anisie, **I. Rosca**, A.-I. Sandu, D. Ailincăi, L. Marin; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri private

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Formulation of bio-absorbable class III medical device for local drug delivery	Research agreement nr. 5289/09.08.2019 - CORTHOTEC LIMITED, London, UK (Company) and ICMPP, Iasi, Romania (Contract Research Organization - CRO)/ Coordonator: Dr. Mariana PINTEALA	2019-2021	96203	

Propuneri de proiecte nationale

Nr. Crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Detectia electrochimica a biomarkerilor serici relevanti pentru bolile hepatice utilizand senzori pe baza de materiale nanostructurate	PCE-2021	PN-III-P4-PCE-2021-1438 Dr. Adina ARVINTE
2.	Dezvoltarea unui sistem portabil pentru detectia electrochimica rapida si sensibila a glucozei si insulinei	PED-2021	PN-III-P2-2.1-PED-2021-0465 Dr. Adina ARVINTE
3.	Nanoparticule de oxizi metalici - alternative noi si eficiente pentru sterilizarea duodenoscoapelor (NanoClean)	TE-2021	PN-III-P1-1.1-TE2021-0739 Dr. Irina ROSCA
4.	Valorificarea sustenabila a biomasei de canepa pentru aplicatii nutraceutice	PED-2021	PN-III-P2-2.1-PED-2021-2086 Dr. Anca Roxana PETROVICI
5.	Noi inhibitori ai anhidrazei carbonice ca potentiali agenti anti-infectiosi impotriva microorganismelor patogene rezistente la antibiotice	PCE-2021	PN-III-P4-PCE-2021-1590 Dr. Andrea ANGELI
6.	Proiectarea si sinteza nanoantioxidantilor magnetici pentru reducerea locala a stresului oxidativ in terapia restenozei	TE-2021	PN-III-P1-1.1-TE2021-0834 Dr. Ioana-Andreea TURIN-MOLEAVIN

7.	Dezvoltarea unor noi compozite pe baza de lichide ionice (ILs) incorporate in retele metal-organice (MIL100) si utilizarea lor in cataliza proceselor de productie a biocombustibililor	PED-2021	PN-III-P2-2.1-PED-2021-0999 Dr. Dana BEJAN
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Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	EURONANOMED2021-043, acromym OxyRad-Therapy submitted to the Joint Transnational Call (JTC) 2021 on "EUROPEAN INNOVATIVE RESEARCH & TECHNOLOGICAL DEVELOPMENT PROJECTS IN NANOMEDICINE	EuroNanoMed III-2021	EURONANOMED2021-043 Dr. Adrian FIFERE – responsabil partener ICMPP

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE**Cerere de brevet**

1. Preparing exopolysaccharide-based materials used in aortic valve tissue engineering, by dissolving mixture of bacterial exopolysaccharide-microcrystalline cellulose, adding epichlorohydrin, crosslinking, drying and lyophilizing hydrogel; D. E Ciolacu, **A. R. Petrovici**, A. C. Mihaila, E. Butoi, Patent Numar-RO135041-A2, 30.06.2021

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Doctoranzi in stagi**

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Oana-Elena RACHITA (casatorita CARP)	Chimie	2018	-stagi finalizat, redactare teza	Dr. Mariana PINTEALA	Senzori electrochimici cu aplicatii biomedicale
2.	Alexandra IACOBESCU	Chimie	2020	4 examene	Dr. Mariana PINTEALA	Investigatii prin spectroscopia RES ale nanoantioxidantilor si generatorilor de specii reactive

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1	Dr. Adina ARVINTE	Processes
2	Dr. Mariana PINTEALA	Molecules Journal of Enzyme Inhibition and Medicinal Chemistry

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1	Dr. Mariana PINTEALA, CSI	22
2	Dr. Florica DOROFTEI, INS I-A	17
3	Dr. Adina ARVINTE, CSIII	14
4	Dr. Adina COROABA, AC	13
5	Dr. Adrian FIFERE, CS	10
6	Dr. Irina ROSCA, CS	8

Proiect 1.4. Materiale (bio)polimere si arhitecturi nanostructurate multifunctionale pentru aplicatii specifice		
director proiect: Dr. Dan ROSU		
Echipe (procent de timp alocat proiectului): Dr. Dan ROSU, CSI (100%) Dr. Mariana PINTEALA, CSI (20%) Dr. Fanica MUSTATA, CSI (40%) Dr. Liliana ROSU, CSIII (100%) Dr. Carmen-Alice TEACA, CSIII (100%) Dr. Cristian-Dragos VARGANICI, CSIII (100%)	Dr. Maurusa-Elena IGNAT, CS (100%) Dr. Leonard IGNAT, CS (100%) Dr. Irina ROSCA, CS (30%) Dr. Anca PETROVICI, CS (20%) Dr. Adina COROABA, AC (20%) Livia ALBU, Tehnician (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Obtinerea de acoperiri ecologice durabile si inovatoare din resurse regenerabile si materiale hibride micro- si nanostructurate; - Modificarea produselor de origine naturala in vederea introducerii de grupe termo- si fotopolimerizabile - Stabilirea procedeelor de preparare a micro- si nanoparticulelor metalice si de oxizi metalici - Obtinerea de micro- si nanoparticule metalice si oxizi metalici - Obtinerea polimerilor foto- si termo-reticulabili din resurse regenerabile - Caracterizarea fizico-chimica a materialelor de acoperire; a micro- si nanoparticulelor metalice si oxizi metalici - Evaluarea comportarii la actiunea factorilor de mediu a ansamblului suport-material de acoperire 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - carti/capitole: 2 - participari la manifestari stiintifice: 2 	<ul style="list-style-type: none"> - lucrari stiintifice ISI publicate: 9 - capitole de carte: 3 - participari la manifestari stiintifice: 6 - propuneri de proiecte: 1

I. ACTIVITATEA STIINTIFICA

Carte (trimisa la publicat)

- *Surface Treatment Methods of Natural Fibers and their Effects on Biocomposites* (A. Shahzad, F. Tanasa, **C.-A. Teaca**, Eds.) in curs de publicare la editura Woodhead Publishing-Elsevier (Woodhead Publishing Series in Composites Science and Engineering Series); (March 15, 2022); Language: English; Paperback: 600 pages; ISBN-10: 0128218630; ISBN-13: 978-0128218631

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Cellulose Nanoparticles/Polysaccharide-type Polymer Based Materials; **C.-A. Teaca**, F. Tanasa, M.-C. Stanciu; In: *Cellulose Nanoparticles: Synthesis and Manufacturing*; (Eds.) V. K. Thakur, E. Frollini, J. Scott; The Royal Society of Chemistry (RSC); pp. 442-465 (2021)
2. Application of essential oils to biofilms; M. Nechifor, F. Tanasa, **C.-A. Teaca**; In: *Essential Oils: Extraction Methods and Applications*; Inamuddin Ed.; Wiley-Scrivener (2021)
3. Protective Coatings for Wood; F. Tanasa, **C.-A. Teaca**, M. Zanoaga; In: *Handbook of Modern Coatings Technologies- Applications and Development*; M. Aliofkhaezraei, A. Nasar, M. Chipara, N. Laidani, J.T.M. De Hosson, Eds. Elsevier, USA; pp. 175-267 (2021)

Raportate la alte subprograme:

- Multicomponent polymer systems based on agro-industrial waste; F. Tanasa, **C.-A. Teaca**, M. Nechifor, M. Zanoaga; In: *Bioplastics for Sustainable Development*; M. Kuddus, Roohi, Eds.; Springer; pp. 467-513 (2021)

Capitol carte trimis la publicat

- Multicomponent polymer systems based on agro-industrial waste; F. Tanasa, **C.-A. Teaca**, M. Nechifor, M. Zanoaga; In: *Bioplastics for Sustainable Development*; M. Kuddus, Roohi, Eds., Springer; 45 pages; Publisher Springer Singapore, eBook ISBN: 978-981-16-1823-9; Hardcover ISBN: 978-981-16-1822-2

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Trees as bioindicators of environmental pollution and its impact on wood chemical composition; **C.-A. Teaca**; *BioResources* 16, 2184-2187 (2021) FI = 1.614
2. Sustainable wood coating made of epoxidized vegetable oils for ultraviolet protection; **C.-D. Varganici, L. Rosu, D. Rosu, F. Mustata**, T. Rusu; *Environmental Chemistry Letters* 19(1), 307-328 (2021) (IF = 9.027)

3. Epoxy resin with DOPO-based oligophosphonate S-IPNs: Comparative effect of three hardeners on the thermal and fire properties; **C.-D. Varganici, L. Rosu**, S. Lehner, C. Hamciuc, M. Jovic, **D. Rosu, F. Mustata**, S. Gaan; *Materials & Design* 212, 110237 (2021) FI = 7,991
4. Effect of thermal aging on the physic-chemical and optical properties of poly(esterurethane) elastomers designed for passive damping (pads) of the railway; **L. Rosu, C.-D. Varganici, D. Rosu**, S. Oprea; *Polymers* 13(2), 1-20 (2021) FI = 4,329
5. Photochemical stability of a cotton fabric surface dyed with a reactive triphenodioxazine dye; **L. Rosu, C.-C. Gavat, D. Rosu, C.-D. Varganici, F. Mustata**; *Polymers* 13, 3986 (2021) FI = 4,329
6. Bio-based coatings from epoxy resins crosslinked with a rosin acid derivative for wood thermal and anti-fungal protection; **L. Rosu, F. Mustata, D. Rosu, C.-D. Varganici, I. Rosca**, T. Rusu; *Progress in Organic Coatings* 151, 106008 (2021) FI = 5,161
7. Assessing the thermal and fungal behavior of eco-friendly epoxy thermosets derived from vegetable oils for wood protective coatings; **F. Mustata, D. Rosu, C.-D. Varganici, L. Rosu, I. Rosca**, N. Tudorachi; *Progress in Organic Coatings*, <https://doi.org/10.1016/j.porgcoat.2021.106612> (2021) FI= 5,161
8. Dynamic mechanical analysis and thermal expansion of lignin-based biopolymers; S.-N. Mazurchevici, D. Vaideanu, D. Rapp, **C.-D. Varganici**, M. Boca, D. Nedelcu; *Polymers* 13(17) 2953 (2021) FI = 4,329
9. Photochemical behavior of polymer modified vegetable oils as eco-friendly wood protective coatings; **D. Rosu, F. Mustata, L. Rosu, C.-D. Varganici**; *ACS Applied Polymer Materials*, acceptata FI = 4,089

Raportate la alte subprograme

- Synthesis, characterization of erythromycin propionat core-based star poly(etherurethane)s and their antibacterial properties; D. Filip, D. Macocinschi, C. G. Tuchilus, M. F. Zaltariov, **C.-D. Varganici**; *Macromolecular Research* 29(9), 613-624 (2021) FI = 2,227
- Exploring the potential of thin films made from poly(imide-amide-sulfone)s for engineering applications; C.-P. Contantin, M. Asandulesa, **C.-D. Varganici**, A. Wolinska-Grabczyk, M.-D. Damaceanu; *Materials Science and Engineering B: Solid-State Materials for Advanced Technology* 270, 115217 (2021) FI = 4,051
- Synthesis and thermal characterization of some hardeners for epoxy resins based on castor oil and cyclic anhydrides; **F. Mustata**, N. Tudorachi; *Industrial Crops and Products* 159, 113087 (2021) FI = 5,645
- Antibacterial polysiloxane polymers and coatings for cochlear implants; V. Cozma, **I. Rosca**, L. Radulescu, C. Martu, V. Nastasa, **C.-D. Varganici**, E. L. Ursu, F. Doroftei, **M. Pinteala**, C. Racles; *Molecules* 26(162), 4892 (2021) FI = 4,441

Comunicari orale prezentate la manifestari stiintifice internationale

1. Antifungal properties of new multicomponent polymer systems as flame retardant coatings; **I. Rosca, C.-D. Varganici, L. Rosu**, C. Hamciuc, **D. Rosu, F. Mustata**; Progress in Organic and Macromolecular Compounds Conference, MACRO Iasi, Romania, 7-9.10.2021
2. Epoxy-based S-IPNs as eco-friendly flame retardants; **C.-D. Varganici, L. Rosu, D. Rosu, F. Mustata**; CEEC-TAC6 & Medicta2021, Split, Croatia, 20-24.07.2021

Raportate la alte subprograme

- Stability of the HPC/PU polymeric blends in accelerated weathering and biological environments; M.-F. Zaltariov, **C.-D. Varganici**, D. Filip, D. Macocinschi; 1st Corrosion and Materials Degradation WEB Conference, ONLINE, 17-19.05.2021

Postere prezentate la manifestari stiintifice internationale

3. Morphological study of some epoxy resin with DOPO-based oligophosphonate S-IPNs; A.-L. Vasiliu, **C.-D. Varganici, D. Rosu, F. Mustata**, O.M. Munteanu, **L. Rosu**; Progress in Organic and Macromolecular Compounds Conference, MACRO Iasi, Romania, 7-9.10.2021
4. Thermal behaviour and fungal protection of composites based on wood and natural and synthetic epoxy resins cured with a rosin acid derivative; **C.-D. Varganici, L. Rosu, F. Mustata, D. Rosu, I. Rosca**; CEEC-TAC6 & Medicta 2021, Split, Croatia, 20-24.07.2021
5. Non-isothermal degradation kinetic study of new multicomponent polymer systems for flame retardant coatings; **L. Rosu, C.-D. Varganici, F. Mustata, D. Rosu**, A.-L. Vasiliu; CEEC-TAC6 & Medicta 2021, Split, Croatia, 20-24.07.2021
6. Thermal characterization of bio-based epoxy resins crosslinked with curing agents from raw renewable resources; **L. Rosu, C.-D. Varganici, F. Mustata, D. Rosu**; CEEC-TAC6 & Medicta 2021, Split, Croatia, 20-24.07.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/ responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Comportamentul in conditii simulate de mediu a unor noi sisteme polimerice multicomponente pentru materiale de acoperire rezistente la flacara	TE 165/2020/ Cristian-Dragos VARGANICI	2020- 2022	87.785	47.765

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/ responsabil contract
1.	Acoperiri ecologice durabile si inovatoare din resurse regenerabile pentru protectia suprafetelor impotriva actiunii factorilor de mediu	PCE 2021	PN-III-P4-PCE-2021-0357 Dan ROSU

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1	Dan ROSU	Polymers
2.	Cristian-Dragos VARGANICI	Polymers
3.	Carmen-Alice TEACA	BioResources

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Dan ROSU, CS I	23
2.	Mariana PINTEALA, CS I	22
3.	Cristian-Dragos VARGANICI, CS III	21
4.	Carmen-Alice TEACA, CS III	19
5.	Liliana ROSU, CS III	19
6.	Adina COROABA, AC	13
7.	Irina ROSCA, CS	8

LABORATOR POLIADITIE SI FOTOCHIMIE**SUBPROGRAM 2: SINTEZA DE MONOMERI SI POLIMERI PRIN METODE CHIMICE SI FOTOCHIMICE. MATERIALE PENTRU ECO- SI BIO-APLICATII**

DIRECTOR SUBPROGRAM: DR. SERGIU COSERI

Proiect 2.1. Structuri polimerice dirijate pentru incorporarea de nanoaditivi, cu aplicatii eco-tehnologice, utilizand metode chimice si fotochimice

director proiect: Dr. Sergiu COSERI

Echipa (procent de timp alocat proiectului): Dr. Sergiu COSERI, CSI (100%) Dr. Fulga TANASA, CSIII (100%) Dr. Violeta MELINTE, CSIII (100%) Dr. Andreea Laura SCUTARU, CSIII (100%) Dr. Daniela IVANOV, CS (100%) Dr. Mioara MURARIU, CS (100%)			Dr. Lenuta STROEA, CS (100%) Dr. Gabriela BILIUTA, CS (100%) Dr. Viorica Elena PODASCA, AC (100%) Dr. Raluca BARON, AC (100%) Drd. Madalina CULICA, AC (37,5%) Drd. Ioana DUCEAC, AC (50%) Mihaela GHEORGHIU, A1 (100%)		
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate			
<ul style="list-style-type: none"> - Sinteza de monomeri (met)acrilici, de nanoparticule anorganice (CeO₂, TiO₂) si functionalizarea lor; functionalizarea chimica a nanotuburilor de carbon - Caracterizarea structurala (RMN, FTIR) si morfologica (SEM, TEM) a compusilor obtinuti - Prepararea de materiale hibride utilizand interactiuni fizice/chimice intre matricea polimera si nanoparticule de metale sau oxizi metalici - Caracterizarea structurala, morfologica, termica, optica si mecanica a materialelor rezultate - Testarea mai multor variante preparative in obtinerea de compozite hibride si investigarea proprietatilor fizico-chimice (structurale, optice, termice, morfologice, autoasamblare) ale materialelor obtinute - Analiza proprietatilor fizico-chimice ale copolimerilor si materialelor hibride rezultate - Aprecierea comportarii materialelor sintetizate in vederea prefigurarii posibilelor aplicatii (senzori, fotocatalizatori, protectie UV) 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - participari la manifestari stiintifice: 2 - teze de doctorat: 1 - propuneri de proiecte: 2 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 14 - capitol carte: 1 - participari la manifestari stiintifice: 15 - teze de doctorat: 1 - propuneri de proiecte: 6 - brevete de inventii acordate: 1 			

I. ACTIVITATEA STIINTIFICA**Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate**

1. Multicomponent polymer systems based on agro-industrial waste, **F. Tanasa**, C.A. Teaca, M. Nechifor, M. Zanoaga, *Bioplastics for Sustainable Development*; (Eds.) M.K. Roohi, Springer, 467-514 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Mineralization versus photoreduction of 4-nitrophenol under the influence of surface functionalized CeO₂ nanoparticles, hosted by versatile cellulose supports; **V. Melinte, A.L. Scutaru, M.E. Culica, S. Coseri**; *Applied Surface Science* 565, 150494 (2021) FI = 6,707
2. Cellulose-based biogenic supports, remarkably friendly biomaterials for proteins and biomolecules; **M.E. Culica, A.L. Chibac-Scutaru**, T. Mohan, **S. Coseri**; *Biosensors and Bioelectronics* 182, 113170 (2021) FI = 10,618
3. All-polysaccharide hydrogels for drug delivery applications: Tunable chitosan beads surfaces via physical or chemical interactions, using oxidized pullulan; **I.A. Duceac**, L. Verestiuc, A. Coroaba, D. Arotaritei, **S. Coseri**; *International Journal of Biological Macromolecules* 181, 1047-1062 (2021) FI = 6,953
4. Influence of microfibrillated cellulose and soft biocomponent on the morphology and thermal properties of thermoplastic polyurethanes; D.M. Panaitescu, C.A. Nicolae, **V. Melinte, A.L. Scutaru**, A.R. Gabor, M.S. Popa, M. Oprea, **T. Buruiana**; *Journal of Applied Polymer Science* 138 (37) 50951 (2021) FI = 3,125
5. ZnO-Ag based polymer composites as photocatalysts for highly efficient visible-light degradation of Methyl Orange; **V.E. Podasca**, M.D. Damaceanu; *Journal of Photochemistry and Photobiology A: Chemistry* 406, 113003 (2021) FI = 4,291
6. Testing of chemically activated cellulose fibers as adsorbents for treatment of arsenic contaminated water; M. Ciopec, **G. Biliuta**, A. Negrea, N. Duteanu, **S. Coseri**, P. Negrea, M. Ghangrekar; *Materials* 14 (13), 3731 (2021) FI = 3,623
7. Insights on cellulose research in the last two decades in Romania; **S. Coseri**; *Polymers* 13 (5), 689 (2021) FI = 4,329
8. Aliphatic polyurethane elastomers quaternized with silane-functionalized TiO₂ nanoparticles with UV-shielding features; **L. Stroea, A.L. Chibac-Scutaru, V. Melinte**; *Polymers* 13 (8), 1318 (2021) FI = 4,329
9. Affordable magnetic hydrogels prepared from biocompatible and biodegradable sources; **R.I. Baron, G. Biliuta**, V. Socoliuc, **S. Coseri**; *Polymers* 13(11), 1693 (2021) FI = 4,329
10. Synthesis, characterization, and antifungal activity of silver nanoparticles embedded in pullulan matrices; O. Burduniuc, A.-C. Bostanaru, M. Mares, **G. Biliuta, S. Coseri**; *Materials* 14(22), 7041 (2021) FI = 3,623
11. Development of quantum dot (QD) based color converters for multicolor display; M.T. Sajjad, A.K. Bansal, F. Antolini, E. Preis, **L. Stroea**, S. Toffanin, M. Muccini, L. Ortolani, A. Migliori, S. Allard, U. Scherf, I.D.W. Samuel; *Nanomaterials* 11, 1089 (2021) FI = 5,076
12. Critical assessment of structural changes in some copolyamide-clay hybrid materials in correlation with the filler characteristics; M. Zanoaga, A. Airinei, N. Fifere, C.V. Grigoras, D. Timpu, **F. Tanasa**, *Polymer Composites* <https://doi.org/10.1002/pc.26273> (2021) FI = 3,171
13. Novel chitosan-hydroxyapatite macroporous composites for biomedical applications; **I.A. Duceac**, F. Tanasa; *Revue Roumaine de Chimie* 65(12), 1111-1119 (2020) (neraportat in 2020) FI = 0,278
14. Synthesis and self-assembly of optically active random copolymers bearing L-alanine and L-glutamic acid moieties in aqueous medium; **M. Murariu, L. Stroea, V. Melinte**; *Reactive and Functional Polymers* 157, 104778 (2020) (neraportat in 2020) FI = 3,975

Raportate la alte subprograme

- Synthesis of benzaldehyde-grafted polysilane: A highly stable and selective "turn-on" fluorescent sensor for cytosine; **A.L. Chibac-Scutaru**, C. Cojocar, G. Roman, P. Samoila, G. Sacarescu, M. Simionescu, L. Sacarescu; *Journal of Molecular Liquids* 326, 115300 (2021) FI = 6,165
- Exploring the potential of thin films made from poly(imide-amide-sulfone)s for engineering applications; C.P. Constantin, M. Asandulesa, C. Varganici, **V. Melinte**, M. Bruma, A. Jankowski, A. Wolinska-Grabczyk, M.D. Damaceanu; *Materials Science and Engineering B* 270, 115217 (2021) FI = 4,051
- Nano-assembly and optical properties of difluoroboron dibenzoylmethane-polysilane; L. Sacarescu, C. Cojocar, G. Roman, G. Sacarescu, M. Simionescu, P. Samoila, **A.L. Chibac-Scutaru**; *Polymer* 232, 124188 (2021) FI = 4,43

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. CeO₂ nanoparticles embedded in different cellulosic substrates: photocatalytic materials for pollutant removal or organic reactions; **A.L. Chibac-Scutaru, V. Melinte**; The 10th Global Conference on Materials Science and Engineering CMSE 2021, Online, 1-4.08.2021

Comunicari orale prezentate la manifestari stiintifice internationale

2. Cellulose-derived platforms for targeted technological applications; **A.L. Chibac-Scutaru, V. Melinte, S. Coseri**; 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spania, 24-30.09.2021
3. Surface functionalization of inorganic nanoparticles for covalent immobilization in polymer matrices; **L. Stroea, A.L. Chibac-Scutaru, V. Melinte**; 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spania, 24-30.09.2021
4. Proton conductive membranes for fuel cells: challenges when cellulose replace nafion; **S. Coseri**; 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spain, 24-30.09.2021

5. Versatility of cellulosic matrix used for immobilization of synthesized CeO₂ nanoparticles in tailoring the photocatalytic properties of hybrid composites; **A.L. Chibac-Scutaru, V. Melinte, M.E. Culica, S. Coseri**; The 3rd International Workshop Advances on Photocatalysis AdvPhotoCat-EE2021, Online, 28-29.06.2021
6. UV-Shielding ability of aliphatic polyurethane – silane-functionalized TiO₂ nanoparticle elastomeric coatings; **L. Stroea, A.L. Chibac-Scutaru, V. Melinte**; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
7. Study of the interaction of fluorescent polymeric sensors containing fluorescein derivatives with some quenchers and sensing characteristics enhancement by Au NPs; **M. Murariu**; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
8. Cellulose - derived matrices for functionalized CeO₂ nanoparticles immobilization, and their photocatalytic behaviour; **M.E. Culica, A.L. Chibac-Scutaru, V. Melinte, S. Coseri**; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
9. Advancements on the selective oxidation of cellulose, via non-persistent phthalimide N-oxyl radical; **G. Biliuta, R.I. Baron, S. Coseri**; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
10. Preparation of water-soluble carboxylated cellulose derivatives as efficient hydrogel promoters; **R.I. Baron, G. Biliuta, S. Coseri**; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
11. Oxidized pullulan for fine-tuning a chitosan-based drug delivery system; **I.A. Duceac, S. Coseri**; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
12. Water, an essential component of the food industry; C. Stoian, **F. Tanasa**; The 16th International Conference of Constructive Design and Technological Optimization in Machine Building Field OPROTEH 2021, Bacau, Romania, 25-27.05.2021

Raportate la alte subprograme

- Dielectric spectroscopy investigation of novel hybrid composites obtained from cellulose derivatives doped with 1-hydroxybenzotriazole; M. Asandulesa, **M. E. Culica, S. Coseri**; 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spania, 24-30.09.2021

Postere prezentate la manifestari stiintifice internationale

13. Comparative structural, morphological and optical characterization of CeO₂/doped-CeO₂ nanoparticles; **V. Melinte, A.L. Chibac-Scutaru, V. Podasca**; 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spania, 24-30.09.2021
14. Hydrogels based on PVA and pullulan with self-healing behavior; **R.I. Baron, G. Biliuta, S. Coseri**; XXXIth edition of the International Congress of "Apollonia" University of Iasi "By promoting excellence, we prepare the future", Iasi, Romania, 1-3.03.2021
15. Cellulose – carbon nanotubes hybrid materials acting as electromagnetic shielding materials; **G. Biliuta, R.I. Baron, S. Coseri**; XXXIth edition of the International Congress of "Apollonia" University of Iasi "By promoting excellence, we prepare the future", Iasi, Romania, 1-3.03.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Highly sensitive immunoassay device based on natural resources (HISENSE)	PN-III-P2-2.1-PED-2019-0169 (520PED / 02.11.2020) Dr. S. COSERI	2020-2022	121.385	51.410
2.	Extinderea limitelor celulozei spre fabricarea de membrane conductoare de protoni superioare, pentru celule de combustibil (EXCELLFUEL)	PN-III-P4-ID-PCE2020-0476 (PCE 19/2021) Dr. S. COSERI	2021-2023	242.517	80.574
3.	Noi compozite hibride pe baza de biopolimeri cu nanoparticule de CeO ₂ : un pas inainte catre materiale fotocatalitice durabile si competitive (POLYCER)	PN-III-P1-1.1-TE-2019-1245 (23/27.08.2020) Dr. A.L. SCUTARU	2020-2022	89.420	42.236

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Platforma de chemosenzori luminescenti pe baza de nanocristale semiconductoare (QDs) netoxice pentru detectarea poluantilor din mediu	TE-2021	PN-III-P1-1.1-TE2021-0912 Dr. L. STROEA

2.	Imbunatatirea performantelor fotocatalitice si antibacteriene ale unor noi materiale hibride pe baza de particule de ZnO	TE-2021	PN-III-P1-1.1-TE-2021-0169 Dr. V.E. PODASCA
3.	Acoperiri hibride fotosensibilizate pe baza de matrici poliuretanic si nanoparticule de oxid metalic avand caracteristici fotocatalitice ajustabile	PCE-2021	PN-III-P4-PCE2021-0934 Dr. V. MELINTE
4.	Platforme hibride ecologice autonome ce includ nanoparticule de CeO ₂ pentru conversia fotocatalitica eficienta a poluantilor toxici	PED-2021	PN-III-P2-2.1-PED-2021-0837 Dr. A.L. SCUTARU
5.	Un nou concept de obtinere a hidrogelurilor injectabile cu retea dubla, pe baza de polimeri naturali	TE-2021	PN-III-P1-1.1-TE2021-0597 Dr. G. BILIUTA
6.	Proiectarea de noi arhitecturi 3D cu proprietati anti-inghet si conductive controlate	PD-2021	PN-III-P1-1.1-PD2021-0462 Dr. R. BARON

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE

Brevete acordate

1. Poliuretani termoplastici cu segmente structurale biodegradabile si procedeu de obtinere; **V. Melinte, T. Buruiana, A.L. Scutaru, L. Stroea**; C08G 18/08; 30.08.2021

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Sergiu COSERI	Chimie	2016

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Madalina Elena CULICA	Chimie	2018	4 examene 2 Rapoarte de cercetare	Dr. S. COSERI	Celuloza si derivatii sai functionalizati, utilizati in aplicatii tehnice neconventionale
2.	Ioana Sabina TRIFAN	Chimie	2021	Colocviu admitere	Dr. S. COSERI	Sinteza si caracterizarea unor retele polizaharidice fotoreactive

Teze sustinute

Nr. crt.	Titlul tezei	Doctorand	Conducator stiintific	Data sustinerii
1.	Noi retele polimerice pe baza de polizaharide modificate cu potentiale aplicatii medicale	Ioana A. TANASA (DUCEAC)	Dr. S. COSERI	21.10.2021

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1	Sergiu COSERI	Polymers Materials Polysaccharides
2	Violeta MELINTE	Nanomaterials
3	Andreea Laura SCUTARU	Polymers

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Sergiu COSERI, CSI	22
2.	Violeta MELINTE, CSIII	14
3.	Gabriela BILIUTA, CS	14

4.	Lenuta STROEA, CS	10
5.	Andreea Laura SCUTARU, CSIII	9
6.	Fulga TANASA, CSIII	8

Proiect 2.2. Materiale poliuretanicе ce includ bio-componenti ca perspectiva a chimiei ecologice

director proiect: Dr. Stefan OPREA

Echipa (procent de timp alocat proiectului):

Dr. Stefan OPREA, CSI (100%)

Dr. Constantin GAINA, CSII (50%)

Dr. Viorica GAINA, CSII (100%)

Dr. Marioara NECHIFOR, CSIII (100%)

Dr. Luiza Madalina GRADINARU, CS (100%)

Dr. Violeta Otilia POTOLINCA, CS (100%)

Dr. Oana URSACHE, AC (100%)

Activitati realizate

- Poliuretani si compozite poliuretanicе cu continut crescut de bio-componenti
- Noi poliuretani cu comportare dielectrica specifica ce includ derivati de 1,3,4-thiadiazole, glicerina sau ulei de ricin
- Prepararea unor materiale compozite hibride pe baza de uretani si componente anorganice de tipul unor nanoparticule metalice (Ag), nanoparticule ale oxizilor metalici (Fe₂O₃; Fe₃O₄ etc.)
- Materiale polimerice reticulate cu bio-componenti
- Materiale poliuretanicе ce includ o-dianisidina si reticulanti bio-componenti ca: Tween 20, Span 20, Phloroglucinol
- Functionalizarea uleiului de ricin cu grupari furfurali si maleimidice protejate (monomer A4B4 autopolimerizabil)
- Materiale polimere colorate si/sau termoreversibile
- Elastomeri poliuretanic colorati care includ derivati de azobenzen (Sudan Orange G) cu o buna rezistenta la radiatii UV
- Reticularea uleiului de ricin functionalizat cu grupe maleimidice sau/si furfuralice in retele termoreversibile
- Elastomeri cu hidrofilie imbunatatita
- Poliuretani cu proprietati imbunatatite ce includ derivati de 1,2,4-triazol si glicerina sau ulei de ricin

Documente monitorizare propuse

- lucrari stiintifice publicate: **5**
- participari la manifestari stiintifice: **2**
- propuneri de proiecte: **1**

Documente monitorizare realizate

- lucrari stiintifice publicate/ acceptate: **7**
- participari la manifestari stiintifice **3**
- propuneri de proiecte: **3**
- brevet international: **1**

I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

Raportate la alte subprograme

- Multicomponent polymer systems based on agro-industrial waste, F. Tanasa, C.A. Teaca, **M. Nechifor**, M. Zanoaga, *Bioplastics for Sustainable Development*; (Eds.) M.K. Roohi, Springer, 467-514 (2021)

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Vegetable oil-based polymers obtained via Diels-Alder reaction; **V. Gaina, O. Ursache, C. Gaina**; *Current Trends in Polymers Science* 20, 69-81 (2020) (neraportata 2020)
2. New polyurethanes with specific dielectric behavior through included of 1,3,4-thiadiazole derivative in their structure; **S. Oprea, V.O. Potolinca**, V. Oprea; *European Polymer Journal* 143, 110177 (2021) FI = 4,598
3. The effects of the inclusion of 1,2,4-triazole derivatives into the main chains of the polyurethane urea exposed to UV radiation; **S. Oprea, V.O. Potolinca**; *High Performance Polymers* DOI: 09540083211043737 (2021) FI = 2,161

- Physical properties and dielectric behavior of the poly(urethane-urea) based on o-dianisidine and renewable cross-linkers; **S. Oprea, V.O. Potolinca**, V. Oprea; *Journal of Applied Polymer Science* 138 (21), e50481 (2021) FI = 3,125
- Surface energy evaluation of casting and nanofiber polyurethane films by using different models; **L.M. Gradinaru**, M. Barbalata-Mandru, S. Vlad, M. Petrescu; *Journal of Applied Polymer Science* 138 (33), e50834 (2021) FI = 3,125
- Behavior to UV irradiation of the polyurethanes containing azobenzene side groups in the main chains structure; **S. Oprea, V.O. Potolinca**; *Journal of Polymer Research* 28 (10), 369 (2021) FI = 3,097
- Maleimides—a versatile platform for polymeric materials designed/tailored for high performance applications; **V. Gaina, M. Nechifor, C. Gaina, O. Ursache**; *Polymer-Plastics Technology and Materials* 60(3), 253-270 (2021) FI = 3,267

Raportate la alte subprograme

- Shear flow of associative polymers in aqueous solutions; M. Bercea, **L.M. Gradinaru**, M. Barbalata-Mandru, S. Vlad, L.E. Nita, I.A. Plugariu, R. Albulescu; *Journal of Molecular Structure* 1238, 130441 (2021) FI = 3,196
- Matching the cellulose/silica films surface properties for design of biomaterials that modulate extracellular matrix; A.M Dobos, E.L Ursu, **L.M Gradinaru**, M. Dobromir; *Membranes* 11(11), 840 (2021) FI = 4,106
- Effect of thermal aging on the physico-chemical and optical properties of poly(ester urethane) elastomers designed for passive damping (pads) of the railway; L. Rosu, C.D. Varganici, D. Rosu, **S. Oprea**; *Polymers* 13(2), 192 (2021) FI = 4,329
- Preparation and surface characterization of polyurethane hydrogel; M. Barbalata-Mandru, M. Bercea, **L.M. Gradinaru**, M. Aflori, R. Albulescu; *Revue Roumaine de Chimie* 66(1), 87-93 (2021) FI = 0,278
- Effect of UV irradiation on surface of collagen film; M. Drobot, M. Barbalata-Mandru, **L.M. Gradinaru**, I. Alexa; *Revue Roumaine de Chimie* 66 (1), 81-85 (2021) FI = 0,278

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

- Polyurethane composites based on iron oxide nanoparticles as precursor in MRI; **L.M. Gradinaru**, S. Vlad, M. Barbalata-Mandru, M. Drobot, M. Spiridon, M. Aflori, M. Butnaru, I. Alexa, R.C. Ciobanu; The 9th IEEE International Conference on E-Health and Bioengineering - EHB 2021, Grigore T. Popa University of Medicine and Pharmacy, ISI EHB-Conference Proceeding, (2021)

Comunicari orale prezentate la manifestari stiintifice internationale

- Polyurethane Composites Based on Iron Oxide Nanoparticles as Precursor in MRI; **L.M. Gradinaru**, S. Vlad, M. Barbalata-Mandru, M. Drobot, M. Spiridon, M. Aflori, M. Butnaru, I. Alexa, R.C. Ciobanu; The 9th IEEE International Conference on E-Health and Bioengineering - EHB 2021, Grigore T. Popa University of Medicine and Pharmacy, Web Conference, Iasi, Romania, 18-19.11.2021
- Synthesis and characterization of novel polyurethanes based on piperazine and renewable cross-linkers; **V. O. Potolinca, S. Oprea**; ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

Postere prezentate la manifestari stiintifice internationale

- BSA/polymer hybrid hydrogels as carrier for neomycin delivery; **L. M. Gradinaru**, M. Bercea, R. V. Gradinaru; International Scientific Conference of the Bulgarian Peptide Society, Velingrad, Bulgaria, 27-29.08.2021

Postere prezentate la manifestari stiintifice nationale

Raportate la alte subprograme

- Modification of the polyurethane film surface properties after air-plasma treatment; M. Barbalata-Mandru, **L.M. Gradinaru**, M. Aflori, S. Ursache; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice - raportate la alte subprograme

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	POC-A1-A1.2.3-G, ID: P-40-443/2015, Parteneriate pentru transfer de cunostinte in domeniul materialelor polimere folosite in ingineria biomedicala (POINGBIO)	Contract de finantare nr. 86 / 08.09.2016, director proiect: M. AFLORI L.M. GRADINARU – membru echipa	2016-2022	3199877,61	374195,6

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Hybrid materials based on non-isocyanate polyurethanes for skin/wound dressing	TE-2021	PN-III-P1-1.1-TE-2021-0168/Luiza Madalina GRADINARU
2.	Engineering "green" polyurethane materials using an eco-friendly bio-based approach	PD-2021	PN-III-P1-1.1-PD-2021-0622/Violeta Otilia POTOLINCA
3.	Bio-based polymer coatings with re-mendable thermo-responsive properties	PD-2021	PN-III-P1-1.1-PD-2021-0513/Oana URSACHE

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE**Brevete acordate**

1. Non-isocyanate polyurethane thermoreversible hydrogel and method for its preparation; C. Ciobanu, **L.M. Gradinaru**, L.D. Tigau; US 2021/0301057 A1, 30.09.2021

V. PRESTIGIU STIINTIFIC**Cercetatori cu indice Hirsch peste 8**

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Stefan OPREA, CS I	20
2.	Constantin GAINA, CS II	16
3.	Viorica GAINA, CS II	16
4.	Luiza Madalina GRADINARU, CS	10
5.	Oana URSACHE, AC	10
6.	Violeta Otilia POTOLINCA, CS	9

LABORATOR POLICONDENSARE SI POLIMERI TERMOSTABILI

SUBPROGRAM 3: STRUCTURI HETEROCATENARE/HETEROCLICE. SINTEZA, CARACTERIZARE, APLICATII PENTRU IMBUNATATIREA CALITATII VIETII

DIRECTOR SUBPROGRAM: DR. LUMINITA MARIN

Proiect 3.1. Derivati de chitosan si/sau fenotiazina: sinteza, obtinere de materiale, formulare, investigare

Director proiect: Dr. Luminita MARIN

<p>Echipa (procent de timp alocat proiectului): Dr. Luminita MARIN, CSI (100 %) Dr. Daniela AILINCAI, CS (100%) Dr. Manuela Maria IFTIME, CS (100%) Dr. Anda Mihaela CRACIUN, CS (100%) Dr. Andrei BEJAN, CS (100%)</p>			<p>Sandu CIBOTARU, AC, DRD. (38.6%) Bianca Iustina ANDREICA, AC, DRD (36%) Alexandru ANISIEI, AC, DRD. (29%) Drd. Ramona LUNGU (100%) Drd. Vera Maria PLATON (100%)</p>	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate		
<p>Derivati de chitosan - Au fost obtinute hidrogeluri pe baza de chitosan si aldehide bioactive (piridoxal-5-fosfat;) care au fost caracterizate structural (FTIR, RMN), supramolecular (WXR, POM), morfologic (SEM) si reologic - S-a realizat testarea activitatii antimicrobiene si biocompatibilitatea <i>in vitro</i> a hidrogelurilor - Au fost obtinuti derivati de chitosan solubili in apa prin grefarea de grupari policarbonat, si polimerii obtinuti au fost caracterizati structural (FTIR, RMN) si supramolecular (POM) - Biocompatibilitatea derivatilor de chitosan obtinuti a fost testata <i>in vitro</i> pe cellule NHDF</p> <p>Materiale pe baza de chitosan - Au fost obtinute formulari prin incapsularea <i>in situ</i> de medicamente (5 fluorouracil, sare de sodiu de diclofenac) in hidrogelurile sintetizate si formularile au fost caracterizate structural (FTIR, RMN), supramolecular (WXR, POM) si morfologic (SEM) - A fost investigata eliberarea <i>in vitro</i> a medicamentelor incapsulate din formularile obtinute prin UV-vis - A fost studiata biodegradabilitatea enzimatica <i>in vitro</i> in prezenta de lizozima - Au fost obtinute nanofibre pe baza de chitosan si s-a realizat caracterizarea lor structurala (FTIR, RMN), morfologica (SEM), supramoleculara (POM)</p> <p>Derivati de fenotiazina - Au fost sintetizati derivati de fenotiazina solubili in apa prin PEG-ilare si derivatii obtinuti au fost caracterizati structural (FTIR, RMN) si</p>	<p>- lucrari stiintifice publicate: 7 - carti/capitole - participari la manifestari stiintifice: 5 - propuneri de proiecte: 1</p>	<p>- lucrari stiintifice publicate: 9 - capitole: 1 - participari la manifestari stiintifice: 10 - propuneri de proiecte: 3</p>		

<p>supramolecular (POM)</p> <ul style="list-style-type: none"> - A fost realizata testarea in vitro si in vivo a biocompatibilitatii derivatilor obtinuti - Au fost sintetizati derivati de fenotiazina cu grupari azometina pentru aplicatii optoelectronice si s-a realizat caracterizarea lor structurala, supramoleculara si fotofizica - A fost sintetizata o serie de derivati de fenotiazina cu unitati sulfonamida si azometina pentru inhibarea carbonanhidrazei <p>Materiale pe baza de derivati de fenotiazina</p> <ul style="list-style-type: none"> - Au fost preparate materiale pe baza derivatilor de fenotiazina obtinuti (hidrogeluri), care au fost caracterizate supramoleculare si fotofizic 		
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. **L. Marin, D. Ailincăi, M.M. Iftime, A.M. Craciun, A. Bejan, M. Pinteala, M.J.M. Abadie**, Hydrogelation of Chitosan with Monoaldehydes Towards Biomaterials with Tuned Properties, in *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*, (Eds.) M.J.M. Abadie, M. Pinteala, A. Rotaru; Springer; 345-356 (2021) ISBN 978-3-030-57455-0

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Imination of chitosan nanofibers in a heterogeneous system. Synthesis optimization and impact on fiber morphology, **A. Anisiei**, A.C. Bostanaru, M. Mares, **L. Marin**, *Cellulose Chemistry and Technology* 55 (7-8), 785-793(2021) FI = 1,46
2. Theoretical model for the diclofenac release from PEGylated chitosan hydrogels, **D. Ailincăi**, M. Agop, I.C. Marinas, A. Zala, S.A. Irimiciuc, L. Dobreci, T.C. Petrescu, C. Volovat, *Drug Delivery* 28(1), 261-271 (2021) FI = 6,41
3. Fully-water-soluble BODIPY containing fluorescent polymers prepared by RAFT method for the detection of Fe³⁺ ions, S. He, L. Xiao, **L. Marin**, Y. Bai, X. Cheng, *European Polymer Journal* 150, 110428 (2021) FI = 4,59
4. Amphiphilic chitosan-g-poly(trimethylene carbonate) – a new approach for biomaterials design, **B.I. Andreica, D. Ailincăi, A.I. Sandu, L. Marin**, *International Journal of Biological Macromolecules* 193, 414-424 (2021) FI = 6,95
5. Chitosan based macromolecular probes for the selective detection and removal of Fe³⁺ ion, C.W. Li, **L. Marin**, X.J. Cheng, *International Journal of Biological Macromolecules* 186, 303-313 (2021) FI = 6,95
6. Eco-friendly PDLC composites based on chitosan and cholesteryl acetate, **D. Ailincăi, L. Marin**, *Journal of Molecular Liquids* 321, 114466 (2021) FI=6,16
7. A Theoretical Model for Release Dynamics of an Antifungal Agent Covalently Bonded to the Chitosan, **L. Marin**, M. Popa, **A. Anisiei**, S.A. Irimiciuc, M. Agop, T.C. Petrescu, D. Vasincu, L. Himiniuc, *Molecules* 26(7), 2089 (2021) FI=4,4
8. New 2,9-disubstituted-1,10-phenanthroline derivatives with anticancer activity by selective targeting of telomeric G-quadruplex DNA, **A.M. Craciun**, A. Rotaru, C. Cojocaru, I.I. Mangalagiu, R. Danac, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 249, 119318 (2021), FI=4,09
9. Double functionalization of chitosan based nanofibers towards biomaterials for wound healing, **R. Lungu, A. Anisiei**, I. Rosca, **A.I. Sandu, D. Ailincăi, L. Marin**, *Reactive and Functional Polymers* 167, 105028 (2021) FI = 3,975

Raportate la alte subprograme

- Modulation of the PLLA Morphology through Racemic Nucleation to Reach Functional Properties Required by 3D Printed Durable Application, D. Dimonie, S. Mathe, **M.M. Iftime**, D. Ionita, R. Trusca, S. Iftime, *Materials* 14(21), 6650 (2021) FI = 3,62

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Imino-chitosan Hydrogels - Promising Biomaterials for Candida Infections' Treatment, **D. Ailincăi**, M. Mares, A. Bostanaru, **L. Marin**, *IFMBE Proceedings Series* (Springer)
2. PEG-ylated Phenothiazine Derivatives. Synthesis and Antitumor Activity, **S. Cibotaru**, V. Nastasa, **A.I. Sandu**, A.C. Bostanaru, M. Mares, **L. Marin**, *IFMBE Proceedings Series* (Springer)
3. Biocompatible hydrogels with broad-spectrum antimicrobial activity, **D. Ailincăi**, I. Rosca, S. Morariu, L. Mititelu Tartau, M. Angheloiu, **L. Marin**, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126

- Chitosan biocompatible hydrogels as drug delivery matrices for anticancer applications, **A.M. Craciun**, G. Gavril, I.C. Marinas, L. Mititelu Tartau, **L. Marin**, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126
- Double-functionalized chitosan nanofibers for wound healing, **R. Lungu**, **A. Anisie**, I. Rosca, **I. Sandu**, **D. Ailinc**, **L. Marin**, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126
- Designing phenothiazine-based materials with high luminescence in solid state, **A. Bejan**, **L. Marin**, B. Chiricuta, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126
- Salicyl-imine-chitosan hydrogels for prolonged drug release, **M. Iftime**, L. Mititelu Tartau, **L. Marin**, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126

Comunicari orale prezentate la manifestari stiintifice internationale

- PEG-ylated Phenothiazine Derivatives. Synthesis and Antitumor Activity, **S. Cibotaru**, V. Nastasa, A.I. Sandu, A.C. Bostanaru, M. Mares, **L. Marin**, 5th International Conference on Nanotechnologies and Biomedical Engineering, Chisinau, Republic of Moldova, 3-5.11.2021
- Imino-chitosan Hydrogels - Promising Biomaterials for Candida Infections' Treatment, **D. Ailinc**, M. Mares, A. Bostanaru, **L. Marin**, International Conference on Nanotechnologies and Biomedical Engineering, Chisinau, Republic of Moldova, 3-5.11.2021
- Designing phenothiazine-based materials with high luminescence in solid state, **A. Bejan**, **L. Marin**, B. Chiricuta, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Biocompatible hydrogels with broad-spectrum antimicrobial activity, **D. Ailinc**, I. Rosca, S. Morariu, L. Mititelu Tartau, M. Angheloiu, **L. Marin**, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Salicyl-imine-chitosan hydrogels for prolonged drug release, **M. Iftime**, L. Mititelu Tartau, **L. Marin**, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Comunicari orale prezentate la manifestari stiintifice nationale

- Synthesis and characterization of novel imine derivatives of quaternary ammonium salt of chitosan, **B.I. Andreica**, I. Rosca, **L. Marin**, ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
- Biodegradable imino-chitosan nanofibers as wound dressing materials, **A. Anisie**, I. Rosca, **A.I. Sandu**, A. Bele, **L. Marin**, ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
- Novel luminescent phenothiazine derivatives for biological applications, **S. Cibotaru**, **L. Marin**, ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

Postere prezentate la manifestari stiintifice internationale

- Double-functionalized chitosan nanofibers for wound healing, Progress in organic and macromolecular compounds, **R. Lungu**, **A. Anisie**, I. Rosca, **A.-I. Sandu**, **D. Ailinc**, **L. Marin**, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Chitosan biocompatible hydrogels as drug delivery matrices for anticancer applications, **A.M. Craciun**, G. Gavril, I.C. Marinas, L. Mititelu Tartau, **L. Marin**, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Smart Wound monitoring Restorative Dressings (SWORD)	H2020-MSCA-RISE-2019 (873123) Dr. Luminita MARIN	2020-2022	96.600	57.960
2.	Nanomaterials and Nanoarchitectures. Composite materials & their applications	NATO Emerging Security Challenges Division Event Award Id. G58792021 Suport SWORD/ Dr. Luminita MARIN	2021	59000	

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Hidrogeluri pe baza de chitooligozaharide - platforma pentru co-eliberarea unor agenti antivirali si antifungici	PN-III-P1-1.1-PD-2019-1021(PD 204/2020)/ Dr. Daniela AILINCAI	2020-2022	246950	98100
2.	Hidrogeluri injectabile pe baza de chitosan utilizate ca matrici biocompatibile si biodegradabile pentru formulari cu 5-fluorouracil cu aplicare locala anticancer	PN-III-P1-1.1-PD-2019-1182, (PD 197/2020)/ Dr. Anda Mihaela CRACIUN	2020-2022	246950	90110 RON (18022 Euro)
3.	Bandaj resorbabil cu eliberare controlata de norfloxacin pentru vindecarea arsurilor	PN-III-P2-2.1-PED-2019-5071 (538PED -2020)/ Dr. Luminita MARIN	2020-2022	600 000	214174
4.	Nanomateriale ecologice pe baza de chitosan pentru aplicatii de interes contemporan	PN-III-P4-ID-PCE-2020-2717 (PCE 2 /2021)/ Dr. Luminita MARIN	2021-2023	1198032	493750
5.	Pansamente pentru vindecarea inteligenta a ranilor	PN-III-P3-3_6-H2020-2020-0138 (47/2021)/ Dr. Luminita MARIN	2021	35298.36	35298.36
Raportate la alte subprograme					
-	Inchiderea lanturilor de valoare din bioeconomia prin obtinere de bioproduse inovative cerute de piata	PN-III-P1-1.2-PCCDI-2017-0569 (10PCCDI/2018)/Dr. Florin Oancea-ICECHIM, Dr. Calin DELEANU, Dr. Luminita MARIN	2018-2020	950500	36064

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Materiale pe baza de fenotiazina cu un design de tip elice pt dispozitive OLED	PD-2021	PN-III-P1-1.1- PD-2021-0646/ A. BEJAN
2.	Biofungicide naturale pe baza de precursori ecologici pentru agricultura sustenabila	PED-2021	PN-III-P2-2.1-PED-2021-4161/ M. IFTIME
3.	Medicamente anticancer pe baza de fenotiazina PEGilata	PED-2021	PN-III-P2-2.1-PED-2021-4485/ L. MARIN

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Lista conducatorilor de doctorat**

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Luminita MARIN	CHIMIE	2016

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	CIBOTARU Sandu	Chimie	2019	- 4 examene - 2 proiect /raport cercetare	Dr. Habil Luminita MARIN	Derivati de fenotiazina solubili in apa. Sinteza, caracterizare, proprietati
2.	ANDREICA Bianca-Iustina	Chimie	2020	- 4 examene	Dr. Habil Luminita MARIN	Derivati de chitosan solubili in apa pentru aplicatii biomedicale
3.	ANISIEI Alexandru	Chimie	2020	-4 examene	Dr. Habil Luminita MARIN	Derivati de chitosan pentru dezvoltarea de bandaje pentru tratarea arsurilor
4.	PLATON Vera Maria	Chimie	2020	-4 examene	Dr. Habil Luminita MARIN	Formulari pe baza de chitosan pentru eliberarea controlata a eritromicinei

5.	LUNGU Ramona	Chimie	2020	-4 examene	Dr. Habil Luminita MARIN	Dezvoltare de materiale multifunctionale pe baza de derivati iminici de chitosan
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Stagii de cercetare

Nr. crt.	Nume si prenume	Sursa de finantare	Institutul in care s-a efectuat stagiul/ perioada
1.	Vera Maria Platon	Proiect: H2020-MSCA-RISE-2019, NoBiasFluors No 872331	Scientific Services Company Otava Ltd. & Institute of Molecular Biology and Genetics NAS of Ukraine

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in Web of Science, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate

Nr. crt.	Nume si prenume	Revista
1.	Luminita MARIN	Polymers Polysaccharides

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Luminita MARIN, CSI	27
2.	Daniela AILINCAI, CS	11
3.	Manuela IFTIME, CS	8

Proiect 3.2. Materiale polimerice care contin fosfor, sulf sau azot pentru filme, membrane sau acoperiri

Director proiect: Dr. Corneliu HAMCIUC

Echipa (procent de timp alocat proiectului): Dr. Corneliu HAMCIUC, CSI (100%) Dr. Elena HAMCIUC, CSII (100%) Dr. Tachita VLAD-BUBULAC, CSIII (100%)		Dr. Diana SERBEZEANU, CS (100%) Dr. Daniela-Ionela CARJA, CS (0%) Dr. Alina-Mirela IPATE, AC (100%)
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - S-au sintetizat aditivi ecologici cu proprietati antiflamma, compusi mic-moleculari, monomeri bifunctionali (bisfenoli) si polimeri (polifosfonati) care contin fosfor in lantul principal si/sau in catena laterala. Confirmarea structurala a compusilor sintetizati s-a realizat prin metode spectrale; proprietatile termice au fost investigate prin analiza termogravimetrica dinamica si microcalorimetrie diferentiale. S-a evaluat comportarea la flacara a unora dintre compusi prin analiza de combustie calorimetrica la microscaala (MCC). - S-au preparat doua serii de nanocompozite polimerice cu rezistenta la flacara imbunatatita pe baza de rasini epoxidice. Pentru prima serie s-au folosit drept aditivi antiflamma un polifosfonat si nanoparticule de halloysite. Pentru cea de a doua serie s-au folosit compusi mic-moleculari care contin fosfor si acid boric. S-a realizat caracterizarea structurala, morfologica si termica a materialelor obtinute si s-a evaluat comportarea la flacara prin analiza MCC. S-a stabilit influenta tipului si concentratiei fiecarui component asupra proprietatilor finale ale nanocompozitelor preparate. 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - participari la manifestari stiintifice: 3 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 7 - participari la manifestari stiintifice: 6 - capitole de carte: 1 - carti editate: 1 - propuneri de proiecte: 4

<p>- S-au preparat doua serii de nanocompozite pe baza de alcool polivinilic, in combinatie cu aditivi antiplama ecologici (polifosfonati) si compusi anorganici cu activitate antimicrobiana (TiO₂ si zeoliti care contin ioni de argint). S-au determinat structura, morfologia si proprietatile termice ale acestor nanocompozite. Comportarea la flacara s-a evidentiat prin analiza MCC. S-a investigat activitatea antimicrobiana a acestora si s-au efectuat studii de citotoxicitate. S-a stabilit influenta tipului si concentratiei fiecarui component asupra proprietatilor finale ale materialelor preparate, in special in ceea ce priveste comportarea la flacara si activitatea antimicrobiana.</p> <p>- S-a sintetizat o serie de polieterimide. S-a realizat optimizarea procesului de electrofilare a solutiilor din polimerii preparati in vederea obtinerii unor membrane cu proprietati controlabile. S-a efectuat caracterizarea fizico-chimica a membranelor din micro- si nanofibre, obtinute prin electrofilarea solutiilor de polimeri.</p>		
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I. ACTIVITATEA STIINTIFICA

Carti editate in edituri consacrate din strainatate

1. Science Without Borders: Alexander Von Humboldt's Concepts in Today's World, Proceedings of the Humboldt-Kolleg, Varna, September 18-21, 2019; (Eds.) L. Taseva, R. Argirova, D. Boteva, M. L. Grilli, T. **Vlad-Bubulac**; Faber Publishing House, Sofia, Bulgaria (2020) (neraportat anterior)

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Aromatic-alicyclic polyimides: from basic aspects toward high technologies; C. Hulubei, **E. Hamciuc, C. Hamciuc**; Imidic polymers and green polymer chemistry; (Eds.) A. I. Barzic, N. K. Rewat, A. K. Haghi, Apple Academic Press, Palm Bay, USA, CRC Press, Boca Raton USA; 1-22 (2021)

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Poly(vinyl pyrrolidone) – chitosan hydrogels as matrices for controlled drug release; **A.-M. Ipate, D. Serbezeanu**, A. Bargan, **C. Hamciuc**, L. Ochiuz, S. Gherman; *Cellulose Chemistry and Technology* 55 (1-2), 63-73 (2021), FI = 1,46
2. Liquid crystalline hyperbranched polyesters with phosphorus functional groups; **D. Serbezeanu**, A.-M. Macsim, **I.-D. Carja, C. Hamciuc**, M. Pislaru, **T. Vlad-Bubulac**; *High Performance Polymer*, 33 (4) 383-393 (2021), FI = 2,16
3. Physicochemical characterization and energy recovery of spent coffee grounds; V. Bejenari, A. Marcu, **A.-M. Ipate**, D. Rusu, N. Tudorachi, I. Anghel, I.-E. Sofran, G. Lisa, *Journal of Materials Research and Technology* 15, 4437-4451 (2021), FI = 5,03
4. Azomethines containing 1,3,4-oxadiazole ring: synthesis, photophysical properties, halochromism and metal ions sensing responses; **C. Hamciuc**, M. Homocianu, **E. Hamciuc**; *Journal of Molecular Liquids* 336, 116268(2021), FI = 6,16
5. Novel polyimide/copper-nickel ferrite composites with tunable magnetic and dielectric properties; **C. Hamciuc**, M. Asandulesa, **E. Hamciuc**, T. Roman, M. A. Olariu, A. Pui; *Polymers* 13, 1646 (2021), FI = 4,32
6. Study on highly thermostable low-k polymer films based on fluorene-containing polyetherimides; M. A. Olariu, **C. Hamciuc**, M. Asandulesa, **E. Hamciuc**, E.-L. Epure, V. Tsakiris, G. Lisa; *Polymer Engineering and Science* 61 (10), 2639-2652 (2021), FI = 2,42
7. Study on thermal and flame retardant properties of phosphorus-containing polyimides; **D. Serbezeanu, T. Vlad-Bubulac, E. Hamciuc, C. Hamciuc**, G. Lisa, I. Anghel, I.-E. Sofran, D.-M. Preda; *Revista de Chimie* 72 (4), 13-21 (2021)

Comunicari orale prezentate la manifestari stiintifice internationale

1. New hydrogels based on polymers and zeolite containing l-arginine and caffeine; S. Gherman, D. Zavastin, L. Ochiuz, **A. Ipate**, A. Bele; The International Congress of Apollonia University of Iasi, Romania, 1-3.03.2021
2. Electrospinning fabrication of nanofibers based on phosphorus-containing polyimides; **D. Serbezeanu**; Materials, Methods and Technologies, Twenty-Third International Conference, Burgas, Bulgaria, 19-22.08.2021

3. Intelligent composites from poly(vinyl alcohol) for coatings applications; **T. Vlad-Bubulac**; Materials, Methods and Technologies, 23rd International Conference, Burgas, Bulgaria, 19-22.08.2021

Raportate la alte subprograme

- Development of polyvinyl alcohol materials with plant extracts for biomedical applications; M. Barbalata Mandru, **D. Serbezeanu**, M. Spiridon, M. Drobeta, M. Aflori; International Congress "By promoting excellence we prepare the future", Iasi, Romania, 1-3.03.2021

Postere prezentate la manifestari stiintifice internationale

4. Aromatic polyimide membranes with tunable properties; **D. Serbezeanu, A.-M. Ipate**, A.-L. Vasiliu, **T. Vlad-Bubulac**; International Congress "By promoting excellence we prepare the future", Iasi, Romania, 1-3.03.2021
5. InELPHoPRO/ Innovative electrospun membranes based on phosphorus-containing polymers for protective clothing; **D. Serbezeanu**; XXV-th International Exhibition of Inventics, INVENTICA 2021, Iasi, Romania, 23-25.06.2021
6. Hidrogels based on poly(vinylpyrrolidone) and chitosan used to relase tetracycline hydrochloride; **A.-M. Ipate**; Materials, Methods and Technologies, 23rd International Conference, Burgas, Bulgaria, 19-22.08.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice - raportate la alte subprograme

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Parteneriate pentru transfer de cunostinte in domeniul materialelor polimere folosite in ingineria biomedicala acronim POINGBIO ID P_40_443, cod MySMIS: 105689	Contract de finantare nr. 86 / 08.09.2016 Director proiect: Dr. M. AFLORI Responsabili contracte subsidiare, membri in echipe de implementare: Dr. T. VLAD-BUBULAC, Dr. D. SERBEZEANU	2016-2022		

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Membrane inovative electrofilate pe baza de polimeri ce contin fosfor pentru haine de protectie.	PN-III-P1.1-TE-2019-0639/ Contract nr. 89/03.09.2020 Director de proiect: Dr. Diana SERBEZEANU	2020-2022	431900	216000

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Nanocompozite cu rezistenta la flacara si activitate antimicrobiana pe baza de rasini epoxidice si alcool polivinilic	PCE 2021	PN-III-P4-PCE-2021-1092/ Dr. Corneliu HAMCIUC
2.	Microgenerator de energie pe baza de compozit piezopolimeric imprimat pe suport dielectric flexibil	PED 2021	PN-III-P2-2.1-PED-2021-1344 Dr. Corneliu HAMCIUC
3.	Materiale inteligente cu proprietati adaptate pentru cagule rezistente la foc	PED 2021	PN-III-P2-2.1-PED-2021-2949 Dr. Diana SERBEZEANU
4.	Materiale rezistente la flacara performante pentru protectia componentelor structurale in ingineria civila	PED 2021	PN-III-P2-2.1-PED-2021-3898 Dr. Tachita VLAD-BUBULAC

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Corneliu HAMCIUC	Chimie	2016

V. PRESTIGIU STIINTIFIC

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Corneliu HAMCIUC, CSI	24
2.	Elena HAMCIUC, CSII	23
3.	Tachita VLAD-BUBULAC, CSIII	16
4.	Diana SERBEZEANU, CS	12
5.	Ionela-Daniela CARJA, CS	13
6.	Alina-Mirela IPATE, AC	8

Premii (distinctii) ale societăților științifice naționale obținute prin procese de selecție

Nr. crt.	Nume si prenume	Premiul	Societatea nationala
1.	Diana SERBEZEANU	Diploma of Excellence/Silver Medal Innovative electrospun membranes based on phosphorus-containing polymers for protective clothing	XXV-th International Exhibition of Inventics INVENTICA 2021, Iasi, Romania, 23-25 June 2021

Proiect 3.3. Materiale hibride pe baza de polisulfone

Director proiect: Dr. Anca FILIMON

Echipa (procent de timp alocat proiectului): Dr. Anca FILIMON, CSIII (100%) Dr. Adina Maria DOBOS, CS (100%) Dr. Elena PERJU, CS (100%)		Dr. Dumitru POPOVICI, AC (100%) Dr. Mihaela Dorina ONOFREI, ISP IA (100%) Drd. Oana DUMBRAVA (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate	
<ul style="list-style-type: none"> - Sinteza polisulfonei functionalizate ca matrice polimera - Confirmarea structurilor polisulfonelor cuaternizate prin analiza elementala, spectroscopie IR, ¹H-RMN - Activarea polisulfonei sintetizate cu polimeri naturali in vederea imbunatatirii proprietatilor optime in eco-tehnologii: studii de compatibilitate din date viscozimetrice - Efectul calitatii solventului asupra proprietatilor termodinamice si stabilirea interactiunilor (inter-/intramoleculare, de lunga si scurta distanta). Corectii matematice - Optimizarea proprietatilor in solutie - viscozimetrice/reologice - functie de diferiti parametri (concentratie, temperatura, solvent, compozitie), in vederea imbunatatirii proprietatilor specifice suprafatei - Stabilirea compozitiilor optime ale amestecurilor de polimeri in scopul controlului si cresterii performantei materialelor 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 4 - carti/capitole: 1 - participari la manifestari stiintifice: 4 - propuneri de proiecte: 1 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 6 - capitole: 1 - participari la manifestari stiintifice: 6 - propuneri de proiecte: 3 	

I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Sustainable eco-friendly polymer-based membranes used in water depollution for life quality improvement; **A.M. Dobos, M.D. Onofrei, A. Filimon**; Green polymer chemistry and composites: pollution prevention and waste reduction; (Eds.) N.K. Rawat, I. Stoica, A.K. Haghi; Apple Academic Press; 225-268 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Processing of quaternized polysulfones solutions as tool in design of electrospun nanofibers: Microstructural characteristics and antimicrobial activity; **A. Filimon**, N. Olaru, F. Doroftei, A. Coroaba, S. Dunca; *Journal of Molecular Liquids* 330, 115664, 1-11 (2021) FI = 6,16
2. New insights on solvent implications in the design of materials based on cellulose derivatives using experimental and theoretical approaches; **A. Filimon, M.D. Onofrei**, *Materials*, 14, 6627 (2021) FI = 3,62
3. Matching the cellulose/silica films surface properties for design of biomaterials that modulate extracellular matrix; **A.M. Dobos**, E.-L. Ursu, L.-M. Gradinaru, M. Dobromir, A. Filimon; *Membranes* 11, 840, 1-19 (2021), FI = 4,10
4. Mesomorphic behavior of symmetric azomethine dimers containing different chromophore groups; **E. Perju**, L. Marin; *Molecules* 26, 2183, 1-12 (2021) FI = 4,41
5. Polysulfone dispersed liquid crystals as promising materials for flexible substrates of organic light emitting diodes; **D. Popovici, O. Dumbrava**, M.-A. Paun; *Scientific Bulletin, Series A*, 83(3), 201-212 (2021) FI = 0,94
6. Development of adsorbent materials based on functionalized copolymers with future applications as antibacterial agent in life quality and environmental field; L. Lupa, A. Filimon, A. Popa, S. Dunca; *Reactive and Functional Polymers* 161, 104845, 1-10 (2021) FI = 3,97

Comunicari orale prezentate la manifestari stiintifice internationale

1. Applying of modified materials with ionic liquids in advanced watertreatment technologies; L. Lupa, L. Coheci, R. Lazau, **A. Filimon**, P. Negrea; International Meet & Expo on Materials Science and Nanomaterials (MATERIALSMEET2021), Valencia, Spain, 11-13.10.2021
2. Ionic liquids-based polysulfone membranes for cadmium removal from aqueous solutions; L. Lupa, S.N. Tolea, **O. Dumbrava, A. Filimon**; 11th International Conference on Environmental Engineering and Management, Environmental Engineering for a Clean and Healthy Planet, Muttenz, Switzerland, 8-10.10.2021
3. Structure-rheological parameters relationship in systems ionic polysulfones/natural or synthetic additive; **A.M. Dobos, M.D. Onofrei, A. Filimon**; International Scientific Events: Materials, Methods & Technologies, Burgas, Bulgaria, 19-22.08.2021
4. Performance of quaternized polysulfone membranes in environmental applications dictated by the ionic liquid nature; **O. Dumbrava, A.M. Dobos, M.D. Onofrei, A. Filimon**; International Scientific Events: Materials, Methods & Technologies, Burgas, Bulgaria, 19-22.08.2021

Comunicari orale prezentate la manifestari stiintifice nationale

5. Tratarea avansata a apei bazata pe membrane de polisulfone functionalizate/lichide ionice; T. Novacut, S.N. Tolea, L. Lupa, **A. Filimon**; Apa - Esenta vietii, Apa pretuita in centrul vietii imbunatatite, AquaSensTim - 2021, Timisoara, Romania, 22.03.2021

Postere prezentate la manifestari stiintifice internationale

6. New "green" technology for advanced water treatment based on functionalized polysulfones/ionic liquids membranes; **A. Filimon**, Lavinia Lupa; The 25th International Exhibition of Inventions "INVENTICA 2021", Iasi, Romania, 23-25.06.2021

II. ATRAGEREA DE FONDURI DE CERCETARE**Proiecte de cercetare nationale finantate din fonduri publice**

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	O noua tehnologie „verde” pentru tratarea avansata a apei bazata pe membrane de polisulfone functionalizate/lichide ionice	310PED/2020/ Dr. Anca FILIMON	2020-2022	600000	197700

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Membrane bioactive pe baza de polisulfone functionalizate cu implicatii in terapia prin hemodializa	TE-2021	PN-III-P1-1.1-TE-2021-1049/ Dr. Anca FILIMON
2.	Dezvoltarea si caracterizarea unor noi biomateriale celulozice cu potential aplicativ in ingineria tisulara	TE-2021	PN-III-P1-1.1-TE-2021-0651/ Dr. Adina Maria DOBOS
3.	Tehnologii imbunatatite pentru dezvoltarea de membrane polisulfonice electrofilate integrate intr-un dispozitiv extracorporal aplicabil in insuficienta renala	PED-2021	PN-III-P2-2.1-PED-2021-2700/ Dr. Anca FILIMON

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	DUMBRAVA Oana	Chimie	2020	- 4 examene	Dr. Habil. Luminita MARIN	Materiale polisulfonice cu proprietati biologice active

V. PRESTIGIU STIINTIFIC

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Anca FILIMON, CS III	12
2.	Adina Maria DOBOS, CS	11
3.	Dumitru POPOVICI, AC	9
4.	Elena PERJU, CS	8

Premii (distinctii) ale societăților științifice naționale obținute prin procese de selecție

Nr. crt.	Nume si prenume	Premiul	Societatea nationala
1.	A. FILIMON, L. Lupa	Diploma excelenta, Medalie de Argint	The 25th International Exhibition of Inventions "INVENTICA 2021", Iasi, Romania, 23-25 iunie 2021
2.	T. Novacut, S.N. Tolea, L. Lupa, A. FILIMON	Mentiune	AquaSensTim - 2021, Timisoara, Romania, 22 martie 2021

Proiect 3.4. Corelarea factorilor de mediu si stres cu studii structurale si de metabolomica RMN in regnul vegetal si animal

Director proiect: Dr. Alina NICOLESCU

Echipa (procent de timp alocat proiectului): Dr. Alina NICOLESCU, CSIII (100%) Dr. Calin DELEANU, CSI (50%) Dr. Mihaela BALAN-PORCARASU, AC (100%) Dr. Gabriela Liliana AILIESEI, AC (100%)	Dr. Ana-Maria MACSIM, AC (100%) Chim. Mihaela CRISTEA, AC (100%) Anisoara CONDREA, A1 (100%) Liviu CRISTEA, M2 (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Sinteza unor compusi heterociclici cu azot - Identificare de markeri RMN pentru erori metabolice cu efect de autointoxicare - Studii structurale si caracterizarea completa RMN a compusilor sintetizati in trimestrul I - Studii preliminare privind metabolomica RMN la tomate - Sinteza unor compusi cetonici cu activitate de semnalizare in regnul vegetal - Studii preliminare privind metabolomica RMN la struguri - Evaluarea gradului de acetilare la chitosan prin RMN - Studii structurale si caracterizare completa RMN la compusii studiati in trimestrul III 	<ul style="list-style-type: none"> - lucrari stiintifice publicate 3 - participari la manifestari stiintifice 2 - propuneri de proiecte 1 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 3 - participari la manifestari stiintifice: 3 - propuneri de proiecte: 2

I. ACTIVITATEA STIINTIFICA

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Benzimidazolium salts as starting materials or intermediates in 1,3-dipolar cycloadditions; A.-M. Macsim, E. Georgescu, F. Georgescu, P. Filip, A. Nicolescu, C. Deleanu; *Monatshefte fur Chemie* 152, 845-852 (2021) FI = 1,45

Raportate la alte subprograme

- Liquid crystalline hyperbranched polyesters with phosphorus functional groups; D. Serbezeanu, **A.-M. Macsim**, I.-D. Carja, C. Hamciuc, M. Pislaru, T. Vlad-Bubulac; *High Performance Polymers* 33, 383-393 (2021), FI=2,16
- Synthesis of thiourea-graft-polyethyleneimine and its performance in flocculation of some inorganic particles; C.-A. Ghiorghita, L. Ghimici, **G.-L. Ailiese**; *Industrial & Engineering Chemistry Research* 60, 5167-5175 (2021), IF=3,76
- Bile salts adsorption on dextran-based hydrogels; M. C. Stanciu, M. Nichifor, G. L. Ailiese; *International Journal of Biological Macromolecules* 190, 270-283 (2021), FI = 6,95
- Di-topic hybrid ligands with an isoxazole ring in the central unit: Synthesis, structural characterization and molecular modeling; B.-I. Bratanovici, C. Cojocar, **A. Nicolescu**, M. Dascalu, Ghe. Roman; *Journal of Molecular Structures* 1245, 131129 (2021), FI = 3,19
- Nitrogen-based linkers with a mesitylene core: synthesis and characterization; L. G. Bahrin, **A. Nicolescu**, S. Shova, N. L. Marangoci, L. M. Birsa, L. G. Sarbu; *Molecules* 26, 5952 (2021), FI = 4,41
- Immobilization and release studies of triazole derivatives from grafted copolymer based on gellan-carrying betaine units; N. Baranov, S. Racovita, S. Vasiliu, **A.-M. Macsim**, C. Lionte, V. Sunel, M. Popa, J. Desbrieres, C. Cheptea; *Molecules* 26, 3330 (2021), FI = 4,41
- Synthesis of poly(ethylene brassylate-co-squaric acid) as potential essential oil carrier; A. P. Chiriac, A. G. Rusu, L. E. Nita, **A.-M. Macsim**, N. Tudorachi, I. Rosca, I. Stoica, D. Tampu, M. Aflori, F. Doroftei; *Pharmaceutics* 13, 477 (2021), FI = 6,32
- 3,4-Ethylenedioxythiophene (EDOT) end-group functionalized poly-ε-caprolactone (PCL): self-assembly in organic solvents and its coincidentally observed peculiar behavior in thin film and protonated media; A.-D. Bendrea, L. Cianga, **G.-L. Ailiese**, E.-L. Ursu, D. G. Colak, I. Cianga; *Polymers* 13, 2720 (2021), FI = 4,34
- Thermosensitive poloxamer-graft-carboxymethyl pullulan: a potential injectable hydrogel for drug delivery; M. Constantin, B. Cosman, M. Bercea, **G.-L. Ailiese**, Ghe. Fundueanu; *Polymers* 13, 3025 (2021), FI = 4,34
- MALDI mass spectrometry monitoring of cyclodextrin-oligolactide derivatives synthesis; D.-A. Blaj, **M. Balan-Porcarasu**, B. A. Petre, V. Harabagiu, C. Peptu; *Polymer* 233, 124186 (2021), FI = 4,43
- Flexible thin films based on poly(ester imide) materials for optoelectronic applications; D. Serbezeanu, M. Homocianu, **A.-M. Macsim**, A. A. Enache, T. Vlad-Bubulac; *Polymer International* DOI 10.1002/pi.6288 (2021) FI = 2,99
- Contributions to the quaternization description and kinetics illustrated on poly(dimethylaminoethyl methacrylate); **G.L. Ailiese**, V. Barboiu, E. S. Dragan; *Reactive and Functional Polymers* 161, 104852 (2021) FI = 3,9
- 1-Vinylazulenes with oxazolonic ring-potential ligands for metal ion detectors; synthesis and products properties; M. Cristea, L. Birzan, F. Dumitrascu, C. Enache, V. Tecuceanu, A. Hanganu, C. Draghici, C. Deleanu, **A. Nicolescu**, M. Maganu, A. C. Razus; *Symmetry* 13, 1209 (2021) FI=2,71

Articole aparute in reviste recunoscute de CNCS (B+) sau indexate intr-o baza internationala de date (BDI)

1. Classical galactosemia - A case report; M. Scurtul, C. Boiciuc, D. Blanita, V. Sacara, I. Tarcomnicu, D. Stambouli, A. Nicolescu, C. Deleanu, S. Gladun, N. Usurelu; *Buletin de perinatologie* 1(90), 76-80 (2021)
2. Amino acids profile in the diagnosis of inborn errors of metabolism; V. Hlistun, E. Efremov, D. Blanita, C. Boiciuc, D. Munteanu, V. Lupu, A. Oglinda, A. Casian, I. Casian, A. Nicolescu, C. Deleanu, N. Usurelu; *Buletin de perinatologie* 1(90), 53-56 (2021)

Comunicari orale prezentate la manifestari stiintifice nationale

1. Interlaboratory assessment for reproducibility in NMR metabolomics; C. Duduianu, **G. Ailiese**, **M. Balan**, **M. Cristea**, **A.-M. Macsim**, C. Stavarache, C. Stavarache, O. Popa, A. Hirtopeanu, **A. Nicolescu**, **C. Deleanu**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
2. Complexation of acetophenone substituted benzimidazolium salt with native and modified cyclodextrins – an NMR study; **M. Balan-Porcarasu**, **A. Nicolescu**, F. Georgescu, **C. Deleanu**, B. C. Simionescu; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Raportate la alte subprograme

- Siloxane/silane derivatives based on 5-amino-1,3,4-thiadiazole-2-thiol and their gold complexes: interfacial phenomena based on photoluminescence; M. Damoc, A. C. Stoica, M. Dascalu, **A.-M. Macsim**, R. I. Tigoianu, D. Blaj, A. G. Rusu, M. Iacob, M. Cazacu; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Postere prezentate la manifestari stiintifice nationale

3. Operator versus instrumental induced variability in NMR spectroscopy; **G. L. Ailiese**, C. Duduianu, L. Cristea, C. Stavarache, M. Cristea, O. Popa, M. Balan-Porcarasu, A.-M. Macsim, A. Nicolescu, C. Deleanu; Simpozionul

"Celebrating half a century of Magnetic Resonance in Romania" organizat in cadrul conferintei internationale "Processes in isotopes and molecules", Cluj-Napoca, Romania, 22-24.09.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Inchiderea lanturilor de valoare din bioeconomia prin obtinerea de bioproduse inovative cerute de piata (PROSPER)	PN-III-P1-1.2-PCCDI-2017-0569, Contract Nr. 10 / 2018 Dr. Calin DELEANU	2018-2021	950.000	18.032
2.	Integrated use of the next generation plant biostimulants for an enhanced sustainability of field vegetable high residue farming systems (STIM4+)	Grant EEA Bilateral Norvegia-RO, RO-NO-2019-0540, 14 / 2020 Dr. Alina NICOLESCU	2020-2023	844.632	377.117

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Fast NMR spectroscopy for metabolomics and lipidomics	PD-2021	PN-III-P1-1.1-PD-2021-0766 / Dr. Alina NICOLESCU
2.	Plant bioactives for nutraceutical formulas promoting the cardiovascular function	PED-2021	PN-III-P2-2.1-PED-2021-2430 /Dr. Alina NICOLESCU

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE

Servicii comandate de beneficiar (produs vandut, sume incasate)

Nr. crt.	Produs	Sume incasate 2021
1.	Analize RMN pentru Actavis Bucuresti	178.900 RON

Alte Servicii efectuate de catre colectivul RMN in anul 2021:

4.190 probe analizate prin RMN in perioada ianuarie-octombrie 2021 (pentru majoritatea probelor au fost inregistrate mai multe tipuri de spectre RMN).

V. PRESTIGIU STIINTIFIC

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Alina NICOLESCU, CSIII	21
2.	Calin DELEANU, CSI	19
3.	Mihaela BALAN-PORCARASU, AC	11

LABORATOR POLIMERI FUNCTIONALI "MIHAI DIMA"**SUBPROGRAM 4: POLIMERI IONICI SINTETICI SI NATURALI.****MATERIALE COMPOZITE MULTIFUNCTIONALE**

DIRECTOR SUBPROGRAM: DR. MARCELA MIHAI

Proiect 4.1. Polimeri (zwitter)ionici liniari si reticulati: sinteza, materiale, aplicatii		
director proiect: Dr. MARCELA MIHAI		
Echipa (procent de timp alocat proiectului): Dr. Marcela MIHAI, CSII (100%) Dr. Florin BUCATARIU, CSIII (100%) Dr. Silvia VASILIU, CSIII (100%) Dr. Stefania RACOVITA, CS (100%) Dr. Diana Felicia LOGHIN, AC (100%) Dr. Marius Mihai ZAHARIA, AC (100%)	Ana-Lavinia VASILIU, AC (100%) Melinda Maria BAZARGHIDEANU, AC (100%) Larisa Maria PETRILA, AC (100%) Marin Aurel TROFIN, Drd. (100%) Angela PELIN, M2 (100%) Ioan TESCU, A1 (50%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Sinteza si caracterizare de microparticule poroase pe baza de 4-vinilpiridina, precursori pentru obtinerea de polimeri ionici sintetici - Functionalizare copolimeri acrilici reticulati, formare de schimbatori de ioni - Depunere "one-step" si "multi-step" de polielectroliti naturali/sintetici pe microparticule anorganice sau suprafete plane - Optimizarea procesului de grefare pe diferite sorturi de amidon - Reactii polimer analoage pe amidon grefat - Sinteza de microparticule poroase cu structura zwitterionica prin reactii polimer analoage in prezenta unui agent de betainizare - Stabilizarea arhitecturilor polimerice prin tratament termic si chimic - Caracterizare morfologica si structurala a materialelor: schimbatori de ioni, microparticule poroase, amidon grefat, suport solid/polimer, microparticule zwitterionice - Determinare proprietati specifice: capacitate de schimb, umflare - Testarea in regim static/dinamic a interactiunilor materialelor polimerice multifunctionale cu poluanti anorganici de tipul ionilor metalelor tranzitionale, poluanti organici de tip acid humic, coloranti sau medicamente. 	<ul style="list-style-type: none"> - lucrari stiintifice publicate/ acceptate: 5 - participari la manifestari stiintifice: 5 - teze de doctorat: 1 - propuneri de proiecte: 2 	<ul style="list-style-type: none"> - lucrari stiintifice publicate/ acceptate: 13 - participari la manifestari stiintifice: 21 - teze de doctorat: 1 - propuneri de proiecte: 6

I. ACTIVITATE STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

- Life cycle assessment for eco-design in product development (Chapter 11), in *Assessing the sustainability progress: frameworks, tools and case studies*; G. Barjoveanu, C. Teodosiu, **M. Mihai**, I. Morosanu, D. Fighir, **A.-L. Vasiliu**, **F. Bucatariu** (publicata sub contract Elsevier no. 846739), ISBN 606798 (data estimata a publicarii: Aprilie 2022)
- Synthetic macromolecules with biological activity, in *Biological Macromolecules: Bioactivity and Biomedical Applications*, **S. Racovita**, M. Popa, L.I. Atanase, **S. Vasiliu**, ISBN: 978-0-323-85759-8, DOI: 10.1016/B978-0-323-85759-8.00014-2, Elsevier (data estimata a publicarii: 2022).

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Recent developments in layer-by-layer assembled systems application in water purification; C.-A. Ghiorghita, **M. Mihai**; *Chemosphere* 270, 129477 (2021) FI = 7,086
2. Multifunctional CaCO₃/polyelectrolyte sorbents for heavy metal ions decontamination of synthetic waters; **M.M. Zaharia**, **F. Bucatariu**, F. Doroftei, **D.F. Loghin**, **A.-L. Vasiliu**, **M. Mihai**; *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 613, 126084 (2021) FI = 4,539
3. The benefits of smart nanoparticles in dental applications; **S. Vasiliu**, **S. Racovita**, I.A. Gugoasa, M.A. Lungan, M. Popa, J. Desbrieres; *International Journal of Molecular Sciences* 22, 2585 (2021) FI = 4,556
4. Polybetaines in biomedical applications; **S. Racovita**, **M.A. Trofin**, **D.F. Loghin**, **M.M. Zaharia**, **F. Bucatariu**, **M. Mihai**, **S. Vasiliu**; *International Journal of Molecular Sciences* 22, 9321 (2021) FI = 4,556
5. *In situ* CaCO₃ mineralization controlled by carbonate source within chitosan-based cryogels; **A.-L. Vasiliu**, M. V. Dinu, **M.M. Zaharia**, D. Peptanariu, **M. Mihai**; *Materials Chemistry and Physics* 272, 125025 (2021) FI= 4,094
6. Design of multifunctional composite materials based on acrylic ion exchangers and CaCO₃ as sorbents for small organic molecules; **M.M. Zaharia**, **A.-L. Vasiliu**, **M.A. Trofin**, D. Pamfil, **F. Bucatariu**, **S. Racovita**, **M. Mihai**; *Reactive and Functional Polymers* 166, 104997 (2021) FI = 3,975
7. Polyelectrolyte Multilayers: An Overview on Fabrication, Properties, and Biomedical and Environmental Applications; **L.-M. Petrila**, **F. Bucatariu**, **M. Mihai**, C. Teodosiu; *Materials* 14, 4152 (2021) FI = 3,623
8. Multifunctional composites of zwitterionic resins and silver nanoparticles for point-of-demand antimicrobial applications; **M.M. Zaharia**, C.-A. Ghiorghita, **M.A. Trofin**, F. Doroftei, I. Rosca, **M. Mihai**; *Materials Chemistry and Physics* 275, 125225 (2022) FI = 4,094
9. An overview on composite sorbents based on polyelectrolytes used in advanced wastewater treatment; **F. Bucatariu**, C. Teodosiu, I. Morosanu, D. Fighir, R. Ciobanu, **L.M. Petrila**, **M. Mihai**; *Polymers* 13(22), 3963 (2021) FI = 4,329
10. Sorption behavior of grafted porous microparticles based on methacrylic monomers and chitosan/gellan gum towards Cu(II) and Ni(II) ions in aqueous solutions; **S. Racovita**, M.A. Lungan, **A.L. Vasiliu**, **S. Vasiliu**, **M. Mihai**, *ChemistrySelect* 6, 1-13 (2021) FI = 2,109
11. Toxicity Assessment of Long-Term Exposure to Non-Thermal Plasma Activated Water in Mice; V. Nastasa, A.-S. Pasca, R.-N. Malancus, A.-C. Bostanaru, L.-I. Ailincăi, E.-L. Ursu, **A.-L. Vasiliu**, B. Minea, E. Hnatiuc, M. Mares; *International Journal of Molecular Sciences* 22, 11534 (2021) FI = 4,556
12. Immobilization and release studies of triazole derivatives from grafted copolymer based on gellan-carrying betaine units; N. Baranov, **S. Racovita**, **S. Vasiliu**, A.M. Măcsim, C. Lionte, V. Sunel, M. Popa, J. Desbrieres, C. Cheptea; *Molecules* 26, 3330 (2021) FI = 4,411
13. Heavy metals and arsenic in an abandoned barite mining area: ecological risk assessment using biomarkers; R. Necula, **M. Zaharia**, A. Butnariu, M.-M. Zamfirache, A. Surleva, C. I. Ciobanu, O. Pintilie, C. Iacoban, G. Drochioiu, *Environmental Forensics*, DOI: 10.1080/15275922.2021.1976315 (2021) FI = 1,328

Raportate la alte subprograme

- Elastic Composites with PDMS matrix and Polysulfone-Supported Silver Nanoparticles as Filler; C. Racles, M. Asandulesa, V. Tiron, C. Tugui, N. Vornicu, B.-I. Ciubotaru, M. Mičušík, M. Omastová, **A.-L. Vasiliu**, C. Ciomaga; *Polymer* 217, 123480, 1-46 (2021) FI = 4,430

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Hydrophobic biocompatible CaCO₃/ Cellulose material with potential application in wound dressing, **A.-L. Vasiliu**, **M.-M. Zaharia**, **M.-M. Bazarghideanu**, I. Rosca, D. Peptanariu, **M. Mihai**, Proceedings of International Conference Progress in Organic Macromolecular Compounds, ISSN 2810 – 2347, ISSN – L 2810 – 2126, 81-82, 2021
2. Synthesis and characterization of acrylic ion exchange resins and their environmental applications as sorbents, **M.-M. Zaharia**, **A.-L. Vasiliu**, **M.-A. Trofin**, **M.-M. Bazarghideanu**, C. Blegescu, **M. Mihai**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, 123-124, 2021

3. New zwitterionic copolymer with carboxybetaine moieties as possible drug delivery system; **M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, D. F. Loghin**, O. Boita, **M. Mihai**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, 131-132, 2021

Raportate la alte subprograme

- Morphological study of some epoxy resin with DOPO – based oligophosphonate S-IPNs; **A.-L. Vasiliu**, C. D. Varganici, D. Rosu, F. Mustata, O. M. Munteanu, Liliana Rosu; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, 121-122, 2021

Comunicari orale prezentate la manifestari stiintifice internationale

1. Sand/polyelectrolyte composites with affinity for different water pollutants; **F. Bucatariu, M. Zaharia, L. Petrila, M. Mihai**; XXXIth edition of the International Congress of the „Apollonia” University of Iasi „By promoting excellence, we prepare future”, Iasi, Romania, 01-03.2021
2. Porous microparticles with complex architecture based on acrylic ion exchange resin and gellan; **S. Racovita**, M.A. Lungan, I. Gugoasa, **S. Vasiliu**, M. Popa; IUPAC-MACRO 2020+, The 48th World Polymer Congress, ICC Jeju, Korea, 16-20.05.2021
3. Wastewater decontamination of heavy metal ions using ion exchange resins based on acrylic copolymers; **M. Zaharia**, I. Bunia, **F. Bucatariu**, C.A. Ghiorghita, D. Schwarz, **M. Mihai**; Bucharest Polymer Conference 2nd Edition, University POLITEHNICA of Bucharest, Romania, 10-11.06.2021
4. Single polyelectrolyte multilayers deposited on silica microparticles with enhanced loading/release properties for different pollutants; **F. Bucatariu, M. Zaharia, M. Mihai**; Bucharest Polymer Conference 2nd Edition, University POLITEHNICA of Bucharest, Romania, 10-11.06.2021
5. New sorbents based on poly(amidoxime)/chitosan beads; **D. F. Loghin, S. Vasiliu, S. Racovita, M.-M. Bazarghideanu, M. Mihai**, Bucharest Polymer Conference 2nd Edition, University POLITEHNICA of Bucharest, Romania, 10-11.06.2021
6. Synthesis and characterization of ion exchange resins based on acrylic copolymers with high affinity to different heavy metal ions; **M.-M. Zaharia, F. Bucatariu, L.-M. Petrila, A.-L. Vasiliu, M. Mihai**; Materials, Methods & Technologies 23rd International Conference, Burgas, Bulgaria, 19-22.08.2021
7. Nano-silver in-situ synthesis in zwitterionic beads, as antimicrobial inorganic/organic composites; **M. Mihai, M.-M. Zaharia**, C.-A. Ghiorghita, **M. M. Bazarghideanu, A.-L. Vasiliu, M.-A. Trofin**; Materials, Methods & Technologies 23rd International Conference, Burgas, Bulgaria, 19-22.08.2021.
8. Zwitterionic porous microparticles containing betaine units with drug delivery capabilities; **M.-A. Trofin, S. Vasiliu, S. Racovita, M. Mihai**; Materials, Methods & Technologies 23rd International Conference, Burgas, Bulgaria, 19-22.08.2021.
9. Acrylic ion exchange resins. Synthesis and preliminary tests on water cleaning from Tarnita closed mine area; **M.-M. Zaharia, F. Bucatariu**, M. Ignat, **M.-A. Trofin, M. Mihai**; 11th International Conference on Environmental Engineering and management (ICEEM), Muttentz, Switzerland, 08-10.09.2021
10. Daisogel/(polycation/polyanion)_n composite microparticles with affinity for emerging pollutants; **M. Mihai, L.-M. Petrila, M.-A. Trofin, M.-M. Zaharia, F. Bucatariu**; 11th International Conference on Environmental Engineering and management (ICEEM), Muttentz, Switzerland, 08-10.09.2021
11. Synthesis and characterization of quartz sand/polyethyleneimine composite particles with application in water cleaning; **F. Bucatariu, M.-M. Zaharia, L.-M. Petrila, M.-A. Trofin, M. Mihai**; 11th International Conference on Environmental Engineering and management (ICEEM), Muttentz, Switzerland, 08-10.09.2021
12. Hydrophobic biocompatible CaCO₃/Cellulose material with potential application in wound dressing; **A.-L. Vasiliu, M.-M. Zaharia, M.-M. Bazarghideanu**, I. Rosca, D. Peptanariu, M.-A. Lungan, **M. Mihai**; *Progress in Organic and Macromoleculcular Compounds* 28th edition „MACRO Iasi 2021”, Iasi, Romania, 7-9.10.2021.

Comunicari orale prezentate la manifestari stiintifice internationale

13. Composite materials based on polyelectrolytes used as sorbents in batch and column studies; **L.-M. Petrila, F. Bucatariu, M. Mihai**; ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
14. Ionic beads/CaCO₃ composites as sorbents for small organic molecules; **A.-L. Vasiliu, M.-M. Zaharia, M. Mihai**; ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
15. Zwitterionic porous microparticles - Advanced materials as potential drug delivery systems; **M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, M. Mihai**; ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
16. Silica/polyelectrolyte sorbents for the removal of organic pollutants; **L.-M. Petrila, F. Bucatariu, M. Mihai**; 1st Edition Ph.D. Students' Days, Arad, 26.11.2021

Postere prezentate la manifestari stiintifice internationale

17. Sustainable use of composite sorbents to remove emerging and priority pollutants in advanced wastewater treatment processes; C. Teodosiu, **F. Bucatariu**, D. Fighir, I. Morosanu, R. Ciobanu, C. Paduraru, **M. Mihai**; 11th

International Conference on Environmental Engineering and management (ICEEM), Muttentz, Switzerland, 08-10.09.2021.

18. Soft materials as zwitterionic porous microparticles with drug delivery capabilities; **A.-L. Vasiliu, M.-A. Trofin, S. Vasiliu, S. Racovita, D.F. Loghin, M. Mihai**; Interfaces International Conference, Sardinia, Italia, 21-25.09.2021
19. New zwitterionic copolymer with carboxybetaine moieties as possible drug delivery system; **M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, D.F. Loghin, O. Boita, M. Mihai**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
20. Synthesis and characterization of acrylic ion exchange resins and their environmental applications as sorbents; **M.-M. Zaharia, A.-L. Vasiliu, M.-A. Trofin, M.-M. Bazarghideanu, C. Blegescu, M. Mihai**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
21. New zwitterionic copolymer with carboxybetaine moieties as possible drug delivery system; **M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, D.F. Loghin, O. Boita, M. Mihai**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Raportate la alte subprograme

- Aromatic polyimide membranes with tunable properties; D. Serbezeanu, A.-M. Ipate, **A.-L. Vasiliu**, T. Vlad-Bubulac; XXXIth edition of the International Congress of "Apollonia" University of Iasi - "By promoting excellence, we prepare the future", Iasi, Romania, 1 - 3.03.2021
- Non-isothermal degradation kinetic study of new multicomponent polymer systems for flame retardant coatings; L. Rosu, C.-D. Varganici, F. Mustata, D. Rosu, **A.-L. Vasiliu**; 6th Central and Eastern European Conference on Thermal Analysis and Calorimetry - CEEC - TAC 6, Split, Croatia, 20 - 24.07.2021
- Morphological study of some epoxy resin with dopo - based oligophosphonate S-IPNs; **A.-L. Vasiliu**, C.-D. Varganici, D. Rosu, F. Mustata, O.M. Munteanu, L. Rosu; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice (1)

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR):	in 2021
1.	Lego-style approach for problematic water streams treatment (WATERLEGO)	Project consortium 224 ERA.Net RUS Plus Call 2017 Coordonator proiect: S. SCHWARZ, Dr. M. MIHAI	2018-2021	-	-

Proiecte de cercetare nationale finantate din fonduri publice (6)

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1	Procese integrate si sustenabile de depoluare a mediului, reutilizare a apelor uzate si valorificare a deseurilor (SUSTENVPRO), PC2: Eficientizarea proceselor de tratare a apei si dezvoltarea de materiale inovative pentru eliminarea poluantilor prioritari	26PCCDI/2018, Director proiect: C. Teodosiu, Responsabil partener ICMPP si director PC2 Dr. M. MIHAI	2018-2021	140.842	48.264
2	Proiectarea unor noi perle chitosan/amidon amidoximat pentru aplicatii in purificarea apelor (BEADCsAmOxS)	PN-III-P1-1.1-PD-2016-1313, contract 1PD/2018 Director proiect: D.F. LOGHIN, Tutore: M. MIHAI	2018-2021	50.000	6.854
3	Decontaminarea apelor de ionii metalelor grele prin intermediul schimbatorilor de ioni: cazul poluarii de la mina inchisa de la Tarnita (WHIERTARN)	PN-III-P1-1.1-PD-2019-0286, Contract nr: PD 137 din 20/08/2020 Director proiect: M. ZAHARIA, Tutore: M. MIHAI	2020-2022	49.908	27.012

3	Microparticule compozite nisip/poliectrolit cu capacitate ridicata de incarcare/eliberare de compusi anorganici/organici din ape poluate (POLYSAND)	PN-III-P2-2.1-PED-2019-1996, Contract nr: 521PED/2020 Director proiect: F. BUCATARIU	2020-2022	92.783	51.986
5	Zwitterionic porous microparticles containing zein and betaine moieties with antimicrobial activity and drug delivery capabilities (ZwitterZein)	PN-III-P4-ID-PCE-2020-1541 Director proiect: Dr. M. MIHAI	2021-2023	239.606	89.531
6	Solutii inovative si sustenabile pentru eliminarea poluantilor prioritari si emergenti prin procese de epurare avansata a apelor uzate (SUSTINWATER)	Contract nr. 56/2021 Director proiect Prof. Carmen TEODOSIU Membri in proiect M. MIHAI, F. BUCATARIU	2021-2023	239.606	92.400

Raportate la alte subprograme

-	Infra SupraChem Lab Centru de Cercetari avansate in domeniul chimiei supramoleculare	Cod MySMIS: 108983 Contract de finantare: nr. 339/390015/25.02.2021 Dr. Narcisa MARANGOCI (Membru echipa de management: M. MIHAI)	2021-2023	~4 mil	
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Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Amidon hidrolizat pentru micro si nano-particule/fibre cu activitate antimicrobiana si capacitate de administrare a medicamentelor	TE 2021	PN-III-P1-1.1-TE-2021-0982 D.F. LOGHIN
2	Arhitecturi polielectroliti/enzime depuse pe microparticule anorganice pentru cataliza statica/dinamica (POLYENZY)	PCE 2021	PN-III-P4-PCE-2021-1381 F. BUCATARIU
3	Ecotehnologie la scala de laborator pentru materiale avansate antimicrobiene pe baza de zeina si polizaharide	PED 2021	PN-III-P2-2.1-PED-2021-1750 M. MIHAI
4	Controlul si eliminarea eficienta a produsilor secundari ai dezinfectiei in tratarea apei pentru potabilizare	PED 2021	PN-III-P2-2.1-PED-2021-0930 Responsabil partener ICMPP Dr. M. MIHAI
5	Imbunatatirea calitatii vinului prin utilizarea agentilor sustenabili si inovativi de limpezire	PED 2021	PN-III-P2-2.1-PED-2021-2017 Responsabil partener ICMPP Dr. M. MIHAI
6	Extractia ultrarapida si aplicatii ale proteinelor zeinice din porumbul autohton	PED 2021	PN-III-P2-2.1-PED-2021-3648 Responsabil partener ICMPP Dr. M. MIHAI

Manifestari stiintifice (congres, conferinta, simpozion) sau scoli de vara internationale organizate

- Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021, The 28th edition**, ICMPP, 7-9 octombrie, 2021
<https://icmpp.ro/macroiiasi2021/>, 6 conferinte invitate, 9 conferinte pe sectiuni, 22 comunicari orale, 24 postere, peste 70 participanti
membri in comitetul de organizare: M. Mihai, M.M. Zaharia, A-L. Vasiliu, L.M. Petrila, M.M. Bazarghideanu, M.A. Trofin
- ICMPP - Open Door to The Future. Scientific Communications of Young Researchers, MacroYouth'2021**
<https://icmpp.ro/macroyouth2021/>
membri in comitetul de organizare: M. Mihai, F. Bucatariu
- Workshop on Porous polymeric materials for medical and environmental applications**, Institutul de Polimeri, Academia de Stiinte a Bulgariei, Sofia, Bulgaria, 23-27 August 2021
co-organizatori: dr. M. Mihai (ICMPP) si dr. Olea Stoilova (IP-BAS), 6 comunicari orale, 10 participanti

4. **Romanian-Greek Workshop on Macromolecular Materials**, National Hellenic Research Foundation, Theoretical & Physical Chemistry Institute, 26 Noiembrie 2021
co-organizatori: dr. M. Mihai (ICMPP) si dr. Stergis Pispas (NHRF-TPCI), 6 comunicari orale, 15 participanti

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1.	Marcela MIHAI	chimie	2016

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Ana-Lavinia MATRICALA (cas. VASILIU)	chimie	2016	- 3 examene - 3 proiecte cercetare	Dr. Habil. Marcela MIHAI	Materiale compozite bio-inspirate cu aplicatii biomedicale si in protectia mediului
2	Marin-Aurel TROFIN	chimie	2020	- 4 examene	Dr. Habil. Marcela MIHAI	Microparticule poroase zwitterionice cu activitate antimicrobiana si capacitate de administrare medicamente
3	Ramona CIOBANU	Ingineria mediului	2020	- 1 proiect cercetare	Prof. C. TEODOSIU (Univ. Tehnica Iasi) Dr. Habil. Marcela MIHAI	Epurarea avansata a apelor uzate prin procese de sorbtie pentru eliminarea poluantilor prioritari si emergenti
4	Larisa-Maria PETRILA	chimie	2021	-colocviu admitere	Dr. Habil. Marcela MIHAI	Materiale compozite polimer/enzime cu aplicatii catalitice si biomedicale
5	Elena Daniela LOTOS	chimie	2021	-colocviu admitere	Acad. Bogdan C. SIMIONESCU	Biomateriale micro si nanostructurate pe baza de polizaharide pentru aplicatii medicale

Teze sustinute

Nr. crt.	Titlul tezei	Doctorand	Conducator stiintific	Forma de pregatire/data sustinerii
1.	Materiale compozite bio-inspirate cu aplicatii biomedicale si in protectia mediului	Ana-Lavinia MATRICALA (cas. VASILIU)	Dr. Habil. Marcela MIHAI	Cu frecventa, fara stipendiu /17 septembrie 2021

Stagii de cercetare

Nr. crt.	Nume si prenume	Sursa de finantare	Institutul in care s-a efectuat stagiul/ perioada
1.	Marius-Mihai ZAHARIA	Proiect: PN-III-P1-1.1-PD-2019-0286 Perioada: 19.08.2021-10.09.2021	Institutul de Polimeri, Academia de Stiinte a Bulgariei, Sofia, Bulgaria
2	Marius-Mihai ZAHARIA	Proiect: PN-III-P1-1.1-PD-2019-0286 Perioada: 25.10.2021-07.11.2021	Institutul Leibniz de Cercetare a Polimerilor din Dresda (IPF), Germania
3	Florin BUCATARIU	Proiect: PN-III-P2-2.1-PED-2019-1996 Perioada: 25.10.-07.11.2021	Institutul Leibniz de Cercetare a Polimerilor din Dresda (IPF), Germania
4	Marin Aurel TROFIN	Proiect: PN-III-P4-ID-PCE-2020-1541 Perioada: 25.10.-07.11.2021	Institutul Leibniz de Cercetare a Polimerilor din Dresda (IPF), Germania

- Realizarea lucrarii de disertatie „Sinteza si caracterizarea unor materiale compozite pe baza de polielectroliti. Studii de sorbtie si desorbtie a acidului galic” in cadrul Laboratorului Polimeri Functionali, **L.M. Petrila**, sub coordonarea Dr. **M. Mihai** si a Dr. **F. Bucatariu**

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Silvia VASILIU	- Materials (Topical Advisory Panel) - Guest Editor for Special Issue "The Emerging Role of Polymeric Materials in Pharmaceutical Designs and Applications" in International Journal of Molecular Sciences
2	Marcela MIHAI	- Crystals, Reviewer Board - Guest Editor for Special Issue "The Emerging Role of Polymeric Materials in Pharmaceutical Designs and Applications" in International Journal of Molecular Sciences

Membri in conducerea unei organizatii internationale de specialitate

Nr. crt.	Nume si prenume	Organizatia
1.	Marcela MIHAI	Secretar General al Societatii Romane de Chimie

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1	Marcela MIHAI, CS II	15
2	Florin BUCATARIU, CS III	11
3	Vasiliu SILVIA, CS III	10
4	Stefania RACOVITA, CS	10
5	Diana Felicia LOGHIN, AC	9
6	Marius-Mihai ZAHARIA, AC	9

Premii (distinctii) ale societatiilor stiintifice internationale/nationale obtinute prin procese de selectie

Nr. crt.	Nume si prenume	Premiul	Societatea internationala
1.	Ana-Lavinia VASILIU	Best Oral Communication at Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021, The 28th edition, ICMPP, 7-9 octombrie, 2021 HYDROPHOBIC BIOCOMPATIBLE CaCO ₃ /CELLULOSE MATERIAL WITH POTENTIAL APPLICATION IN WOUND DRESSING, Ana-Lavinia VASILIU, Marius-Mihai ZAHARIA, Melinda-Maria BAZARGHIDEANU, Irina ROSCA, Dragos PEPTANARIU, Marcela MIHAI	Polymers-MDPI
2.	Marin-Aurel TROFIN	Best Young Scientist Poster Communication at Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021, The 28th edition, ICMPP, 7-9 octombrie, 2021 NEW ZWITTERIONIC COPOLYMER WITH CARBOXYBETAINE MOIETIES AS POSSIBLE DRUG DELIVERY SYSTEM Marin-Aurel TROFIN, Stefania RACOVITA, Silvia VASILIU, Ana-Lavinia VASILIU, Diana Felicia LOGHIN, Marcela MIHAI	Romanian International Chapter of ACS
3.	Larisa Maria PETRILA	Premiul I pentru Prezentarea orala SILICA/POLYELECTROLYTE SORBENTS FOR THE REMOVAL OF ORGANIC POLLUTANTS Larisa-Maria PETRILA, Florin BUCATARIU, Marcela MIHAI	Ph.D. Students' Days The First Edition, November 26, 2021 ARAD, ROMANIA

Proiect 4.2. Sisteme polimerice multifunctionale cu arhitectura 3D controlata: sinteza si potentiale aplicatii		
director proiect: Dr. Maria Valentina DINU		
Echipa (procent de timp alocat proiectului): Dr. Maria Valentina DINU, CSII (100%) Dr. Ecaterina Stela DRAGAN, CSI (8.33%) Dr. Claudiu Augustin GHIORGHITA, CS (100%) Dr. Irina Elena RASCHIP, CS (100%)	Dr. Ionel Adrian DINU, CS (0%) Dr. Maria Marinela LAZAR, AC (100%) Dr. Ana-Irina COCARTA, AC (0%) Martha MARCU, A (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Functionalizarea chitosanului si/sau polietileniminei cu grupe ligand de tip tiouree, timina, EDTA, DTPA si caracterizarea structurala a polimerilor grefati - Obtinerea de noi compozite pe baza de chitosan functionalizat si aluminosilicati - Sinteza unor criogeluri compozite bogate in azot si ioni metalici - Caracterizarea structurala si texturala a noilor compozite - Testarea capacitatii de sorbtie in regim static si/sau dinamic a oxianionilor si ionilor metalelor grele in functie de structura criogelurilor compozite - Sinteza unor filme pe baza de chitosan/dextrina incorporand uleiuri esentiale de cimbru - Sinteza unor noi criogeluri pe baza de dextran si extracte din coaja de molid - Caracterizarea structurala si texturala a noilor filme compozite - Evaluarea proprietatilor de umflare in medii apoase si a rezistentei mecanice la compresie - Evaluarea activitatii antioxidante si antimicrobiene 	<ul style="list-style-type: none"> - lucrari stiintifice publicate/ acceptate: 4 - participari la manifestari stiintifice: 4 - propuneri de proiecte: 1 	<ul style="list-style-type: none"> - lucrari stiintifice publicate/ acceptate: 14 - participari la manifestari stiintifice: 8 - propuneri de proiecte: 4 - capitole in carti: 1

I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Polysaccharide-based materials as promising alternatives to synthetic-based plastics for food packaging applications; **I. E. Raschip**, N. Fifere, **M. V. Dinu**; *Bioplastics for Sustainable Development*; (Eds.) M. Kuddus, Roohi; Springer Nature Publisher; 515-554 (2021)

Articole publicate/acceptate in reviste cotate de Web of Science (Thomson Reuters)

1. Stabilizing enzymes within polymersomes by coencapsulation of trehalose; **M.V. Dinu**, **I.A. Dinu**, S.S. Saxer, W. Meier, U. Pieleas, N. Bruns; *Biomacromolecules* 22, 134-145 (2021) FI = 6,988
2. Designing smart triple-network cationic cryogels with outstanding efficiency and selectivity for deep cleaning of phosphate; **E. S. Dragan**, D. Humelnicu, **M. V. Dinu**; *Chemical Engineering Journal* 426, 131411 (2021) FI = 13,273
3. Evaluation of phosphate adsorption by porous strong base anion exchangers having hydroxyethyl substituents: kinetics, equilibrium and thermodynamics; D. Humelnicu, **E.S. Dragan**; *Environmental Science and Pollution Research* 28, 7105-7115 (2021) FI = 4,223
4. A comparative analysis on the effect of variety of grape pomace extracts on the ice-templated 3D cryogel features; **I. E. Raschip**, N. Fifere, **M. V. Dinu**; *Gels* 7, 76 (2021) FI = 4,702
5. Analysis of copper(II), cobalt(II) and iron(III) sorption in binary and ternary systems by chitosan-based composite sponges obtained by ice-segregation approach; **M. V. Dinu**, D. Humelnicu, **M. M. Lazar**; *Gels* 7, 103 (2021) FI = 4,702
6. Synthesis of thiourea-graft-polyethyleneimine and its performance in flocculation of some inorganic particles; **C.-A. Ghiorghita**, L. Ghimici, G.-L. Ailiesei; *Industrial & Engineering Chemistry Research* 60, 5167-5175 (2021) FI = 3,720
7. Physically cross-linked chitosan/dextrin cryogels entrapping *Thymus vulgaris* essential oil with enhanced mechanical, antioxidant and antifungal properties; **M. V. Dinu**, A. C. Gradinaru, **M. M. Lazar**, **I. A. Dinu**, **I. E.**

Raschip, N. Ciocarlan, A. C. Aprotosoia; *International Journal of Biological Macromolecules* 184, 898–908 (2021). (FI2020 = 6.953)

8. Synthesis of ethylenediaminetetraacetic acid-functionalized chitosan cryogels as potential sorbents of heavy metal ions; **M. M. Lazar, I. A. Dinu, M. V. Dinu**; *Materiale Plastice* 58, 155-166 (2021) FI = 0,593
9. Preparation and characterization of semi-IPN cryogels based on polyacrylamide and poly(n,n-dimethylaminoethyl methacrylate) and release kinetics of curcumin before and after functionalization with monochlorotriazinyl- β -cyclodextrin; **E. S. Dragan, M. V. Dinu, M. M. Lazar, C.-A. Ghiorghita**, F. Doroftei; *Molecules* 26, 6975 (2021)FI = 4,411
10. Transcutaneous drug delivery systems based on collagen/polyurethane composites reinforced with cellulose; N. Anghel, **M. V. Dinu**, L. Verestiuc, I. A. Spiridon; *Polymers* 13, 1845 (2021) FI = 4,329
11. Contributions to the quaternization description and kinetics illustrated on poly(dimethylaminoethyl methacrylate PDMAEMA); G. L. Ailiesei, V. Barboiu, **E. S. Dragan**; *Reactive and Functional Polymers* 161, 104852 (2021) FI = 3,975
12. An engineered coccolith-based hybrid that transforms light into swarming motion; M. Lomora, A. Larranaga, C. Rodriguez-Emmenegger, B. Rodriguez, **I. A. Dinu**, J.-R. Sarasua, A. Pandit; *Cell Reports Physical Science* 2, 100373 (2021) FI = 9,423
13. Burst-free and sustained release of diclofenac sodium from mesoporous silica/PEI microspheres coated with carboxymethyl cellulose/chitosan layer-by-layer films; **C.-A. Ghiorghita, M. V. Dinu, E. S. Dragan**; *Cellulose*, <https://doi.org/10.1007/s10570-021-04282-y>. (2021) FI = 5,044
14. Xanthan matrix as drug delivery system; N. Anghel, **M. V. Dinu**, F. Doroftei, I. Spiridon; *Revista de Chimie* 72, 89-98 (2021)

Raportate la alte subprograme

- One-pot reduction-hydrophobization of heterogenized platinum with 1,1,3,3-tetramethyldisiloxane; A.-C. Stoica, M. Damoc, L. Baltag, A.-M. Macsim, A. Nicolescu, **M. V. Dinu**, G. Ionita, M. Cazacu; *Applied Organometallic Chemistry* e6485 (2021) FI = 4,105
- Alginate/poloxamer hydrogel obtained by thiol-acrylate photopolymerization for the alleviation of the inflammatory response of human keratinocytes; I. Popescu, M. Turtoi, D. M. Suflet, **M. V. Dinu**, R. N. Darie-Nita, M. Anghelache, M. Calin, M. Constantin; *International Journal of Biological Macromolecules* 180, 418–431 (2021) FI = 6,953
- New cellulose-collagen-alginate materials incorporated with quercetin, anthocyanins and lipoic acid; N. Anghel, **M. V. Dinu**, M. Zaltariov, D. Pamfil, I. Spiridon; *International Journal of Biological Macromolecules* 181, 30–40 (2021) FI = 6,953
- Development and characterization of novel cellulose composites obtained in 1-ethyl-3-methylimidazolium chloride used as drug delivery systems; I. Spiridon, I.-M. Andrei, N. Anghel, **M. V. Dinu**, B.-I. Ciubotaru; *Polymers* 13, 2176 (2021) FI = 4,329
- Recent developments in layer-by-layer assembled systems application in water purification; **C.-A. Ghiorghita**, M. Mihai; *Chemosphere* 270, 129477 (2021) FI = 7,086
- *In situ* CaCO₃ mineralization controlled by carbonate source within chitosan-based cryogels; A.-L. Vasiliu, **M. V. Dinu**, M. M. Zaharia, D. Peptanariu, M. Mihai; *Materials Chemistry and Physics* 272, 125025 (2021) FI = 4,094
- Multifunctional composites of zwitterionic resins and silver nanoparticles for point-of-demand antimicrobial applications; M.-M. Zaharia, **C.-A. Ghiorghita**, M.-A. Trofin, F. Doroftei, I. Rosca, M. Mihai; *Materials Chemistry and Physics* (2021) <https://doi.org/10.1016/j.matchemphys.2021.125225>. FI = 4,094

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Cryogenically-structured composite biomaterials; **M. V. Dinu, M. M. Lazar, I. E. Raschip**; XXXIth edition of the International Congress of "Apollonia" University of Iasi, Iasi, Romania, 01–03.03.2021

Comunicari orale prezentate la manifestari stiintifice internationale

2. Formation of 1D-oriented structure in chitosan-based hydrogels; **M. M. Lazar, M. V. Dinu**; XXXIth edition of the International Congress of "Apollonia" University of Iasi, Iasi, Romania, 01–03.03.2021
3. Competitive adsorption of heavy metal ions by porous chitosan-based composites; **M. M. Lazar, I. A. Dinu, M. V. Dinu**; Young Researchers' International Conference on Chemistry and Chemical Engineering (YRICCCE III), Babes-Bolyai University Faculty of Chemistry and Chemical Engineering, Cluj Napoca, Romania, 04–05.06.2021
4. Enhanced physico-chemical and biological properties of cryogels containing xanthan gum; **I. E. Raschip, G. Hitruc, M. V. Dinu**; Young Researchers' International Conference on Chemistry and Chemical Engineering (YRICCCE III), Babes-Bolyai University Faculty of Chemistry and Chemical Engineering, Cluj Napoca, Romania, 04–05.06.2021
5. 3D Anisotropic polysaccharide-based cryogels as multifunctional eco-friendly materials for wastewater treatment; **M. V. Dinu, M. M. Lazar, I. A. Dinu, I. E. Raschip, C.-A. Ghiorghita**, L. Ghimici; 11th International Conference on Environmental and Management, Muttentz, Switzerland, 8-10.09.2021

6. Development of bioactive hydrogels containing *Thymus vulgaris* essential oil by ice template-assisted freeze-drying technique; I.-V. Platon, **I. E. Raschip**, A. C. Aprotosoiaie, A. C. Gradinaru, **M. V. Dinu**; ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

Postere prezentate la manifestari stiintifice internationale

7. Synthesis and flocculation performance of thiourea-g-polyethyleneimine; **C.-A. Ghiorghita**, L. Ghimici; XXXIth edition of the International Congress of "Apollonia" University of Iasi, Iasi, Romania, 01–03.03.2021

Postere prezentate la manifestari stiintifice nationale

8. Preparation and characterization of multifunctional porous chitosan-based hydrogels by formaldehyde-mediated cross-linking; M. M. Barzu, **C.-A. Ghiorghita**, D. Humelnicu, **M. V. Dinu**; Chimia - frontiera deschisa spre cunoastere, editia a XII-a, Iasi, Romania, 11-12.11.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice - Raportate la alte subprograme

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Ionic polymers based on polysaccharides: correlations between structure, physico-chemical properties and interaction with oppositely charged particle	PN-III-P4-ID-PCE-2020-0296/ Dr. L. Ghimici (S5) Dr. M. V. DINU – membru in echipa	2021–2023	242.000	121.000
2.	Procese integrate si sustenabile de depoluare a mediului, reutilizare a apelor uzate si valorificare a deseurilor	PN-III-P1-1.2-PCCDI-2017-0245 / Responsabil ICMPP: Dr. M. Mihai (S4, P4.1) Dr. C.-A. GHIORGHITA – membru in echipa ICMPP	2018-2021	140.842	48.264
3.	Zwitterionic porous microparticles containing zein and betaine moieties with antimicrobial activity and drug delivery capabilities	PN-III-P4-ID-PCE-2020-1541/ Dr. M. Mihai (S4, P4.1) Dr. C.-A. GHIORGHITA – membru in echipa	2021-2023	239.606	89.531
4.	Quartz sand/polyelectrolyte composite microparticles with high loading/release of some inorganic/organic compounds from polluted waters	PN-III-P2-2.1-PED-2019-1996 / Dr. F. Bucatariu (S4, P4.1) Dr. C.-A. GHIORGHITA – membru in echipa	2020–2022	92.783	51.986

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Sisteme inovatoare de etichetare a securitatii pe baza de hidrogeluri bioactive pentru protejarea produselor impotriva falsificarii	PCE 2021	PN-III-P4-PCE-2021-1132/ Dr. M. V. DINU
2.	Noi materiale adsorbante pe baza de compozite bogate in ioni metalici cu aplicatii in minimizarea deseurilor si economie circulara durabila	TE 2021	PN-III-P1-1.1-TE2021-0771/ Dr. C.-A. GHIORGHITA
3.	Imobilizarea antocianinelor in materiale pe baza de polizaharide pentru obtinerea de ambalaje alimentare ecologice inteligente	TE 2021	PN-III-P1-1.1-TE2021-1683/ Dr. I. E. RASCHIP
4.	Namoluri bogate in fier rezultate din statiile de tratare a apelor reziduale: de la reziduuri nedorite la suporturi polimerice catalitice	PED 2021	PN-III-P2-2.1-PED-2021-0996/ Dr. M. V. DINU

Propuneri de proiecte nationale - Raportate la alte subprograme

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
	Proiectarea de noi arhitecturi 3D cu proprietati anti-inghet si conductive controlate	PD2021	PN-III-P1-1.1-PD-2021-0462/ Dr. R. BARON (S2) Tutore: M. V. DINU

	Bio-filme polimerice cu proprietati de regenerare termoreglabile	PD2021	PN-III-P1-1.1-PD-2021-0513/ Dr. O. URSACHE, Tutore: M. V. DINU
	Proiectarea materialelor poliuretanic "verzi" folosind o abordare ecologica bazata pe biocomponenti	PD2021	PN-III-P1-1.1-PD-2021-0622/ Dr. V.O. POTOLINCA, Tutore: M. V. DINU

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1.	Ecaterina Stela DRAGAN	Chimie	2002
2.	Maria Valentina DINU	Chimie	2021

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	PLATON Ioana-Victoria	Chimie	2021	Colocviu admitere	Dr. Habil. Maria Valentina DINU	Proiectarea de noi biomateriale multifunctionale pe baza de polimeri si diferite molecule bioactive naturale

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate

Nr. crt.	Nume si prenume	Revista
1	Dr. Ecaterina Stela DRAGAN	Current Smart Materials, Editor Asociat
		Molecules, membru in Consiliul Editorial la Sectiunea "Green Chemistry"
2	Dr. Maria Valentina DINU	Editor - Reactive and Functional Polymers
		Editorial board member - Gels

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Dr. Ecaterina Stela DRAGAN, CSI	37
2.	Dr. Maria Valentina DINU, CSII	26
3.	Dr. Ionel Adrian DINU, CS	13
4.	Dr. Maria Marinela LAZAR, AC	10
5.	Dr. Ana-Irina COCARTA, AC	10
6.	Dr. Claudiu-Augustin GHIORGHITA, CS	9
7.	Dr. Irina Elena RASCHIP, CS	9

LABORATOR POLIMERI NATURALI, MATERIALE BIOACTIVE SI BIOCOMPATIBILE**SUBPROGRAM 5: POLIMERI NATURALI/SINTETICI PENTRU MATERIALE BIOACTIVE, BIOCOMPATIBILE, BIOMIMETICE**

DIRECTOR SUBPROGRAM: DR. GHEORGHE FUNDUEANU-CONSTANTIN

Proiect 5.1. Suporturi macromoleculare adaptive pentru aplicatii biomedicale		
director proiect: Dr. Gheorghe FUNDUEANU-CONSTANTIN		
Echipa (procent de timp alocat proiectului): Dr. Gheorghe FUNDUEANU-CONSTANTIN, CSI (100%) Dr. Marieta FUNDUEANU-CONSTANTIN, CSII (100%) Dr. Dana Mihaela SUFLET, CSIII (100%) Dr. Irina POPESCU, CSIII (100%)	Dr. Irina Mihaela PELIN, CS (100%) Dr. Sanda-Maria BUCATARIU, AC (100%) Dr. Mihail LUPEI, Ing (100%) Drd. Bogdan-Paul COSMAN, (100%) Tinca BUNIA, A (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Sinteza si caracterizarea unor noi copolimeri sensibili la pH si temperatura pe baza de NIPAAm, acriloilvalina si 4-vinilpiridina - Modificarea chimica a polizaharidelor (alginat, carboximetil pululan, pectina pentru obtinerea unor derivati functionalizati cu proprietati prestabilite (sensibilitate la stimuli externi, termogelifiere, reticulare <i>in situ</i>, capacitate de autoasamblare, etc.) - Sinteza de micro-/nano-geluri sensibile la stimuli externi (pH, temperatura) pentru transportul si eliberarea medicamentelor la celulele tumorale - Obtinerea materialelor compozite pe baza de polizaharide/derivati ai acestora/PVA/ortofosfati de calciu cu aplicatii in ingineria tisulara - Hidrogeluri pe baza de acid hialuronic folosite ca surogate de tesuturi si tumori pentru testarea medicamentelor antitumorale 	<ul style="list-style-type: none"> - Lucrari stiintifice publicate 6 - Carti/capitole 2 - Participari la manifestari stiintifice 6 - Propuneri de proiecte 1 	<ul style="list-style-type: none"> - Lucrari stiintifice publicate 7 - Capitole 2 - Participari la manifestari stiintifice 8 - Propuneri de proiecte 5 - Brevete 1

I. ACTIVITATEA STIINTIFICA**Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate**

1. Smart Polymeric materials for drug delivery; **G. Fundueanu, S. Bucatariu, M. Constantin**; *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Ed.) M.J. Abadie, M. Pinteala, A. Rotaru; Springer; 275-294 (2021)
2. Curdlan Derivatives: New Approaches in Synthesis and Their Applications; **D.M. Suflet**; *Sustainability of Biomass through Bio-based Chemistry*; (Ed.) V.I. Popa; CRC Press Taylor & Francis Group; 263-286 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Alginate/poloxamer hydrogel obtained by thiol-acrylate photopolymerization for the alleviation of the inflammatory response of human keratinocytes; **I. Popescu, M. Turtoi, D.M. Suflet, M.V. Dinu, R.N. Darie-Nita, M. Anghelache, M. Calin, M. Constantin**; *International Journal of Biological Macromolecules* 180, 418-431 (2021) FI = 6,953

2. Thermo- and pH-responsive copolymer of N-isopropylacrylamide with acryloylvaline: synthesis and properties in aqueous solutions; E. Tarabukina, V. Harabagiu, **G. Fundueanu, M. Constantin**, A. Filippov; *Journal of Polymer Research* 28, 155 (2021) FI = 3,097
 3. Double cross-linked pectin beads stable in physiological environment as potential support for biomedical applications; **I. Popescu, M. Lupei, M. Constantin**, G. Voicu, M. Calin, A.I. Prisacaru, **G. Fundueanu**; *Journal of Polymer Research* 28, 424 (2021) FI = 3,097
 4. Dual cross-linked chitosan/PVA hydrogels containing silver nanoparticles with antimicrobial properties; **D.M. Suflet, I. Popescu, I. M. Pelin**, D.L. Ichim, O.M. Daraba, **M. Constantin, G. Fundueanu**; *Pharmaceutics* 13, 1461 (2021) FI = 6,321
 5. Intelligent micro-vehicles for drug transport and controlled release to cancer cells; **M. Constantin, S. Bucatariu, I. Popescu, B. Cosman**, P. Ascenzi, **G. Fundueanu**; *Reactive and Functional Polymers* 165, 104961 (2021) FI = 3,74
 6. Thermosensitive poloxamer-graft-carboxymethyl pullulan: A potential injectable hydrogel for drug delivery; **M. Constantin, B. Cosman**, M. Bercea, G.L. Ailiesei, **G. Fundueanu**; *Polymers* 13, 3025 (2021) FI=4,329
 7. A novel platform for drug testing: Biomimetic three-dimensional hyaluronic acid-based scaffold seeded with human hepatocarcinoma cells; M. Turtoi, M. Anghelache, **S.M. Bucatariu**, M. Deleanu, G. Voicu, F. Safciuc, I. Manduteanu, G. Fundueanu, M. Simionescu, M. Calin; *International Journal of Biological Macromolecules* 185, 604-619 (2021) FI = 6,953
- Raportate la alte proiecte din cadrul subprogramului**
- The separation of kreutzonit particles by cationic pullulan derivatives; **L. Ghimici, M. Constantin**; *Environmental challenges* 5, 100352 (2021)

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Chitosan-PVA composite hydrogels: synthesis, characterization and their antibacterial properties; **B. Cosman**, D.M. Rata, **D.M. Suflet, G. Fundueanu**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, 127-128 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Stimuli-sensitive polymers for self-regulated drug delivery systems; **G. Fundueanu**; United Conference of Pharma 2B, New York, USA, 14-15.07.2021

Comunicari orale prezentate la manifestari stiintifice internationale

2. pH/temperature-sensitive microspheres for drug delivery to the tumors; **G. Fundueanu, M. Constantin, B. Cosman, S. Bucatariu**; International Congress of the „Apollonia” University from Iasi „By promoting excellence, we prepare the future” XXXIth Edition, Iasi, Romania, 01-03.03.2021
3. Design of chitosan films via solvent free thermal cross linking method; **S. Bucatariu, B. Cosman, G. Fundueanu, M. Constantin**; International Congress of the „Apollonia” University from Iasi „By promoting excellence, we prepare the future” XXXIth Edition, Iasi, Romania, 01-03.03.2021
4. Chitosan/oxalic acid/poly(vinyl alcohol) cryogels for biomedical applications; **I.M. Pelin, I. Popescu, M. Constantin**; International Congress of the „Apollonia” University from Iasi „By promoting excellence, we prepare the future” XXXIth Edition, Iasi, Romania, 01-03.03.2021
5. Degradable Pluronic/alginate hydrogels for skin wound healing-in vitro studies; **I. Popescu**, M. Turtoi, R.N. Darie-Nita, M. Calin; International Congress of the „Apollonia” University from Iasi „By promoting excellence, we prepare the future” XXXIth Edition, Iasi, Romania, 01-03.03.2021
6. Chitosan-based hydrogel loaded with anti-inflammatory drug for local treatment of periodontitis; A.N. Cadinoiu, L. I. Atanase, **I. Popescu**, D. M. Rata; International Congress of the „Apollonia” University from Iasi „By promoting excellence, we prepare the future” XXXIth Edition, Iasi, Romania, 01-03.03.2021
- Production and characterization of surrogates for biomedical testing; **G. Fundueanu**, G. David, S. Coseri, **D. Suflet, I. Popescu**, L. Cianga, S. Bucatariu; 5D-NanoP Workshop, Iasi, Romania, 11.10.2021
- In-situ forming hydrogels based on thiolated alginate and pluronic diacrylate; **I. Popescu, M. Constantin, G. Fundueanu**, R.N. Darie-Nita, M. Turtoi, M. Anghelache, M. Calin; 5D-NanoP Workshop, Iasi, Romania, 11.10.2021
- Hyaluronic acid-based 3D cell model of human hepatocarcinoma for chemotherapeutic drug testing; M. Turtoi, M. Anghelache, **S.M. Bucatariu**, M. Deleanu, G. Voicu, **G. Fundueanu**, M. Simionescu, M. Calin; 5D-NanoP Workshop, Iasi, Romania, 11.10.2021

Comunicari orale prezentate la manifestari stiintifice internationale

7. pH/Temperature-sensitive interpenetrating polymeric hydrogel; **B. Cosman, S. Bucatariu, M. Constantin, G. Fundueanu**; ICMPP - Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

Postere prezentate la manifestari stiintifice internationale

8. Chitosan-PVA composite hydrogels: synthesis, characterization and their antibacterial properties; **B. Cosman, D.M. Rata, D.M. Suflet, G. Fundueanu**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE**Proiecte de cercetare internationale finantate din fonduri private (raportate la alte subprograme)**

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
	Parteneriate pentru transfer de cunostiinte in domeniul materialelor polimere folosite in ingineria biomedicala	POC-A1-A1.2.3-G-2015/ Membri: M. FUNDUEANU, D. SUFLET	2016-2022	3000000	377975

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Terapii inteligente pentru boli non-comunicabile, bazate pe eliberarea controlata de compusi farmacologici din celule incapsulate dupa manipulare genetica sau bionanoparticule vectorizate	PN-III-P1-1.2-PCCDI-2017-0697/ G. FUNDUEANU-responsabil partener (ICMPP)	2018-2021	276.000	16.963
2.	Mimarea mecanismelor viului prin abordari ale chimiei supramoleculare, in cinci dimensiuni	PN-III-P4-ID-PCCF-2016-0050/G. FUNDUEANU-responsabil partener 3	2018-2022	189.000	23.818
3.	Hidrogeluri compozite inovative cu activitate antibacteriana si antiinflamatorie cu aplicatii in tratamentul paradontozei	PN-III-P2-2.1-PED-2019-1780/ M. FUNDUEANU-CONSTANTIN	2020-2022	60.200	30.100

Proiecte de cercetare nationale finantate din fonduri publice (raportate la alte subprograme)

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Platforme teranostice antitumorale pe baza de carbon dots si matrici polimerice	PN-III-P1-1.2-PCCDI-2017-0083/ Responsabil partener 1 (ICMPP): M. PINTEALA, Membru: M. FUNDUEANU-CONSTANTIN	2018-2021	211.500	12.111

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Hidrogeluri compozite formate in situ cu proprietati mecanice controlate pentru aplicatii in regenerarea osoasa	TE-2021	PN-III-P1-1.1-TE-2021-0774/ I. POPESCU
2.	Bi-layer device based on amphiphilic curdlan derivatives for wound treatment	PCE-2021	PN-III-P4-PCE-2021-1035/ D.M. SUFLET
3.	Hidrogeluri biomimetice pentru sisteme de eliberare cu auto-reglare a medicamentelor	PCE-2021	PN-III-P4-PCE-2021-1146/ G. FUNDUEANU-CONSTANTIN
4.	Microsfere bioresorbabile mineralizate cu hidroxiapatita si incarcate cu antibiotic folosite ca sistem bifunctional in tratamentul osteomielitei	PED-2021	PN-III-P2-2.1-2021-1512/ I. PELIN

Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Novel multifunctional composites materials based on cellulose hydrogels and aerogels with metal nanoparticles and/or drugs for biomedical applications	HORIZON-MSCA-2021-PF-01	101062576/ G. FUNDUEANU-CONSTANTIN

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE

Brevete acordate

1. Procedeu de obtinere a unor microgeluri superabsorbante biocompatibile; **M.D. Suflet, M. Fundueanu-Constantin**, E.G. Ioanid, O.M. Daraba, **M. Aflori**; RO134817-A2/3.03.2021

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Gheorghe FUNDUEANU-CONSTANTIN	Chimie	2019

Doctoranzi in stagiu

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	COSMAN Bogdan	Chimie	2020	- 4 examene sustinute	Gheorghe FUNDUEANU-CONSTANTIN	Materiale inteligente pe baza de polimeri sensibili la stimuli externi cu aplicatii biomedicale
2.	VASILACHE Andreea	Chimie	2021	-colocviu de admitere	Gheorghe FUNDUEANU-CONSTANTIN	Micro- si macro-geluri polimerice cu structuri complexe pentru eliberarea controlata a medicamentelor si pentru alte aplicatii biomedicale

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Gheorghe FUNDUEANU-CONSTANTIN	- Journal of Clinical Rehabilitative Tissue Engineering Research - Chinese Rehabilitation Medical Association - Jacobs Journal of Nanomedicine and Nanotechnology

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Gheorghe FUNDUEANU-CONSTANTIN, CSI	24
2.	Marieta FUNDUEANU-CONSTANTIN, CSII	24
3.	Dana Mihaela SUFLET, CSIII	11
4.	Irina POPESCU, CSIII	11

Proiect 5.2. Polimeri amfifili si sisteme polimerice complexe pe baza de compusi naturali si sintetici

director proiect: Dr. Marieta NICHIFOR

Echipa (procent de timp alocat proiectului): Dr. Marieta NICHIFOR, CSI (100%) Dr. Maria BERCEA, CSI (100%) Dr. Simona MORARIU, CSII (100%) Dr. Luminita GHIMICI, CSII (100%)	Dr. Magdalena-Cristina STANCIU, CS (100%) Dr. Cristina-Eliza BRUNCHI, CS (100%) Dr. Mirela TEODORESCU, CS (100%) Drd. Ioana-Alexandra PLUGARIU, (0*) *Concediu pentru cresterea copilului
Activitati realizate	Documente monitorizare propuse Documente monitorizare realizate
Polimeri amfifili: - Sinteze de polimeri cationici pe baza de dextran cu grupe diimidazol pendante si sau colesterol la capat de lant; caracterizare structurala si fizico-chimica;	- lucrari stiintifice publicate: 7 - participari la manifestari stiintifice: 2
	- lucrari stiintifice publicate: 9 - participari la manifestari stiintifice 6

<p>studii de autoasamblare si determinarea proprietatilor agregatelor; activitate antimicrobiana</p> <ul style="list-style-type: none"> - S-au obtinut polimeri care pot forma micle sferice cu diametrul 100-200 nm, capabile sa encapsuleze molecule hidrofobe (curcumina) si cu activitate buna fata de bacterii si fungi - Sinteze de hidrogeluri cationice reticulate prin puncti de diimidazol, caracterizare fizico-chimica. S-au obtinut superadsorbanti cu capacitate mare de retinere a compusilor anionici <p>Sisteme polimere complexe:</p> <ul style="list-style-type: none"> - Caracterizare morfologica si reologica a unor materiale hibride pe baza de poli(alcool vinilic)/poli(etilen oxid)/poli(propilen oxid) identificate ca potentiale materiale pentru tratamentul COVID-19 sau ca fluide de foraj - Elaborare si caracterizare de hidrogeluri multifunctionale pe baza de amestecuri de polimeri si proteine/peptide (PVA/HPC/BSA/GSH) in vederea utilizarii lor ca pansamente - S-a investigat tranzitia de faza si modificarile conformationale care au loc la adaosul de etanol in solutiile apoase de xantan - S-au investigat solutiile de poliuretan in amestec cu poli(alcool vinilic) prin reologie si difuzia luminii si au fost evidentiata fenomene de autoasamblare care au loc in anumite conditii de curgere sau tranzitii sol-gel in functie de temperatura - S-a evaluat compatibilitatea dintre un polimer neutru si un polielectrolit in functie de compozitie si masa moleculara - S-a investigat comportarea viscozimetrica si reologica a unor amestecuri polimer/proteina si proteina/peptida de interes pentru aplicatii biomedicale. <p>Purificare ape uzate:</p> <ul style="list-style-type: none"> - Studiul agregarii unor pesticide de tip organofosforic si piretroid, precum si a unor contaminanti de tip anorganic (silicat de zirconiu, caolin, etc) in prezenta unor polielectroliti cationici sintetici sau pe baza de polizaharide (dextran, pullulan). - S-au stabilit conditiile optime de purificare si mecanismul de floculare pentru fiecare compozitie poluant/polimer. 	<p>- propuneri de proiecte: 1</p>	<p>- propuneri de proiecte: 4</p>
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

Raportate la alte subprograme

- Cellulose Nanoparticles/Polysaccharide-type Polymer Based Materials; C.-A. Teaca, F. Tanasa, **M.-C. Stanciu**; Cellulose Nanoparticles: Synthesis and Manufacturing; (Eds) V. K. Thakur, E. Frollini, J. Scott; The Royal Society of Chemistry (RSC); 442-465 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Self-assembly of dextran – b – deoxycholic acid polyester copolymers: Copolymer composition and self-assembly procedure tune the aggregate size and morphology; **M. Nichifor, M.C. Stanciu, F. Doroftei**; *Carbohydrate Polymers* 252, 117147 (2021) FI = 9,381
2. An overview of a year with COVID-19: What we know? **M. Teodorescu**; *Electronic Journal of General Medicine* 18(3), em286, (2021) FI = 2,466
3. Impact of ethanol addition on the behaviour of xanthan gum in aqueous media; **C.-E. Brunchi, S. Morariu, M. Bercea**; *Food Hydrocolloids* 120, 106928 (2021) FI = 9,147

4. Bile salts adsorption on dextran-based hydrogels; **M.C. Stanciu, M. Nichifor**, G.L. Ailiesei; *International Journal of Biological Macromolecules* 190, 270–283 (2021) FI = 6,953
5. The viscosity of globular proteins in the presence of an "inert" macromolecular cosolute; **I.A. Plugariu, M. Bercea**; *Journal of Molecular Liquids* 337, 116382 (2021) FI = 6,165
6. Shear flow of associative polymers in aqueous solutions; **M. Bercea**, L.M. Gradinaru, M. Barbalata-Mandru, S. Vlad, L.E. Nita, **I.A. Plugariu**, R. Albulescu; *Journal of Molecular Structure* 1238, 130441 (2021) FI = 3,196
7. Efficacy of quaternary ammonium groups based polyelectrolytes for the reduction of various pesticide formulations content from synthetic wastewater; **L. Ghimici, M. Nichifor**; *Separation and Purification Technology* 276, 119325 (2021) FI = 7,312
8. Detection of polymer compatibility by means of self-organization: poly(ethylene oxide) and poly(sodium 4-styrenesulfonate); **M. Bercea**, B.A. Wolf; *Soft Matter* 17(20), 5214-5220 (2021) FI = 3,679
9. Tailoring the properties of PVA/HPC/BSA hydrogels for wound dressing applications; **M. Bercea**, L.-M. Gradinaru, **S. Morariu, I.-A. Plugariu**, R.V. Gradinaru; *Reactive & Functional Polymers* 170, 105094 (2021) FI = 3,975

Raportate la alte subprograme

- Biocompatible iminoboronate – chitooligosaccharides hydrogels for potential treatment of nosocomial infections; D. Ailincăi, I. Rosca, **S. Morariu**, L. Mititelu-Tartau, L. Marin; *Carbohydrate Polymers*, doi.org/10.1016/j.carbpol.2021.118727. FI = 9,381
- Synthesis of thiourea-graft-polyethyleneimine and its performance in flocculation of some inorganic particles; C.-A. Ghiorghita, **L. Ghimici**, G.L. Ailiesei; *Industrial and Engineering Chemical Research* 60 (14), 5167-5175 (2021) FI = 3,72
- Injectable thixotropic β -cyclodextrin-functionalized hydrogels based on guanosine quartet assembly; M.-C. Sardaru, I. Rosca, **S. Morariu**, E.-L. Ursu, R. Ghiarasim, A. Rotaru; *International Journal of Molecular Sciences* 22(17), 9179-1-16 (2021) FI = 5,54
- Preparation and surface characterization of polyurethane hydrogels; M. Barbalata-Mandru, **M. Bercea**, L.M. Gradinaru, M. Aflori, R. Albulescu; *Revue Roumaine de Chimie* 66(1), 87-93 (2021) FI = 0,278
- New Physical Hydrogels Based on Co-Assembling of Fmoc-Amino-Acids; A. Croitoriu, L.E. Nita, A.P. Chiriac, A.G. Rusu, **M. Bercea**; *Gels* 7, 208 (2021) FI = 4,702

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. 3D Bioprinted scaffolds based on functionalised gelatin and PEGDA for soft tissue engineering; I. Cobzariu, **M. Bercea**, C.A. Peptu, M. Butnaru, L. Verestiuc; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126
2. Macromolecular crowding in solutions of bovine serum albumin and neutral polymers; **M. Bercea, I.-A. Plugariu**; *Proceedings of the 9th IEEE International Conference on E-Health and Bioengineering*, Iasi, Romania, 18-19.11.2021
3. On the interactions between bovine serum albumin and reduced glutathione in solution; **M. Bercea, I.-A. Plugariu, L.E. Nita, S. Morariu**, R.V. Gradinaru; *Proceedings of the 9th IEEE International Conference on E-Health and Bioengineering*, Iasi, Romania, 18-19.11.2021
4. Aqueous solutions of chitosan: viscometric and flocculation properties; **C.-E. Brunchi, L. Ghimici**; *TEXTEH X International Conference Proceedings* 123-130 (2021) DOI: 10.35530/TT.2021.21

Raportate la alte subprograme

- Biocompatible hydrogels with broad-spectrum antimicrobial activity, D. Ailincăi, I. Rosca, **S. Morariu**, L. Mititelu Tartau, M. Angheloiu, L. Marin, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, pag. 51-52 (2021)

Comunicari orale prezentate la manifestari stiintifice internationale

1. Macromolecular crowding in solutions of bovine serum albumin and neutral polymers; **M. Bercea, I.-A. Plugariu**; The 9th IEEE International Conference on E-Health and Bioengineering - EHB 2021, Grigore T. Popa University of Medicine and Pharmacy, Iasi, Romania, 18-19.11.2021
2. On the interactions between bovine serum albumin and reduced glutathione in solution; **M. Bercea, I.-A. Plugariu, L.E. Nita, S. Morariu**, R.V. Gradinaru; The 9th IEEE International Conference on E-Health and Bioengineering - EHB 2021, Grigore T. Popa University of Medicine and Pharmacy, Iasi, Romania, 18-19.11.2021
3. Aqueous solutions of chitosan: viscometric and flocculation properties; **C.-E. Brunchi, L. Ghimici**; *TEXTEH X International Conference*, Bucharest, Romania, 21-22.10.2021
4. Dextran-based antimicrobial polymers; **M.- C. Stanciu, M. Nichifor**, New trends and strategies in the chemistry of advanced materials with relevance in biological systems, technique and environmental protection, 13th Edition, *online*, Timisoara, Romania, 07-08.10.2021

5. 3D Bioprinted scaffolds based on functionalised gelatin and pecta for soft tissue engineering; I. Cobzariu, **M. Bercea**, C.A. Peptu, M. Butnaru, L. Verestiuc; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
6. Synthesis and solution self-assembly of polysaccharide-based block copolymers; **M.-C. Stanciu**, **M. Nichifor**, F. Doroftei; XXXI-th International Congress of „Apollonia” University, Iasi, Romania, 1–3.03.2021

Raportate la alte subprograme

- 3D Anisotropic polysaccharide-based cryogels as multifunctional eco-friendly materials for wastewater treatment; M.V. Dinu, M. Marinela Lazar, I.A. Dinu, I.E. Raschip C.-A. Ghiorghita, **L. Ghimici**; 11th International Conference on Environmental Engineering and Management, Mutteenz, Swetzerland, 8-10.09.2021
- Biocompatible hydrogels with broad-spectrum antimicrobial activity; D. Ailincal, I. Rosca, **S. Morariu**, L. Mititelu- Tartau, M. Angheloiu, L. Marin; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Postere prezentate la manifestari stiintifice internationale**Raportate la alte subprograme**

- BSA/polymer hybrid hydrogels as carrier for neomycin delivery; L.M. Gradinaru, M. Bercea, R.V. Gradinaru; International Scientific Conference of the Bulgarian Peptide Society, Bulgaria, Velingrad, 27-29.08.2021
- Synthesis and flocculation performance of thiourea-g-polyethyleneimine; C.-A. Ghiorghita, **L. Ghimici**, G.L. Ailiesei; The International Congress of "Apollonia" University, Iasi, Romania, 1-3.03.2021

II. ATRAGEREA DE FONDURI DE CERCETARE**Proiecte de cercetare internationale finantate din fonduri publice (raportate la alte subprograme)**

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Parteneriate pentru transfer de cunostinte in domeniul materialelor polimere folosite in ingineria biomedicala, POINGBIO	POC-A1-A1.2.3-G-2015/ M. Aflori Membru: M. BERCEA	2016-2022	3000000	377975

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Conceperea de platforme peptidice moderne inspirate din lumea vie	PN-III-P2-2.1-PED-2019-2484, contract 494PED/2020, Director proiect: R. Gradinaru Responsabil partener ICMMP: M. BERCEA	2020-2022	40.404	22.303
2.	Polimeri ionici pe baza de polizaharide: corelatii intre structura chimica proprietati fizico-chimice si interactiuni cu particule cu sarcina opusa	PN-III-P4-ID-PCE-2020-0296/ L. GHIMICI	2021-2023	242.516	121.457

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Design and engineering of smart biomaterials with self-healing ability	PCE 2021	PN-III-P4-PCE-2021-0105/ M. BERCEA
2.	Development of antiviral potential polymer-clay hybrid materials	PCE 2021	PN-III-P4-PCE-2021-0475/ S. MORARIU
3.	Noi sisteme complexe de (bio)polimeri cu structuri si proprietati tintite pentru formulari cosmetice.	PED 2021	PN-III-P2-2.1-PED-2021-2472 C.E. BRUNCHI
4.	Materiale bioactive ca sisteme de eliberare de medicamente cu compusi fitoterapeutici pentru potentiala preventie/tratament a infectiei cu coronavirus	TE 2021	PN-III-P1-1.1-TE-2021-0867 M. TEODORESCU

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Maria BERCEA	Chimie	2017
2	Luminita GHIMICI	Chimie	2019

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	PLUGARIU Ioana Alexandra	Chimie	2018	- 4 examene - 1 proiect cercetare - 2 referate	Maria BERCEA	Elaborarea si caracterizarea unor materiale polimere cu aplicatii biomedicale
2.	NAFUREANU Maria Magdalena	Chimie	2021	-colocviu de admitere	Luminita GHIMICI	Polimeri ionici. Comportare in solutii si dispersii apoase

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Maria BERCEA	Guest Editor, Polymers: Self-Healing Polymers and Composites

Membri in conducerea unei organizatii internationale de specialitate

Nr. crt.	Nume si prenume	Organizatia
1.	Mariana BERCEA	Presedinte Societatea Romana de Reologie
2.	Simona MORARIU	Vicepresedinte Societatea Romana de Reologie

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Maria BERCEA, CSI	24
2.	Marieta NICHIFOR, CSI	22
3.	Simona MORARIU, CSII	22
4.	Luminita GHIMICI, CSII	20
5.	Cristina-Eliza BRUNCHI, CS	12
6.	Mirela TEODORESCU, CS	9
7.	Magdalena-Cristina STANCIU, CS	8

Proiect 5.3. Sisteme polimerice hibride structurate cu reticulanti functionali specifici

director proiect: Dr. Aurica P. CHIRIAC

Echipe (procent de timp alocat proiectului): Dr. Aurica P. CHIRIAC, CSI (100%) Dr. Fonica MUSTATA, CSI (60%) Dr. Loredana E. NITA, CSI (100%) Dr. Diana CIOLACU, CSII (100%) Dr. Alina G. RUSU, CS (100%)	Dr. Alina GHILAN, AC (CM) Dr. Raluca NICU, AC (100%) Drd. Alexandra CROITORIU, (100%) Drd. Alina SANDU, (100%) Constanta MUNTEANU, A2 (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
- Preparare structuri supramoleculare prin autoasamblare de compusi macromoleculari	- lucrari stiintifice publicate: 6	- lucrari stiintifice publicate: 11

<p>naturali/sintetici</p> <ul style="list-style-type: none"> - Evidentierea factorilor care declanseaza asamblarea - Sinteza/caracterizarea aducti ulei ricin/anhidride ciclice - Realizare retele polimerice 3D din polimeri naturali - Studii de sorbtie/desorbtie ale (hidro)gelurilor realizate - Preparare materiale hibride tip gel din structuri polimerice supramoleculare si LMMGs - Utilizare structuri peptidice LMMGs pentru obtinere geluri. Preparare sisteme hibride din polimeri naturali si LMMGs - Testare aducti ulei de ricin ca agenti de reticulare - Studii de sorbtie/desorbtie ale (hidro)gelurilor realizate - Caracterizare structurala si morfologica a retelelor 3D - Functionalizare polizaharide cu peptide antitumorale - Stabilire mecanisme, relatie structura-proprietati in complexi polizaharo-peptidice - Sinteza lichide ionice reactive pe baza de saruri cuaternare de amoniu - Sinteza sisteme 3D ce contin nanoparticule polimerice - Elucidare structura nanoparticulelor celuloza/lignina - Investigarea preliminara a structurilor preparate in trimestrele I-III 	<ul style="list-style-type: none"> - participari la manifestari stiintifice 2 - brevete acordate/cereri 1 	<ul style="list-style-type: none"> - participari la manifestari stiintifice 7 - brevete acordate: 2 - capitole carti: 3 - propuneri de proiecte: 5
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Sustainable hydrogels from renewable resources; **D. Ciolacu**; *Sustainability of biomass through bio-based chemistry*; (Ed.) V.I. Popa; CRC Press, Taylor and Francis Group; 161-190 (2021)
2. Morphological aspects of sustainable hydrogels; **D. Rusu, D. Ciolacu**, R. Vlase; *Sustainability of biomass through bio-based chemistry*; (Ed.) V.I. Popa; CRC Press, Taylor and Francis Group, 201-228 (2021)
3. Bio-based stimuli-responsive hydrogels with biomedical applications; **R. Nicu, D. Ciolacu**; *Sustainability of biomass through bio-based chemistry*; (Ed.) V.I. Popa; CRC Press, Taylor and Francis Group; 229-262 (2021)

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. New physical hydrogels based on post-assembling of Fmoc-amino acids; **A. Croitoru, L.E. Nita, A.P. Chiriac, A.G. Rusu**, M. Bercea; *Gels* 7, 208 (2021) FI = 4,702
2. Synthesis and thermal characterization of some hardeners for epoxy resins based on castor oil and cyclic anhydrides; **F. Mustata, N. Tudorachi**; *Industrial Crops & Products* 159, 113087 (2021) FI = 5,645
3. Alginate enriched with phytic acid for hydrogels preparation; **L.E. Nita, A.P. Chiriac, A. Ghilan, A.G. Rusu, N. Tudorachi**, D. Timpu; *International Journal of Biological Macromolecules* 181, 561-571 (2021) FI = 6,953
4. Alginate enriched with phytic acid for hydrogels preparation. Therapeutic applications; **L.E. Nita, A.P. Chiriac, A. Ghilan, A.G. Rusu**, D. Pamfil, I. Rosca, L. Mititelu-Tartau; *International Journal of Biological Macromolecules* 189, 335-345 (2021) FI = 6,953
5. Chemical treatment of lignosulfonates under DBD plasma conditions. I. Spectral characterization; G. Cazacu, O. Chirila, M. Totolin, **D. Ciolacu, L. Nita**, M. Drobotu, C. Vasile; *Journal of Polymers and the Environment* 29, 900-921 (2021) FI = 3,667
6. Synthesis of Poly(Ethylene brassylate-co-squaric acid) as Potential Essential Oil Carrier; **A.P. Chiriac, A.G. Rusu, L.E. Nita**, A.M. Macsim, **N. Tudorachi**, I. Rosca, I. Stoica, D. Tampu, M. Aflori, F. Doroftei; *Pharmaceutics* 13, 477 (2021) FI = 6,321
7. Polymeric Carriers Designed for Encapsulation of Essential Oils with Biological Activity; **A.P. Chiriac, A.G. Rusu, L.E. Nita**, V.M. Chiriac, I. Neamtu, A. Sandu; *Pharmaceutics* 13, 631 (2021) FI = 6,321
8. Advanced Functional Materials Based on Nanocellulose for Pharmaceutical/Medical Applications; **R. Nicu, F. Ciolacu, D. Ciolacu**; *Pharmaceutics* 13, 1125, 1-57 (2021) FI = 6,321

9. Bio-based coatings from epoxy resins crosslinked with a rosin acid derivative for wood thermal and anti-fungal protection; L. Rosu, **F. Mustata**, D. Rosu, C.-D. Varganici, I. Rosca, T. Rusu; *Progress in Organic Coatings* 151, 106008 (2021) FI = 5,161
10. Co-assembled peptides hierarchically oriented for supramolecular gel formation; **A. Croitoriu, L.E. Nita, A. G. Rusu**, F. Doroftei, L. Verestiuc; *Revue Roumaine de Chimie* 66, 449-458 (2021) FI = 0,278
11. Bioactive collagen hydrolysate-chitosan/essential oil electrospun nanofibers designed for medical wound dressings; M. Rapa, C. Gaidau, L. Mititelu-Tatau, M.D. Berechet, A.C. Berbecaru, I. Rosca, **A.P. Chiriac, A.G. Rusu**, M. Bercea; *Pharmaceutics* 13, 1939 (2021) FI = 6,321

Raportate la alte subprograme

- Sustainable wood coating made of epoxidized vegetable oils for ultraviolet protection; C.-D. Varganici, L. Rosu, D. Rosu, **F. Mustata**, T. Rusu; *Environmental Chemistry Letters* 19, 307-328 (2021) FI = 8,70

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)**Raportate la alte subprograme**

- Shear flow of associative polymers in aqueous solutions; **M. Bercea**, L.M. Gradinaru, M. Barbalata-Mandru, S. Vlad, L.E. Nita, I.A. Plugariu, R. Albulescu; *Journal of Molecular Structure* 1238, 130441 (2021)

Comunicari orale prezentate la manifestari stiintifice internationale

1. Supramolecular self-assembled hydrogels based on hyaluronic acid with a squaric acid copolymer; **A.P. Chiriac, A.G. Rusu, L.E. Nita**, N. Tudorachi; EUTOPIA 3 – Third Meeting of the European Topology Interdisciplinary Initiative, Science Faculty, Lisbon, Portugal, 15 – 17.02.2021

Raportate la alte subprograme

- Antifungal properties of new multicomponent polymer systems as flame retardant coatings; I. Rosca, C.-D. Varganici, L. Rosu, C. Hamciuc, D. Rosu, **F. Mustata**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Epoxy-based S-IPNs as eco-friendly flame retardants; C.-D. Varganici, L. Rosu, D. Rosu, **F. Mustata**; CEEC-TAC6 & Medicta, Split, Croatia, 20-24.07.2021

Comunicari orale prezentate la manifestari stiintifice nationale

2. Supramolecular gels based on amino acids; **A. Croitoriu, L.E. Nita, A.G. Rusu**, A. Cimponeriu, A. Chiriac; IEEE International Conference on e-Health and Bioengineering EHB 2021 - 9th Edition, Iasi, Romania, 18-19.11.2021
3. New polymeric particles loaded with sea buckthorn essential oil; **A.E. Sandu, A. Chiriac, A.G. Rusu**, A.M. Serban, **L.E. Nita**, E. Gille; IEEE International Conference on e-Health and Bioengineering EHB 2021 - 9th Edition, Iasi, Romania, 18-19.11.2021

Postere prezentate la manifestari stiintifice internationale

4. Synthesis and characterization of maleoyl-chitosan/polypeptide bioconjugate; **A.G. Rusu, A.P. Chiriac, L.E. Nita**; 7th International Polysaccharide Conference (EPNOE 2021), Nantes, Franta, 11-15.10.2021
5. Biobased polymeric network designed for lavender oil encapsulation; **A.P. Chiriac, L.E. Nita, A.G. Rusu**; 31st Annual Conference of the European Society for Biomaterials (ESB 2021), 5-9.09.2021
6. Enzymatic crosslinked hydrogels based on gelatin loaded with maleoyl-chitosan/poly (aspartic acid) nanocarriers as potential therapeutic scaffolds for tissue engineering; **A.G. Rusu, A.P. Chiriac, L.E. Nita**; 31st Annual Conference of the European Society for Biomaterials (ESB 2021), 5-9.09.2021
7. New gels preparation based on peptide-peptide co-assembly; **A. Croitoriu, L.E. Nita**, A. Serban, **A.G. Rusu**; 31st Annual Conference of the European Society for Biomaterials (ESB 2021), 5-9.09.2021

II. ATRAGEREA DE FONDURI DE CERCETARE**Proiecte de cercetare internationale finantate din fonduri publice**

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	COST Action CA16205 - European Network on understanding gastrointestinal absorption-related processes	Dr. A.P. CHIRIAC	2017-2021		
2.	COST Action CA17112 - Prospective european drug-induced liver injury network	Dr. L.E. NITA	2018-2022		
3.	COST Action CA17139 - European Topology Interdisciplinary Action	Dr. A.P. CHIRIAC	2018-2022		

4.	CA18125 - Advanced Engineering and Research of aeroGels for Environment and Life Sciences	Dr. L.E. NITA	2019-2023		
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Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Suporturi magnetice inteligente 3D avansate pentru ingineria si regenerarea tisulara a osului (3D SMARTMAGTISS)	PN-III-P2-2.1-PED2019-4524/ A. P. CHIRIAC	2020-2022	150000/ ICMPP	55000
2.	Noi hidrogeluri hibride polimer/peptide ca platforme inovatoare proiectate pentru aplicatii in culturi celulare	PN-III-P2-2.1-PED2019-2743/ L. E. NITA	2020-2022	350000/ ICMPP	170000
3.	Micro/nanomotoare pe baza de glicopeptide proiectate pentru eliberarea de medicamente anti-tumorale	PN-III-P1-1.1-PD-2019-0271/ Dr. A.G. RUSU	2020-2022	246950/ ICMPP	105000
4.	Terapii inteligente pentru boli non-comunicabile, bazate pe eliberarea controlata de compusi farmacologici din celule incapsulate dupa manipulare genetica sau bionanoparticule vectorizate	PN-III-P1-1.2-PCCDI-2017-0697/ Dr. G. Fundueanu-Constantin; P2-INTERA: D. CIOLACU	2018-2021	276000/ ICMPP	16963

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Investigarea prin inteligenta artificiala a unor sisteme polimerice hibrid si aplicabilitate in imprimarea 3D	PCE 2021	1032/442/ A. CHIRIAC
2.	Platforma inovatoare 3D cu bioactivitate specifica pentru vindecarea arsurilor utilizand o abordare de tip "antibiotic free"	PCE 2021	1026/440/ L. NITA
3.	Utilizarea Invatarii Automate in Sisteme Polimerice Hibrid cu Aplicabilitate in Imprimarea 3D	PED-2021	1113/ A. CHIRIAC
4.	Platforma inovatoare 3D cu bioactivitate specifica pentru vindecarea arsurilor utilizand o abordare de tip "antibiotic-free"	PED-2021	2025/ L. NITA
5.	Dezvoltarea de matrici nanocompozite multifunctionale pentru ingineria tesuturilor osoase	PED-2021	4065/ D. CIOLACU

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE**Brevete acordate**

- Procedeu de preparare a unei structuri reticulate cu aplicatii biomedicale; **A.P. Chiriac, L. E. Nita, A. Diaconu, A.G. Rusu, I. Neamtu, N. Tudorachi**; Nr. 132541/30.06.2021
- Procedeu de depunere a unui compozit magnetic pe un stent metalic; **A.P. Chiriac, I. Neamtu, A. Diaconu, V. M. Chiriac, L. E. Nita, C. Munteanu**; Nr. 133840/30.06.2021

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Lista conducatorilor de doctorat**

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1.	Dr. E. Loredana NITA	Chimie	2019

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	CROITORU Alexandra	Chimie	2020	- 4 examene	Loredana E. NITA	Geluri multicomponente: modelarea structurilor cu compusi de masa moleculara mica

2.	SANDU Alina	Chimie	2020	- 4 examene	Loredana E. NITA	Complecsi biocompatibili: formulari, incapsulari de compusi bioactivi si aplicatii potientiale
3.	COBZARIU Isabella	Chimie	2021	-colocviu de admitere	Loredana E. NITA	Arhitecturi polimerice hibride concepute ca structuri hidrogel
4.	URSACHI Vlad Constantin	Chimie	2021	-colocviu de admitere	Loredana E. NITA	Nano/microstructuri magnetice cu potential in terapia antitumorală
5.	CRETU Bianca Elena Beatrice	Chimie	2021	-colocviu de admitere	Loredana E. NITA	Matrici polimerice complexe cu incluziuni antibacteriene

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Aurica P. CHIRIAC	editor Nr. Special Pharmaceutics, MDPI
		Recent Patents on Materials Science
		The Open Macromolecules Journal
		The Open Polymer Science Journal
		Journal of Research Updates in Polymer Science
2.	Loredana E. NITA	Current Applied Polymer Science
		Journal of Biomaterials and Nanobiotechnology
		Recent Patents on Materials Science
3.	Diana CIOLACU	editor Nr. Special Polymers, MDPI
		editor Nr. Special Macromol, MDPI
		editor Nr. Special Materials, MDPI
		editor Nr. Special Advances in Polymer Technology, Wiley
4.	Alina G. RUSU	editor Nr. Special Frontiers in Bioengineering and Biotechnology, Frontiers
		editor Nr. Special Pharmaceutics, MDPI
		editor Nr. Special Polymers, MDPI

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Aurica P. CHIRIAC, CSI	20
2.	Fanica MUSTATA, CSI	23
3.	Loredana E. NITA, CSI	15
4.	Diana CIOLACU, CS II	14
5.	Alina G. RUSU, CS	11
6.	Alina GHILIAN, AC	10
7.	Raluca NICU, AC	10

Proiect 5.4. Valorificare biomasa vegetala. Procedee neconventionale de separare si functionalizare

director proiect: Dr. Iuliana SPIRIDON

Echipa (procent de timp alocat proiectului):

Dr. Iuliana SPIRIDON, CSI (100%)
 Dr. Niculae OLARU, CSI (100%)
 Dr. Catalin Narcis ANGHEL, CS (100%)
 Dr. Anca Giorgiana GRIGORAS, CS (100%)
 Dr. Anca Roxana PETROVICI, CS (30%)

Drd. Irina APOSTOL, (100%)
 Drd. Alexandra DIMOFTE, (100%)

Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Documentare privind tehnici noi de separare a biomasei - Separarea si caracterizarea unor compusi ai biomasei (celuloza, lignina) - Modificarea chimica/enzimatica a componentelor biomasei - Proiectarea unor sisteme pe baza de compusi naturali/compusi naturali modificati - Caracterizarea sistemelor obtinute - Sinteza de esteri ai celulozei (acetat de celuloza, acetoftalat de celuloza, acetonicotinat de celuloza) - Obtinerea de nanofibre, prin tehnica de electrofilare, din acetatii de celuloza sintetizati - Experimente de adsorbție pentru indepartarea colorantilor din ape reziduale folosind sistemele dezvoltate - Biosinteza nanoparticulelor metalice cu potential terapeutic utilizand diverse surse de biomasa - Testarea unor stabilizatori pentru conservarea nanoparticulelor metalice cu aplicatii terapeutice - Investigarea sistemelor pe baza de compusi naturali modificati - Corelarea datelor obtinute si diseminarea rezultatelor 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 4 - carti/capitole: 1 - participari la manifestari stiintifice: 4 - propuneri de proiecte: 1 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - capitole carti: 1 - participari la manifestari stiintifice: 4 - propuneri de proiecte: 2

I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Polymeric antimicrobials with quaternary ammonium moieties; **A. G. Grigoras**; *Mitigation of Antimicrobial Resistance, Vol. 2. Natural and Synthetic Approaches, Series Title: Sustainable Agriculture Reviews*; (Eds.) H. Panwar, C. Sharma, E. Lichtfouse; Springer, Cham, vol. 49, pg. 123-170 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Natural and synthetic polymeric antimicrobials with quaternary ammonium moieties: a review; **A.G. Grigoras**; *Environmental Chemistry Letters* 19, 3009-3022 (2021) FI = 9,027
2. New cellulose-collagen-alginate materials incorporated with quercetin, anthocyanins and lipoic acid; **N. Anghel**, M. V. Dinu, M. Zaltariov, D. Pamfil, **I. Spiridon**; *International Journal of Biological Macromolecules* 181, 30-40 (2021) FI = 6,953
3. Development and characterization of novel cellulose composites obtained in 1-ethyl-3-methylimidazolium chloride used as drug delivery systems; **I. Spiridon**, I.-M. Andrei, **N. Anghel**, M.V. Dinu, B.-I. Ciubotaru; *Polymers* 13(11), article 2176 (2021) FI = 4,329
4. Synthesis and characterization of new ferrite-lignin hybrids; **I. Spiridon**, I.-A. Dascalu, A. Coroaba, **I. Apostol**, N.M. Palamaru, A.R. Iordan, A.I. Borhan; *Polymers* 13(15), article 2495 (2021) FI = 4,329
5. Investigation of cellulose derivatives in solution: laser light scattering and gel permeation chromatography studies; **A. G. Grigoras**, V.C. Grigoras; *Romanian Journal of Physics* 66, Article 902 (2021) FI = 1,888

Raportate la alte subprograme

- Innovative Ag-TiO₂ Nanofibers with Excellent Photocatalytic and Antibacterial Actions; P. Pascariu, C. Cojocar, A. Airinei, **N. Olaru**, I. Rosca, E. Koudoumas, P. Sucheai; *Catalysts* 11, 1234 (2021) FI = 4,146
- Processing of quaternized polysulfones solutions as tool in design of electrospun nanofibers: Microstructural characteristics and antimicrobial activity; A. Filimon, **N. Olaru**, F. Doroftei, A. Coroaba, S. Dunca; *Journal of Molecular Liquids* 330, 115664 (2021) FI = 6,165
- Novel electrospun membranes based on PVDF fibers embedding lanthanide doped ZnO for adsorption and photocatalytic degradation of dye organic pollutants; P. Pascariu, C. Cojocar, P. Samoila, **N. Olaru**, A. Bele, A. Airinei; *Materials Research Bulletin* 141, 111376 (2021) FI = 4,641
- Transcutaneous drug delivery systems based on collagen/polyurethane composites reinforced with cellulose; **N. Anghel**, M.V. Dinu, L. Verestiuc, **I.A. Spiridon**; *Polymers* 13 (11), article 1845 (2021) FI = 4,329
- Xanthan matrix as drug delivery system; **N. Anghel**, M.V. Dinu, F. Doroftei, **I. Spiridon**; *Revista de Chimie* 72, 89-98 (2021)

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Lignin as source of new hybrid materials; **I. Apostol**, I.-A. Dascalu, A. Coroaba, **I. Spiridon**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126 pag. 115-116 (2021)
2. Polysaccharides-based materials as drug delivery systems; **A. Dimofte**, **N. Anghel**, M.V. Dinu, T. Boita, **I. Spiridon**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, pag. 125-126 (2021)

Comunicari orale prezentate la manifestari stiintifice nationale

1. Xanthan acrylate/cobalt ferrite material for removing dyes from wastewaters; **I. Apostol**, **N. Anghel**, **I. Spiridon**; ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
2. Xanthan as component of the drug delivery systems, **A. Dimofte**, **N. Anghel**, M. V. Dinu, T. Boita, **I. Spiridon**, ICMPP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

Postere prezentate la manifestari stiintifice internationale

3. Polysaccharides-based materials as drug delivery systems; **A Dimofte**, **N. Anghel**, M.V. Dinu, T. Boita, **I. Spiridon**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
4. Lignin as source of new hybrid materials; **I. Apostol**, I.-A. Dascalu, A. Coroaba, **I. Spiridon**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice (raportate la alte Subprograme)

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Obtinerea de chimicale si/sau combustibili prin torefactia si piroliza reziduurilor de conifer forestiere-	PD 49/2020 Dr. Elena Butnaru Mentor I. SPIRIDON	2020-2022		

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Biomass compounds: sustainable solution for pharmaceutical, environment and cosmetic	PCE 2021	PCE-2021-2274/ I. SPIRIDON
2.	Metoda inovatoare de datare a obiectelor de arta si patrimoniu din lemn	PED 2021	Coordonator: N. Vornicu, responsabil ICMPP: I. SPIRIDON

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1.	Iuliana SPIRIDON	Chimie	2017

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	APOSTOL Irina	Chimie	2020	-4 examene sustinute - 1 referat sustinut	Iuliana SPIRIDON	Noi materiale ecologice pe baza de polimeri naturali
2.	DIMOFTE Alexandra	Chimie	2020	-4 examene sustinute - 1 referat sustinut	Iuliana SPIRIDON	Structuri supramoleculare pe baza de polimeri naturali

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate

Nr. crt.	Nume si prenume	Revista
1	Iuliana SPIRIDON	Cellulose Chemistry and Technology
		Membru in Scientific Board al revistei <i>Buletinul Institutului Politehnic Iasi</i> , sectia Chimie si Inginerie Chimica

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Iuliana SPIRIDON, CSI	24
2.	Niculae OLARU, CSI	15
3.	Anca Giorgiana GRIGORAS, CS	8

LABORATOR POLIMERI ANORGANICI**SUBPROGRAM 6: POLIMERI ELEMENT-ORGANICI, COMPLECSI METALICI SI MATERIALE ORGANIC/ANORGANICE**

DIRECTOR SUBPROGRAM: DR. MARIA CAZACU

Proiect 6.1. Compusi, polimeri si materiale organic-anorganice cu proprietati adaptive

director proiect: Dr. Maria CAZACU

Echipa (procent de timp alocat proiectului): Dr. Maria CAZACU, CSI (100%) Dr. Carmen RACLES, CSI (100%) Dr. Sergiu SHOVA, CSII (100%) Dr. Mihaela DASCALU, CSIII (100%) Dr. Mirela-Fernanda ZALTARIOV, CS (100%) Dr. Codrin TUGUI, CS (100%) Dr. Alexandra BARGAN, AC (100%) Dr. George-Theodor STIUBIANU, AC (100%)			Dr. Alina SOROCEANU, AC (50%) Dr. Adrian BELE, AC (100%) Dr. Mihail IACOB, AC (0%) Roxana SOLOMON, A (100%) Drd. Georgiana-Oana TURCAN-TROFIN (41%) Drd. Bianca-Iulia CIUBOTARU (100%) Drd. Madalin DAMOC, (50%) Drd. Alexandru-Constantin STOICA (100)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate		
- Sinteza de noi derivati siloxanici capabili de complexare a metalelor: sinteza de noi compusi siloxanici cu rol de liganzi; caracterizare fizica si chimica; coordinarea de metale si caracterizarea produsilor de reactie; prepararea de produse de auto-asamblare a complexilor metalici, evaluarea comportarii si potentialului aplicativ al acestora - Preparare de elastomeri silicon-organici cu capacitate de auto-reparare: sinteza si caracterizarea substratului siliconic reactiv; modificarea chimica a polisiloxanilor prin atasarea de grupe organice capabile de auto-asamblare prin legaturi dinamice; caracterizarea structurala a polimerilor modificati; testarea capacitatii de auto-reparare in conditii de deteriorare mecanica - Sinteza de complecsi metalici cu liganzi siloxan-organici capabili sa raspunda la stimuli externi: sinteza de complecsi ai metalelor tranzitionale; caracterizarea chimica si structurala a complexilor; testarea capacitatii complexilor metalici de a raspunde la stimuli electrici si optici; stabilitatea hidrolitica si enzimatica a formularilor lipozomale pe baza de complecsi metalici - Noi derivati siloxan-organici capabili de auto-asamblare: functionalizarea cu grupe polare a substraturilor organo-siloxanice monomeric sau oligomeric; caracterizare structurala; evaluarea proprietatilor de suprafata; studiul comportarii in solutie apoasa; studii privind stabilitatea hidrolitica	- lucrari stiintifice publicate: 6 - participari manifestari stiintifice: 6	- lucrari stiintifice publicate: 14 - participari la manifestari stiintifice: 26 - brevete acordate/trimise: 2/1 - proiecte depuse: 12 - capitole de carte: 3		

I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Bio-based polymers for liposomal drug formulations; **M.-F. Zaltariov, B.-I. Ciubotaru**, M. Savin, D. Filip, D. Macocinschi; *Applications of Biodegradable and Bio-Based Polymers for Human Health and a Cleaner Environment*; (Eds.) I. Stoica, O. Mukbaniani, A.K. Haghi; Apple Academic Press, partnered with CRC Press, a member of the Taylor & Francis Group; ISBN: 9781771889766, (2021).
2. Metal complexes-based catalysts for oxidation reactions as new alternatives for catalytic processes in the production of bio-based polymers; **M.-F. Zaltariov**; in *Applications of Biodegradable and Bio-Based Polymers for Human Health and a Cleaner Environment*; (Eds.) I. Stoica, O. Mukbaniani, A.K. Haghi; Apple Academic Press, partnered with CRC Press, a member of the Taylor & Francis Group; ISBN: 9781771889766, (2021).
3. Wood-based biopolymers as active elements in new green silicone composites; **G. Stiubianu, A. Bargan, M. Cazacu**; *Applications of Biodegradable and Bio-Based Polymers for Human Health and a Cleaner Environment*, Eds: I. Stoica, O. Mukbaniani, N. Kanwar Rawat, A.K. Haghi; Apple Academic Press, partnered with CRC Press, a member of the Taylor & Francis Group; (2021).

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Octakis(phenyl)-T8-silsesquioxane-filled silicone elastomers with enhanced electromechanical capability; **M. Dascalu, M. Iacob, C. Tugui, A. Bele, G.-T. Stiubianu, C. Racles, M. Cazacu**; *Journal of Applied Polymer Science* 138 (14), 50161 (2021) FI = 2,81
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Raportate la alte subprograme

- Novel electrospun membranes based on PVDF fibers embedding lanthanide doped ZnO for adsorption and photocatalytic degradation of dye organic pollutants, P. Pascariu Dorneanu, C. Cojocaru, P. Samoila, N. Olaru, **A. Bele**, A. Airinei, *Materials Research Bulletin* 141, 111376 (2021) FI = 4,641
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- 1-(4-Carboxyphenyl)-5-methyl-1H-1,2,3-triazole-4-carboxylic acid - A versatile ligand for the preparation of coordination polymers and mononuclear complexes, B.I. Bratanovici, **S. Shova**, V. Lozan, I.A. Dascalu, R. Ardeleanu, G. Roman, *Polyhedron* 200, 115115, 5 (2021), FI = 3,052
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 - Dielectric, Thermal and Water Absorption Properties of Some EPDM/Flax Fiber Composites, A. Airinei, M. Asandulesa, M. D. Stelescu, N. Tudorache, N. Fifere, **A. Bele**, V. Musteata, *Polymers* 13(15):2555 (2021) FI = 4,329
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1. Characterisation of metal threads from Archaeological textiles religious by methods of Archaeometry, N. Vornicu, C. Bibire, **M. F. Zaltariov**, *Annals of the University of Oradea Fascicle of Textiles, Leatherwork*, ISSN 1843 – 813X, 22(1), 95 (2021)

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1. Metal complexes based on polydentate ligands for medicine and catalysis; **M.F. Zaltariov**, N. Vornicu; Yesterday's heritage-implications for the development of tomorrow's sustainable society Conference, Chisinau, Moldova, 229-230 (2021)
2. Stability of the HPC/PU Polymeric Blends in Accelerated Weathering and Biological Environments, **M. F. Zaltariov**, C. D. Varganici, D. Filip, D. Macocinschi, 1st Corrosion and Materials Degradation Web Conference, sciforum ID-045074; DOI: 10.3390/CMDWC2021-10034 (2021)
3. Bioinspired polymer materials for thermal management of heating and cooling in buildings- ID-166, **G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui**, C. Ursu, 9th European Conference on Renewable Energy Systems, ECRES 2021, ISBN Number: 978-605-86911-9-3 (2021)
4. Siloxane/Silane derivatives based on 5-amino-1,3,4-thiadiazole-2-thiol and their gold complexes: interfacial phenomena based on photoluminescence, **M. Damoc, A.C. Stoica, M. Dascalu**, A.-M. Macsim, R.I. Tigoianu, **D. Blaj**, A.G. Rusu, **M. Iacob, M. Cazacu**, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126
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1. "First-Principles Calculations of the Energy Flux for Bioinspired Personalized Thermal Comfort Wearables", **G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui**, C. Ursu, 3rd AAAFM-UCLA International Conference on Advances in Functional Materials, UCLA, Functional Composite Materials, "Materials, The Building Block For The Future", 18-20.08.2021
2. Chemically designed silicones for 3D printing technology, **C. Tugui, G. Stiubianu, M. Cazacu**, M.S. Serbulea, A. Stefan, 13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021

Comunicari orale prezentate la manifestari stiintifice internationale

3. Metal complexes based on polydentate ligands for medicine and catalysis; **M.F. Zaltariov**, N. Vornicu; Yesterday's heritage-implications for the development of tomorrow's sustainable society Conference, Chisinau, Moldova, 229-230, 11-12.02.2021
4. Bioinspired materials for dynamic thermal comfort and all weather homeostasis, **G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui**, C. Ursu, The International Congress of APOLLONIA University "By promoting excellence we prepare the future", 1-3.03.2021
5. Bioinspired Polymer Nanocomposites Providing Scalable Solution for Thermal Management, **G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui**, C. Ursu, The Applied NANOTECHNOLOGY and NANOSCIENCE International Conference- ANNIC 2021, 24-26.03.2021
6. Bioinspired polymer materials for thermal management of heating and cooling in buildings- ID-166, **G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui**, C. Ursu, 9th European Conference on Renewable Energy Systems, ECRES 2021, 21-23.04.2021

7. Bioinspired Nanocomposite Films for Human Comfort Thermal Management, **G. Stiubianu, M. Dascalu, A. Bargan, C. Racles, A. Bele, C. Tugui**, C. Ursu, **M. Cazacu**, 15th International conference on materials chemistry (MC15), Royal Society of Chemistry hosted the event online, 11-15.07.2021
8. Permethylated two-dimensional Metal-Organic Frameworks - Promising Candidates for Emerging 2D Materials, **A. C. Stoica, M. Damoc, G. Stiubianu, M. Cazacu**, AAAFM-UCLA International Conference on Advances in Functional Materials, 18.08.2021
9. Interpenetrating Polymer Networks for Wave Energy Harvesting, **A. Bele**, Materials, Methods&Technologies 2021, Twenty-Third International Conference, Flora Expo Center, Burgas, Bulgaria, 19-22.08.2021
10. Passive Heating and Cooling for Bioinspired Personalized Thermal Comfort in XXIst Century Wearables, **G. Stiubianu, M. Dascalu, A. Bargan, C. Racles, A. Bele, C. Tugui**, C. Ursu, **M. Cazacu**, Materials, Methods&Technologies 2021, 23rd International Conference, Flora Expo Center, Burgas, Bulgaria, 19-22.08.2021
11. Developments in functional materials for energy-efficient thermal comfort, **G. Stiubianu, C. Ursu, A. Bele, C. Tugui, A. Bargan, M. Dascalu, C. Racles, M. Cazacu**, 13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021
12. High thermal conductivity nanocomposites with two-dimensional materials for thermal load management in shape memory alloy devices, **G. Stiubianu, A. Bele, C. Tugui, M. Cazacu**, F. Borza, L.G. Bujoreanu, V. Apostol, 13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021
13. Magnetic properties of some iron oxide nanoparticles, nanocomposites, and thin films, R. Bosinceanu, A. Vasile, E. Vasile, I. Deac, M.N. Palamaru, A.R. Iordan, **M. Iacob**, S. Ando, **M. Cazacu**, D. Toloman, A.Popa, F. Iacomi, 13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021
14. Studies on grapheme/PEDOT:PSS and grapheme/polysiloxane composite layers, L.Punga, T. Alupului, A. Popa, D. Toloman, C. Grosan, L. Barbu-Tudoran, **A. Bele**, M. Suche, **M. Cazacu**, D. Timpu, P. Prepelita, V. Craciun, T. Tropin, F. Iacomi, 13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021
15. Assessment of Us-Up Equation of state parameters for silicone elastomers, M.A. Mota, D.M. Manoli, A.D. Sabau, **C. Tugui, M. Cazacu**, E.M. Stan, M. S. Serbulea, 13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021
16. Siloxane/silane derivatives based on 5-amino-1,3,4-thiazole-2-thiol and their gold complexes: interfacial phenomena based on photoluminescence, **M. Damoc, A. C. Stoica, M. Dascalu**, A. M. Macsim, R. I. Tigoianu, D. Blaj, A. G. Rusu, **M. Iacob, M. Cazacu**, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
17. Energy-efficient dynamic polymer-based nanocomposites for thermal comfort, **G. Stiubianu, C. Ursu, C. Tugui, A. Bele, A. Bargan, M. Dascalu, C. Racles, M. Cazacu**, A. Ciobotaru, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Functionalized silica as doxorubicin carriers, **C. Racles, M.-F. Zaltariov**, D. Peptanariu, T. Vasiliu, **M. Cazacu**, 5DnanoP Workshop2021, 11.10.2021
- New silatranes possessing biodegradable and bioactive functionalities, **M.-F. Zaltariov, M. Cazacu**, D. Peptanariu, C. Cojocar, L. Clima, **B.-I. Ciobotaru, A. Bargan**, 5DnanoP Workshop2021 at Petru Poni Institute, 11.10.2021

Comunicari orale prezentate la manifestari stiintifice nationale

18. Tunable hybrid materials-platforms for bioimaging, **M. Zaltariov**, M. Avadanei, R. I. Tigoianu, M. Cazacu, "Zilele Spitalului Clinic CF Iasi" editia 2021, 23 - 27.11.2021
19. Formulări siliconice pentru tehnologia de printare 3D, **C. Tugui, G. Stiubianu**, A. Stefan, M.-S. Serbulea, A.-D. Sabau, **M. Cazacu**, Conferinta Cercetării Stiintifice din Academia Romana, (CCSAR-2021) 22 - 23.11.2021
20. Multi-step procedure leading to heterocycle containing dimethylsilane unit, **M. Damoc, A. C. Stoica**, D. Blaj, A.-M. Macsim, **M. Dascalu, M. Cazacu**, ICMPP - Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021
21. Copper tetranuclear complex bearing silanol functional groups, **A.-C. Stoica, M. Damoc, M. Dascalu, M. Cazacu**, ICMPP - Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

Postere prezentate la manifestari stiintifice internationale

22. Silicone-based materials for green wave energy harvesting; **A. Bele**, A. Skov, EuroNanoForum, 01.05.2021
23. Virtual Booth, **A. Bele**, A. Skov, EuroNanoForum, 01.05.2021
24. Stability of the HPC/PU Polymeric Blends in Accelerated Weathering and Biological Environments, **M. F. Zaltariov**, C. D. Varganici, D. Filip, D. Macocinschi, 1st Corrosion and Materials Degradation Web Conference, 17-19.05.2021

25. Green interpenetrated silicone-based elastomeric webs engineered as wave energy harvesters, **N. Ionescu, A. Bele, M. Dascalu, G. Stiubianu, M. Cazacu**, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Raportate la alte subprograme

- Applications and properties of lanthanide complexes, I. R. Tigoianu, S. Carlos, M. Avadanei, **M. F. Zaltariov**, D. Ursu, 1st International Electronic Conference on Chemical Sensors and Analytical Chemistry, 1-15.07.2021
- Towards robust metal-organic frameworks based on fluorinated linkers for gas storage, I.A. Dascalu, S. Shova, R. Ardeleanu, N. Marangoci, M. Pinteala, C. Janiak, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Postere prezentate la manifestari stiintifice nationale

26. Process for obtaining a two-component silicone rubber, **A. Bele**, INVENTICA 2021, Iasi, Romania, 23-25.06.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021 (EUR)
1.	Multifunctional Spin Crossover Materials, SPINSWITCH	H2020-MSCA-RISE-2016 No 734322/ dr. Sergiu SHOVA	2017-2021	120000	30000
2.	A pan-European Network for Marine Renewable Energy, WECANet	COST Action CA17105/ dr. M. CAZACU	2018-2022	-	-
2.	Overcoming Barriers to Nanofluids Market Uptake, NANOUP TAKE	COST action CA15119/ dr. M. CAZACU	2016-2020	-	-

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Mimarea mecanismelor viului prin abordari ale chimiei supramoleculare, in cinci dimensiuni (5D-nanoP)	PN-III-P4-ID-PCCF-2016-0050, 4/2018/ Dr. M. CAZACU	2018-2022	945.000	160.804
2.	Emerging 2D materials based on two-dimensional permethylated metal-organic networks	PN-III-P4-ID-PCE-2020-2000/Dr. M. CAZACU	2021-2023	1.200.000	370000
3.	Traductori electromecanici moi pe baza de siliconi imprimati 3D, 3DETSi	PN-III-P2-2.1-PED-2019-3652, 320PED/2020/ Dr. M. CAZACU	2020-2022	600000	288.000
4.	Materiale dinamice duale pentru confort termic uman	PN-III-P2-2.1-PED-2019-1885/2020/ Dr. G. STIUBIANU	2020-2022	614.836	387.728
5.	Smart composite system with self-controlled configuration developed from shape memory/ amorphous magnetic materials in elastomeric matrices, SMAMEM	PN-III-P2-2.1-PED-2019-4138, 321PED/2020/ Dr. M. CAZACU - responsabil partener	2020-2022	100.000	41.000
6.	Rețele interpenetrate tip "panza de paianjen" pe baza de siloxani pentru recoltarea energiei valurilor, SilWebWEH	PN-III-P1-1.1-PD-2019-0148/ Dr. A. BELE	2020-2022	184.450	137.000
7.	Compozite siliconice cu raspuns la stimuli multipli pentru traductoare cu functiune dubla comutabila	PN-III-P1-1.1-PD-2019-0649, PD129 /2020/ Dr. C. TUGUI	2020-2022	246.950	100.000
8.	Tehnologii eco-inovative de recuperare a grupului de metale platinice din convertorii catalitici	PN-III-P1-1.2-PCCDI-2017-0185, 76PCCDI/2018/	2018-2020	800.000	46.798

	auto uzati, ECOTECH-GMP	Dr. M. CAZACU			
Raportate la alte subprograme					
	O noua tehnologie "verde" pentru tratarea avansata a apei bazata pe membrane de polisulfone functionalizate/lichide ionice	PN-III-P2-2.1-PED-2019-3013/2020/Dr. A. FILIMON	2020-2022	123.629	197.700

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Procedeu de reticulare fara catalizator pentru o noua generatie de siliconi durabili	PED-2021	PN-III-P2-2.1-PED-2021-3096/ Dr. M. CAZACU
2.	Complecsi ai Fe(II) de tip spin crossover si materiale pe baza lor pentru comutatori multifunctionali	PCE-2021	PN-III-P4-PCE-2021-0579/ Dr. S. SHOVA
3.	Arhitecturi metal-organice adaptate pentru detectie selectiva	PED-2021	PN-III-P2-2.1-PED-2021-3348/ Dr. M.F. ZALTARIOV
4.	Captarea directa a dioxidului de carbon atmosferic prin strategii chimice si biologice scalabile	PED-2021	PN-III-P2-2.1-PED-2021-4527/ Dr. G. STIUBIANU
5.	Instrumente inteligente pentru proiectarea, obtinerea si optimizarea de noi membrane de tip PS-POSS-IL (polisulfona-silsesquioxani impregnate cu lichide ionice) cu aplicatii in separarea CO ₂	PED-2021	PN-III-P2-2.1-PED-2021-3900/ Dr. A. BARGAN
6.	Compozite siliconice de tip elastomeric sensibile la stimuli multipli	TE-2021	PN-III-P1-1.1-TE-2021-1026/ Dr. M. DASCALU
7.	Versatilitatea unitatilor de constructie secundare (SBUs) in obtinerea retelelor metal-organice (MOFs) pentru aplicatii medicale	TE-2021	PN-III-P1-1.1-TE-2021-1440/ Dr. M.F. ZALTARIOV
8.	Instrumente inteligente pentru proiectarea, sinteza si optimizarea de noi materiale hibride pe baza de siliciu cu aplicatii in captarea-stocarea CO ₂	TE-2021	PN-III-P1-1.1-TE-2021-1665/ Dr. A. BARGAN
9.	Pardoseli si suprafete inteligente imprimate 3D pentru colectarea energiei si avertizare timpurie in accidente din interiorul cladirilor	TE-2021	PN-III-P1-1.1-TE-2021-0804/ Dr. G. STIUBIANU
10.	Detectarea si evaluarea impactului produs de MMOD in vehiculele spatiale cu o retea modulara de senzori polimerici pe baza de elastomeri siliconici	TE-2021	PN-III-P1-1.1-TE-2021-0156/ Dr. A. BELE
11.	Polisiloxan/compozite complecsi metalici cu proprietati de elastomeri dielectricsi	PD-2021	PN-III-P1-1.1-PD-2021-0687/ Dr. A. SOROCEANU

Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Multifunctional chiral switchable materials, CHIRALSWITCH	MSCA-RISE-2020	MSCA-RISE-2020 Research and Innovation Staff Exchange, ID 101007688/Dr. S. SHOVA

Manifestari stiintifice (congres, conferinta, simpozion) sau scoli de vara internationale organizate

- Progress in Organic and Macromolecular Compounds Conference, Macrolasi 2021, The 28th edition "Petru Poni" Institute of Macromolecular Chemistry, 7 - 9 October 2021, Iasi, Romania;
informatii program: <https://icmpp.ro/macroiiasi2021/program.php>
George Stiubianu- Membru in comitetul de organizare

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE**Brevete acordate**

- Procedeu de obtinere a siliconilor colorati transparenti, **C. Racles, M. Cazacu**, A 2017 01085 (hotarare publicare OSIM: nr. 4.2./39 din 30.03.2021)
- Thiosemicarbazone metal complexes and their pharmaceutical use, G.E. Buchel, E. Stratulat, M. Babak, O. Palamarciuc, P. Rapta, **S. Sova**, V. Arion, W. A. Ang, International Patent, Number CH070016/2021.

Cerere brevet

3. Procedeu de obtinere a unui cauciuc siliconic bicomponent, **A. Bele, C. Racles, M. Dascalu, G. Stiubianu**, A/00341/2021, OSIM

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Lista conducatorilor de doctorat**

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Maria CAZACU	Chimie	2010

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	TURCAN-TROFIN Georgiana-Oana	Chimie	2016	- stagi de pregatire finalizat ; teza in curs de redactare	Maria CAZACU	Noi compusi si materiale siliconice functionale
2.	CIUBOTARU Bianca-Iulia	Chimie	2019	- patru examene - trei referate	Maria CAZACU	Noi compusi si materiale continand siliciu pentru aplicatii biomedicale
3.	DAMOC Madalin	Chimie	2020	- cinci examene	Maria CAZACU	Compusi de coordinare multifunctionali cu liganzi avand schelet flexibil si hidrofob
4.	STOICA Alexandru-Constantin	Chimie	2020	- cinci examene	Maria CAZACU	Materiale 2D bazate pe retele metal-organice bi-dimensionale permetilate

Stagii de cercetare

Nr. crt.	Nume si prenume	Sursa de finantare	Institutul in care s-a efectuat stagiul/ perioada
1.	STOICA Alexandru-Constantin	project H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Research internship in the framework of project H2020-MSCA-RISE-2016, SPINSWITCH No 734322, at Taras Shevchenko National University of Kyiv, Ukraine 28.08.2021-27.10.2021
2.	CIUBOTARU Bianca-Iulia	project H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Research internship in the framework of project H2020-MSCA-RISE-2016, SPINSWITCH No 734322, at Taras Shevchenko National University of Kyiv, Ukraine 28.08.2021-27.10.2021
3.	DAMOC Madalin	project H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Research internship in the framework of project H2020-MSCA-RISE-2016, SPINSWITCH No 734322, Taras Shevchenko National University of Kyiv, Ukraine, 28.08.2021-27.09.2021
4.	Mihail IACOB	EMPAPOSTDOCS-II programme Marie Skłodowska-Curie grant agreement number 754364 (European Union's Horizon 2020)	Postdoctoral internship, EMPA, Switzerland, EMPAPOSTDOCS-II programme Marie Skłodowska-Curie grant agreement number 754364 1.03.2019-28.02.2021

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in Web of Science, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate

Nr.	Nume si prenume	Revista
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crt.		
1.	Maria CAZACU	Revista de Chimie Revue Roumaine de Chimie
2.	Carmen RACLES	Materiale Plastice

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Maria CAZACU	27
2.	Carmen RACLES	20
3.	Sergiu SHOVA	33
4.	Mihaela DASCALU	14
5.	George-Theodor STIUBIANU	13
6.	Adrian BELE	14
7.	Mirela-Fernanda ZALTARIOV	13
8.	Alexandra BARGAN	14
9.	Mihail IACOB	11
10.	Codrin TUGUI	11

Premii ale Academiei Romane

Nr. crt.	Nume si prenume	Premiul
1.	Codrin TUGUI	Premiul Academiei Romane "COSTIN D. NENITESCU" pentru grupul de lucrari <i>Polimeri siliconici conceputi pentru traductoare pe baza de elastomeri</i> pentru anul 2019

Premii (distinctii) ale societatilor stiintifice internationale obtinute prin procese de selectie

Nr. crt.	Nume si prenume	Premiul	Societatea internationala
1.	Maria CAZACU	Medalia „Cristofor Simionescu“ pentru excelenta in Domeniul Chimiei Macromoleculare	American Chemical Society
2.	Madalin DAMOC	Best Young Scientist Oral Communication	International Conference Progress in Organic and Macromolecular Compounds 28 th Edition, Macro Iasi 2021, Iasi, Romania, October 7 - 9, 2021, 2021 for the paper OC6: <i>Siloxane/Silane derivatives based on 5-Amino-1,3,4-thiazole-2-thiol and their gold complexes:interfacial phenomena based on photoluminescence</i> , M. Damoc, A.C. Stoica, M. Dascalu, A.M. Macsim, R.I. Tigoianu, D. Blaj, A.G. Rusu, M. Iacob, M. Cazacu.
3.	Natalia IONESCU (mentorata de dr. Adrian BELE)	Best Young Scientist Poster Presentation	International Conference Progress in Organic and Macromolecular Compounds 28 th Edition, Macro Iasi 2021, Iasi, Romania, October 7 - 9, 2021 for the paper PP4: <i>Green interpenetrated silicone-based elastomeric webs engineered as wave energy harvesters</i> , N. Ionescu, A. Bele, M. Dascalu, G. Stiubianu, M. Cazacu.

Proiect 6.2. Compozite polimer-anorganice si materiale nanostructurate cu aplicatii in fotodectie, cataliza si protectia mediului				
director proiect: Dr. Liviu SACARESCU				
Echipa (procent de timp alocat proiectului): Dr. Liviu SACARESCU, CS I (100%) Dr. Valeria HARABAGIU, CSI (12.5%) Dr. Rodinel ARDELEANU, CSII (100%) Dr. Gheorghe ROMAN, CSII (100%) Dr. Corneliu COJOCARU, CSII (100%) Dr. Mihaela SIMIONESCU, CS III (100%) Dr. Gabriela SACARESCU, CS III (100%) Dr. Petrisor SAMOILA, CS III (100%) Dr. Maria IGNAT, CS III (50%) Dr. Cristian PEPTU, CS (50%) Dr. Maria Emiliana FORTUNA, CS (100%)			Dr. Andra Cristina HUMELNICU, AC (100%) Dr. Razvan ROTARU, AC (100%) Dr. Marius SOROCEANU, AC (60%) Elena MARLICA, Referent sp. IA (50%) Drd. Laurentiu BALTAG, AC (50%) Drd. Diana BLAJ, AC (50%) Drd. Elvira MAHU Drd. Ionela GRECU Drd. Diana DIACONU Drd. Bogdan Constantin CONDURACHE, ISP(100%) Andra Catalina BUTNARU, Tehnician (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate		
<ul style="list-style-type: none"> - Sinteza de compusi organici din clasa heterociclorilor - Sinteza de complexi ai borului cu beta-dicetone - Caracterizare structurala - Studiul interactiunilor cu alte sisteme electrono-active - Obtinerea de materiale polimere si hibride - Caracterizare morfologica si structurala - Modelarea/optimizarea sistemelor investigate 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 9 - participari la manifestari stiintifice: 4 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 13 - participari la manifestari stiintifice: 6 - propuneri proiecte: 2 - teze sustinute: 1 - brevete: 2 		

I. ACTIVITATEA STIINTIFICA

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Data-driven modeling and optimization of oil spill sorption by wool fibers: retention kinetics and recovery by centrifugation; **B.C. Condurache, C. Cojocaru, P. Samoila, M. Ignat, V. Harabagiu**; *International Journal of Environmental Science and Technology* 1-12, (2021) FI = 9,028
2. Boosting catalytic wet-peroxide-oxidation performances of cobalt ferrite by doping with lanthanides for organic pollutants degradation; **P. Samoila, C. Cojocaru, E. Mahu, M. Ignat, V. Harabagiu**; *Journal of Environmental Chemical Engineering* 9, 104961 (2021) FI = 5,909
3. Synthesis of benzaldehyde-grafted polysilane: A highly stable and selective "turn-on" fluorescent sensor for cytosine; A.L. Chibac-Scutaru, **C. Cojocaru, G. Roman, P. Samoila, G. Sacarescu, M. Simionescu, L. Sacarescu**; *Journal of Molecular Liquids* 326, 115300 (2021) FI = 5,85
4. Artificial neural network and molecular modeling for assessing the adsorption performance of a hybrid alginate-based magsorbent; **C. Cojocaru, A.C. Humelnicu, P. Pascariu, P. Samoila**, *Journal of Molecular Liquids* 337, 116406/ 1-12 (2021) FI = 5,85
5. Calcium carbonate - carboxymethyl chitosan hybrid materials; **M. E. Fortuna**, E. Ungureanu, C. D. Jitareanu; *Materials* 14(12), 3336 (2021) FI = 3,623
6. Tailoring mesoporous titania features by ultrasound-assisted sol-gel technique: effect of surfactant/titania precursor weight ratio; **E. Mahu, C. C. Giorgiana, L. Doina, I. Asaftei, L. Sacarescu, V. Harabagiu, M. Ignat**, *Nanomaterials* 11, 1263 (2021) FI = 5,076
7. Nano-assembly and optical properties of difluoroboron dibenzoylmethane-polysilane; **L. Sacarescu, C. Cojocaru, G. Roman, G. Sacarescu, M. Simionescu, P. Samoila, A.L. Chibac-Scutaru**; *Polymer* 232, 124188 (2021) FI = 4,43
8. Cyclodextrin-oligolactide conjugates: monitoring synthesis parameters by MALDI-TOF mass spectrometry; **D.A. Blaj, C. Peptu**, M. Balan-Porcarasu, A.B. Petre, **V. Harabagiu**; *Polymer* 233, 124186 (2021) FI = 4,43
9. Bio-based ionically cross-linked alginate composites for PEMFC potential applications, **P. Samoila, I. Grecu, M. Asandulesa, C. Cojocaru, V. Harabagiu**, *Reactive and Functional Polymers* 165, 104967 (2021) FI = 3,975
10. Studies on kinetics and adsorption equilibrium of lead and zinc ions from aqueous solutions on sarkanda grass lignin; E. Ungureanu, A. E. Trofin, L. C. Trinca, A. M. Arifon, O. C. Ungureanu, **M. E. Fortuna, D. C. Jitareanu, V. I. Popa**; *Cellulose Chemistry and Technology* 55 (7-8), 939-948 (2021) FI = 1,43

11. Humic acid removal from water by sorption and photocatalysis under vis irradiation using Fe₂O₃/silica nanocomposite; S. Motoc, C. Ianasi, A. Baciuc, C. Delcicou, **L. Săcărescu**, A.-M. Putz, F. Manea; *Environmental Engineering and Management Journal* 20(3), 335-345 (2021) FI = 0,869
12. Effect of calcium stearate as a lubricant and catalyst on the thermal degradation of poly(3-hydroxybutyrate); D. M. Panaitescu, M. S. Popa, V. Raditoiu, A. N. Frone, **L. Săcărescu**, A. R. Gabor, C. A. Nicolae, M. Teodorescu, *International Journal of Biological Macromolecules* 190, 780-791 (2021) FI = 6,953
13. Magnetic silica particles functionalized with guanidine derivatives for microwave-assisted transesterification of waste oil; P. Chipurici, A. Vlaicu, I. Calinescu, M. Vinatoru, C. Busuioc, A. Dinescu, A. Ghebaour, E. Rusen, G. Voicu, **M. Ignat**, A. Diacon; *Scientific Reports* 11, 17518 (2021) FI = 3,998

Raportate la alte subprograme

- Innovative Ag-TiO₂ Nanofibers with Excellent Photocatalytic and Antibacterial Actions; P. Pascariu, **C. Cojocaru**, A. Airinei, N. Olaru, I. Rosca, E. Koudoumas, M.P. Sucheai; *Catalysts* 11, 1234/1-20 (2021)
- Novel electrospun membranes based on PVDF fibers embedding lanthanide doped ZnO for adsorption and photocatalytic degradation of dye organic pollutants, P. Pascariu, **C. Cojocaru**, **P. Samoila**, N. Olaru, A. Bele, A. Airinei; *Materials Research Bulletin* 141, 111376 (2021)
- Revealing the effect of the synthesis conditions on the structural, optical and antibacterial properties of cerium oxide nanoparticles; N. Fifere, A. Airinei, M. Dobromir, **L. Săcărescu**, S. I. Dunca; *Nanomaterials* 11, 2596 (2021)
- Thermo- and pH-responsive copolymer of N-isopropylacrylamide with acryloylvaline: synthesis and properties in aqueous solutions; E. Tarabukina, **V. Harabagiu**, Gh. Fundueanu, M. Constantin, A. Filippov; *Journal of Polymer Research* 28(5), 155 (2021)
- Self-assembly and rheological behavior of chloramphenicol-based poly (ester ether) urethanes, M. F. Zaltariov, D. Filip, D. Macocinschi, C. Ibanescu, M. Danu, **L. Săcărescu**, *Journal of Polymer Research* 28(5), 1-15 (2021)
- Investigation of a biosystem based on *Arthrospira platensis* for air revitalisation in spacecrafts: Performance evaluation through response surface methodology; G. Soreanu, I. Cretescu, M. Diaconu, **C. Cojocaru**, **M. Ignat**, **P. Samoila**, **V. Harabagiu**; *Chemosphere* 264, 128465 (2021) FI = 5,778
- Ditopic hybrid ligands with an isoxazole ring in the central unit: synthesis, structural characterization and molecular modeling; B.-I. Bratanovici, **C. Cojocaru**, A. Nicolescu, M. Dascalu, **G. Roman**; *Journal of Molecular Structure* 1245, 131129 (2021) **FI = 2,011**
- Synthesis, crystal structure and luminescent properties of isorecticular lanthanide-organic frameworks based on a tetramethyl-substituted terphenyldicarboxylic acid; I.-A. Dascalu, E.A. Mikhalyova, S. Shova, B.-I. Bratanovici, **R. Ardeleanu**, N. Marangoci, V. Lozan, **G. Roman**, *Polyhedron* 194, 114929 (2021) FI = 3,052
- 1-(4-Carboxyphenyl)-5-methyl-1H-1,2,3-triazole-4-carboxylic acid - A versatile ligand for the preparation of coordination polymers and mononuclear complexes; B.-I. Bratanovici, S. Shova, V. Lozan, I.-A. Dascalu, **R. Ardeleanu**, **G. Roman**; *Polyhedron* 200, 115115 (2021) FI = 3,052
- New 2,9-disubstituted-1,10-phenanthroline derivatives with anticancer activity by selective targeting of telomeric G-quadruplex DNA; A.-M. Craciun, A. Rotaru, **C. Cojocaru**, I. Mangalagiu, R. Danac; *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 249, 119318 / 1-14 (2021) FI = 4,098

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Ultrasound synthesis of rare-earth modified TiO₂: effect of rare-earth element on TiO₂ structure and its photocatalytic activity; **M. Ignat**, **E. Mahu**, **P. Samoila**, **V. Harabagiu**; International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spain, 24-30.09.2021
2. Polysaccharide composites - energy related applications; **V. Harabagiu**, **P. Samoila**, **R. Rotaru**, **I. Grecu**; 23rd International Conference "New Cryogenic and Isotope Technologies for Energy and Environment" - EnergEn 2021; Baile Govora, 26-29 octombrie, 2021

Comunicari orale prezentate la manifestari stiintifice nationale

- Polymer assisted ultrafiltration: Experimental design, modeling & process optimization; **C. Cojocaru**; 5DnanoP Workshop-2021, ICMPP, 11.10.2021

Postere prezentate la manifestari stiintifice internationale

3. Nystatin-loaded chitosan films for candidiasis treatment; **A.-C. Humelnicu**, **P. Samoila**, **C. Cojocaru**, **V. Harabagiu**; EPNOE Junior Meeting 4th edition, Leuven, Belgium, 3-4.02.2021
4. Evans Blue Photodegradation by Novel Samarium Doped Zinc Aluminium Spinel Ferrites; **I. Grecu**, **P. Samoila**, **C. Cojocaru**, P. Pascariu, **V. Harabagiu**; Environmental and Energy Applications AdvPhotoCat-EE 2021, 28-29.06.2021
5. Functionalized Multi-wall Carbon Nanotubes and Aquatic Plant; **M. E. Fortuna**, E. Ungureanu, O. Ungureanu, **M. Ignat**, 15th International conference on materials chemistry (MC15), UK, 12-15.07.2021
6. Effects of functionalized MWCNT on the aquatic environment; **M. E. Fortuna**, E. Ungureanu, D. C. Jitareanu, **M. Ignat**; International Symposium THE ENVIRONMENT AND THE INDUSTRY, SIMI 2021, Bucharest, Romania, 24.09.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Valorificarea inovativa si integrata a deseurilor biopolimerice prin procese de sinteza inteligente in camp de microunde cu obtinerea de materiale carbonice pentru aplicatii de nisa	POC 163/1/3, AP1: CDI in sprijinul competitivitatii economice si dezvoltarii afacerilor, Actiunea 1.2.1, Tip de proiect – Proiect tehnologic inovativ, Cod MySMIS: 120696 Responsabil proiect partener ICMPP: Petrisor SAMOILA	2021-2024	~260.000	32.800
2.	European network for furan based chemical and materials for a sustainable development – FUR4Sustain	CA18220. M. IGNAT si V. HARABAGIU, manageri nationali	2020-2022		

Contract prestari servicii

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Servicii pentru caracterizarea avansata a probelor rezultate din biotratatarea aerului	Contract UTI-ICMPP nr. 131CH/ 24.09.2021 Responsabil: Petrisor SAMOILA	60 zile	~2.180	2.180

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Valorificarea unor deseuri celoligninice ca materiale adsorbante pentru suplimente nutritive folosite in agricultura	PED-2021	Responsabil proiect partener ICMPP: Maria Emiliana FORTUNA
2.	Progrese in Reciclarea Chimica a Deseurilor de PET – Glicoliza Catalitica cu Catalizatori Magnetici Nanodimensionati	TE-2021	Petrisor SAMOILA

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Valeria HARABAGIU	Chimie	2009

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Laurentiu BALTAG	Chimie	2020	- 4 examene	Valeria HARABAGIU	Nanocompozite polimerice pentru imagistica medicala
2.	Diana BLAJ	Chimie	2020	-4 examene	Valeria HARABAGIU	Monitorizarea proceselor de polimerizare a monomerilor ciclici prin spectrometrie de masa
3.	Ionela GRECU	Chimie	2020	-4 examene	Valeria HARABAGIU	Nanocompozite polimerice cu proprietati fotocatalitice in domeniul vizibil

4.	Diana DIACONU	Chimie	2020	-4 examene	Valeria HARABAGIU	Conjugate polimeri- ciclodextrine - preparare, proprietati, aplicatii
5.	Bogdan Constantin CONDURACHE	Chimie	2015	- Stagiul pregatire finalizat - Tehnoredactare teza de doctorat	Valeria HARABAGIU	Materiale sorbtive polimere pentru eliminarea poluantilor din apele contaminate
6.	Elvira MAHU (cas.TURCU)	Polimeri Anorganici	2017	- Stagiul pregatire finalizat - Tehnoredactare tezei de doctorat	Valeria HARABAGIU	Nanomateriale poroase. Preparare, proprietati, aplicatii

Teze sustinute

Nr. crt.	Titlul tezei	Doctorand	Conducator stiintific	Forma de pregatire/data sustinerii
1.	Studii privind modificarea chitosanului pentru aplicatii medicale, in sisteme alternative de producere a energiei si de protectie a mediului	Andra-Cristina HUMELNICU	Valeria HARABAGIU	Doctorat cu frecventa/9.04.2021

V. PRESTIGIU STIINTIFIC**Membri in conducerea unei organizatii internationale de specialitate**

Nr. crt.	Nume si prenume	Organizatia
1	Valeria HARABAGIU	Presedinte filiala SChR Iasi

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1	Corneliu COJOCARU, CS II	29
2	Valeria HARABAGIU, CS I	26
3	Liviu SACARESCU, CS I	21
4	Gheorghe ROMAN, CS II	16
5	Petrisor SAMOILA, CS III	16
6	Maria IGNAT, CSIII	14
7	Rodinel ARDELEANU, CS II	10
8	Mihaela SIMIONESCU, CS III	10
9	Gabriela SACARESCU, CS III	10
10	Cristian PEPTU, CS	10

LABORATOR POLIMERI ELECTROACTIVI SI PLASMOCHIMIE

SUBPROGRAM 7: ARHITECTURI POLIMERE PENTRU APLICATII IN OPTO-ELECTRONICA SI ENERGIE

DIRECTOR SUBPROGRAM: DR. MARIANA-DANA DAMACEANU

<p>Proiect 7.1. Polimeri (hetero)aromatici pentru filme subtiri si acoperiri destinate unor aplicatii din (opto)electronica si energie</p> <p style="text-align: right;">director proiect: Dr. Mariana-Dana DAMACEANU</p>		
<p>Echipa (procent de timp alocat proiectului): Dr. Mariana-Dana DAMACEANU, CSI (100%) Dr. Ion SAVA, CSI (100%) Dr. Radu-Dan RUSU, CSIII (75%) Dr. Irina BUTNARU, CS (100%) Dr Catalin-Paul CONSTANTIN, CS (100%)</p>	<p>Dr. Andra-Elena BEJAN, AC (0%, conc. crestere copil) Dr. Stefan CHISCA, AC (0%, stagiu) Drd. Adriana-Petronela CHIRIAC, AC (100%) Drd. Andra-Ionela GAVRIL (0%, conc. crestere copil) Drd. Ioana-Alexandra TROFIN (16,66%) Mioara Gabriela SAVA, A (100%)</p>	
<p>Activitati realizate</p> <ul style="list-style-type: none"> - S-a efectuat sinteza unor monomeri cu unitati (hetero)aromatice sau heterociclice, ca difenilamina, trifenilmetan, trifenilamina, imida, fenoxazina, etc. si s-au optimizat reactiile de sinteza - S-a realizat sinteza de oligomeri conjugati cu unitati de naftilimida sau trifenilamina/fenoxazina si s-au optimizat reactiile de sinteza - Compusii sintetizati au fost identificati structural prin tehnici spectrale ca FTIR, RMN sau MS - Au fost preparati polimeri pe baza de trifenilamina cu proprietati electrocrome, pe baza de trifenilmetan si azobenzen, cu proprietati fotocrome si polimeri heteroaromatici conjugati cu proprietati de emisie de lumina - S-au obtinut acoperiri/filme oligomere/polimere pe diferite suporturi - S-a efectuat caracterizarea structurala, termica, optica si electronica a polimerilor/filmelor obtinute - Din polimerii cu proprietati peliculogene s-au preparat filme de sine statatoare a caror suprafata a fost modificata prin tratare cu radiatie UV/plasma - S-au obtinut compozite polimere/structuri supramoleculare prin dispersarea unor compusi micromoleculari/CNT in matrici polimere - S-au preparat materiale poliimidice in microunde, precum si amestecuri polimere miscibile/imiscibile - S-au efectuat studii de structurare a unor filme poliimidice azobenzenice - Materialele obtinute au fost caracterizate prin diverse tehnici avansate care au permis realizarea de relatii structura-proprietati, in baza carora s-au 	<p>Documente monitorizare propuse</p> <ul style="list-style-type: none"> - lucrari stiintifice publicate: 6 - participari la manifestari stiintifice: 4 - teze de doctorat: 1 - propuneri de proiecte: 1 	<p>Documente monitorizare realizate</p> <ul style="list-style-type: none"> - lucrari stiintifice publicate: 10 - participari la manifestari stiintifice: 9 - teze de doctorat: 1 - propuneri de proiecte: 12 - brevete publicate: 1

stabiliati conditiile de optimizare - Filmele oligomere au fost testate in celule solare de tip DSSC, in timp ce polimerii de tip imidic au fost testati in dispozitive electrocrome sau ca membrane de separare a gazelor - Compozitele polimere cu CNT au fost testate in prototipuri de micro-supercondensatoare flexibile		
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I. ACTIVITATEA STIINTIFICA

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Opto-electronic properties modulation through iodine doping of imine- and triphenylamine-based oligomers; **A. E. Bejan**, C. V. Diaconu, **M. D. Damaceanu**; *Journal of Electronic Materials* 50(3), 1358–1369 (2021) FI = 1,938
2. Tailoring poly(ether-imide) films features towards high performance flexible substrates; **I. Butnaru**, **A. P. Chiriac**, M. Asandulesa, **I. Sava**, G. Lisa, **M. D. Damaceanu**; *Journal of Industrial and Engineering Chemistry* 93, 436-447 (2021) FI = 6,064
3. A novel approach towards crown-ether modified polyimides with affinity for alkali metal ions recognition; **A. P. Chiriac**, **M. D. Damaceanu**; *Journal of Molecular Liquids* 114929, 322 (2021) FI = 6,165
4. Assessing the Electrical Characteristics of p–n Heterojunction Prototype Diodes Realized with n-Type Polyimide Materials; **C. P. Constantin**, G. Lisa, **M. D. Damaceanu**; *Macromolecules* 54, 941-957 (2021) FI = 5,985
5. Structural Chemistry-Assisted Strategy toward Fast Cis–Trans Photo/Thermal Isomerization Switch of Novel Azo-Naphthalene-Based Polyimides; **C. P. Constantin**, I. Sava, **M. D. Damaceanu**, *Macromolecules* 54, 1517-1538 (2021) FI = 5,985
6. The synergistic effect of nitrile and jeffamine structural elements towards stretchable and high-k neat polyimide materials; **I. Butnaru**, **A. P. Chiriac**, C. Tugui, M. Asandulesa, **M. D. Damaceanu**; *Materials Chemistry Frontiers* 5(20), 7558-7579 (2021) FI = 6,482
7. Exploring the potential of thin films made from poly(imide-amide-sulfone)s for engineering applications; **C. P. Constantin**, M. Asandulesa, C. Varganici, V. Melinte, M. Bruma, A. Jankowski, A. Wolinska-Grabczyk, **M. D. Damaceanu**; *Materials Science and Engineering B-Advanced Functional Solid-State Materials* 270, 115217 (2021) FI = 4,051
8. Investigation of surface relief gratings on azo-copolyimide films using atomic force microscopy; **I. Sava**, I. Stoica, I. Mihaila, I. Topala; *Revue Roumaine de Chimie* 66(2), 193-198. (2021) FI = 0,278
9. Spectroscopic and electrochemical properties of thiophene-phenylene based Schiff-bases with alkoxy side groups, towards photovoltaic applications; P. Nitschke, B. Jarzabek, **M. D. Damaceanu**, **A. E. Bejan**, P. Chaber; *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* 248, 119242 (2021) FI = 4,098
10. Effect of Protonation on Optical and Electrochemical Properties of Thiophene-Phenylene-Based Schiff Bases with Alkoxy Side Groups; P. Nitschke, B. Jarzabek, **A. E. Bejan**, **M. D. Damaceanu**; *Journal of Physical Chemistry B* 125 (30), 8588-8600 (2021) FI = 2,991

Raportate la alte subprograme

- ZnO-Ag based polymer composites as photocatalysts for highly efficient visible-light degradation of Methyl Orange; V. E. Podasca, **M. D. Damaceanu**; *Journal of Photochemistry and Photobiology A: Chemistry* 406, 113003 (2021) FI = 4,291
- Evaluation of Local Mechanical and Chemical Properties via AFM as a Tool for Understanding the Formation Mechanism of Pulsed UV Laser-Nanoinduced Patterns on Azo-Naphthalene-Based Polyimide Films; I. Stoica, E. L. Epure, **C. P. Constantin**, **M. D. Damaceanu**, E. L. Ursu, I. Mihaila, **I. Sava**; *Nanomaterials* 11(3), 812 (2021) FI = 5,076

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate, inclusiv electronic

1. Recent concepts in electrochromic polymers containing triarylamine as electroactive unit; **M. D. Damaceanu**, **C. P. Constantin**, **A. E. Bejan**, C. Logigan, *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, pp. 27-28 (2021)
2. Study of new imines containing a phenanthroline chromophore; **I. Butnaru**, C. Logigan, **M. D. Damaceanu**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, pp. 63-64 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Recent concepts in electrochromic polymers containing triarylamine as electroactive unit; **M. D. Damaceanu**, **C. P. Constantin**, **A. E. Bejan**, C. Logigan; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Comunicari orale prezentate la manifestari stiintifice internationale

- Synthesis and characterization of new triphenylamine-based polyimides for electrochromic applications; **C. P. Constantin, A. E. Bejan, M. D. Damaceanu**; 2nd Bucharest Polymer Conference, Bucharest, Romania, 9-11.06.2021
- Insights into some organic light-emitting materials based on a donor-acceptor system for OLEDs; **M. D. Damaceanu, C. P. Constantin, R. D. Rusu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Spain, 24-30.09.2021
- Polyimides containing bipyridyl-amine functionalized triphenylamine as electrochromic materials, **I. Butnaru, C. P. Constantin, M. D. Damaceanu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Spain, 24-30.09.2021
- Study of new imines containing a phenanthroline chromophore; **I. Butnaru, C. Logigan, M. D. Damaceanu**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
- Effect of dianhydride segment structure on the electrochromic properties of novel triphenylamine-based polyimides; **C. P. Constantin, A. E. Bejan, M. D. Damaceanu**; New trends and strategies in the chemistry of advanced materials with relevance in biological systems, technique and environmental protection" 13th Edition, Timisoara, Romania, 07-08.10.2021
- Phenoxazine-based polymers with blue and green light emission in solid state for light-emitting diode applications; **M. D. Damaceanu, C. P. Constantin**; New trends and strategies in the chemistry of advanced materials with relevance in biological systems, technique and environmental protection" 13th Edition (online), Timisoara, Romania, 07-08.10.2021

Raportate la alte subprograme

- Conjugated azomethines with donor-acceptor topology and some hybrid materials based on them; M. Soroceanu, **C. P. Constantin, M. D. Damaceanu**; 2nd Bucharest Polymer Conference, Bucharest, Romania, 9-11.06.2021
- Investigation of some conjugated push-pull naphthalene-based imines for potential use in optoelectronic applications; M. Soroceanu, **C. P. Constantin, M. D. Damaceanu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Spain, 24-30.09.2021

Postere prezentate la manifestari stiintifice internationale

- Fluorene-based chemical tools for light-emitting materials; **R. D. Rusu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Spain, 24-30.09.2021
- Electrochromic prototype devices based on triphenylamine-triphenylmethane containing polyimides; **C.-P. Constantin, A.-E. Bejan, M. D. Damaceanu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Spain, 24-30.09.2021

Raportate la alte subprograme

- Pretesting laser-patterned polyimide films as substrates for flexible electronic devices; I. Stoica, **I. Sava**, E. G. Hitruc, A. F. Trandabat; Nanoscientific Forum Europe, Scanning Probe Microscopy (NSFE-2021) Freiburg, Germany, 15-17.09.2021
- Advanced morphological and statistical analysis of laser induced micro/nano multiscale surface relief gratings on azo-polyimide films; I. Stoica, **I. Sava**, J. Konieczkowska, E. Schab-Balcerzak, Nanoscientific Forum Europe, Scanning Probe Microscopy (NSFE-2021) Freiburg, Germany, 15-17.09.2021

II. ATRAGEREA DE FONDURI DE CERCETARE**Proiecte de cercetare internationale finantate din fonduri publice****Raportate la alte subprograme**

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Parteneriate pentru transfer de cunostinte in domeniul materialelor polimere folosite in ingineria biomedicala, POINGBIO Membri: R.D. RUSU, C. P. CONSTANTIN	86/08.09.2016 Responsabil: M. AFLORI Contract subsidiar nr. 6484/09.10.2020 cu S.C. Innovative Green Power S.R.L., Responsabil ICMPP: R.D. RUSU	2016-2022	3.000.000	374.225

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Dispozitive polimere emitatoare de lumina imbunatatite prin metode chimice	485PED/2020 / Radu-Dan RUSU	2020-2022	123.200	60.060

2.	Ingineria de ultima generatie a unor dispozitive electrocrome polimerice cu functionare la tensiune joasa destinate economisirii de energie	438PED/2020 / Catalin-Paul CONSTANTIN	2020-2022	123.203	55.960
Raportate la alte subprograme					
	Ingineria unor filme organice subtiri pentru utilizare ca strat-uri active eficiente in dispozitive optoelectronice	PD nr. 182 / 2020 Responsabil: Marius SOROCEANU Mentor: Mariana-Dana DAMACEANU	2020-2022	50.918	23.354

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Ferestre inteligente de stocare a energiei: de la ingineria de material la cea de dispozitiv flexibil cu functii integrate electrocrome si capacitive	PCE 2021	PN-III-P4-PCE-2021-1728/ M. D. DAMACEANU
2.	Ingineria unor materiale cu constanta dielectrica mare pe baza de copoliimide pentru utilizare in dispozitive de stocare a energiei	TE 2021	PN-III-P1-1.1-TE-2021-1110 / I. BUTNARU
3.	Dezvoltarea unor prototipuri de dispozitive electrocrome cu operare in infrarosu apropiat pe baza de polimeri cu unitati electroactive de triarilamina	TE 2021	PN-III-P1-1.1-TE-2021-0888 / C. P. CONSTANTIN
4.	Dezvoltarea unor materiale polimere transparente, flexibile si dielectrice pentru dispozitive electronice	TE 2021	PN-III-P1-1.1-TE-2021-1524 / R. D. Rusu
5.	Depasirea limitelor membranelor poliimidice pentru separarea si captarea de CO ₂ cu un consum redus de energie prin utilizarea conceptului PIM si a tehnicii de amestecare	PED 2021	PN-III-P2-2.1-PED-2021-1666/ M. D. DAMACEANU
6.	Suporturi polimere pe baza de arhitecturi hiperramificate pentru dispozitive electronice flexibile	PED 2021	PN-III-P2-2.1-PED-2021-3099/ R. D. RUSU
7.	Implementarea unor prototipuri de dispozitive electrofluorocrome de ultima generatie ce contin polimeri electroactivi pe baza de fenoxazina cu modulatie de fluorescenta controlata redox	PED 2021	PN-III-P2-2.1-PED-2021-1563/ C. P. CONSTANTIN
8.	Ingineria substraturilor/electrozilor flexibili inalt performanti de tip poliimidic pentru utilizare in dispozitive conexe energiei	PED 2021	PN-III-P2-2.1-PED-2021-1333/ I. BUTNARU
9.	Structuri flexibile de celule fotovoltaice hibride	PED 2021	PN-III-P2-2.1-PED-2021-2028/Responsabil Partener ICMPP: M. D. DAMACEANU
10.	Structuri organice emitatoare de lumina nanopaternate pentru surse de lumina flexibile la scara larga	PED 2021	PN-III-P2-2.1-PED-2021-3600/ Responsabil Partener ICMPP: M. D. DAMACEANU

Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Pesticide Reduction by Pest Tracing and Pesticide Monitoring PestTrace	H2020, LC-GD-8-1-2020 Type of action: RIA	101036964/ Coordonator SINTEF-Norway, C. Simon, Responsabil Partener ICMPP: M. D. DAMACEANU
2.	New gas separation membranes with enhanced permeability in harsh enviroments	International programme i-LINK 2021 for the promotion of the CSIC's international scientific collaboration with foreign institutions.	LINKA20414/ Coordonator Institute of Polymer Science and Technology (ICTP-CSIC), Spain, A. Lozano, Responsabil Partener ICMPP: M. D. DAMACEANU (principal investigator)

Manifestari stiintifice (congres, conferinta, simpozion) sau scoli de vara internationale organizate

1. *Progress in Organic and Macromolecular Compounds 28th Edition*, ICMPP, Iasi, Romania, October 7 – 9, 2021:
R. D. Rusu, C. P. Constantin - membri in Comitetul de organizare

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE**Brevete publicate**

1. Procedeu de obtinere a unor diamine aromatice continand piperazina si a unor filme poliimidice flexibile cu unghi de contact coborat pe baza lor; **R. D. Rusu, C. P. Constantin**, M. Aflori, M. Pislaru, A. F. Trandabat; OSIM: RO 134969A2/28.05.2021.

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Lista conducatorilor de doctorat**

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
2.	Mariana-Dana DAMACEANU	CHIMIE	2016

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	CHIRIAC Adriana-Petronela	Chimie	2017	- 3 examene sustinute - 3 proiecte cercetare prezentate	Mariana-Dana DAMACEANU	Polimeri aromatici functionali cu cicluri imidice pentru tehnologii avansate
2.	GAVRIL Andra-Ionela	Chimie	2019	- 2 examene sustinute	Mariana-Dana DAMACEANU	Compusi heterociclici macromoleculari hiperramificati
3.	TROFIN Ioana-Alexandra	Chimie	2021	colocviu admitere	Mariana-Dana DAMACEANU	Polimeri hiperramificati pentru aplicatii electronice

Teze sustinute

Nr. crt.	Titlul tezei	Doctorand	Conducator stiintific	Forma de pregatire/data sustinerii
1.	Polimeri aromatici functionali cu cicluri imidice pentru tehnologii avansate	CHIRIAC Adriana-Petronela	DAMACEANU Mariana-Dana	Cu frecventa (stipendiu)/ 28.10.2021

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Mariana-Dana DAMACEANU	Editor carte Elsevier: "Polyimides: Advances in Blends and Nanocomposites" (expected in 2022)

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Mariana-Dana DAMACEANU, CS I	23
2.	Ion SAVA, CS I	19
3.	Radu-Dan RUSU, CSIII	12
4.	Catalin-Paul CONSTANTIN, CS	11
5.	Irina BUTNARU, CS	9

Premii ale Academiei Romane

Nr. crt.	Nume si prenume	Premiul
1.	Catalin-Paul CONSTANTIN	Premiul Cristofor I. SIMIONESCU, Grup lucrari: <i>Structuri heterociclice oligomere si polimere pentru materiale avansate in (opto)electronica</i>

Proiect 7.2. Polimeri semiconductori/amfili cu aplicatii opto-electronice		
director proiect: Dr. Andrei HONCIUC		
Echipa (procent de timp alocat proiectului):		
Dr. Andrei HONCIUC, CSII (100%) Dr. Mircea GRIGORAS, CSI (50%) Dr. Aurica FARCAS, CSII (100%) Dr. Ana-Maria RESMERITA, CSIII (100%) Dr. Ana-Maria SOLONARU, CS (100%)	Dr. Mihai ASANDULESA, CS (100%) Dr. Loredana VACAREANU, AC (100%) Dr. Oana Iuliana NEGRU, AC (65%) Oltica TESCU, A1 (100%) Angela ROTARU, Ins. Sp. (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - S-au identificat strategiile de sinteza a unor blocuri de polimeri semiconductori hidrofobi/hidrofilii - S-au sintetizat nanoparticule Janus prin metoda separarii de faza din particule samanta de polistiren reticulat, dar in absenta gazului inert, motiv pentru care aceasta activitate va fi continuata in conditii imbunatatite - S-au sintetizat pseudopolirotaxani si polirotaxani de tip gazda-oaspete pe baza de polistiren si PEG inclus in cavitatea hidroxipropil-b- ciclodextrinelor (PEG/HPβCD & PS/HPβCD) si s-au comparat proprietatile electro-optice cu cele ale polimerului de referinta - S-au sintetizat polimeri semiconductori/amfili pe baza de polianilina functionalizata cu grupe sulfonice, a caror solubilitate si procesabilitate este superioara polianilinelor de baza - S-au aplicat metode noi pentru sinteza de polirotaxani si depunerea lor ca filme monomoleculare pe substrat solid prin metoda Langmuir-Blodgett - S-au efectuat masuratori electrice/ dielectrice ale unor materiale pe baza de copolimeri, blenduri polimere sau compozite - S-au preparat nanoparticule semiconductoare prin copolimerizare sau reactii de suprafata cu polimeri semiconductori - S-au facut studii preliminare asupra proprietatilor electro-optice si activitatii interfaciale a polimerilor semiconductori/amfili de polianilina functionalizata obtinuti - S-au utilizat polimeri de polianilina in prepararea de noi materiale compozite din nanoparticule de polistiren si derivati de polianilina - S-au optimizat metodele de sinteza ale polimerilor semiconductori/amfili 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 4 - carti publicate: 1 - participari la manifestari stiintifice: 1 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - carti publicate: 1 - participari la manifestari stiintifice: 11 - propuneri de proiecte: 10

I. ACTIVITATEA STIINTIFICA

Carti aparute in edituri consacrate din strainatate

1. *Chemistry of Functional Materials Surfaces and Interfaces*; A. Honciuc; Editura Elsevier: Amsterdam; 1-271 (2021), ISBN: 978-0-12-821059-8, DOI: 10.1016/C2019-0-02998-6

Articole publicate/acceptate in reviste cotate de Web of Science (Thomson Reuters)

1. Semiconductor-insulator (nano-)couples with tunable properties obtained from asymmetric modification of Janus nanoparticles; V. Mihali, **A. Honciuc**; *ACS Applied Materials & Interfaces* 13, 41, 49206-49214 (2021) FI = 9,229
2. Molecular dynamics and conductivity of a PTB7:PC71BM photovoltaic polymer blend: a dielectric spectroscopy study; **M. Asandulesa**, S. Kostromin, A. Tameev, A. Aleksandrov, S. Bronnikov; *ACS Applied Polymer Materials* 3, 4869-4878 (2021) FI = 4,089

3. Synthesis, Photophysics, and Langmuir Films of Polyfluorene/Permodified Cyclodextrin Polyrotaxanes; A. El Haitami, **A.-M. Resmerita**, O. Fichet, S. Cantin, P.-H. Aubert, **A. Farcas**; *Langmuir* 37, 11406–11413 (2021) FI = 3,882
4. Evaluation of the chemical, morphological and dielectric properties of supramolecular networks consisting of polyethylene glycol polyrotaxanes and polystyrene/semi-rotaxane with hydroxypropyl- β -cyclodextrins; **A.-M. Resmerita**, **M. Asandulesa**, **A. Farcas**; *Macromolecular Chemistry & Physics*, (2021) FI = 2,527
5. NanoTraPPED - A New Method for Determining the Surface Energy of Nanoparticles via Pickering Emulsion Polymerization; **A. Honciuc**, **O.I. Negru**; *Nanomaterials*, 11, Article 3200/1-17 (2021)-FI = 5,346

Raportate la alte subprograme

- Dual crystalline-amorphous salen-metal complexes behave like nematic droplets with AI Egens vistas; M. Damoc, A.-C. Stoica, M. Dascalu, **M. Asandulesa**, S. Shova, M. Cazacu; *Dalton Transactions* 50, 13841-13858 (2021) FI = 4,390
- Tailoring poly(ether-imide) films features towards high performance flexible substrates; I. Butnaru, A.-P. Chiriac, **M. Asandulesa**, I. Sava, G. Lisa, M.-D. Damaceanu; *Journal of Industrial and Engineering Chemistry* 93 436–447 (2021) FI = 6,064
- The synergistic effect of nitrile and jeffamine structural elements towards stretchable and high-k neat polyimide materials; I. Butnaru, A.-P. Chiriac, C. Tugui, **M. Asandulesa**, M.-D. Damaceanu; *Materials Chemistry Frontiers* 5, 7558-7579 (2021) FI = 6,482
- Exploring the potential of thin films made from poly(imide-amide-sulfone)s for engineering applications; C.-P. Constantin, **M. Asandulesa**, C. Varganici, V. Melinte, M. Bruma, A. Jankowski, A. Wolinska-Grabczyk, M.-D. Damaceanu; *Materials Science and Engineering B-Advanced Functional Solid-State Materials* 270, 115217 (2021) FI = 4,051
- Elastic composites with PDMS matrix and polysulfone-supported silver nanoparticles as filler; C. Racles, **M. Asandulesa**, V. Tiron, C. Tugui, N. Vornicu, B.-I. Ciubotaru, M. Micusik, M. Omastova, A.-L. Vasiliu, C. Ciomaga; *Polymer* 217 123480 (2021) FI = 4,430
- Novel Polyimide/Copper-Nickel Ferrite Composites with Tunable Magnetic and Dielectric Properties; C. Hamciuc, **M. Asandulesa**, E. Hamciuc, T. Roman, M. Andrei, A. Pui; *Polymers* 13, 1646 (2021) FI = 4,430
- Dielectric, Thermal and Water Absorption Properties of Some EPDM/Flax Fiber Composites; A. Airinei, **M. Asandulesa**, M. D. Stelescu, N. Tudorachi, N. Fifere, A. Bele, V. Musteata; *Polymers* 13, 2555 (2021) FI = 4,329
- Study on highly thermostable low-k polymer films based on fluorene-containing polyetherimides; M. Andrei, C. Hamciuc, **M. Asandulesa**, E. Hamciuc, E.-L. Epure, V. Tsakiris, G. Lisa; *Polymer Engineering and Science* 61, 2639-2652 (2021) FI = 2,428
- Bio-based ionically cross-linked alginate composites for PEMFC potential applications; P. Samoila, I. Grecu, **M. Asandulesa**, C. Cojocar, V. Harabagiu; *Reactive and Functional Polymers* 165, 104967 (2021) FI = 3,975

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Design of HPLS Laser System Self Alignment Beam Pointing Integrated Solution; A. Costea, P. Schiopu, **A. Farcas**, 13th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), 1-6, DOI: 10.1109/ECAI52376.2021.9515108 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Conjugated polyrotaxanes and their applications in optoelectronics and biology; **A. Farcas**; Institute des Études Avancées (IEA) of Cergy-Pontoise University, CY Cergy Paris Universite-France, Paris, France, 25.10.2021

Comunicari orale prezentate la manifestari stiintifice internationale

2. Determining the surface energy of nanoparticles from their interfacial immersion depth in Pickering emulsion; **O.I. Negru**, **A. Honciuc**, **A.-M. Solonaru**, D.N. Nguyen Giang, K. Tristan; 2nd Bucharest Polymer Conference University Polytechnica of Bucharest, Bucuresti, Romania, 9-11.06.2021
3. Core-shell polystyrene/polyaniline nanoparticles with variable conductivity and surface properties; **A.-M. Solonaru**, **A. Honciuc**, **O.I. Negru**; 2nd Bucharest Polymer Conference University Polytechnica of Bucharest, Bucuresti, Romania, 9-11.06.2021
4. Design of HPLS Laser System Self Alignment Beam Pointing Integrated Solution; A. Costea, P. Schiopu, **A. Farcas**; 13th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), Pitesti-Romania, 1-3.07.2021
5. Effect of Aluminum nanostructured electrode on the properties of bulk heterojunctions based heterostructures for electronics; O. Rasoga, C. Breazu, M. Socol, **A.-M. Solonaru**, **L. Vacareanu**, G. Petre, N. Preda, A. Stanculescu, F. Stanculescu, G. Socol, M. Girtan, A. Doroshkevich; 2021 Fall Meeting of the European Materials Research Society (E-MRS), 20 – 23.09.2021

6. Dielectric spectroscopy investigation of novel hybrid composites obtained from cellulose derivatives doped with 1-hydroxybenzotriazole; **M. Asanduleasa**, M. E. Culica, S. Coseri; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Spania, 24-30.09.2021
7. Synthesis of supramolecular networks based of polyrotaxanes architectures; **A.-M. Resmerita, A. Farcas**; The 6th International Conference on Polymer Processing in Engineering (PPE 2021), Galati, Romania, 18 - 19.11.2021
8. Electrochemical synthesis of N-substituted polyaniline with different micro/nanostructure from acidic to slightly acidic electrolyte solutions; **L. Vacareanu, A.-M. Solonaru, A. Honciuc**, The 6th International Conference on Polymer Processing in Engineering (PPE 2021), Galati, Romania, 18 - 19.11.2021
9. Polyaniline/Poly(Styrene-co-tert-Butyl Acrylate) Composites: Preparation Morphology and Surface Properties, **A.-M. Solonaru, A. Honciuc, O. I. Negru**, The 6th International Conference on Polymer Processing in Engineering (PPE 2021), Galati, Romania, 18 - 19.11.2021
10. Determining the surface energy of nanoparticles by Pickering emulsion polymerization technology; **O.I. Negru, A. Honciuc, A.-M. Solonaru**; The 6th International Conference on Polymer Processing in Engineering (PPE 2021), Galati, Romania, 18 - 19.11.2021

Postere prezentate la manifestari stiintifice internationale

11. Organic heterostructures with indium-free transparent conductor electrode for opto-electronic applications; G. Petre, A. Stanculescu, M. Girtan, M. Socol, C. Breazu, **L. Vacareanu**, N. Preda, O. Rasoga, F. Stanculescu, A. Doroshkevich; The 2021 Spring Meeting on the European Materials Research Society (E-MRS), 31.05 - 03.06.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (CHF) din care:	2021 (CHF)
1.	NanoTraPPED-Development of a Method for Measuring the Surface Energy of Nanoparticles	Grant Nr. 200021_188465-finantat de Swiss National Science Foundation /Dr. A. HONCIUC	2021-2022	136.250	102.187

Proiecte de cercetare nationale finantate din fonduri publice Raportate la alte subprograme

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (Lei) din care:	2021 (Lei)
-	Extinderea limitelor celulozei spre fabricarea de membrane conductoare de protoni superioare, pentru celule de combustibil	NR. PCE 19/2021 cod proiect: PN-III-P4-ID-PCE-2020-0476 Responsabil: Dr. S. Coseri Membru echipa: M. ASANDULESA	36 luni	1.198.032	398.032

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Utilizarea "PEmPTech" in sinteza polimerilor amprentati pentru extractia ionilor metalici din apele uzate si minerit hidrologic	PCE 2021	PN-III-P4-PCE-2021-0306 Dr. Andrei HONCIUC
2.	Materiale semiconductoare supramoleculare pentru dispozitive electronice organice	PCE 2021	PN-III-P4-PCE-2021-0906 Dr. Aurica FARCAS
3.	Politoraxani reticulati: Sinteza, dezvoltare si aplicatii	PCE 2021	PCE 2021-1028 Dr. Ana-Maria RESMERITA
4.	Noi compozite pe baza de polianilina si grafena/nanoparticule Janus cu conductivitati variabile	TE 2021	PN-III-P1-1.1-TE-2021-0115 Dr. Ana-Maria SOLONARU
5.	Dezvoltarea de noi arhitecturi microporoase de polimeri conjugati ca senzori solizi pentru detectia de derivati nitroaromatici periculosi	TE 2021	PN-III-P1-1.1-TE-2021-1068 Dr. Loredana VACAREANU
6.	Noi concepte de nanocompozite semiconductoare pe baza de polimeri conjugati si nanoparticule multifunctionale Janus	TE 2021	PN-III-P1-1.1-TE-2021-1332 Dr. Mihai ASANDULESA
7.	Poliorotaxani conjugati: o strategie promitatoare pentru materiale organice electronice	PED 2021	PN-III-P2-2.1-PED-2021-2064 Dr. Aurica FARCAS

8.	Tranzistor cu efect de camp organic flexibil si nanostructurat pentru detectie in UV-VIS	PED 2021	PN-III-P2-2.1-PED-2021-3165 Dr. A. Stanculescu, Dr. G. Socol, Dr. A. HONCIUC (ICMPP)
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Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Pi-conjugated polymer rotaxanes: Supramolecular encapsulation as a promising approach to organic electronic materials	Institute des Études Avancées (IEA) of Cergy-Pontoise University	Project INEX "Pi-ROT" #73 Dr. Aurica FARCAS
2.	Translocation of small molecules through membrane channels	German Research Foundation (DFG)	DFG-Antrag WI 2279/32-1/ Prof. Dr. M. Winterhalter, Dr. Aurica FARCAS (ICMPP)

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Dr. Mihai ASANDULESA	Guest Editor, Polymers (Impact Factor: 3.426, Q1) pentru numarul special: Polymer-Based Dielectric Materials

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Mircea GRIGORAS, CS I	20
2.	Andrei HONCIUC, CS II	17
3.	Aurica FARCAS, CS II	17
4.	Ana-Maria RESMERITA, CS III	13
5.	Mihai ASANDULESA, CS	11
6.	Loredana VACAREANU, AC	10

LABORATOR CHIMIA FIZICA A POLIMERILOR**SUBPROGRAM 8: CHIMIA FIZICA A MATERIALELOR MULTICOMPONENTE IN SOLUTIE SI IN FAZA SOLIDA**

DIRECTOR SUBPROGRAM: DR. ANTON AIRINEI

Proiect 8.1. Interactiuni fizico-chimice in sisteme fotosensibile

director proiect: Dr. Anton AIRINEI

Echipa (procent de timp alocat proiectului): Dr. Anton AIRINEI, CSI (100%) Dr. Mihaela HOMOCIANU, CSIII (100%) Dr. Mihaela AVADANEI, CSIII (100%) Dr. Petronela PASCARIU, CSIII (100%) Dr. Nicusor FIFERE, CS (100%)			Dr. Radu Ionut TIGOIANU, AC (100%) Dr. Dragos Lucian ISAC, AC, (100%) Dr. Carmen GHERASIM, AC (100%) Dorel URUSU, A1 (100%) Roxana IRIMIA, A1 (100%) Daniela ACATINCAI, A1 (100%)		
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate			
<ul style="list-style-type: none"> - S-au obtinut nanostructuri pe baza de TiO₂ dopat cu Ag sau Cu prin electrofilare. Nanostructurile au fost caracterizate din punct de vedere morfologic, structural si al proprietatilor optice - S-au studiat caracteristicile fotofizice ale unor complexi metalici ai bazei Schiff care rezulta din reactia 1,3-bis(aminopropil)tetrametildisiloxanului si 2,6-diformil-4-metil-fenol cu ioni de tip 4f (La³⁺, Nd³⁺, Gd³⁺, Sm³⁺ si Dy³⁺) (spectre electronice de absorbtie, spectre de emisie, timpi de viata). - S-au obtinut noi nanostructuri unidimensionale pe baza de TiO₂ dopat cu metale rare (La, Er, Sm). S-au evaluat performantele fotocatalitice utilizand drept colorant Albastru de metilen si antibiotic ciprofloxacina - S-au preparat membrane fotocatalitice din PVDF in care au fost incorporate nanostructuri anorganice de tip ZnO:Ln (La, Sm, Er). Sistemul a fost analizat din punct de vedere al performantelor fotocatalitice utilizand Rodamina B si Albastru de metilen, sub actiunea luminii vizibile. - S-au preparat si caracterizat din punct de vedere optic si morfologic nanoparticule de oxid de cupru si evaluarea activitatii fotocatalitice la degradarea unor coloranti organici. - Impactul parametrilor de mediu (pH, temperatura, lumina etc.) asupra proprietatilor fotofizice a unor azometine care contin 1,3,4-oxadiazol prin studii de spectroscopie (absorbție, fluorescență) in solventi organici cu polaritate diferita. - Studiul interactiunilor intermoleculare la derivati de naftalimida prin efecte de solvent asupra spectrelor de absorbtie si emisie, aplicand teoriile Lippert-Mataga si 	<ul style="list-style-type: none"> - lucrari stiintifice publicate/acceptate: 7 - carti/capitole: 1 - participari la manifestari stiintifice: 3 	<ul style="list-style-type: none"> - lucrari stiintifice publicate/acceptate: 7 - capitol de carte: 1 - participari la manifestari stiintifice: 10 - propuneri proiecte: 7 			

<p>Bakhshiev, precum si modelele Kamlet-Taft si Catalan. Analiza procesului de stingere a fluorescentei la acesti compusi de naftalimida cu apa.</p> <ul style="list-style-type: none"> - Analiza structurilor electronice ale 4,4'-dihidroxiazobenzenului care contine grupari epoxi folosind metodele TDF si TD-TDF (functionala CAM B3LYP) sau modelul Tamm-Dancoff (TDA-DFT). Investigarea procesului de fotoizomerizare si stabilirea mecanismului de izomerizare. - S-a studiat efectul parametrilor de sinteza pentru nanoparticule de oxid de ceriu, asupra vacantelor superficiale de oxigen prin spectroscopie XPS. Pentru evaluarea activitatii superficiale ale nanoparticulelor s-a analizat cantitatea de oxigen stocat in comparatie cu cantitatea necesara stoechiometrica pentru a se forma oxidul de ceriu. - Evaluarea activitatii fotocatalitice a materialelor noi pe baza de TiO₂ dopat cu Cu, Ag sau RE (La, Er, Sm) in functie de cantitatea de dopant pentru degradarea unor coloranti (albastru de metilen, Amaranth, Rosu de Congo, etc.) sub iradiere cu lumina vizibila. De asemenea, a fost evaluata cinetica procesului de fotodegradare pentru aceste materiale. - Au fost analizate proprietatile fotofizice ale unor azometine care contin ciclul 1,3,4-oxadiazolic: solvatocromism, halocromism si detectia unor ioni metalici (Zn²⁺, Cu²⁺, Co²⁺, Ag⁺). 		
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Electrical and electronic gas sensors; **P. Pascariu Dorneanu**, E. Koudoumas, M. Sucheia; *Transparent Conductive Oxides*; (Eds.) M. Sucheia, E. Koudoumas, **P. Pascariu**, M. Micut; Elsevier; acceptat 2021

Raportate la alte subprograme

- Polysaccharide-based materials as promising alternatives to synthetic-based plastics for food packaging applications; I. E. Raschip, **N. Fifere**, M. V. Dinu; *Bioplastics for Sustainable Development*; (Eds) M. Kuddus, Roohi; Springer Nature Publisher; 515-554 (2021)
- Molecular dynamics simulations and in silico analysis of supramolecular self-assembled structures; C. Cojocaru, A. Neamtu, T. Vasiliu, **D. L. Isac**, M. Pinteala, *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Eds.) M. J. M. Abadie, M. Pinteala, A. Rotaru; Springer International Publishing; 357-371 (2021)
- Measuring ionic transport through lipid bilayers; R. Zonda, S. A. Ibanescu, M. Sillion, A. Coroaba, **D. L. Isac**, M. J. M. Abadie, M. Pinteala; *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*; (Eds.) M. J. M. Abadie, M. Pinteala, A. Rotaru; Springer International Publishing, 25-50 (2021)

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Innovative Ag-TiO₂ nanofibers offering excellent photocatalytic and antibacterial action; **P. Pascariu**, C. Cojocaru, **A. Airinei**, N. Olaru, I. Rosca, E. Koudoumas, M. P. Sucheia; *Catalysts* 11, 1234 (2021) FI = 4,146
2. Optical properties of solute molecules: Environmental Effects, challenges, and their practical implications; **M. Homocianu**, *Microchemical Journal* 161, 105797 (2021) FI = 4,821
3. Novel electrospun membranes based on PVDF fibers embedding lanthanide doped ZnO for adsorption and photocatalytic degradation of dye organic pollutants; **P. Pascariu**, C. Cojocaru, P. Samoila, N. Olaru, A. Bele, **A. Airinei**; *Materials Research Bulletin* 141, 111376 (2021) FI = 4,641
4. Revealing the effect of synthesis conditions on the structural, optical, and antibacterial properties of cerium oxide nanoparticles; **N. Fifere**, **A. Airinei**, M. Dobromir, L. Sacarescu, S. I. Dunca; *Nanomaterials* 11, 2596 (2021) FI = 5,047
5. Dielectric, thermal and water absorption properties of some EPDM/flax fiber composites; **A. Airinei**, M. Asandulesa, M. D. Stelescu, N. Tudorachi, **N. Fifere**, A. Bele, V. Musteata; *Polymers* 13, 2555 (2021) FI = 4,329
6. Obtaining nanostructured ZnO onto Si coatings for optoelectronic applications via eco-friendly chemical preparation routes; M. Sucheia, E. G. Petromichelaki, C. Romanitan, M. Androulidaki, A. Manousaki, Z. Viskadourakis, R. Ikram, **P. Pascariu**, G. Kenanakis; *Nanomaterials* 11, 2490 (2021) FI = 5,047

7. New La³⁺ doped TiO₂ nanofibers for photocatalytic degradation of organic pollutants: Effect of thermal treatment and doping loadings; **P. Pascariu**, C. Cojocaru, **M. Homocianu**, P. Samoila, A. Dascalu, M. Sucheai; *Ceramics International* (acceptata) FI = 4,527

Raportate la alte subprograme

- In silico study of PEI-PEG-squalene-dsDNA polyplex formation: the delicate role of the PEG length in the binding of PEI to DNA; T. Vasiliu, B. F. Craciun, A. Neamtu, L. Clima, **D. L. Isac**, S. S Maier, M. Pinteala, F. Mocci, A. Laaksonen; *Biomaterials Science* 9, 6623-6640 (2021) FI = 6.843
- A comparative analysis on the effect of variety of grape pomace extracts on the ice-templated 3D cryogel features; I. E. Raschip, **N. Fifere**, M. V. Dinu; *Gels* 7, 76 (2021) FI = 4.702
- Artificial neural network and molecular modeling for assessing the adsorption performance of a hybrid alginate-based magsorbent; C. Cojocaru, A. C. Humelnicu, **P. Pascariu**, P. Samoila; *Journal of Molecular Liquids* 337, 116406 (2021) FI = 6.165
- Azomethines containing 1,3,4-oxadiazole ring: Synthesis, photophysical properties, halochromism and metal ions sensing responses; C. Hamciuc, **M. Homocianu**, E. Hamciuc; *Journal of Molecular Liquids* 336, 116268 (2021); FI = 6.165
- Critical assessment of structural changes in some copolyamide-clay hybrid materials in correlation with the filler characteristics; M. Zanoaga, **A. Airinei**, **N. Fifere**, C. V. Grigoras, D. Timpu, F. Tanasa; *Polymer Composites* 42, 5936-5951 (2021); FI = 3.171
- Flexible thin films based on poly(ester imide) materials for optoelectronic applications; D. Serbezeanu, **M. Homocianu**, A. M. Macsim, A. A. Enache, T. Vlad-Bubulac; *Polymer International* <https://doi.org/10.1002/pi.6288>; FI = 2.990

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. PVDF fibers embedding lanthanide doped ZnO membranes for adsorption and photocatalytic degradation of dye organic pollutants; **P. Pascariu**, C. Cojocaru, **A. Airinei**, M. Sucheai; The 3rd International Workshop Advances on Photocatalysis (AdvPhotoCat-EE2021); Bucharest, Romania, 28–29.06.2021
2. Electronic structure and mechanism of isomerization in the case of azobenzene derivatives during the reaction pathways following the ground and excited-state pathways; **D. L. Isac**, **A. Airinei**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", Iasi, RO, 7-9.10.2021

Comunicari orale prezentate la manifestari stiintifice internationale

3. Composite nanofibers for improved photocatalytic performance under UV and visible light irradiation; M. Sucheai, **P. Pascariu**, E. Koudoumas; 3rd Webinar on Catalysis, Chemical Engineering & Technology; 24–25.06.2021
4. New La doped TiO₂ nanofibers for photocatalytic degradation of dye and drug: the effect of thermal treatment and La doping amount; **P. Pascariu**, C. Cojocaru, **M. Homocianu**, P. Samoila, M. Sucheai; The 3rd International Workshop Advances on Photocatalysis (AdvPhotoCat-EE2021), Bucharest, Romania, 28 –29.06.2021
5. 1D-lanthanides (La, Sm, Er) doped TiO₂ photocatalysts for degradation of organic pollutions; **P. Pascariu**, C. Cojocaru, M. Sucheai; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Costa Brava, Spain, 24-30.09.2021
6. Structural characterization of rare-earths doped TiO₂ nanofibers; L. B Tudoran, C. Romanitan, **P. Pascariu**, M. P. Sucheai; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Costa Brava, Spain, 24-3.09.2021
7. Electrospun Cu doped TiO₂ nanofiber composites with high photocatalytic activity; **P. Pascariu**, **M. Homocianu**; New Trends and Strategies in the Chemistry of Advanced Materials with Relevance in Biological Systems, Technique and Environmental Protection, Timisoara, Romania, 7-8.10.2021

Postere prezentate la manifestari stiintifice internationale

8. Photocatalytic composite membranes for water treatment: results, limitations, and new insights; **M. Homocianu**, **P. Pascariu**; New Trends and Strategies in the Chemistry of Advanced Materials with Relevance in Biological Systems, Technique and Environmental Protection, Timisoara, Romania, 7-8.10.2021
9. Structural properties of copper oxide nanoparticles and their applications as photocatalysts in organic pollutants degradation; **C. Gherasim**, **A. Airinei**, **P. Pascariu**, **N. Fifere**, F. Doroftei, A. Dascalu; The 3rd International Workshop Advances on Photocatalysis including Environmental and Energy Applications, AdvPhotoCat-EE2021, Bucharest, Romania, 28 –29.06.2021
10. Applications and properties of lanthanide complexes; **I. R. Tigoianu**, C. Serpa, **M. Avadanei**, M. F. Zaltariov, **D. Ursu**; 1st International Electronic Conference on Chemical Sensors and Analytical Chemistry, CSAC2021; 1 – 15.07. 2021

Raportate la alte subprograme

- Evans blue photodegradation by novel samarium doped zinc aluminium spinel ferrites; I. Grecu, P. Samoila, C. Corneliu, **P. Pascariu**, V. Harabagiu; The 3rd International Workshop Advances on Photocatalysis (AdvPhotoCat-EE2021), Bucharest, Romania, 28 –29.06.2021

- A new bioinspired peptide with potential self-assembly properties; V. R. Gradinariu, C. S. Mocanu, B. A. Petre, L. D. Ion, G. Drochioiu, **M. Homocianu**, L. E. Nita; International Scientific Conference of the Bulgarian Peptide Society, Velingrad, Bulgaria, 27-29.08.2021
- Siloxane/silane derivatives based on 5-amino-1,3,4-thiazole-2-thiol and their gold complexes: interfacial phenomena based on photoluminescence, M. Damoc, A. C. Stoica, M. Dascalu, A. M. Macsim, **R. I. Tigoianu**, D. Blaj, A. G. Rusu, M. Iacob, M. Cazacu; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Participari la diverse seminarii online:

- PicoQuant Webinar on the MultiHarp 160, our new scalable multichannel event timer and TCSPC unit; R. Tigoianu; 1.03.2021
- PicoQuant Webinar on Uncovering the conformational dynamics of intrinsically disordered proteins on the single molecule level; R. Tigoianu; 17.03.2021
- PicoQuant Webinar on Recent application stories featuring PicoQuant's picosecond pulsed lasers. R. Tigoianu; 1.04.2021
- PicoQuant Webinar on Functional studies of dysfunctional proteins; R. Tigoianu; 25.06.2021
- PicoQuant Webinar on Probing the Dynamics and Interaction Mechanisms of Intrinsically Disordered Proteins with Single-Molecule Spectroscopy; R. Tigoianu; 25.08.2021
- Webinar on Monitoring electronic excitations in organic semiconductors with ultrafast optical pump-probe spectroscopy; SelectScience Science House, Church Farm Business Park, Corston, Bath, BA2 9AP UK; R. Tigoianu; 8.10.2021
- PicoQuant Webinar on Prima - A new multiple color pulsed diode laser; R. Tigoianu; 1.10.2021
- Ronexprim Webinar Milestone „Metode pentru prepararea probelor in vederea determinarii metalelor"; R. Tigoianu; 21.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Contracte de cercetare internationale

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Masuratori de fluorescenta, fosforescenta, timp de viata, respectiv studii de toxicitate si citotoxicitate si studii de evaluare a biocompatibilitatii materialelor, Dr. R. TIGOIANU	Contract prestari servicii incheiat cu Universitatea din Chisinau, Republica Moldova Contract Nr. 4350/4370/10.07.2020/ dr. M. PINTEALA	2021		

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Noi membrane compozite nanostructurate cu proprietati fotocatalitice imbunatatite pentru purificarea apei	PN-III-P1-1.1-TE-2019-0594/Petronela PASCARIU	24 luni	431.900	237.416

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Studii in silico ale derivatilor azobenzenici. Amprente electronice si structuri moleculare in reactii de izomerizare	PD 2021	PN-III-P1-1.1-PD-2021-0060/ D. L. ISAC
2.	Compozite polimerice inovatoare pentru rezonatori dielectrici in domeniul microundelor	PCE 2021	PN-III-P4-PCE-2021-1794/ Mihaela AVADANEI
3.	Materiale hibride polimerice pentru aplicatii ca senzori si rezonatori dielectrici in domeniul microundelor	PED 2021	PN-III-P2-2_1-PED-2021-4200/ Mihaela AVADANEI
4.	Stimuli-responsive composite materials for sensor development	TE 2021	PN-III-P1-1.1-TE-2021/Mihaela HOMOCIANU
5.	Plasturi/comprese cu materiale composite continand grafena nanofibre de ZnO pur si dopat-polimeri biocompatibili pentru aplicatii medicale	PED 2021	PN-III-P2-2.1-PED-2021-1681/ Petronela PASCARIU

6.	Materiale textile noi fotocatalitice active pentru utilizari in spatiile inchise	PED 2021	PN-III-P2-2.1-PED-2021-1674/ Petronela PASCARIU
7.	Sistem de purificare fotocatalitica a apei in lumina vizibila la scara de laborator pentru aplicatii de economisire a energiei	PED 2021	PN-III-P2-2.1-PED-2021-1681/ Petronela PASCARIU

Manifestari stiintifice (congres, conferinta, simpozion) sau scoli de vara internationale organizate

1. The 3rd International Workshop Advances on Photocatalysis (AdvPhotoCat-EE2021) (organizatori), Bucharest, Romania, June 28 -29, 2021 (Online event); Informatii program: <https://photocatalysis-workshop.eu/>; 22 persoane invitate din 13 tari (<https://photocatalysis-workshop.eu/invited-speakers/>), 30 prezentari orale (<https://photocatalysis-workshop.eu/book-of-abstracts/>), 36 prezentari de tip poster si peste 150 participanti din 20 de tari; Membru comitet organizare dr. **P. Pascariu**

III. DEZVOLTARE DE SERVICII, TEHNOLOGII, PRODUSE

Analize spectrale, elementale

1.	Spectre de absorbtie in UV-Viz	2370
2.	Spectre de fluorescenta	1870
3.	Analize carbon	135
4.	Analize hidrogen	135
5.	Analize azot	128
6.	Analize sulf	98
7.	Analize halogeni	30
8.	Analize rezidui	45

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr crt	Nume si prenume	Revista
1.	Anton AIRINEI	Liquids, liquids@mdpi.com
2.	Petronela PASCARIU	Editorial board Surface and Interfaces Surface and Interfaces - Special Issue <i>Advances in photocatalysis - AdvPhotoCat2021</i> Applied Sciences, Special Issue <i>Multifunctional Nanostructured Materials for Next Generation Photovoltaics</i>

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Anton AIRINEI, CS I	25
2.	Petronela PASCARIU, CS III	15
3.	Mihaela AVADANEI, CS III	14
4.	Mihaela MOMOCIANU, CS III	12
5.	Nicusor FIFERE, CS	12

Proiect 8.2. Interactiuni si proprietati in sisteme polimerice complexe

director proiect: Dr. Mihai BREBU

Echipe (procent de timp alocat proiectului): Dr. Mihai BREBU, CS II (100 %) Dr. Raluca Nicoleta DARIE-NITA, CS II (100 %) Dr. Elena STOLERU, CS (100 %) Dr. Daniela PAMFIL, CS (100 %)	Dr. Cristian GRIGORAS, CS (100 %) Dr. Raluca Petronela DUMITRIU, AC (100 %) Dr. Anamaria IRIMIA, AC (100 %) Dr. Elena BUTNARU, AC (100 %)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
- Functionalizari chimice si energetice pe hartie si PLA, - Structurari si imobilizari in sisteme	- lucrari stiintifice publicate: 4 - capitole: 1	- lucrari stiintifice publicate: 8 - capitole: 4

<p>polimer/principiu activ</p> <ul style="list-style-type: none"> - Evaluari ale proprietatilor la suprafata si a energiei libere de suprafata in sisteme polimer/principiu activ - Evidentieri si evaluari a interactiunilor intre princippile active si matricile polimerice - Teste de migrare si mecanisme de eliberare a principiilor active din matrici polimerice - Studiul tranzitiilor termice in sisteme PLA/chitosan-compusi vegetali - Comportamentul si stabilitatea termica a unor deseuri de biomasa vegetala - Caracterizarea produsilor de degradare termica a biomasei 	<ul style="list-style-type: none"> - participari la manifestari stiintifice: 3 	<ul style="list-style-type: none"> - participari la manifestari stiintifice: 12 - propuneri proiecte: 5
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I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Processing of commercially available bioplastics; **R.N. Darie-Nita**, M. Rapa; *Bioplastics for Sustainable Development*; (Eds.) M. Kuddus, Roohi; Springer, Singapore; p. 103-136, ISBN 978-981-16-1822-2 (2021)
2. Bio-based bioplastics in active food packaging; **E. Stoleru, A. Irimia, E. Butnaru**; *Bioplastics for Sustainable Development*; (Eds.) M. Kuddus, Roohi; Springer, Singapore; p. 347-379, ISBN 978-981-16-1822-2 (2021)
3. Synthetic bioplastics in active food packaging; **E. Butnaru, E. Stoleru, A. Irimia**; *Bioplastics for Sustainable Development*; (Eds.) M. Kuddus, Roohi; Springer, Singapore; p. 381-398, ISBN 978-981-16-1822-2 (2021)
4. Poly(lactic acid)-based materials: Food packaging applications and biodegradability evaluation; **E. Stoleru**, *Applications of Biodegradable and Bio-Based Polymers for Human Health and a Cleaner Environment*; (Eds.) I. Stoica, O. Mukbaniani, N. K. Rawat, A. K. Haghi; Apple Academic Press (Taylor&Francis Group); 2021, *in press* <https://www.appleacademicpress.com/applications-of-biodegradable-and-bio-based-polymers-for-human-health-and-a-cleaner-environment-/97817711889766>

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Application of vegetal oils in developing bioactive paper-based materials for food packaging; **A. Irimia, E. Stoleru, C. Vasile, A. Bele, M. Brebu**; *Coatings* 11, 1211 (2021) FI = 2,881
2. Towards a bioactive food packaging: Poly(lactic acid) surface functionalized by chitosan coating embedding clove and argan oils; **E. Stoleru, C. Vasile, A. Irimia, M. Brebu**; *Molecules* 26, 4500 (2021) FI = 4,411
3. Bioactive electrospun fibers of poly(ϵ -caprolactone) incorporating α -tocopherol for food packaging applications; **R.P. Dumitriu, E. Stoleru, G.R. Mitchell, C. Vasile, M. Brebu**; *Molecules* 26, 5498 (2021) FI = 4,411
4. Stabilization techniques of essential oils by incorporation into biodegradable polymeric materials for food packaging; **E. Stoleru, M. Brebu**; *Molecules* 26, 6307 (2021) FI = 4,411
5. PLA-based materials containing bio-plasticizers and chitosan modified with rosehip seed oil for ecological packaging; **R.N. Darie-Nita, M. Rapa, M. Sivertsvik, J.T. Rosnes, E.E. Popa, R.P. Dumitriu, O. Marincas, E. Matei, C. Predescu, C. Vasile**; *Polymers* 13, 1610 (2021) FI = 4,329
6. The effect of different soft core/hard shell ratios on the coating performance of acrylic copolymer latexes; **C.N. Cheaburu-Yilmaz, O. Yilmaz, R.N. Darie-Nita**; *Polymers* 13, 3521 (2021) FI = 4,329
7. Apiaceae essential oils: boosters of terbinafine activity against dermatophytes and potent anti-inflammatory effectors; **A. Trifan, S.V. Luca, A.C. Bostanaru, M. Brebu, A. Jitareanu, R.T. Cristina, K. Skalicka-Woźniak, S. Granica, M.E. Czerwińska, A. Kruk, H. Greige-Gerges, E. Sieniawska, M. Mares**; *Plants* 10, 2378/1-17 (2021) FI = 3,935
8. Thermal degradation of polyethylene in the presence of a non-acidic porous solid by a continuous flow reactor; **K. Murata, Y. Sakata, M. Brebu**; *Journal of Analytical and Applied Pyrolysis* 161, 105395/1-7 (2021) FI = 5,541

Raportate la alte subprograme

- Alginate/poloxamer hydrogel obtained by thiol-acrylate photopolymerization for the alleviation of the inflammatory response of human keratinocytes; **I. Popescu, M. Turtoi, D.M. Suflet, M.V. Dinu, R.N. Darie-Nita, M. Anghelache, M. Calin, M. Constantin**; *International Journal of Biological Macromolecules* 180, 418-431 (2021) FI = 6,953
- New cellulose-collagen-alginate materials incorporated with quercetin, anthocyanins and lipoic acid; **N. Anghel, M.V. Dinu, M. Zaltariov, D. Pamfil, I. Spiridon**; *International Journal of Biological Macromolecules* 181, 30 - 40 (2021) FI = 6,953

- Alginate enriched with phytic acid for hydrogels preparation. Therapeutic applications; L.E. Nita, A.P. Chiriac, A. Ghilan, A.G. Rusu, **D. Pamfil**, I. Rosca, L. Mititelu-Tartau; *International Journal of Biological Macromolecules*, 189, 335 – 345 (2021) FI = 6,953
- Design of multifunctional composite materials based on acrylic ion exchangers and CaCO₃ as sorbents for small organic molecules; M.M. Zaharia, A.L. Vasiliu, M.A. Trofin, **D. Pamfil**, F. Bucatariu, S. Racovita, M. Mihai; *Reactive and Functional Polymers* 166, 104997 (2021) FI= 3,975
- Investigation of cellulose derivatives in solution: laser light scattering and gel permeation chromatography studies; A.G. Grigoras, **V.C. Grigoras**, *Romanian Journal of Physics*, 66, Art. 902/1-10 (2021) FI = 1,888

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Development of bioactive polymeric materials by incorporation of essential/vegetal oils into biopolymer matrices; **E. Stoleru, R.P. Dumitriu, M. Brebu**, C. Vasile, A. Enache; *Proceedings MDPI* 69(1), 25 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Bio-based polymeric materials with incorporated natural bioactive compounds for food packaging or medical applications; **R. P. Dumitriu**; International Manufacturing Forum Series IMFS - Natural Products and Manufacturing, CDRSP Leiria, Portugal, 5.08.2021

Comunicari orale prezentate la manifestari stiintifice internationale

2. Electrospun fibrous coatings with antimicrobial/antioxidant properties; **R.P. Dumitriu, A. Irimia, E. Stoleru, M. Brebu**; International Congress of „Apollonia” University Iasi - By promoting excellence, we prepare the future, Edition XXXI, Iasi, Romania, 1 – 3.03.2021
3. Oil-loaded chitosan coatings towards a bioactive food contact material; **E. Stoleru, M. Brebu, R. P. Dumitriu, A. Irimia**; International Congress of „Apollonia” University Iasi - By promoting excellence, we prepare the future, Edition XXXI, Iasi, Romania, 1 – 3.03.2021
4. pH-sensitive controlled release of ciprofloxacin from natural/synthetic polymeric hybrid systems; **D. Pamfil, E. Butnaru**, C. Vasile, **M. Brebu**; International Congress of „Apollonia” University Iasi - By promoting excellence, we prepare the future, Edition XXXI, Iasi, Romania, 1 – 3.03.2021
5. Chitosan-based hydrogels incorporating bioactive compounds; **E. Stoleru, R. P. Dumitriu, C. N. Cheaburu-Yilmaz, M. Brebu**; International Conference on Polymer Science and Composite Materials - Polymer Connect, 5-7.07.2021
6. Alginate/lignosulfonate-based bioactive systems for green synthesis of Ag nanoparticles; **R.P. Dumitriu, M. Brebu, E. Stoleru**; International Conference on Polymer Science and Composite Materials - Polymer Connect, 5-7.07.2021
7. Characterization of coniferous forestry residues for thermal valorization; **E. Butnaru**, A. M. Serban, **D. Pamfil**, N. Balmoj, I. Spiridon, **M. Brebu**; 23rd International Conference: Materials, Methods and Technologies, Burgas, Bulgaria, 19 – 22.08.2021
8. Influence of bioactive plant extract on the stability of chitosan-based materials; **E. Stoleru, M. Brebu, R.P. Dumitriu**; 23rd International Conference: Materials, Methods & Technologies, Burgas, Bulgaria, 19-22.08.2021

Raportate la alte subprograme

- I.E. Raschip, E. Stoleru, M.V. Dinu, N. Fifere, Xanthan/poly(vinyl alcohol) composites embedding natural antioxidant agents with potential in food packaging applications; International Conference on Polymer Science and Composite Materials - Polymer Connect, 5-7.07.2021

Postere prezentate la manifestari stiintifice internationale

9. Edible food packaging formulations based on renewable resources; M. Rapa, E. Matei, C. Predescu, A.C. Berbecaru, C.M. Pantilimon, **R.N. Darie-Nita**, G. Coman, E.E. Popa; Chemistry World Conference, Roma, Italia, 06-08.09.2021
10. How is influencing packaging food safety? M. Belous, V.E. Simion, **M. Brebu, E. Stoleru**; Sensor Fint 2021 - Smart Spectral Sensors for Agri-Food Quality and Process Control, Porto, Portugal, 30.09 – 1.10.2021
11. Stimuli responsive polymeric-materials as sensing platforms; **E. Stoleru, M. Brebu**; Sensor Fint 2021 - Smart Spectral Sensors for Agri Food Quality and Process Control; Porto, Portuga, 30.09 – 1.10.2021

Postere prezentate la manifestari stiintifice nationale

12. Chemical composition and antifungal activity of five Artemisia spp. essential oils (EOs) on some phytopathogenic fungi; C. M. Rosu, B. Ivanescu, F. Doroftei, **E. Stoleru, M. Brebu**; Congresul Stiintific International, Universitatea pentru Stiintele Vietii "Ion Ionescu de la Brad" din Iasi, Facultatea de Horticultura, Iasi, Romania, 21-22.10.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare internationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	KSP-S- Bio-farming for bioactive compounds, NOFIMA AS (promotor de proiect) cu The Research Council of Norway	320740/09.12.2020; Dr. Elena STOLERU responsabil partener	2021-2023	ICMPP: 500000 NOK (50 000 euro)	

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val
1.	Dezvoltarea de ambalaje alimentare fara impact negativ asupra mediului ambient (AMBAL-INOV)	POC 375/390051/30.09.2021, Cod MySmis 120994; Dr. Mihai BREBU responsabil partener	2021-2023	ICMPP: 2.444.700
2.	Fitoextracte si uleiuri esentiale din Artemisia spp. cu potential in agricultura ecologica, ca biopesticide si erbicide (BioPest)	PN-III-P2-2.1-PED-2019-0091, contract nr. 394/23.10.2020; Dr. Mihai BREBU responsabil partener	2020-2022	ICMPP: 60.000
3.	Obtinerea de chimicale si/sau combustibili prin torefactia si piroliza reziduurilor de conifere forestiere (Forestchemifuel)	PD49/2020 - Dr. Elena BUTNARU	2020-2022	49.390
4.	Biopolimer cu suprafata structurata 3D prin imobilizarea unui hidrogel pentru adeziune controlata de celule (BioHydroSurf);	PD31/2020 - Dr. Elena STOLERU	2020-2022	244.450=

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Deseuri agricole - valorificare completa in biocombustibili si chimicale - AgriValBack	PCE 2021	PN-III-P4-PCE-2021-1141 Dr. Mihai BREBU
2.	Realizarea unor noi membrane polimerice protectoare cu aplicabilitate in tratamentul plagilor cutanate	PED 2021	PN-III-P2-2.1-PED-2021 R.P. DUMITRIU-responsabil partener ICMPP
3.	Eco-filamente active pe baza de poliestere pentru imprimarea 3D a unui prototip destinat suportului medical impotriva COVID-19	TE 2021	PN-III-P1-1.1-TE-2021-1602/R.N. DARIE-NITA
4.	Ambalaje de hartie bioactive pentru o perioada de valabilitate extinsa a alimentelor	TE 2021	PN-III-P1-1.1-TE-2021-1270 Anamaria IRIMIA
5.	Antimicrobial Soft Hydrogels Embedded with Plantago major Extracts as Promising Natural Origin Polymeric Scaffolds for Wound Tissue Healing	PD 2021	PN-III-P1-1.1-PD-2021-0607 Daniela PAMFIL

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr.	Nume si prenume	Domeniul	Anul atestarii
1.	Mihai BREBU	Chimie	2021

Stagii de cercetare

Nr. crt.	Nume si prenume	Sursa de finantare	Institutul in care s-a efectuat stagiul/ perioada
1.	Raluca Nicoleta DARIE-NITA	Academia Polona de Stiinte (PAN) - schimb interacademic	Wroclaw University of Science and Technology, Polonia/20-30 Septembrie 2021

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in Web of Science, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate

Nr.	Nume si prenume	Revista
1.	Mihai BREBU	- Polymers, Numar special "Natural Additives for Special and High Performance Polymeric Materials"
2.	Raluca Nicoleta DARIE-NITA	- International Journal of Polymer Science, Numar special "Polymeric Materials from Renewable Resources for Environmentally Friendly Applications" - Polymers, Numar special "Polyester-based materials"
3.	Elena STOLERU	- Polymers, Numar special "Natural Additives for Special and High Performance Polymeric Materials"

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Mihai BREBU, CSII	27
2.	Raluca Nicoleta DARIE-NITA, CS II	21
3.	Elena STOLERU, CS	16
4.	Raluca Petronela DUMITRIU, AC	13
5.	Vasile Cristian GRIGORAS, CS	12
6.	Daniela PAMFIL, CS	11
7.	Anamaria IRIMIA, AC	8

Proiect 8.3. Materiale polimere. Corelatii structura, morfologie, proprietati optice si electrice

director proiect: Dr. Andreea Irina BARZIC

Echipa (procent de timp alocat proiectului): Dr. Andreea Irina BARZIC, CSIII (100%) Dr. Raluca Marinica ALBU, CS (100%) Dr. Iuliana STOICA, CS (100%)	Dr. Luminita Ioana BURUIANA, AC (100%) Dr. Simona Luminita NICA, AC (100%) Dr. Marius SOROCEANU, AC (40%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
- S-au obtinut materiale polimere transparente cu polarizabilitate inalta prin metoda amestecarii solutiei polimere cu cea de colorant sau agent de ranforsare, combinata cu ultrasonare - S-au analizat proprietatile optice (absorbanta/transmitanta, indice de refractie sau birefringenta) in domeniul vizibil in functie de tipul de solvent sau aditiv - S-au obtinut materiale polimere cu conductivitate electrica marita prin ranforsare cu micro/nano particule (nanotuburi de carbon, titanat de bariu, nitrura de aluminiu) - S-a realizat modificarea suprafetei filmelor polimere prin: frecare cu materiale dure si abrazive si frecare cu materiale textile, urmata de intindere prin presare cu o matrita cu suprafata corugata - S-au investigat proprietatile morfologice si adeziunea interfaciala a filmelor polimere inainte si dupa aplicarea tehnicilor de modificare a suprafetei - S-a studiat dispersia indicelui de refractie in materiale polimere transparente, urmarindu-se gradul optim de ranforsare pentru mentinerea transparentei si impactul doparii polimerului asupra parametrilor rezultati din curbele de dispersie	- lucrari stiintifice publicate: 2 - capitole: 1 - participari la manifestari stiintifice: 2	- lucrari stiintifice publicate: 9 - lucrari BDI: 4 - capitole: 2 - carti editate: 2 - participari la manifestari stiintifice: 11 - propuneri de proiecte: 3

I. ACTIVITATEA STIINTIFICA

Carti editate in edituri consacrate din strainatate

1. *Imidic polymers and green polymer chemistry. New technology and developments in process and product*; (Eds.) **A. I. Barzic**, N.K. Rawat, A.K. Haghi; Apple Academic Press - Taylor & Francis; 378 pag (2021)
2. *Green polymer chemistry and composites pollution prevention and waste reduction*; (Eds.) N. K. Rawat, **I. Stoica**, A.K. Haghi; Apple Academic Press - Taylor & Francis; 294 pag (2021)

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Self-assemblies of macromolecular systems containing green polymers; **A.I. Barzic**, **R.M. Albu**, C. Logigan; *Applied biopolymer technology and bioplastics, sustainable development by green engineering materials*; (Eds.) N.K. Rawat, T.G. Volova, A. K. Haghi; Apple Academic Press - Taylor & Francis; 241-258 (2021)
2. Patterning polyimide films at nanoscale using dynamic plowing lithography; **I. Stoica**; *Imidic polymers and green polymer chemistry. New technology and developments in process and product*; (Eds.) A. I. Barzic, N.K. Rawat, A.K. Haghi; Apple Academic Press - Taylor & Francis; 209-230 (2021)

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Surface alteration implications on potential use of semi-alicyclic polyimide as biomedical materials; **A.I. Barzic**, **R.M. Albu**, **I. Stoica**; *Applied Surface Science* 540, 148377 (2021) FI = 6,607
2. Percolation effects in MCNT-filled polystyrene: rheological, optical, adhesion and conductive investigations; **A.I. Barzic**; *Materiale Plastice* 58(1), 69-77 (2021) FI = 0,593
3. Optical properties and biointerface interactions of chitin; **A.I. Barzic**, **R.M. Albu**; *Polymer Bulletin* 78, 6535-6548 (2021) FI = 2,870
4. Effect of mechanical treatments on orientation behavior and spectral properties of azo-derivatives dyes incorporated in PVA films; **R.M. Albu**, **I. Stoica**, **A.I. Barzic**, M. Postolache, M.D. Angheluta, D.O. Dorohoi; *Polymer Engineering & Science* 61, 2453-2465 (2021) FI = 2,428
5. Molecular modeling, spectral and optical properties of HPMC in different solvents; **R.M. Albu**, **L.I. Buruiana**, **S.L. Nica**, **A.I. Barzic**; *Revue Roumaine de Chimie* 66(4), 381-385 (2021) FI = 0,278
6. Effect of scanning speed on AFM height images and 3D surface texture parameters explored on smooth and rough polymer surfaces; **I. Stoica**, E.G. Hitruc; *Revue Roumaine de Chimie* 66(2), 199-204 (2021) FI = 0,278
7. Polyimides containing chalcogen atoms in solution phase: viscoelasticity and interferometry analyses; **A.I. Barzic**, **R.M. Albu**, C. Hulubei; *Revue Roumaine de Chimie* 66(4), 361-366 (2021) FI = 0,278
8. Evaluation of local mechanical and chemical properties via AFM as a tool for understanding the formation mechanism of pulsed UVLASER nanoinduced patterns on azo-naphthalene-based polyimide films; **I. Stoica**, E. L. Epure, C. P. Constantin, M. D. Damaceanu, E. L. Ursu, I. Mihaila, I. Sava; *Nanomaterials* 11, 812(1-23) (2021) FI = 5,047
9. New strategy for inducing anisotropy in polyimide films for nematics orientation in display applications; E.L. Epure, **I. Stoica**, **R.M. Albu**, C. Hulubei, A.I. Barzic; *Nanomaterials* 11, 3107(1-18) (2021) FI = 5,047

Raportate la alte subprograme

- Synthesis of poly(ethylene brassylate-co-squaric acid) as potential essential oil carrier; A.P. Chiriac, A.G. Rusu, L.E. Nita, A.-M. Macsim, N. Tudorachi, I. Rosca, **I. Stoica**, D. Tampu, M. Aflori, F. Doroftei; *Pharmaceutics* 13, 477(1-24) (2021) FI = 6,321
- Investigation of surface relief gratings on azo-copolyimide films using atomic force microscopy; I. Sava, **I. Stoica**, I. Mihaila, I. Topala; *Revue Roumaine de Chimie* 66(2), 193-198 (2021) FI = 0,278

Articole aparute in reviste recunoscute de CNCS (B+) sau indexate intr-o baza internationala de date (BDI)

1. Effect of the dianhydride moieties on refraction properties of polyimides based on chalcogen elements; **A.I. Barzic**, **R. M. Albu**, **M. Soroceanu**, A.-D. Diaconu, B.C. Condurache, **I. Stoica**; *TEHNOMUS Journal* 28, 69-73 (2021)
2. The influence of filler combination on the refractive index of polyimides used in photovoltaics; **A.I. Barzic**, **R.M. Albu**, M. A. Lungan, **I. Stoica**; *TEHNOMUS Journal* 28, 84-88 (2021)
3. Plasma induced changes on the surface features of a polyimide and their role in interfacial adhesion; **I. Stoica**, **R.M. Albu**, **L.-I. Buruiana**, M.A. Lungan, **A.I. Barzic**; *TEHNOMUS Journal* 28, 78-83 (2021)
4. Effect of polymer structure and morphology on interfacial interaction to some microorganisms; **I. Stoica**, **L.-I. Buruiana**, **R.M. Albu**, M.A. Lungan, **A.I. Barzic**; *TEHNOMUS Journal* 28, 95-100 (2021)

Comunicari orale prezentate la manifestari stiintifice internationale

1. Preparation and sensor characteristics of polyimides filled with iron oxide; **S.L. Nica**, C. Hulubei, V. Nica, I.I. Petrila; *Polymer processing in engineering - PPE 2021*, Galati, Romania, 18-19.11. 2021
2. Double-layered polymer shielding cover with graded refractive index for solar cells with enhanced light harvesting; **A.I. Barzic**; *Polymer processing in engineering - PPE 2021*, Galati, Romania, 18-19.11. 2021

3. Dynamic patterning of polyimide films using atomic force microscopy technique; **I. Stoica**; Polymer processing in engineering - PPE 2021, Galati, Romania, 18-19.11. 2021
4. Effect of the dianhydride moieties on refraction properties of polyimides based on chalcogen elements; **A.I. Barzic, R. M. Albu, M. Soroceanu, A.D. Diaconu, B.C. Condurache, I. Stoica**; 21th Edition of the International Conference Tehnomus new Tehnomus New Technologies and Products in Machine Manufacturing Technologies, Suceava, Romania, 11-13.11.2021
5. The influence of filler combination on the refractive index of polyimides used in photovoltaics; **A.I. Barzic, R.M. Albu, M. A. Lungan, I. Stoica**; 21th Edition of the International Conference Tehnomus Tehnomus New Technologies and Products in Machine Manufacturing Technologies, Suceava, Romania, 11-13.11.2021
6. Plasma induced changes on the surface features of a polyimide and their role in interfacial adhesion; **I. Stoica, R.M. Albu, L.-I. Buruiana, M.A. Lungan, A.I. Barzic**; 21th Edition of the International Conference Tehnomus New Technologies and Products in Machine Manufacturing Technologies, Suceava, Romania, 11-13.11.2021
7. Effect of polymer structure and morphology on interfacial interaction to some microorganisms; **I. Stoica, L.-I. Buruiana, R.M. Albu, M.A. Lungan, A.I. Barzic**; 21th Edition of the International Conference Tehnomus Tehnomus New Technologies and Products in Machine Manufacturing Technologies, Suceava, Romania, 11-13.11.2021

Postere prezentate la manifestari stiintifice internationale

8. Mechanical alteration of the morphological features of a polyimide and their impact on interfacial compatibility; **A. I. Barzic, I. Stoica, R.M. Albu**; 4th Edition of the NanoScientific Forum Europe 2021 – the platform for nanoscience and SPM research in Europe!, Freiburg, Germany, 15-17.09. 2021
9. A new texturing approach of a polyimide shielding cover for enhanced light propagation in photovoltaic devices; **A.I. Barzic, I. Stoica, R.M. Albu**; 4th Edition of the NanoScientific Forum Europe 2021 – the platform for nanoscience and SPM research in Europe!, Freiburg, Germany, 15-17.09. 2021
10. Pretesting laser-patterned polyimide films as substrates for flexible electronic devices; **I. Stoica, I. Sava, E.G. Hitruc, A. F. Trandabat**; 4th Edition of the NanoScientific Forum Europe 2021 – the platform for nanoscience and SPM research in Europe!, Freiburg, Germany, 15-17.09. 2021
11. Advanced morphological and statistical analysis of laser induced micro/nanomultiscale surface relief gratings on azo-polyimide films; **I. Stoica, I. Sava, J. Konieczkowska, E. Schab-Balcerzak**; 4th Edition of the NanoScientific Forum Europe 2021 – the platform for nanoscience and SPM research in Europe!, Freiburg, Germany, 15-17.09. 2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Strategii inovatoare pentru reducerea pierderilor optice prin materiale polimerice de protectie pentru dispozitive fotovoltaice mai eficiente	PN-III-P1-1.1-TE-2019-1878, nr. TE83/1.09.2020/ Andreea Irina BARZIC	24 luni	431.900	280.000

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Abordari inovatoare de marire a stocarii energiei in dielectrici prin doparea polimerilor verzi cu compusi naturali pentru dispozitive eco-compatibile	TE 2021	PN-III-P1-1.1-TE-2021-0762/ Raluca Marinica ALBU
2.	Abordare originala in adaptarea foto/piezo actuatiei coexistente pe suporturi poliimidice pentru electronica flexibila/extensibila si senzori	TE 2021	PN-III-P1-1.1-TE-2021-1044/ Iuliana STOICA
3.	Diode electroluminiscente cu eficienta de extractie luminoasa imbunatatita prin noi incapsulanti polimerici cu un design micro/nano-structural inovativ al suprafetei	PED 2021	PN-III-P2-2.1-PED-2021-1089/ Andreea Irina BARZIC

V. PRESTIGIU STIINTIFIC

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Andreea Irina BARZIC	12
2.	Iuliana STOICA	17

Proiect 8.4. Bio(nano)compozite. Compatibilitate, studii cinetice si de degradare		
director proiect: Dr. Maria Cristina POPESCU		
Echipa (procent de timp alocat proiectului): Dr. Maria-Cristina POPESCU, CSII (100%) Dr. Doina BEJENARU, CSII (100%) Dr. Daniela FILIP, CSII (100%)	Dr. Carmen-Mihaela POPESCU, CS II (42%) Dr. Daniel TIMPU, CSII (100%) Drd. Bianca-Ioana DOGARU, AC (100%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Evaluarea structurala si morfologica a unor sisteme bio(nano)compozite constituite din gelatina, caseina/CNC, argila - Evaluarea structurala si morfologica a unor poliuretani tip stea - Evaluarea cinetica a modificarilor structurale in lemnul tratat termic si hidrotermic - Evaluarea structurala si morfologica a sistemelor nanoparticule hidrofobe de SiO₂ si polimeri acrilici pentru acoperire lemn - Studiul interactiunilor in sisteme gelatina, caseina/CNC, argile - Studiul proprietatilor termice si reologice in functie de compozitie a poliuretanilor de tip stea - Utilizarea metodelor matematice avansate in evaluarea interactiunilor in sisteme gelatina, caseina/CNC, argile - Evaluarea interactiunilor in sistemele nanoparticule hidrofobe de SiO₂ si polimeri acrilici pentru acoperire lemn si hartie - Utilizarea metodelor matematice avansate in evaluarea interactiunilor dintre materialele bio(nano)compozite si moleculele de apa - Stabilirea cineticii de sorbtie in materialele complexe bio(nano)compozite - Studiul proprietatilor reologice si termice ale unor compozite ce contin solventi eutectici naturali - Evaluarea gradului de cristalinitate si a parametrilor retelei cristaline in sisteme complexe - Evaluarea compatibilitatii formularilor bio(nano)compozite cu biofertilizatori - Stabilizarea unor agenti bioactivi in matrici bio(nano)compozite - Studiul proprietatilor de bioadezivitate si mucoadezivitate ale unor hidrogeluri hibride, polimer natural si polimer sintetic - Studiul interactiunii suport/material de acoperire a unor formulari (super)hidrofobe 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 4 - participari la manifestari stiintifice: 2 - propuneri de proiecte: 1 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - participari la manifestari stiintifice: 7 - propuneri de proiecte: 6

I. ACTIVITATEA STIINTIFICA

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

1. Synthesis, characterization of erythromycin propionate core-based star poly(ether urethane)s and their antibacterial properties; **D. Filip, D. Macocinschi**, C.G. Tuchilus, M.F. Zaltariov, C.D. Varganici; *Macromolecular Research* 29, 613-624 (2021) FI = 2,227
2. Gelatin reinforced with CNCs as nanocomposite matrix for trichoderma harzianum KUEN 1585 spores in seed coatings, **B. I. Dogaru**, V. Stoleru, G. Mihalache, S. Yonsel, **M. C. Popescu**; *Molecules* 26, 5755 (2021) FI = 4,411
3. Interactions between different organosilicons and archaeological waterlogged wood evaluated by infrared spectroscopy; **C. M. Popescu**, M. Broda; *Forests* 12, 268/1-16 (2021) FI = 2,633
4. Correlation of studies between colour, structure and mechanical properties of commercially produced ThermoWood® treated Norway spruce and Scots pine; P. Torniaainen, **C. M. Popescu**, D. Jones, A. Scharf, D. Sandberg; *Forests* 12, 1165/1-24 (2021) FI = 2,633

5. Effective use of olive pulp as biomass additive for eco-grade TPU-based composites using functional surface modifiers; S. Sismanoglu, U. Tayfun, **C. M. Popescu**, Y. Kanbur; *Biomass Conversion and Biorefinery* (acceptata) FI = 4,987

Raportate la alte subprograme

- Alginate enriched with phytic acid for hydrogels preparation; L.E. Nita, A.P. Chiriac, A. Ghilan, A.G. Rusu, N. Tudorachi, **D. Timpu**; *International Journal of Biological Macromolecules* 181, 561-571 (2021) FI = 6,953
- Raman Spectroscopy, X-ray diffraction, and scanning electron microscopy as noninvasive methods for microstructural alterations in psoriatic nails; A.E. Chiriac, D. Azoicai, A. Coroaba, F. Doroftei, **D. Timpu**, A. Chiriac, M. Pertea, E.L. Ursu, M. Pinteala; *Molecules* 26, 280 (2021) FI = 4,411

Comunicari orale prezentate la manifestari stiintifice internationale

1. Analysis of honey using infrared spectroscopy and 2D-COS; **B. I. Dogaru**, C. M. Bogza, C. Golea, **M. C. Popescu**; The Eleventh International Symposium on Two Dimensional Correlation Spectroscopy (2DCOS-11); Iasi, Romania, 17-19.08.2021
2. Nanocomposite coatings for wood protection; **B. I. Dogaru**, **M. C. Popescu**, **D. Timpu**, **C. M. Popescu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Costa Brava, Spania, 24 – 30.09.2021
3. Nanocomposite formulation to create superhydrophobic surface on wood; **B.-I. Dogaru**, A.Stankiewicz, P. Gradinariu, **C.-M. Popescu**; 13th International Conference on Physics of Advanced Materials (ICPAM-13) Sant Feliu de Guixols, Costa Brava, Spania, 24 – 30.09.2021
4. Structural characterization of modified cotton/leather samples using cold atmospheric pressure plasma (CAPP) and TiO₂-SiO₂ - reduced graphene oxide nanopowders by WAXD analysis; **D. Timpu**, M.C. Rosu, C. Tudoran, M. Coros, C. Socaci, A. Udra, D. Cosma; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols, Costa Brava, Spania, 24 – 30.09.2021
5. Structural, optical and electrical properties of ZnO:Co,Ni thin films deposited by spin coating; M. Toma, L. Punga, V. Tiron, G.G. Rusu, M. Dobromir, **D. Timpu**, F. Tudorache, F. Iacomi; 13th International Conference on Physics of Advanced Materials (ICPAM-13), Sant Feliu de Guixols Costa Brava, Spania, 24 – 30.09.2021

Postere prezentate la manifestari stiintifice internationale

6. Nanocomposite formulations based on CNC for protection of organic surfaces; **B. I. Dogaru**, **C. M. Popescu**; 7th International Polysaccharide Conference EPNOE; Nantes, Franta, 11-15.10.2021
7. Properties and structure characterization of nanocellulose reinforced casein films; **B. I. Dogaru**, **M. C. Popescu**; 7th International Polysaccharide Conference EPNOE; Nantes, Franta, 11-15.10.2021

Raportate la alte subprograme

- Structural studies on some dental composites containing polyglass and gold nanoparticles as additives; S. Ionita, D. Pricop, M. Ignat, K. Magyari, M. Todea, V. Simon, F. Doroftei, **D. Timpu**, O. Luca, D. Diaconu-Popa, V. Tudose, M. Sucheaa, F. Iacomi, 13th International Conference on Physics of Advanced Materials (ICPAM-13); Sant Feliu de Guixols, Costa Brava, Spania, 24 – 30.09.2021
- Studies on graphene/PEDOT:PSS and graphene/polysiloxane composite layers; L. Punga, T. Alupului, A. Popa, D. Toloman, C. Grosan, L. Barbu-Tudoran, A. Bele, M. Sucheaa, M. Cazacu, **D. Timpu**, P. Prepelita, V. Craciun, T. Tropin, F. Iacomi; 13th International Conference on Physics of Advanced Materials (ICPAM-13); Sant Feliu de Guixols, Costa Brava, Spania, 24 – 30.09.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Nanotehnologii inovative pe baza de polimeri pentru obtinerea de noi materiale avansate, acronim NAPOLI19; PC1. Procedeu inovativ de obtinere a ceramicii de nitrura de titan pe calea hibridelor polimerice compozite pentru aplicatii biomedicale, BIOTIN	40PCCDI/2018, cod proiect: PN-III-P1.2-PCCDI-2017-0428; Responsabil PC1: Daniel TIMPU	2018-2021	26.729	1.530
2	Program interinstitutional pentru dezvoltarea de solutii avansate de eco-nanotehnologii pentru tratamente multifunctionale ale materialelor textile si din piele, PHYSforTEL	44PCCDI/2018, cod PN-III-P1-1.2-PCCDI-2017-0743 Responsabil Partener ICMPP: Daniel TIMPU	2018-2021	42.434	2.453

3.	Nano-materiale de acoperire sustenabile de inalta performanta pentru bio-substraturi, NANO4BIO	PN-III-P1-1.1-TE-2019-1375/45 Director Dr. Carmen Mihaela POPESCU	2020-2022	88.150	49.680
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Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Reziduurile lignocelulozice in materiale de inalta calitate pentru agricultura ecologica si sustenabila	PCE 2021	PN-III-P4-PCE-2021-1261/ Dr. Maria Cristina POPESCU
2.	Formulari bionanocompozite verzi pentru agricultura sustenabila	PED 2021	PN-III-P2-2.1-PED-2021-1860 Dr. Maria Cristina POPESCU
3.	Procedeu experimental de obtinere a unui nou tip de fertilizant bioactiv, pentru culturile organice, din reziduuri obtinute dupa procesarea industriala a tomatelor	PED 2021	PN-III-P2-2.1-PED-2021-3871 Dr. Maria Cristina POPESCU
4.	Formulari bio-nanocompozite pentru productia placilor fibrolemnoase ecologice	PED 2021	PN-III-P2-2.1-PED-2021-2563 Dr. Carmen Mihaela POPESCU

Propuneri de proiecte internationale

Nr.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Biomimetic intelligent materials to increase lifetime of offshore structures	MarTera-2021	Dr. Carmen-Mihaela POPESCU
2.	Nanocomposite formulations for antimicrobial green coatings on wood and wood-based products (NORMAGREEN)	M-ERA.NET 2021	Dr. Carmen-Mihaela POPESCU

Manifestari stiintifice (congres, conferinta, simpozion) sau scoli de vara internationale organizate

- The Eleventh International Symposium on Two Dimensional Correlation Spectroscopy (2DCOS-11)*; Iasi, Romania, ICMPP, 17-19 august 2021; <https://mihacpop.wixsite.com/2dcos/program>; peste 60 participanti; **dr. M. C. Popescu, dr. C. M. Popescu**
- 13th International Conference on Physics of Advanced Materials (ICPAM-13)*, Costa Brava, Spain UAIC, 24 - 30.09. 2021, <https://icpam.ro/final-programs/>; 77 plenare/invitate, peste 180 participanti; **dr. D. Timpu**

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)**Lista conducatorilor de doctorat**

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1.	Dr. Maria-Cristina POPESCU	Chimie	2021

Doctoranzi in stagi

Nr. crt.	Doctorand	Domeniul	Anul admiterii	Stadiul pregatirii	Conducator stiintific	Titlul tezei
1.	Bianca-Ioana DOGARU	Chimie	2016	- 3 examene - 3 proiecte cercetare	Acad. Bogdan C. SIMIONESCU	Bionanocompozite polimere pentru agricultura sustenabila

V. PRESTIGIU STIINTIFIC**Membri in colective de redactie ale revistelor nationale/internationale (cotate in Web of Science, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1	Dr. Carmen-Mihaela POPESCU	Editorial Board Member of Wood Material Science & Engineering Associate Editor of International Wood Products Journal Guest Editor of Forests, Special Issue: <i>Thermal Modification of Wood: Process and Properties</i> Guest Editor of Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy <i>VSI of ICAVS and 2DCOS</i>
	Dr. Maria-Cristina POPESCU	Guest Editor of Molecules, Special Issue: <i>Advanced Functional Polymer Nanocomposites</i>
2	Dr. Daniel TIMPU	Editorial Board Member of European Chemical Bulletin

Membri in conducerea unei organizatii internationale de specialitate

Nr. crt.	Nume si prenume	Organizatia
1.	Dr. Carmen-Mihaela POPESCU	EPNOE Junior (vice chair)

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Maria-Cristina POPESCU, CS II	24
2.	Carmen-Mihaela POPESCU, CS II	20
3.	Daniel TIMPU, CS II	18
4.	Daniela FILIP, CS II	16
5.	Doina BEJENARU, CS II	16

LABORATOR FIZICA POLIMERILOR SI MATERIALELOR POLIMERE

SUBPROGRAM 9: CARACTERIZARE VS. SINTEZA. ABORDARE HOLSTICA IN STUDIUL MATERIALELOR POLIMERE

DIRECTOR SUBPROGRAM: ACAD. BOGDAN C. SIMIONESCU

<p>Proiect 9.1. Fenomene de mobilitate moleculara specifice polimerilor si materialelor polimere</p> <p style="text-align: right;">director proiect: Dr. Mariana CRISTEA</p>		
<p>Echipa (procent de timp alocat proiectului): Acad. Bogdan SIMIONESCU, CSI (100%) Dr. Mariana CRISTEA, CSII (100%) Dr. Constantin GAINA, CSII (30%) Dr. Mihaela SILION, CSIII (100%) Dr. Daniela IONITA, CS (100%)</p>	<p>Dr. Cristian PEPTU, CS (50%) Dr. Valentina-Elena MUSTEATA, AC (100%) Dr. Vlad HURDUC, Insp. Sp.II (100%) Dorina ANGHEL, Ref.I (100%) Elena MARLICA, Ref.I (50%) Iulian OCEANU, A1 (100%)</p>	
<p>Activitati realizate</p> <ul style="list-style-type: none"> - Caracterizarea termoreologica pentru solicitari de tractiune (filme de poliuretani, poliimide, PLA) si incovoiere (eprovete PLA-co-PBAT) - Sinteza si caracterizare structurala hidrogeluri poliuretanic pe baza de CD-PEG-LA - Monitorizarea proprietatilor viscoelastice (E', E'', $\tan \delta$ vs. temperatura) ale unor hidrogeluri poliuretanic pe baza de CD-PEG-LA - Teste TGA efectuate pe copolimeri PLA-co-PBAT, in variate conditii - Optimizarea conditiilor experimentale pentru teste de tip Hi-RES-TGA pentru copolimeri PLA-co-PBAT - Caracterizarea DSC a PLA si copolimerilor PLA-co-PBAT pentru surprinderea fenomenelor fizice - Stabilirea conditiilor optime prin testari comparative pentru derularea experimentelor MDSC pe probe de PLA, PLA-co-PBAT - Experimente MDSC pentru separarea fenomenelor succesive si suprapuse in PLA si PLA-co-PBAT - Sinteza si caracterizare monomeri - Elaborarea procedurilor de sinteza a retelelor dinamice - Teste preliminare de analiza termica 	<p>Documente monitorizare propuse</p> <ul style="list-style-type: none"> - lucrari stiintifice publicate: 3 - capitole de carte: 1 - participari la manifestari stiintifice: 2 - propuneri de proiecte: 1 	<p>Documente monitorizare realizate</p> <ul style="list-style-type: none"> - lucrari stiintifice publicate: 5 - carte editata: 1 - capitole de carte publicate/ acceptate: 2 - participari la manifestari stiintifice: 8 - propuneri de proiecte: 2

I. ACTIVITATEA STIINTIFICA

Carti editate in Editura Academiei Romane

1. *Pandemia. Constrangeri si oportunitati economice*; B. C. Simionescu (coordonator); Editura Academiei Romane, (2021)

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

1. Dynamic molecular phenomena in polyimides investigated by dynamic mechanical analysis; **M. Cristea, D. Ionita**, M. Garbea, M. D. Damaceanu; *Imidic Polymers and Green Polymer Chemistry*; (Eds.) A. I. Barzic, N. K. Rawat, A. K. Haghi; Apple Academic Press, CRC Press, Taylor and Francis Group; 325-348 (2021)
2. Dielectric and thermal characterization of biopolymers; **D. Ionita**, M. Asandulesa, **M. Cristea**; *Functional Biomaterials: Design and development for biotechnology, pharmacology and biomedicine*; (Eds.) T. Mohan, K. S. Kleinschek; Wiley-VCH Verlag GmbH; in press

Articole publicate in reviste cotate de Web of Science (Thomson Reuters)

1. Thermal analysis and polarized light spectroscopy as methods to study the increasing of the durability of PLA designed for 3D printing; S. Mathe, D. Dimonie, **M. Cristea**; *International Journal of Polymer Analysis and Characterization* 26, 253-264 (2021) FI=2,583
2. Modulation of the PLLA morphology through racemic nucleation to reach functional parameters required by 3D printing durable applications; D. Dimonie, S. Mathe, M. M. Iftime, **D. Ionita**, R. Trusca, S. Iftimie; *Materials* 12, art. 6650, 1-17 (2021) FI=3,623
3. Fluorescent phthalocyanine-encapsulated bovine serum albumin nanoparticles: their deployment as therapeutic agents in the NIR region; R. Borlan, D. Stoia, L. Gaina, A. Campu, G. Marc, M. Perde-Schrepler, **M. Silion**, D. Maniu, M. Focsan, S. Astilean; *Molecules* 26, art. 4679, 1-21 (2021) FI=4,411
4. Biodegradable biochar composites; M. Musioł, J. Rydz, H. Janeczek, A. Kordyka, J. Andrzejewski, T. Sterzyński, S. Jurczyk, **M. Cristea**, K. Musioł, M. Kampik, M. Kowalczuk; *Materials Science and Engineering: B*, doi:10.1016/j.mseb.2021.115515, FI=4,051

Articole aparute in reviste recunoscute de CNCS (B+) sau indexate intr-o baza internationala de date (BDI)

5. Petru Poni – a model of leadership, integrity and tenacity; **M. Cristea, D. Ionita, B. C. Simionescu**; *Revista de Chimie* 72 (4), 8-12 (2021)

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Dynamic mechanical analysis: where we are in ICMPP and what can be ahead; **M. Cristea, D. Ionita**, P. Lazar, **B. C. Simionescu**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126, 35-36 (2021)
2. Sample controlled thermal analysis – a promising approach for complex systems; **D. Ionita, M. Cristea**, P. Lazar, **B. C. Simionescu**; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN: 2018 – 2347 ISSN – L 2810 - 2126; 75-76 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Dynamic mechanical analysis: where we are in ICMPP and what can be ahead; **M. Cristea, D. Ionita**, P. Lazar, **B. C. Simionescu**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice nationale

2. Petru Poni - un savant in slujba binelui public; **B. C. Simionescu**; In memoriam Petru Poni (1841-1925), Muzeul "Poni-Cernatescu", Iasi, Romania, 2.04.2021
3. Basarabia si Academia Romana; **B. C. Simionescu**; Conferinta stiintifica comuna "Cercetari stiintifice in contextul provocarilor secolului XXI", Academia de Stiinte a Moldovei si Academia Romana, on-line, 8.06.2021
4. Academia Romana – fragmente ale unei bogate istorii; **B. C. Simionescu**; Simpozionul "Maramures – promotor al culturii si identitatii romanesti in lume", Baia-Mare, Romania, 3.09.2021
5. Figuri de chimisti romani; **B. C. Simionescu**; Concursul "Acad. Cristofor I. Simionescu", Facultatea de Inginerie Chimica si Protectia Mediului, Universitatea "Gheorghe Asachi" din Iasi, Iasi, Romania, 20.11.2021

Comunicari orale prezentate la manifestari stiintifice internationale

6. Sample controlled thermal analysis – a promising approach for complex systems; **D. Ionita, M. Cristea**, P. Lazar, **B. C. Simionescu**; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021
7. Sample-controlled thermal analysis applied to β -cyclodextrin-based polyurethane hydrogels; **M. Cristea, D. Ionita, B. C. Simionescu**; North American Thermal Analysis Conference, virtual conference, 3.08-6.08.2021
8. How oligolactide moiety influences the molecular mobility of β -cyclodextrin polyurethane hydrogels: DMA and DSC investigations; **M. Cristea, D. Ionita, C. Peptu**, D. Diaconu; North American Thermal Analysis Conference, virtual conference, 3.08-6.08.2021

II. ATRAGEREA DE FONDURI DE CERCETARE

Proiecte de cercetare nationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON) din care:	2021
1.	Nanotehnologii inovative pe baza de polimeri pentru obtinerea de noi material avansate (NAPOLI 19) PN-III-P1.2-PCCDI-2017-0428 proiect component PC5: Noi materiale durabile pe baza de polimeri regenerabili pentru imprimare 3D	40PCCDI/2018/Dr. Valeria Harabagiu Dr. Mariana CRISTEA, responsabil PC 5	2018-2021	129.000	7.386

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Efectul chimiei covalente dinamice asupra profilului reologic si a comportarii termice a poliuretanilor pe baza de ciclodextrina destinati vindecarii	PCE 2021	PN-III-P4-PCE-2021-1929/Mariana CRISTEA
2.	Anticiparea comportarii in timp a materialelor poliuretanic prin intermediul investigatiilor termoreologice - modele experimentale	PED 2021	PN-III-P2-2.1-PED-2021-3609/Mariana CRISTEA

IV. PREGATIREA RESURSEI UMANE (nivel doctorat, postdoctorat)

Lista conducatorilor de doctorat

Nr. crt.	Nume si prenume	Domeniul	Anul atestarii
1	Bogdan C. SIMIONESCU	chimie	1993

V. PRESTIGIU STIINTIFIC

Membri in colective de redactie ale revistelor nationale/internationale (cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) sau in colective editoriale ale unor edituri internationale consacrate

Nr. crt.	Nume si prenume	Revista
1.	Bogdan C. SIMIONESCU	Materiale Plastice Revue Roumaine de Chimie Academica Akademos Environmental Engineering and Management Journal

Membri in conducerea unei organizatii internationale de specialitate

Nr. crt.	Nume si prenume	Organizatia
1	Bogdan C. SIMIONESCU	Vicepresedine Academia Romana

Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Bogdan C. SIMIONESCU, CS I	30
2.	Mariana CRISTEA, CS II	23
3.	Constantin GAINA, CS II	15
4.	Cristian PEPTU, CS	12
5.	Mihaela SILION, CS III	12
6.	Daniela IONITA, CS	10

Proiect 9.2. Proprietati fizico-chimice caracteristice materialelor polimere structurate		
director proiect: Dr. Magdalena AFLORI		
Echipa (procent de timp alocat proiectului):		
Dr. Magdalena AFLORI, CSII (100%) Dr. Mihaela OLARU, CSIII (100%) Dr. Gabriela HITRUC, CS(100%) Dr. Mioara DROBOTA, CS (100%) Dr. Cristian URSU, CS (100%)	Dr. Bogdan-George RUSU, CS (100%) Dr. Andrei-Victor OANCEA, AC (100%) Drd. Daniela RUSU, AC (100%) Florica DOROFTEI, ISP.I (50%) Maricel DANU, ISP (50%)	
Activitati realizate	Documente monitorizare propuse	Documente monitorizare realizate
<ul style="list-style-type: none"> - Prepararea de materiale nanostructurate cu unitati silesquioxanice, metacrilat si fluor cu proprietati hidrofobe, auto-reparare si anti-imbatrănire - Stabilirea conditiilor experimentale pentru obtinerea filmelor de ZnO poroase prin tehnica PLD - Tratarea polimerilor in plasma unor gaze inerte si a unor amestecuri de gaze, modificarea suprafetelor polimere - Caracterizarea materialelor micro si nanostructurate multifunctionale obtinute - Elucidarea mecanismelor de interactiune dintre plasma si suprafata polimerica, prin efectuarea diagnozei spectrale a plasmiei si stabilirea relatiei structura-proprietati - Monitorizarea parametrilor plasmiei obtinute prin ablatie laser in vederea stabilirii de corelatii directe cu proprietatile filmului semiconductor - Studiul influentei diferitor tipuri de substrat asupra porozitatii filmelor pe baza de ZnO - Testarea proprietatilor materialelor micro si nanostructurate cu functiuni specifice 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 4 - capitol de carte: 1 - participari la manifestari stiintifice: 2 - propuneri de proiecte: 2 	<ul style="list-style-type: none"> - lucrari stiintifice publicate: 10 - capitol de carte: 1 - participari la manifestari stiintifice: 9 - propuneri de proiecte: 7

I. ACTIVITATEA STIINTIFICA

Capitole in tratate, carti sau monografii editate in edituri consacrate din strainatate

- Surface properties of POSS nanocomposites, M. Murariu, **A.-V. Oancea**, **C. Ursu**, G. Rusu, C. Cotofana, B. Simionescu, **M. Olaru**, *Polyhedral Oligomeric Silsesquioxane (POSS) Polymer Nanocomposites*, (Eds.) S. Thomas, L. Somasekharan, Elsevier, 421-448 (2021).

Articole publicate in reviste cotate de *Web of Science* (Thomson Reuters)

- Smart nanomaterials for biomedical applications- A mini-review; **M. Aflori**; *Nanomaterials* 11, art. 396, 1-33 (2021) FI=5,076
- Effect of UV irradiation on surface of collagen film; **M. Drobota**, M. Barbalata-Mandru, L. M. Gradinaru, I. Alexa; *Revue Roumaine de Chimie* 66, 81-85(2021) FI=0,278
- Preparation and surface characterization of polyurethane hydrogels; M. Barbalata-Mandru, M. Bercea, L. M. Gradinaru, **M. Aflori**, R. Albulescu; *Revue Roumaine de Chimie* 66, 87-93 (2021) FI=0,278
- Electrical characterization of carbon plasma generated by excimer laser ablation of graphite; P. Nica, **C. Ursu**, C. Focsa; *Applied Surface Science* 540, art. 148412, 1-8 (2021) FI=6,707
- Eco-friendly O/W emulsions with potential application in skincare products; A. Danila, S.-A. Ibanescu, C. Zaharia, E. I. Muresan, A. Popescu, **M. Danu**, V. Rotaru; *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 621, art. 125969, 1-12 (2021) FI=4,539
- Preparation, characterization and application of polysaccharide-based emulsions incorporated with lavender essential oil for skin-friendly cellulosic support; A. Danila, E. I. Muresan, S.-A. Ibanescu, A. Popescu, **M. Danu**, C. Zaharia; G. C. Turkoglu, G. Erkan, A.-I. Staras; *International Journal of Biological Macromolecules* 191, 405-413 (2021) FI=6,953
- Long-range oscillations of a laser-produced carbon plasma recorded by an electrostatic energy analyzer; P.-E. Nica, **C. Ursu**, C. Focsa; *Journal of Applied Physics* 129, art. 053305, 1-7 (2021) FI=2,546
- Hard Dental Tissues Regeneration - Approaches and Challenges; **M. Olaru**, L. Sachelarie, G. Calin; *Materials* 14, art. 2558, 1-35 (2021) FI=3,623

9. Evaluation of the wound healing potential of some natural polymers on three experimental models; C. V. Andritoiu, C. E. Andriescu, **M. Danu**, C. Lungu, B. Ivanescu, C. Havarneanu, M. Popa; *Pharmaceuticals* 14, art. 465, 1-17 (2021) FI=5,863
10. Thermal characterization and rheological behavior of some varnishes and paints used for wood protection; A. Mihaila, **M. Danu**, C. Ibanescu, I. Anghel, I.-E. Sofran, L.V. Balanescu, N. Tudorachi, G. Lisa, *International Journal of Environmental Science and Technology*, doi: 10.1007/s13762-021-03579-6 (2021) FI=2,86

Raportate la alte subprograme

- Chemical treatment of lignosulfonates under DBD plasma conditions. I. Spectral characterization; G. Cazacu, O. Chirila, M. I. Totolin, D. Ciolacu, L. Nita, **M. Drobotă**, C. Vasile; *Journal of Polymers and the Environment* 29, 900–921 (2021) FI=3,667
- Self-assembly and rheological behavior of chloramphenicol-based poly(ester ether)urethanes; M.-F. Zaltariov, D. Filip, D. Macocinschi, C. Ibanescu, **M. Danu**, L. Sacarescu; *Journal of Polymer Research* 28, art. 190, 1-15 (2021) FI=3,097
- Comparative investigation of collagen-based hybrid 3D structures for potential biomedical applications; G. David, A. I. Bargan, **M. Drobotă**, A. Bele, I. Rosca; *Materials* 14, art. 3313, 1-16 (2021) FI=3,623
- Synthesis of poly(ethylene brassylate-Co-squaric acid) as potential essential oil carrier; A. P. Chiriac, A. G. Rusu, L. E. Nita, A.-M. Macsim, N. Tudorachi, I. Rosca, I. Stoica, D. Tampu, **M. Aflori**, **F. Doroftei**; *Pharmaceutics* 13, art 477, 1-24 (2021) FI=6,321
- Effect of scanning speed on AFM height images and 3D surface texture parameters explored on smooth and rough polymer surfaces; I. Stoica, **E. G. Hitruc**; *Revue Roumaine de Chimie* 66, 199-204 (2021) FI=0,278

Lucrari prezentate la manifestari stiintifice internationale, publicate integral in volume editate intr-o editura consacrata din strainatate, inclusiv electronic (Conference Proceedings Citation Index- Science, Web of Science, Thomson Reuters)

1. Antimicrobial properties of polyimide film obtained by two-step treatments; **M. Aflori**, M. Butnaru, **F. Doroftei**, **M. Drobotă**, M. Barbalata-Mandru, M. Spiridon, S. Vlad, L. M. Gradinaru, S. Ursache; *Proceedings of the 9th edition of IEEE International Conference on e-Health and Bioengineering*; IEEE 978-1-6654-4000-4/21 (2021)
2. Polyurethane composites based on iron oxide nanoparticles as precursor in MRI; L. M. Gradinaru, S. Vlad, M. Barbalata-Mandru, **M. Drobotă**, M. Spiridon, **M. Aflori**, M. Butnaru, A. Ionel, R. C. Ciobanu; *Proceedings of the 9th edition of IEEE International Conference on e-Health and Bioengineering*; IEEE 978-1-6654-4000-4/21 (2021)
3. Modification of the polyurethane film surface properties after air-plasma treatment; M. Barbalata-Mandru, L. M. Gradinaru, **M. Aflori**, S. Ursache; *Proceedings of International Conference Progress in Organic and Macromoleculcular Compounds* ISSN:2810-2126; 117-118 (2021)

Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice internationale

1. Laser-generated transient carbon plasmas: peculiar dynamics evidenced by optical and electrical measurements; **C. Ursu**, P. E. Nica, G. Rusu, **M. Olaru**, **A. V. Oancea**, C. Focsa; The 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spain, 24–30.09.2021
2. How surface modification techniques can influence the biological activity of a polymer?; **M. Aflori**, **M. Drobotă**; The XXXIth edition of the International Congress of Apollonia University of Iasi, Iasi, Romania; 1-3.03.2021

Comunicari orale prezentate la manifestari stiintifice internationale

3. Development of polyvinyl alcohol materials with plant extracts for biomedical applications; M. Barbalata-Mandru, D. Serbezeanu, M. Spiridon, **M. Drobotă**, **M. Aflori**; The XXXIth edition of the International Congress of Apollonia University of Iasi, Iasi, Romania; 1-3.03.2021
4. Laser-synthesized Si nanoparticles in liquid environment for biomedical applications; B. G. Rusu, C. Ursu, P. Nica, A. Bejan, **M. Olaru**, **A. V. Oancea**, C. Focsa; The 19th International Conference on Plasma Physics and Applications (CPPA 2021), National Institute for Lasers, Plasma and Radiation Physics, Bucharest, Romania, 31.08-3.09.2021
5. Characterization of carbon ions in excimer laser-generated plasma using the electrostatic energy analyzer; P.-E. Nica, **C. Ursu**, G. Rusu, C. Focsa, The 19th International Conference on Plasma Physics and Applications (CPPA 2021), National Institute for Lasers, Plasma and Radiation Physics, Bucharest, Romania, 31.08-3.09.2021
6. Polyurethane Composites Based on Iron Oxide Nanoparticles as Precursor in MRI; L. M. Gradinaru, S. Vlad, M. Barbalata-Mandru, **M. Drobotă**, M. Spiridon, **M. Aflori**, M. Butnaru, A. Ionel and R. C. Ciobanu; The 9th edition of IEEE International Conference on e-Health and Bioengineering; Iasi, Romania, 18-19.11.2021
7. Antimicrobial Properties of Polyimide Film Obtained by Two-Step Treatments; **M. Aflori**, M. Butnaru, **F. Doroftei**, **M. Drobotă**, M. Barbalata-Mandru, M. Spiridon, S. Vlad, L. M. Gradinaru, S Ursache; The 9th edition of IEEE International Conference on e-Health and Bioengineering; Iasi, Romania, 18-19.11.2021

Raportate la alte subprograme

- Bioinspired polymer nanocomposites providing scalable solution for thermal management; G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui, **C. Ursu**; Applied Nanotechnology and Nanoscience International Conference, virtual conference, 24-26.03.2021
- Bioinspired polymer materials for thermal management of heating and cooling in buildings; G. Stiubianu, A. Bargan, M. Dascalu, C. Racles, A. Bele, C. Tugui, **C. Ursu**, M. Cazacu; The 9th European Conference on Renewable Energy Systems (ECRES 2021), Istanbul, Turkey, 21-23.04.2021
- Enhanced physico-chemical and biological properties of cryogels containing xanthan gum; I. E. Raschip, **E. G. Hitruc**, M. V. Dinu; The 3rd Young Researchers' International Conference on Chemistry and Chemical Engineering (YRICCCE III), 4-5.06.2021
- Self-actuated thermal comfort clothing with dielectric elastomers; G. Stiubianu, C. Tugui, A. Bele, M. Dascalu, A. Bargan, **C. Ursu**, C. Racles, M. Cazacu; The 14th International Symposium on Flexible Organic Electronics (ISFOE21), Thessaloniki, 5-8.07.2021
- First-principles calculations of the energy flux for bioinspired personalized thermal comfort wearables; G. T. Stiubianu, A. Bargan, M. Dascalu, C. Racles, A. Bele, C. Tugui, **C. Ursu**, M. Cazacu; The 3rd AAAFM-UCLA International Conference on Advances in Functional Materials, University California, Los Angeles, 18-20.08.2021
- Developments in functional materials for energy-efficient thermal comfort; G. Stiubianu, **C. Ursu**, A. Bele, C. Tugui, A. Bargan, M. Dascalu, C. Racles, M. Cazacu, The 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spain, 24-30.09.2021
- Energy-efficient dynamic polymer-based nanocomposites for thermal comfort; G. Stiubianu, **C. Ursu**, C. Tugui, A. Bele, A. Bargan, M. Dascalu, C. Racles, M. Cazacu, A. Ciobotaru; The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Postere prezentate la manifestari stiintifice internationale

8. An overview of collagen materials used in biomedical applications; M. Spiridon, M. Barbalata-Mandru, M. Butnaru, **M. Aflori**; The XXXIth edition of the International Congress of Apollonia University of Iasi, Iasi, Romania; 1-3.03.2021
9. Modification of the polyurethane film surface properties after air-plasma treatment, M. Barbalata-Mandru, L. M. Gradinaru, **M. Aflori**, S. Ursache, The 28th Edition of International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO IASI 2021, Iasi, Romania, 7-9.10.2021

Raportate la alte subprograme

- Pretesting laser-patterned polyimide films as substrates for flexible electronic devices; I. Stoica, I. Sava, **E. G. Hitruc**, A. F. Trandabat; The 4th edition of the NanoScientific Forum Europe 2021, Freiburg, Germany, 15-17.09.2021

II. ATRAGEREA DE FONDURI DE CERCETARE**Proiecte de cercetare nationale finantate din fonduri publice**

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1.	Parteneriate pentru transfer de cunostinte in domeniul materialelor polimere biocompatibile	POC 86/2016, SMIS105689/ Magdalena AFLORI	2016-2022	3.000.000	374.225

Propuneri de proiecte nationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	Metoda experimentală inovativă de obținere de fotocatalizatori cu eficiență ridicată și flexibili pe baza de semiconductori pentru depoluarea mediului	TE 2021	PN-III-P1-1.1-TE-2021-1182/Cristian URSU
2.	Substitute tisulare biomimetice pentru cartilaje prin printarea 4D a materialelor avansate multicomponente	PED 2021	PN-III-P2-2.1-PED-2021-3253/Mihaela OLARU
3.	Dezvoltarea unui sistem de nanoparticule de siliciu funcționalizate cu aplicații în imunoterapie	TE 2021	PN-III-P1-1.1-TE-2021-1062/Bogdan-George RUSU
4.	Îmbunătățirea germinării semintelor și a vigoriei de creștere a plantelor folosind seminte tratate în plasma rece	PED 2021	PN-III-P2-2.1-PED-2021-3195/Bogdan-George RUSU
5.	Metamateriale nanocompozite biocompatibile cu conductivitate electrică predirecționată și anizotropie controlată pt dezvoltarea sistemelor personalizate utilizate în stimularea magnetică transcraniană	PED 2021	PN-III-P2-2.1-PED-2021-2482/Magdalena AFLORI

Propuneri de proiecte internationale

Nr. crt.	Denumire proiect	Competitia	Numar/responsabil contract
1.	European Training Platform for SMEs in the field of Additive Manufacturing at the sub-millimetre/ micro/ nanoscale – EUPLAT-MINAM (coordonator – IMT Bucuresti)	H2020-INNOSUP-2018-2020	101037855/Mihaela OLARU
2.	Trade interactions established by analysing the exchange of pottery (TIEAEP)	Marie Skłodowska-Curie Global@Venice-Research and training for global challenges	554041/Andrei-Victor OANCEA

V. PRESTIGIU STIINTIFIC**Cercetatori cu indice Hirsch peste 8**

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1.	Magdalena AFLORI, CS II	17
2.	Mihaela OLARU, CS III	12
3.	Cristian URSU, CS	10
4.	Bogdan-George RUSU, CS	9

CENTRALIZATOR REZULTATE

1. DATE DE IDENTIFICARE

- **Statut juridic:** Institutie de cercetare-dezvoltare de interes public, institut al Academiei Romane
- **Act de infiintare:** O 611/1950, HG 197/02.03.1990
- **Numar de inregistrare in Registrul Potentialilor Contractor:** 1753
- **Director:** Dr. Valeria HARABAGIU
- **Director adjunct:** Dr. Anton AIRINEI
- **Secretar Stiintific:** Dr. Marcela MIHAI
- **Adresa:** 700487 Iasi, Aleea Grigore Ghica Voda, nr. 41A
- **Telefon:** +40-332 -880220; Fax: +40-232-211299
- **Pagina web:** www.icmpp.ro; **e-mail:** pponi@icmpp.ro

2. DOMENIU DE SPECIALITATE

- **Conform clasificarii UNESCO:** 23.04; 23.06
- **Conform clasificarii CAEN:** 7310

3. STARE INSTITUT

3.1. Misiune

- Cercetare fundamentala si aplicativa in domeniul polimerilor si materialelor polimere
- Specializare prin intermediul programelor doctorale si/sau postdoctorale tineri cercetatori
- Oferta servicii si consultanta partenerilor regionali si nationali
- Productie la scara mica de polimeri si materiale polimere cu utilizari specifice.

3.2. Directii de cercetare:

- Chimie supramoleculara, fizico-chimia suprafetelor
- Materiale polimere din resurse regenerabile. Protectia mediului. Conservarea energiei
- Materiale polimere proiectate pentru bioaplicatii
- Polimeri pentru aplicatii de inalta performanta. Materiale nanodimensionate/nanostructurate

3.3. Modul de valorificare a rezultatelor de cercetare, dezvoltare, inovare si gradul de recunoastere a acestora:

- Pozitionarea cercetatorilor: cercetatori cu indice Hirsch mai mare de 8: **139**
- Numarul total de citari ale articolelor: **69.307 (50.911 fara autocitari)** (cf. WOS la 25.11.2021)
- Numarul de citari ale articolelor in 2021: **7242** (cf. WOS la 25.11.2021)

3.4. Numarul personalului de cercetare:

- CS - CS I: **133**
- AC: **62**

3.5. Numarul total al personalului

- **283**

4. CRITERII DE PERFORMANTA IN CERCETAREA STIINTIFICA

4.1. Carti editate intr-o editura din strainatate

Carti aparute in edituri consacrate din strainatate

1. *Chemistry of Functional Materials Surfaces and Interfaces*; A. Honciuc; Editura Elsevier: Amsterdam; 1-271 (2021), ISBN: 978-0-12-821059-8, DOI: 10.1016/C2019-0-02998-6
2. *Green polymer chemistry and composites pollution prevention and waste reduction*; (Eds.) N. K. Rawat, I. Stoica, A.K. Haghi; Apple Academic Press - Taylor & Francis; 294 pag (2021)
3. *Imidic polymers and green polymer chemistry. New technology and developments in process and product*; (Eds.) A. I. Barzic, N.K. Rawat, A.K. Haghi; Apple Academic Press - Taylor & Francis; 378 pag (2021)
4. *New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications*. Editors: M. J. M. Abadie, M. Pinteala, A. Rotaru. Springer Nature Switzerland, 371 p (2021).
5. *Science Without Borders: Alexander Von Humboldt's Concepts in Today's World*, Proceedings of the Humboldt-Kolleg, Varna, September 18-21, 2019; (Eds.) L. Taseva, R. Argirova, D. Boteva, M. L. Grilli, T. Vlad-Bubulac; Faber Publishing House, Sofia, Bulgaria (2020) (neraportata 2020)

Carti trimise la publicat

1. *Surface Treatment Methods of Natural Fibers and their Effects on Biocomposites* (A. Shahzad, F. Tanasa, **C.-A. Teaca**, Eds.) in curs de publicare la editura Woodhead Publishing-Elsevier (Woodhead Publishing Series in Composites Science and Engineering Series); (March 15, 2022); Language: English; Paperback: 600 pages; ISBN-10: 0128218630; ISBN-13: 978-0128218631

4.2. Carti editate in Editura Academiei Romane

1. *Pandemia. Constrangeri si oportunitati economice*; B. C. Simionescu (coordonator); Editura Academiei Romane, (2021)

4.3. Capitole carti in strainatate

Applied Biopolymer Technology and Bioplastics. Sustainable Development by Green Engineering Materials, N. K. Rawat, T. G. Volova, A. K. Haghi, Eds., Apple Academic Press, Boca Raton, USA (2021)

1. *Processing relation to rheological behavior of some systems containing green polymers*; A. I. Barzic; p. 1-22
2. *Self-assemblies of macromolecular systems containing green polymers*; A. I. Barzic, R. M. Albu, C. Logigan; p. 241-258

Bioplastics for Sustainable Development; (Eds.) M. Kuddus, Roohi; Springer, Singapore; ISBN 978-981-16-1822-2 (2021)

3. *Processing of commercially available plastics*; R. N. Darie-Nita, M. Rapa; p. 103-136
4. *Bio-based bioplastics in active food packaging*; E. Stoleru, A. Irimia, E. Butnaru; p. 347-379
5. *Synthetic bioplastics in active food packaging*; E. Butnaru, E. Stoleru, A. Irimia; p. 381-398
6. *Multicomponent polymer systems based on agro-industrial waste*; F. Tanase, C. A. Teaca, M. Nechifor, M. Zanoaga; p. 467-513
7. *Polysaccharide-based materials as promising alternatives to synthetic-based plastics for food packaging applications*; I. E. Raschip, N. Fifere, M. V. Dinu; p. 515-554

Cellulose Nanoparticles: vol.2: Synthesis and Manufacturing, V. K. Thakur, E. Frollini, J. Scott, Eds., Royal Society of Chemistry, London (2021)

8. *Cellulose nanoparticles/polysaccharide-type polymer-based materials*; C. A. Teaca, F. Tanasa, M. C. Stanciu; p. 443-466

Food Packaging. Advanced Materials, Technologies, and Innovations, S. M. Rangappa, J.**Parameswaranpillai, S. M. K. Thiagamani, S. Krishnasamy, S. Sienghcin, Eds., CRC Press, Boca Raton, USA (2021)**

9. *Processing and properties of chitosan and/or chitin biocomposites for food packaging*; M. Rapa, C. Vasile; p. 291-326

Fundamentals of Solar Cell Design, Inamuddin, M. I. Ahamed, R. Boddula, M. Rezakazemi, Eds., Wiley-Scrivener Publishing, Beverly, USA (2021)

10. *Practices to enhance conversion efficiencies in solar cells*; A. I. Barzic; p. 247-270

Green Materials and Environmental Chemistry: New Production Technologies, Unique Properties, and Applications, A. Z. Yaser, P. Khullar, A. K. Haghi, Eds., Apple Acad. Press (2021)

11. *Perspectives on polymer materials in products manufacturing for green electronics*; A. I. Barzic, L. I. Buruiana, R. M. Albu; p. 249-276

Green Polymer Chemistry and Composites. Pollution Prevention and Waste Reduction, N. K. Rawat, I. Stoica, A. K. Haghi, Eds., Apple Academic Press, Boca Raton, USA (2021)

12. *Multiphase materials based on green polymers for electronics with minimized environmental impact*; A. I. Barzic; p. 203-223

13. *Sustainable eco-friendly polymer-based membranes used in water depollution for life-quality improvements*; A. M. Dobos, M. D. Onofrei, A. Filimon; p. 225-268

Handbook of Modern Coating Technologies, M. Aliofkhaezrai, N. Ali, M. Chipara, N. B. Laidani, J. T. M. De Hosson, Eds., Elsevier, Amsterdam, (2021)

14. *Protective coatings for wood*; F. Tanasa, C. A. Teaca, M. Zanoaga; p. 175-267

Imidic Polymers and Green Polymer Chemistry. New Technology and Developments in Process and Product, A. I. Barzic, N. K. Rawat, A. K. Haghi, Eds., Apple Academic Press, New York, USA (2021)

15. *Aromatic alicyclic polyimides: From basic aspects toward high technologies*; C. Hulubei, E. Hamciuc, C. Hamciuc; p. 1-22

16. *Molecular modeling of imidic polymers with advanced physico-chemical properties*; R. M. Albu; p. 189-208

17. *Patterning polyimide films at nanoscale using dynamic plowing lithography*; I. Stoica; p. 209-230

18. *Polyimide materials for transistors and biosensors manufacturing*; R. M. Albu, R. F. Barzic; p. 231-249

19. *Dynamic molecular phenomena in polyimides investigated by dynamic mechanical analysis*; M. Cristea, D. Ionita, M. Garbea, M. D. Damaceanu; p. 305-348

New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications, M. J. M. Abadie, M. Pinteala, A. Rotaru, Eds., Springer Nature Switzerland (2021)

20. *Measuring ionic transport through lipid bilayers*; R. Zonda, S. A. Ibanescu, M. Silion, A. Coroaba, D. L. Isac, M. J. M. Abadie, M. Pinteala; p. 25-50

21. *Polymeric carriers for transporting nucleic acids - Contributions to the field*; L. Clima, A. I. Dascalu, B. F. Craciun, M. Pinteala; p. 133-150

22. *A microbiological epilogue - Nosocomial infections*; I. Rosca, E. L. Ursu, A. Fifere; p. 179-189

23. *Inverse problems and hierarchical multiscale modelling of biological matter*; A. Lyubartsev, A. Laaksonen; p. 213-237

24. *Non-viral vectors and drug delivery: In vitro assessment*; D. Peptanariu, M. J. M. Abadie, M. Pinteala; p. 239-254

25. *Smart polymeric materials for drug delivery*; G. Fundueanu, S. Bucatariu, M. Constantin; p. 275-294

26. *Inorganic nanoparticles as radical scavengers*; A. Fifere, I. A. Turin-Moleavin, A. L. Lungoci, N. L. Marangoci, M. Pinteala; p. 295-329

27. *Supramolecular guanosine-quadruplex hydrogels and hydrogel composites for cell growth applications*; E. L. Ursu, A. Rotaru; p. 331-343

28. *Hydrogelation of chitosan with monoaldehydes towards biomaterials with tuned properties*; L. Marin, D. Ailincăi, M. M. Iftime, A. M. Craciun, A. Bejan, M. Pinteala, M. J. M. Abadie; p. 345-356

29. *Molecular dynamics simulations and in silico analysis of supramolecular self-assembled structures*; C. Cojocaru, A. Neamtu, T. Vasiliu, D. L. Isac, M. Pinteala; p. 357-371

Polyhedral Oligomeric Silsesquioxane (POSS) Polymer Nanocomposites. From Synthesis to Applications, S. Thomas, L. Somasekharan, Eds., Elsevier, Amsterdam (2021)

30. *Surface properties of POSS nanocomposites*; M. Murariu, A. V. Oancea, C. Ursu, B. G. Rusu, C. Cotofana, B. Simionescu, M. Olaru; p. 421-448

Polysaccharides: Properties and Applications, Inamuddin, M. I. Ahamed, R. Bodula, T. Altalhi, Eds., Wiley-Scrievener Publishing LLC, Hoboken NY, USA (2021)31. *Rheology and structural properties of polysaccharides*; A. I. Barzic; p. 367-383**Sustainability of Biomass through Bio-based Chemistry, V. I. Popa, Ed., CRC Press, Boca Raton, (2021)**

32. Sustainable hydrogels from renewable resources; D. Ciolacu; p. 161-190

33. Morphological aspects of sustainable hydrogels; D. Rusu, D. Ciolacu, R. Vlase; p. 201-228

34. Bio-based stimuli-responsive hydrogels with biomedical applications; R. Nicu, D. Ciolacu; p. 229-262

35. Curdlan derivatives: New approaches in synthesis and their applications; D. M. Suflet; p. 263-286

Sustainable Agriculture Reviews, 49 (Mitigation of Antimicrobial Resistance, vol. 2. Natural and Synthetic Approaches), H. Panwar, C. Sharma, E. Lichtfouse, Eds., Springer (2021)

36. Polymeric antimicrobials with quaternary ammonium moieties; A. G. Grigoras; p. 123-170

Capitole acceptate spre publicare in tratate, carti sau monografii editate in edituri consacrate din strainatate1. *Dielectric and thermal characterization of biopolymers*; D. Ionita, M. Asandulesa, M. Cristea; Functional Biomaterials: Design and development for biotechnology, pharmacology and biomedicine; (Eds.) T. Mohan, K. S. Kleinschek; Wiley-VCH Verlag GmbH; in press2. *Electrical and electronic gas sensors*; P. Pascariu Dorneanu, E. Koudoumas, M. Suche; Transparent Conductive Oxides; (Eds.) M. Suche, E. Koudoumas, P. Pascariu, M. Micut; Elsevier; (acceptat)3. *Life cycle assessment for eco-design in product development*, in Assessing the sustainability progress: frameworks, tools and case studies; G. Barjoveanu, C. Teodosiu, M. Mihai, I. Morosanu, D. Fighir, A.-L. Vasiliu, F. Bucatariu (publicata sub contract Elsevier no. 846739), ISBN 606798 (data estimata a publicarii: Aprilie 2022)4. *Poly(lactic acid)-based materials: Food packaging applications and biodegradability evaluation*; E. Stoleru, Applications of Biodegradable and Bio-Based Polymers for Human Health and a Cleaner Environment; (Eds.) I. Stoica, O. Mukbaniani, N. K. Rawat, A. K. Haghi; Apple Academic Press (Taylor&Francis Group); in press <https://www.appleacademicpress.com/applications-of-biodegradable-and-bio-based-polymers-for-human-health-and-a-cleaner-environment-/9781771889766>5. *Synthetic macromolecules with biological activity*, in Biological Macromolecules: Bioactivity and Biomedical Applications, S. Racovita, M. Popa, L.I. Atanase, S. Vasiliu, ISBN: 978-0-323-85759-8, DOI: 10.1016/B978-0-323-85759-8.00014-2, Elsevier (data estimata a publicarii: 2022)**4.4. Articole publicate in reviste cotate de Web of Science (Thomson Reuters)**1. *Dynamic constitutional frameworks as antibacterial and antibiofilm agents*, A. Diaconu, T. Coenye, M. Barboiu, S. P. Vincent, Angewandte Chemie International Edition, 60, 22505-22512 (2021), FI₂₀₂₀ = 15.3362. *Designing smart triple-network cationic cryogels with outstanding efficiency and selectivity for deep cleaning of phosphate*, E. S. Dragan, D. Humelnicu, M. V. Dinu, Chemical Engineering Journal, 426, Article 131411/1-17 (2021), FI₂₀₂₀ = 13.2733. *Ionanofluids with [C2mim][CH3SO3] ionic liquid and alumina nanoparticles: An experimental study in viscosity, specific heat and electrical conductivity*, E. I. Chereches, D. Bejan, C. Ibanescu, M. Danu, A. A. Minea, Chemical Engineering Science, 229, Article 116140/1-10 (2021), FI₂₀₂₀ = 13.2734. *Cellulose-based biogenic supports, remarkably friendly biomaterials for proteins and biomolecules*, M. E. Culica, A. L. Chibac-Scutaru, T. Mohan, S. Coseri, Biosensors and Bioelectronics, 182, Article 113170/1-18 (2021), FI₂₀₂₀ = 10.6185. *An engineered coccolith-based hybrid that transforms light into swarming motion*, M. Lomora, A. Larranaga, C. Rodriguez-Emmenegger, B. Rodriguez, I. A. Dinu, J. R. Sarasua, A. Pandit, Cell Reports Physical Science, 2, Article 100373/1-21 (2021), FI₂₀₂₀ = 9.4236. *Self-assembly of dextran-b-deoxycholic acid polyester copolymers: Copolymer composition and self-assembly procedure tune the aggregate size and morphology*, M. Nichifor, M. C. Stanciu, F. Doroftei, Carbohydrate Polymers, 252, Article 117147/1-10 (2021), FI₂₀₂₀ = 9.381

7. *Semiconductor-insulator (nano)-couples with tunable properties obtained from asymmetric modification of Janus nanoparticles*, V. Mihali, A. Honciuc, ACS Applied Materials and Interfaces, 13, 49206-49214 (2021), FI₂₀₂₀ = 9.229
8. *Impact of ethanol addition on the behaviour of xanthan gum in aqueous media*, C. E. Brunchi, S. Morariu, M. Bercea, Food Hydrocolloids, 120, Article 106928/1-9 (2021), FI₂₀₂₀ = 9.147
9. *Natural and synthetic polymeric antimicrobials with quaternary ammonium moieties: a review*, A. G. Grigoras, Environmental Chemistry Letters, 19, 3009-3022 (2021), FI₂₀₂₀ = 9.027
10. *Sustainable wood coatings made of epoxidized vegetable oils for ultraviolet protection*, C. D. Varganici, L. Rosu, D. Rosu, F. Mustata, T. Rusu, Environmental Chemistry Letters, 19, 307-328 (2021), FI₂₀₂₀ = 9.027
11. *Detecting confined fluid behavior by SFA: Past, present and future*, Y. Dong, F. Huo, A. Laaksonen, Green Energy and Environment, 6, 167-168 (2021), FI₂₀₂₀ = 8.207
12. *Semi-interpenetrating networks based on epoxy resin and oligophosphonate: Comparative effect of three hardners on the thermal and fire properties*, C. D. Varganici, L. Rosu, S. Lehner, C. Hamciuc, M. Jovic, D. Rosu, F. Mustata, D. Sabgasachi, S. Gaan, Materials and Design, 112, Article 110237/1-12 (2021), FI₂₀₂₀ = 7.991
13. *Electrochemical behaviour of piperidine. Comparison with control antioxidants*, O. E. Carp, A. Moraru, M. Pinteala, A. Arvinte, Food Chemistry, 339, Article 128110/1-8 (2021), FI₂₀₂₀ = 7.514
14. *Structural insights into Schistosoma mansoni carbonic anhydrase (SmCA) inhibition by selenoureido-substituted benzenesulfonamides*, A. Angeli, M. Ferraroni, A. A. Dadara, S. Selleri, M. Pinteala, F. Carta, P. J. Skelly, C. T. Supuran, Journal of Medicinal Chemistry, 64, 10418-10428 (2021), FI₂₀₂₀ = 7.446
15. *Pillar[5]arene-based polycationic glyco[2]rotaxanes designed as Pseudomonas aeruginosa antibiofilm agents*, T. M. El Dine, R. Jimmidi, A. Diaconu, M. Fransolet, C. Michiels, J. De Winter, E. Gillon, A. Imberty, T. Coenye, S. P. Vincent, Journal of Medicinal Chemistry, 64, 14728-14744 (2021), FI₂₀₂₀ = 7.446
16. *Efficacy of quaternary ammonium groups based polyelectrolytes for the reduction of various pesticide formulations content from synthetic wastewater*, L. Ghimici, M. Nichifor, Separation and Purification Technology, 276, Article 119325/1-8 (2021), FI₂₀₂₀ = 7.312
17. *Electrochemically driven efficient enzymatic conversion of CO₂ to formic acid with artificial cofactors*, Z. Zhang, T. Vasiliu, F. Li, A. Laaksonen, F. Mocchi, X. Ji, Journal of CO₂ Utilization, 52, Article 101679/1-8 (2021), FI₂₀₂₀ = 7.132
18. *Investigation of a biosystem based on Arthrospira platensis for air revitalization in spacecrafts: Performance evaluation through response surface methodology*, G. Soreanu, I. Cretescu, M. Diaconu, C. Cojocaru, M. Ignat, P. Samoila, V. Harabagiu, Chemosphere, 264(Part 2), Article 128465/1-10 (2021), FI₂₀₂₀ = 7.086
19. *Geochemical investigations of noble metal-bearing ores: Synchrotron-based microanalyses and microcosm bioleaching studies*, L. Brinza, I. Ahmed, C. M. Cismasiu, I. Ardelean, I. G. Breaban, F. Doroftei, K. Ignatyev, C. Moisescu, M. Neamtu, Chemosphere, 270, Article 129388/1-10 (2021), FI₂₀₂₀ = 7.086
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21. *Stabilizing enzymes within polymersomes by coencapsulation of trehalose*, M. V. Dinu, I. A. Dinu, S. S. Saxer, W. Meier, U. Piels, N. Bruns, Biomacromolecules, 22, 134-145 (2021), FI₂₀₂₀ = 6.988
22. *Alginate/poloxamer hydrogel obtained by thiol-acrylate photopolymerization for the alleviation of the inflammatory response of human keratinocytes*, I. Popescu, M. Turtoi, D. M. Suflet, M. V. Dinu, R. N. Darie-Nita, M. Anghelache, M. Calin, M. Constantin, International Journal of Biological Macromolecules, 180, 418-431 (2021), FI₂₀₂₀ = 6.953
23. *All-polysaccharide hydrogels for drug delivery applications: Tunable chitosan beads surfaces via physical or chemical interactions, using oxidized pullulan*, I. A. Duceac, L. Verestiuc, A. Coroaba, D. Arotaritei, S. Coseri, International Journal of Biological Macromolecules, 181, 1047-1062 (2021), FI₂₀₂₀ = 6.953
24. *New cellulose-collagen alginate materials incorporated with quercetin, anthocyanins and lipoic acid*, N. Anghel, M. V. Dinu, M. Zaltariov, D. Pamfil, I. Spiridon, International Journal of Biological Macromolecules, 181, 30-40 (2021), FI₂₀₂₀ = 6.953

25. *Alginate enriched with phytic acid for hydrogels preparation*, L. E. Nita, A. P. Chiriac, A. Ghilan, A. G. Rusu, N. Tudorachi, D. Timpu, International Journal of Biological Macromolecules, 181, 561-571 (2021), FI₂₀₂₀ = 6.953
26. *Physically cross-linked chitosan/dextrin cryogels entrapping Thymus vulgaris essential oil with enhanced mechanical, antioxidant and antifungal properties*, M. V. Dinu, A. C. Gradinaru, M. M. Lazar, I. A. Dinu, I. E. Raschip, N. Ciocarlan, A. C. Aprotosoiaie, International Journal of Biological Macromolecules, 184, 898-908 (2021), FI₂₀₂₀ = 6.953
27. *A novel platform for drug testing: Biomimetic three-dimensional hyaluronic acid-based scaffold seeded with human hepatocarcinoma cells*, M. Turtoi, M. Anghelache, S. M. Bucatariu, M. Deleanu, G. Voicu, F. Safciuc, I. Manduteanu, G. Fundueanu, M. Simionescu, M. Calin, International Journal of Biological Macromolecules, 185, 604-619 (2021), FI₂₀₂₀ = 6.953
28. *Chitosan based macromolecular probes for the selective detection and removal of Fe³⁺ ion*, C. Li, L. Marin, X. Cheng, International Journal of Biological Macromolecules, 186, 303-313 (2021), FI₂₀₂₀ = 6.953
29. *Biotinylated chitosan macromolecule based nanosystems: A review from chemical design to biological targets*, V. Balan, G. Dodi, C. T. Mihai, A. M. Serban, V. C. Ursachi, International Journal of Biological Macromolecules, 188, 82-93 (2021), FI₂₀₂₀ = 6.953
30. *Alginate enriched with phytic acid for hydrogels preparation. Therapeutic applications*, L. E. Nita, A. P. Chiriac, A. Ghilan, A. G. Rusu, D. Pamfil, I. Rosca, L. Mititelu-Tartau, International Journal of Biological Macromolecules, 189, 335-345 (2021), FI₂₀₂₀ = 6.953
31. *Bile salts adsorption on dextran-based hydrogels*, M. C. Stanciu, M. Nichifor, G. L. Ailiesei, International Journal of Biological Macromolecules, 190, 270-283 (2021), FI₂₀₂₀ = 6.953
32. *Effect of calcium stearate as a lubricant and catalyst on the thermal degradation of poly(3-hydroxybutyrate)*, D. M. Panaitescu, M. S. Popa, V. Raditoiu, A. N. Frone, L. Sacarescu, A. R. Gabor, C. A. Nicolae, M. Teodorescu, International Journal of Biological Macromolecules, 190, 780-791 (2021), FI₂₀₂₀ = 6.953
33. *Preparation, characterization, and application of polysaccharide-based emulsions incorporated with lavender essential oil for skin-friendly cellulosic support*, A. Danila, E. I. Muresan, S. A. Ibanescu, A. Popescu, M. Danu, C. Zaharia, G. C. Turkoglu, G. Erkan, A. I. Staras, International Journal of Biological Macromolecules, 191, 405-413 (2021), FI₂₀₂₀ = 6.953
34. *Amphiphilic chitosan-g-poly(trimethylene carbonate) - A new approach for biomaterials design*, B. I. Andreica, D. Ailincai, A. I. Sandu, L. Marin, International Journal of Biological Macromolecules, 193 (Part A), 414-424 (2021), FI₂₀₂₀ = 6.953
35. *Design, preparation and in vitro characterization of biomimetic and bioactive chitosan/polyethylene wound dressings*, O. M. Ionescu, A. T. Iacob, A. Mignon, S. Van Vierberghe, M. Baican, M. Danu, C. Ibanescu, N. Simionescu, L. Profire, International Journal of Biological Macromolecules, 193 (Part A), 996-1008 (2021), FI₂₀₂₀ = 6.953
36. *In silico study of PEI-PEG-squalene-dsDNA polyplex formation: the delicate role of the PEG length in the binding of PEI to DNA*, T. Vasiliu, B. F. Craciun, A. Neamtu, L. Clima, D. L. Isac, S. S. Maier, M. Pinteala, F. Mocci, A. Laaksonen, Biomaterials Science, 9, 6623-6640 (2021), FI₂₀₂₀ = 6.843
37. *The separation of kreutzonit particles by cationic pullulan derivatives from model suspension*, L. Ghimici, M. Constantin, Environmental Challenges, 5, Article 100352/1-8 (2021), FI₂₀₂₀ = 6.789
38. *Surface alteration implications on potential use of semi-alicyclic polyimide as biomedical materials*, A. I. Barzic, R. M. Albu, I. Stoica, Applied Surface Science, 540, Article 148377/1-14 (2021), FI₂₀₂₀ = 6.707
39. *Electrical characterization of carbon plasma generated by excimer laser ablation of graphite*, P. Nica, C. Ursu, C. Focsa, Applied Surface Science, 540, Article 148412/1-8 (2021), FI₂₀₂₀ = 6.707
40. *Mineralization versus photoreduction of 4-nitrophenol under the influence of surface functionalized CeO₂ nanoparticles, hosted by versatile cellulose supports*, V. Melinte, L. E. Chibac-Scutaru, M. E. Culica, S. Coseri, Applied Surface Science, 565, Article 150494/1-12 (2021), FI₂₀₂₀ = 6.707
41. *Chalcogenides - incorporating carbonic anhydrase inhibitors concomitantly reverted oxaliplatin - induced neuropathy and enhanced antiproliferative action*, D. Tanini, S. Carradori, A. Capperuci, L. Lupori, S. Zara, M. Ferraroni, C. Ghelardini, L. Di Cesare Mannelli, L. Micheli, E. Lucarini, F. Carta, A. Angeli, C. T. Supuran, European Journal of Medicinal Chemistry, 225, Article 113793/1-12 (2021), FI₂₀₂₀ = 6.514

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Factor de impact cumulativ (FIC) = 1.109,547

Factor de impact mediu/lucrare = FIC/(numar lucrari cotate ISI)= 4,681

4.5. Lucrari publicate in reviste necotate ISI

1. *Crystal structure of (N1,N3-bis{[1-(4-methoxybenzyl)-1H-1,2,3-triazol-4-yl]methylidene}-2,2-dimethylpropane-1,3-diamine)bis(thiocyanato)iron(II)*, K. Znovjyak, M. Seredyuk, S. O. Malinkin, I. A. Golenya, T. Y. Sliva, S. Shova, N. U. Mulloev, *Acta Crystallographica Section E: Crystallographic Communications*, 77, 495-499 (2021)
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9. *Xanthan matrix as drug delivery system*, N. Anghel, M. V. Dinu, F. Doroftei, I. Spiridon, *Revista de Chimie*, 72(1), 89-98 (2021)
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2. *Biocompatible hydrogels with broad-spectrum antimicrobial activity*, D. Ailincăi, I. Rosca, S. Morariu, L. Mititelu Tartau, M. Angheloiu, L. Marin, *Progress in Organic and Macromolecular Compounds, Proceedings*; Eds. M. Mihai, R.D. Rusu; ISSN:2810-2126 (2021)
3. *Chitosan biocompatible hydrogels as drug delivery matrices for anticancer application*; A.M. Craciun, G. Gavril, I.C. Marinas, L. Mititelu Tartau, L. Marin, *Progress in Organic and Macromolecular Compounds, Proceedings*; Eds. M. Mihai, R.D. Rusu; ISSN:2810-2126 (2021)

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14. *Fluorescent EDOT-Functionalized Poly-ε-Caprolactone: Synthesis, Photophysical and Self-Assembling Properties in Organic Solvents and Its Serendipitously Noticed Behaviour in Protonated Media*; A.-D. Bendrea, L. Cianga, G.-L. Ailiesei, I. Cianga; Proceedings (MDPI, Basel, Switzerland) 69 (1), 13 (2021)
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20. *Modification of the polyurethane film surface properties after air-plasma treatment*; M. Barbalata-Mandru, L. M. Gradinaru, M. Aflori, S. Ursache; Proceedings of the 28th International Conference Progress in Organic and Macromolecular Compounds, ISSN 2018 – 2347; 117-118 (2021)
21. *Morphological study of some epoxy resin with DOPO – based oligophosphonate S-IPNs*; A.-L. Vasiliu, C. D. Varganici, D. Rosu, F. Mustata, O. M. Munteanu, Liliana Rosu; Proceedings of Progress in Organic Macromolecular Compounds, ISSN 2810 – 2347, 121-122 (2021)

22. *New zwitterionic copolymer with carboxybetaine moieties as possible drug delivery system*; M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, D. F. Loghin, O. Boita, M. Mihai; Proceedings of International Conference Progress in Organic Macromolecular Compounds, ISSN 2810 – 2347 ISSN – L 2810 – 2126, 131-132, 2021
23. *On the interactions between bovine serum albumin and reduced glutathione in solution*; M. Bercea, I.-A. Plugariu, L.E. Nita, S. Morariu, R.V. Gradinaru; Proceedings of the 9th IEEE International Conference on E-Health and Bioengineering - EHB 2021 (2021)
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27. *Polyurethane composites based on iron oxide nanoparticles as precursor in MRI*; L. M. Gradinaru, S. Vlad, M. Barbalata-Mandru, M. Drobota, M. Spiridon, M. Aflori, M. Butnaru, A. Ionel, R. C. Ciobanu; Proceedings of the 9th edition of IEEE International Conference on e-Health and Bioengineering; IEEE 978-1-6654-4000-4/21 (2021)
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31. *Siloxane/silane derivatives based on 5-amino-1,3,4-thidiazole-2-thiol and their gold complexes: interfacial phenomena based on photoluminescence*, M. Damoc, A.C. Stoica, M. Dascalu, A.-M. Macsim, R.I. Tigoianu, D. Blaj, A.G. Rusu, M. Iacob, M. Cazacu, International Conference Progress in Organic and Macromolecular Compounds Proceedings ISSN 2810 – 2347 ISSN – L 2810 – 2126 (2021)
32. *Stability of the HPC/PU Polymeric Blends in Accelerated Weathering and Biological Environments*, M. F. Zaltariov, C. D. Varganici, D. Filip, D. Macocinschi, 1st Corrosion and Materials Degradation, sciforum ID-045074; DOI: 10.3390/CMDWC2021-10034 (2021).
33. *Study of new imines containing a phenanthroline chromophore*; I. Butnaru, C. Logigan, M. D. Damaceanu; International Conference Progress in Organic and Macromolecular Compounds Proceedings, pp. 63-64 (2021).
34. *Synthesis and characterization of acrylic ion exchange resins and their environmental applications as sorbents*; M.-M. Zaharia, A.-L. Vasiliu, M.-A. Trofin, M.-M. Bazarghideanu, C. Blegescu, M. Mihai; Proceedings of International Conference Progress in Organic Macromolecular Compounds, ISSN 2810 – 2347 ISSN – L 2810 – 2126, 123-124 (2021)
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4.7. Conferinte invitate / plenare prezentate la manifestari stiintifice internationale

The International Congress of Apolonia University of Iasi, Iasi, Romania, 1-3.03.2021

1. Conjugated polymers: a step forward to smarter and more advanced synthetic polymers biomaterials; A.-D. Bendrea, L. Cianga, I. Cianga
2. Cryogenically-structured composite biomaterials; M. V. Dinu, M. M. Lazar, I. E. Raschip

3. How surface modification techniques can influence the biological activity of a polymer?; M. Aflori, M. Drobota
The 3rd International Workshop Advances on Photocatalysis (AdvPhotoCat-EE2021); Bucharest, Romania, 28–29.06.2021
4. PVDF fibers embedding lanthanide doped ZnO membranes for adsorption and photocatalytic degradation of dye organic pollutants; P. Pascariu, C. Cojocaru, A. Airinei, M. Sucheana
International Conference on Polymer Science and Composite Materials, Barcelona, Spain, 05-07.07.2021
5. Biomedical Applications of polymer-coated Metallic Nanoparticles; M. Pinteala, C.M.Uritu
United Conference of Pharma 2B, New York, USA, 14-15.07.2021
6. Stimuli-sensitive polymers for self-regulated drug delivery systems; G. Fundueanu
The 10th Global Conference on Materials Science and Engineering CMSE 2021, 1-4.08.2021
7. CeO₂ nanoparticles embedded in different cellulosic substrates: photocatalytic materials for pollutant removal or organic reactions; A.L. Chibac-Scutaru, V. Melinte
International Manufacturing Forum Series IMFS - Natural Products and Manufacturing, CDRSP Leiria, Portugal, 5.08.2021
8. Bio-based polymeric materials with incorporated natural bioactive compounds for food packaging or medical applications; R. P. Dumitriu
3rd AAAFM-UCLA International Conference on Advances in Functional Materials, UCLA, Functional Composite Materials, Materials, The Building Block For The Future, 18-20.08.2021
9. First-Principles Calculations of the Energy Flux for Bioinspired Personalized Thermal Comfort Wearables, G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui, C. Ursu
13th International Conference on Physics of Advanced Materials, San Feliu de Guixols, Spain, 24-30.09.2021
10. Chemically designed silicones for 3D printing technology, C. Tugui, G. Stiubianu, M. Cazacu, M.S. Serbulea, A. Stefan
11. Ultrasound synthesis of rare-earth modified TiO₂: effect of rare-earth element on TiO₂ structure and its photocatalytic activity; M. Ignat, E. Mahu, P. Samoila, V. Harabagiu
12. Laser-generated transient carbon plasmas: peculiar dynamics evidenced by optical and electrical measurements; C. Ursu, P. E. Nica, G. Rusu, M. Olaru, A. V. Oancea, C. Focsa
28th International Conference Progress in Organic and Macromolecular Compounds, Iasi, Romania, 7 - 9.10.2021
13. Recent concepts in electrochromic polymers containing triarylamine as electroactive unit; M. D. Damaceanu, C. P. Constantin, A. E. Bejan, C. Logigan
14. Electronic structure and mechanism of isomerization in the case of azobenzene derivatives during the reaction pathways following the ground and excited-state pathways; D. L. Isac, A. Airinei
15. Dynamic mechanical analysis: where we are in ICMPP and what can be ahead; M. Cristea, D. Ionita, P. Lazar, B. C. Simionescu
6th International Congress on Biomaterials and Biosensors (BIOMATSEN), Oludeniz, Turkey, 17-23.10.2021
16. Bimetallic Based Nanostructures for Electrochemical Sensing Applications; A. Arvinte
23rd International Conference "New Cryogenic and Isotope Technologies for Energy and Environment" - EnergEn 2021; Baile Govora, 26-29.10.2021
17. Polysaccharide composites – energy related applications; V. Harabagiu, P. Samoila, R. Rotaru, I. Grecu

4.8. Conferinte invitate/plenare/keynote prezentate la manifestari stiintifice nationale

1. Petru Poni - un savant in slujba binelui public; B. C. Simionescu; ***In memoriam Petru Poni (1841-1925), Muzeul "Poni-Cernatescu", Iasi, Romania, 2.04.2021***
2. Basarabia si Academia Romana; B. C. Simionescu; ***Conferinta stiintifica comuna "Cercetari stiintifice in contextul provocarilor secolului XXI", Academia de Stiinte a Moldovei si Academia Romana, on-line, 8.06.2021***
3. Academia Romana – fragmente ale unei bogate istorii; B. C. Simionescu; ***Simpozionul "Maramures – promotor al culturii si identitatii romanesti in lume", Baia-Mare, Romania, 3.09.2021***
4. Figuri de chimisti romani; B. C. Simionescu; ***Concursul "Acad. Cristofor I. Simionescu", Facultatea de Inginerie Chimica si Protectia Mediului, Universitatea "Gheorghe Asachi" din Iasi, Iasi, Romania, 20.11.2021***

4.9. Comunicari orale prezentate la manifestari stiintifice internationale

Yesterday's heritage-implications for the development of tomorrow's sustainable society Conference, Chisinau, Moldova, 229-230, 11-12.02.2021

7. Metal complexes based on polydentate ligands for medicine and catalysis; **M.F. Zaltariov, N. Vornicu**

EUTOPIA 3 – Third Meeting of the European Topology Interdisciplinary Initiative, Science Faculty, Lisbon, Portugal, 15 – 17.02.2021

8. Supramolecular self-assembled hydrogels based on hyaluronic acid with a squaric acid copolymer; **A.P. Chiriac, A.G. Rusu, L.E. Nita, N. Tudorachi**

XXXIth edition of the International Congress of the „Apollonia” University of Iasi „By promoting excellence, we prepare future”, Iasi, Romania, 01-03.2021

9. Bioinspired materials for dynamic thermal comfort and all weather homeostasis, **G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui, C. Ursu**
10. Chitosan-based hydrogel loaded with anti-inflammatory drug for local treatment of periodontitis; **A.N. Cadinoiu, L. I. Atanase, I. Popescu, D. M. Rata**
11. Chitosan/oxalic acid/poly(vinyl alcohol) cryogels for biomedical applications; **I.M. Pelin, I. Popescu, M. Constantin**
12. Degradable Pluronic/alginate hydrogels for skin wound healing-in vitro studies; **I. Popescu, M. Turtoi, R.N. Darie-Nita, M. Calin**
13. Design of chitosan films via solvent free thermal cross linking method; **S. Bucatariu, B. Cosman, G. Fundueanu, M. Constantin**
14. Development of polyvinyl alcohol materials with plant extracts for biomedical applications; **M. Barbalata-Mandru, D. Serbezeanu, M. Spiridon, M. Drobotu, M. Aflori**
15. Electrospun fibrous coatings with antimicrobial/antioxidant properties; **R.P. Dumitriu, A. Irimia, E. Stoleru, M. Brebu**
16. Formation of 1D-oriented structure in chitosan-based hydrogels; **M. M. Lazar, M. V. Dinu**
17. New hydrogels based on polymers and zeolite containing l-arginine and caffeine; **S. Gherman, D. Zavastin, L. Ochiuz, A. Ipate, A. Bele**
18. Oil-loaded chitosan coatings towards a bioactive food contact material; **E. Stoleru, M. Brebu, R. P. Dumitriu, A. Irimia**
19. pH-sensitive controlled release of ciprofloxacin from natural/synthetic polymeric hybrid systems; **D. Pamfil, E. Butnaru, C. Vasile, M. Brebu**
20. pH/temperature-sensitive microspheres for drug delivery to the tumors; **G. Fundueanu, M. Constantin, B. Cosman, S. Bucatariu**
21. Sand/polyelectrolyte composites with affinity for different water pollutants; **F. Bucatariu, M. Zaharia, L. Petrila, M. Mihai**
22. Synthesis and solution self-assembly of polysaccharide-based block copolymers; **M.-C. Stanciu, M. Nichifor, F. Doroftei**

- The Applied NANOTECHNOLOGY and NANOSCIENCE International Conference- ANNIC 2021, 24-26.03.2021**
23. Bioinspired Polymer Nanocomposites Providing Scalable Solution for Thermal Management, G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui, C. Ursu
- 9th European Conference on Renewable Energy Systems, ECREs 2021, 21-23.04.2021**
24. Bioinspired polymer materials for thermal management of heating and cooling in buildings, G. Stiubianu, M. Cazacu, C. Racles, M. Dascalu, A. Bargan, A. Bele, C. Tugui, C. Ursu
- IUPAC-MACRO 2020+, The 48th World Polymer Congress, ICC Jeju, Korea, 16-20.05.2021**
25. Porous microparticles with complex architecture based on acrylic ion exchange resin and gellan; S. Racovita, M.A. Lungan, I. Gugoasa, S. Vasiliu, M. Popa
- The 16th International Conference of Constructive Design and Technological Optimization in Machine Building Field OPROTEH 2021, Bacau, Romania, 25-27.05.2021**
26. Water, an essential component of the food industry; C. Stoian, F. Tanasa
- Young Researchers' International Conference on Chemistry and Chemical Engineering (YRICCCE III), Babes-Bolyai University Faculty of Chemistry and Chemical Engineering, Cluj Napoca, Romania, 04-05.06.2021**
27. Competitive adsorption of heavy metal ions by porous chitosan-based composites; M. M. Lazar, I. A. Dinu, M. V. Dinu
28. Enhanced physico-chemical and biological properties of cryogels containing xanthan gum; I. E. Raschip, G. Hitruc, M. V. Dinu
- 2nd Bucharest Polymer Conference, Bucuresti, Romania, 9-11.06.2021**
29. Advancements on the selective oxidation of cellulose, via non-persistent phthalimide N-oxyl radical; G. Biliuta, R.I. Baron, S. Coseri
30. Cellulose - derived matrices for functionalized CeO₂ nanoparticles immobilization, and their photocatalytic behaviour; M.E. Culica, A.L. Chibac-Scutaru, V. Melinte, S. Coseri
31. Core-shell polystyrene/polyaniline nanoparticles with variable conductivity and surface properties; A.-M. Solonaru, A. Honciuc, O.I. Negru
32. Determining the surface energy of nanoparticles from their interfacial immersion depth in Pickering emulsion; O.I. Negru, A. Honciuc, A.-M. Solonaru, D.N. Nguyen Giang, K. Tristan
33. New sorbents based on poly(amidoxime)/chitosan beads; D. F. Loghin, S. Vasiliu, S. Racovita, M.-M. Bazarghideanu, M. Mihai
34. Oxidized pullulan for fine-tuning a chitosan-based drug delivery system; I.A. Duceac, S. Coseri
35. Preparation of water-soluble carboxylated cellulose derivatives as efficient hydrogel promoters; R.I. Baron, G. Biliuta, S. Coseri; Bucharest Polymer Conference 2nd Edition, Bucuresti, Romania, 9-11.06.2021
36. Single polyelectrolyte multilayers deposited on silica microparticles with enhanced loading/release properties for different pollutants; F. Bucatariu, M. Zaharia, M. Mihai
37. Study of the interaction of fluorescent polymeric sensors containing fluorescein derivatives with some quenchers and sensing characteristics enhancement by Au NPs; M. Murariu
38. Synthesis and characterization of new triphenylamine-based polyimides for electrochromic applications; C. P. Constantin, A. E. Bejan, M. D. Damaceanu
39. UV-Shielding ability of aliphatic polyurethane - silane-functionalized TiO₂ nanoparticle elastomeric coatings; L. Stroea, A.L. Chibac-Scutaru, V. Melinte
40. Wastewater decontamination of heavy metal ions using ion exchange resins based on acrylic copolymers; M. Zaharia, I. Bunia, F. Bucatariu, C.A. Ghiorghita, D. Schwarz, M. Mihai
- 3rd Webinar on Catalysis, Chemical Engineering & Technology, 24-25.06.2021**
41. Composite nanofibers for improved photocatalytic performance under UV and visible light irradiation; M. **Suchea, P. Pascariu, E. Koudoumas**
- The 3rd International Workshop Advances on Photocatalysis AdvPhotoCat-EE2021, 28-29.06.2021**
42. New La doped TiO₂ nanofibers for photocatalytic degradation of dye and drug: the effect of thermal treatment and La doping amount; P. Pascariu, C. Cojocar, M. Homocianu, P. Samoila, M. Suchea
43. Versatility of cellulosic matrix used for immobilization of synthesized CeO₂ nanoparticles in tailoring the photocatalytic properties of hybrid composites; A.L. Chibac-Scutaru, V. Melinte, M.E. Culica, S. Coseri

- 13th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), Pitesti-Romania, 1-3.07. 2021**
44. Design of HPLS Laser System Self Alignment Beam Pointing Integrated Solution; A. Costea, P. Schiopu, A. Farcas
- 2nd International Conference of Polymer Science and Composite Materials "Polymer Connect", Barcelona, Spania, 05-07.07.2021**
45. Chitosan-based hydrogels incorporating bioactive compounds; E. Stoleru, R. P. Dumitriu, C. N. Cheaburu-Yilmaz, M. Brebu
Alginate/lignosulfonate-based bioactive systems for green synthesis of Ag nanoparticles; R.P. Dumitriu, M. Brebu, E. Stoleru
46. Hybrid nanostructured systems based on metal oxides with magnetic and antioxidant properties for biomedical applications; A. Fifere
47. Supramolecular squalene based self-assembled entities as promising non-viral vectors for gene delivery; L. Clima, B. Craciun, D. Peptanariu, M. Pinteala
48. Synthesis and characterization of magnetite nanoparticles coated with a double layer of polymer obtained by SI-ATRP functionalized with the targeting molecule and drug with the property of cleavage in acid pH. R. Ghiarasim, S. Ibanescu, N. Marangoci, A. Coroaba, N. Simionescu, M. Pinteala
- 15th International conference on materials chemistry (MC15), Royal Society of Chemistry, 11-15.07.2021**
49. Bioinspired Nanocomposite Films for Human Comfort Thermal Management, G. Stiubianu, M. Dascalu, A. Bargan, C. Racles, A. Bele, C. Tugui, C. Ursu, M. Cazacu
- CEEC-TAC6 & Medicta2021, Split, Croatia, 20-24.07.2021**
50. Epoxy-based S-IPNs as eco-friendly flame retardants; C.-D. Varganici, L. Rosu, D. Rosu, F. Mustata
- North American Thermal Analysis Conference, 3-6.08.2021**
51. How oligolactide moiety influences the molecular mobility of β -cyclodextrin polyurethane hydrogels: DMA and DSC investigations; M. Cristea, D. Ionita, C. Peptu, D. Diaconu
52. Sample-controlled thermal analysis applied to β -cyclodextrin-based polyurethane hydrogels; M. Cristea, D. Ionita, B. C. Simionescu
- The Eleventh International Symposium on Two Dimensional Correlation Spectroscopy (2DCOS-11), Iasi, Romania, 17-19.08.2021**
53. Analysis of honey using infrared spectroscopy and 2D-COS; B. I. Dogaru, C. M. Bogza, C. Golea, M. C. Popescu
- AAAFM-UCLA International Conference on Advances in Functional Materials, 18.08.2021**
54. Permethylated two-dimensional Metal-Organic Frameworks - Promising Candidates for Emerging 2D Materials, A. C. Stoica, M. Damoc, G. Stiubianu, M. Cazacu
- Materials, Methods and Technologies, 23rd International Conference, Burgas, Bulgaria, 19-22.08.2021**
55. Characterization of coniferous forestry residues for thermal valorization; E. Butnaru, A. M. Serban, D. Pamfil, N. Balmoj, I. Spiridon, M. Brebu
56. Electrospinning fabrication of nanofibers based on phosphorus-containing polyimides; D. Serbezeanu
57. Influence of bioactive plant extract on the stability of chitosan-based materials; E. Stoleru, M. Brebu, R.P. Dumitriu
58. Intelligent composites from poly(vinyl alcohol) for coatings applications; T. Vlad-Bubulac
59. Interpenetrating Polymer Networks for Wave Energy Harvesting, A. Bele
60. Nano-silver in-situ synthesis in zwitterionic beads, as antimicrobial inorganic/organic composites; M. Mihai, M.-M. Zaharia, C.-A. Ghiorghita, M. M. Bazarghideanu, A.-L. Vasiliu, M.-A. Trofin
61. Passive Heating and Cooling for Bioinspired Personalized Thermal Comfort in XXIst Century Wearables, G. Stiubianu, M. Dascalu, A. Bargan, C. Racles, A. Bele, C. Tugui, C. Ursu, M. Cazacu
62. Performance of quaternized polysulfone membranes in environmental applications dictated by the ionic liquid nature; O. Dumbrava, A.M. Dobos, M.D. Onofrei, A. Filimon
63. Structure-rheological parameters relationship in systems ionic polysulfones/natural or synthetic additive; A.M. Dobos, M.D. Onofrei, A. Filimon

64. Synthesis and characterization of ion exchange resins based on acrylic copolymers with high affinity to different heavy metal ions; M.-M. Zaharia, F. Bucatariu, L.-M. Petrila, A.-L. Vasiliu, M. Mihai
65. Zwitterionic porous microparticles containing betaine units with drug delivery capabilities; M.-A. Trofin, S. Vasiliu, S. Racovita, M. Mihai
- The 19th International Conference on Plasma Physics and Applications (CPPA 2021), National Institute for Lasers, Plasma and Radiation Physics, Bucharest, Romania, 31.08-3.09.2021**
66. Laser-synthesized Si nanoparticles in liquid environment for biomedical applications; B. G. Rusu, C. Ursu, P. Nica, A. Bejan, M. Olaru, A. V. Oancea, C. Focsa
67. Characterization of carbon ions in excimer laser-generated plasma using the electrostatic energy analyzer; P.-E. Nica, C. Ursu, G. Rusu, C. Focsa
- 11th International Conference on Environmental Engineering and Management, Environmental Engineering for a Clean and Healthy Planet, Muttenz, Switzerland, 8-10.09.2021**
68. 3D Anisotropic polysaccharide-based cryogels as multifunctional eco-friendly materials for wastewater treatment; M. V. Dinu, M. M. Lazar, I. A. Dinu, I. E. Raschip, C.-A. Ghiorghita, L. Ghimici
69. Acrylic ion exchange resins. Synthesis and preliminary tests on water cleaning from Tarnita closed mine area; M.-M. Zaharia, F. Bucatariu, M. Ignat, M.-A. Trofin, M. Mihai
70. Daisogel/(polycation/polyanion)_n composite microparticles with affinity for emerging pollutants; M. Mihai, L.-M. Petrila, M.-A. Trofin, M.-M. Zaharia, F. Bucatariu
71. Ionic liquids-based polysulfone membranes for cadmium removal from aqueous solutions; L. Lupa, S.N. Tolea, O. Dumbrava, A. Filimon
72. Synthesis and characterization of quartz sand/polyethyleneimine composite particles with application in water cleaning; F. Bucatariu, M.-M. Zaharia, L.-M. Petrila, M.-A. Trofin, M. Mihai
- 2021 Fall Meeting of the European Materials Research Society (E-MRS) virtual conference, 20 - 23 Septembrie, 2021**
73. Effect of Aluminum nanostructured electrode on the properties of bulk heterojunctions based heterostructures for electronics; O. Rasoga, C. Breazu, M. Socol, A.-M. Solonaru, L. Vacareanu, G. Petre, N. Preda, A. Stanculescu, F. Stanculescu, G. Socol, M. Girtan, A. Doroshkevich
- 13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spania, 24-30.09.2021**
74. 1D-lantanides (La, Sm, Er) doped TiO₂ photocatalysts for degradation of organic pollutions; P. Pascariu, C. Cojocar, M. Sucheana
75. Assessment of Us-Up Equation of state parameters for silicone elastomers, M.A. Mota, D.M. Manoli, A.D. Sabau, C. Tugui, M. Cazacu, E.M. Stan, M. S. Serbulea
76. Cellulose-derived platforms for targeted technological applications; A.L. Chibac-Scutaru, V. Melinte, S. Coseri;
77. Developments in functional materials for energy-efficient thermal comfort, G. Stiubianu, C. Ursu, A. Bele, C. Tugui, A. Bargan, M. Dascalu, C. Racles, M. Cazacu
78. Dielectric spectroscopy investigation of novel hybrid composites obtained from cellulose derivatives doped with 1-hydroxybenzotriazole; M. Asanduleasa, M. E. Culica, S. Coseri
79. High thermal conductivity nanocomposites with two-dimensional materials for thermal load management in shape memory alloy devices, G. Stiubianu, A. Bele, C. Tugui, M. Cazacu, F. Borza, L.G. Bujoreanu, V. Apostol
80. Insights into some organic light-emitting materials based on a donor-acceptor system for OLEDs; M. D. Damaceanu, C. P. Constantin, R. D. Rusu
81. Magnetic properties of some iron oxide nanoparticles, nanocomposites, and thin films, R. Bosinceanu, A. Vasile, E. Vasile, I. Deac, M.N. Palamaru, A.R. Jordan, M. Iacob, S. Ando, M. Cazacu, D. Toloman, A.Popa, F. Iacomu
82. Nanocomposite coatings for wood protection; B. I. Dogaru, M. C. Popescu, D. Timpu, C. M. Popescu
83. Nanocomposite formulation to create superhydrophobic surface on wood; B.-I. Dogaru, A.Stankiewicz, P. Gradinariu, C.-M. Popescu
84. Polyimides containing bipyridyl-amine functionalized triphenylamine as electrochromic materials, I. Butnaru, C. P. Constantin, M. D. Damaceanu
85. Proton conductive membranes for fuel cells: challenges when cellulose replace nafion; S. Coseri

86. Structural characterization of modified cotton/leather samples using cold atmospheric pressure plasma (CAPP) and TiO₂-SiO₂ - reduced graphene oxide nanopowders by WAXD analysis; D. Timpu, M.C. Rosu, C. Tudoran, M. Coros, C. Socaci, A. Udrea, D. Cosma
87. Structural characterization of rare-earths doped TiO₂ nanofibers; L. B Tudoran, C. Romanitan, P. Pascariu, M. P. Sucheana
88. Structural, optical and electrical properties of ZnO:Co,Ni thin films deposited by spin coating; M. Toma, L. Punga, V. Tiron, G.G. Rusu, M. Dobromir, D. Timpu, F. Tudorache, F. Iacomi
89. Studies on grapheme/PEDOT:PSS and grapheme/polysiloxane composite layers, L.Punga, T. Alupului, A. Popa, D. Toloman, C. Grosan, L. Barbu-Tudoran, A. Bele, M. Sucheana, M. Cazacu, D. Timpu, P. Prepelita, V. Craciun, T. Tropin, F. Iacomi
90. Surface functionalization of inorganic nanoparticles for covalent immobilization in polymer matrices; L. Stroea, A.L. Chibac-Scutaru, V. Melinte

The 28th International Conference "Progress in Organic and Macromoleculcular Compounds", MACRO Iasi 2021, Iasi, Romania, 7-9.10.2021

91. 3D Bioprinted scaffolds based on functionalised gelatin and pegda for soft tissue engineering; I. Cobzariu, M. Bercea, C.A. Peptu, M. Butnaru, L. Verestiuc
92. Antifungal properties of new multicomponent polymer systems as flame retardant coatings; I. Rosca, C.-D. Varganici, L. Rosu, C. Hamciuc, D. Rosu, F. Mustata
93. Biocompatible hydrogels with broad-spectrum antimicrobial activity, D. Ailincăi, I. Rosca, S. Morariu, L. Mititelu Tartau, M. Angheloiu, L. Marin
94. Carbon based nanomaterials-DNA-gold nanoparticles hybrid assemblies for SERS bioimaging. E.-L. Ursu, A. F. Trandabat, A. Rotaru
95. Complexation of acetophenone substituted benzimidazolium salt with native and modified cyclodextrins – an NMR study; M. Balan-Porcarasu, A. Nicolescu, F. Georgescu, C. Deleanu, B. C. Simionescu
96. Designing phenothiazine-based materials with high luminescence in solid state, A. Bejan, L. Marin, B. Chiricuta
97. Energy-efficient dynamic polymer-based nanocomposites for thermal comfort, G. Stiubianu, C. Ursu, C. Tugui, A. Bele, A. Bargan, M. Dascalu, C. Racles, M. Cazacu, A. Ciobotaru
98. Hydrophobic biocompatible CaCO₃/Cellulose material with potential application in wound dressing; A.-L. Vasiliu, M.-M. Zaharia, M.-M. Bazarghideanu, I. Rosca, D. Peptanariu, M.-A. Lungan, M. Mihai
99. Interlaboratory assessment for reproducibility in NMR metabolomics; C. Duduianu, G. Ailiesei, M. Balan, M. Cristea, A.-M. Macsim, C. Stavarache, C. Stavarache, O. Popa, A. Hirtopeanu, A. Nicolescu, C. Deleanu
100. Salicyl-imine-chitosan hydrogels for prolonged drug release, M. Iftime, L. Mititelu Tartau, L. Marin
101. Sample controlled thermal analysis – a promising approach for complex systems; D. Ionita, M. Cristea, P. Lazar, B. C. Simionescu
102. Siloxane/silane derivatives based on 5-amino-1,3,4-thiazole-2-thiol and their gold complexes: interfacial phenomena based on photoluminescence, M. Damoc, A. C. Stoica, M. Dascalu, A. M. Macsim, R. I. Tigoianu, D. Blaj, A. G. Rusu, M. Iacob, M. Cazacu
103. Study of new imines containing a phenanthroline chromophore; I. Butnaru, C. Logigan, M. D. Damaceanu
104. Thiophene end-group functionalized oligo(2-methyl-2-oxazoline) as an amphiphilic reactive macromonomer and as a non-conventional intrinsic luminescent material; A.-D. Bendrea, L. Cianga, I. Cianga

International Meet & Expo on Materials Science and Nanomaterials (MATERIALSMEET2021), Valencia, Spain, 11-13.10.2021

105. Applying of modified materials with ionic liquids in advanced watertreatment technologies; L. Lupa, L. Coheci, R. Lazau, A. Filimon, P. Negrea

6th International Congress on Biomaterials and Biosensors (BIOMATSEN), Oludeniz, Turkey, 17-23.10.2021

106. Evaluation of antioxidant properties using electrochemistry combined with *in vitro* peroxidation and reducing assays; O. E. Carp, M. Pinteala, A. Arvinte

TEXTEH X International Conference, Bucharest, Romania, 21-22.10.2021

107. Aqueous solutions of chitosan: viscometric and flocculation properties; C.-E. Brunchi, L. Ghimici
5th International Conference on Nanotechnologies and Biomedical Engineering, Chisinau, Republic of Moldova, 3-5.11.2021

108. Imino-chitosan Hydrogels - Promising Biomaterials for Candida Infections' Treatment, D. Ailincăi, M. Mares, A. Bostanaru, L. Marin

109. PEG-ylated Phenothiazine Derivatives. Synthesis and Antitumor Activity, S. Cibotaru, V. Nastasa, A.I. Sandu, A.C. Bostanaru, M. Mares, L. Marin

21st Edition of the International Conference Tehnomus new Tehnomus New Technologies and Products in Machine Manufacturing Technologies - on-line edition 2021, Suceava, Romania, 11-13.11.2021

110. Effect of the dianhydride moieties on refraction properties of polyimides based on chalcogen elements; A.I. Barzic, R. M. Albu, M. Soroceanu, A.D. Diaconu, B.C. Condurache, I. Stoica

111. Effect of polymer structure and morphology on interfacial interaction to some microorganisms; I. Stoica, L.-I. Buruiana, R.M. Albu, M.A. Lungu, A.I. Barzic

112. Plasma induced changes on the surface features of a polyimide and their role in interfacial adhesion; I. Stoica, R.M. Albu, L.-I. Buruiana, M.A. Lungu, A.I. Barzic

113. The influence of filler combination on the refractive index of polyimides used in photovoltaics; A.I. Barzic, R.M. Albu, M. A. Lungu, I. Stoica

The 9th IEEE International Conference on E-Health and Bioengineering - EHB 2021, Grigore T. Popa University of Medicine and Pharmacy, Web Conference, Iasi, Romania, 18-19.11.2021

114. Antimicrobial Properties of Polyimide Film Obtained by Two-Step Treatments; M. Aflori, M. Butnaru, F. Doroftei, M. Drobotă, M. Barbalata-Mandru, M. Spiridon, S. Vlad, L. M. Gradinaru, S. Ursache

115. Macromolecular crowding in solutions of bovine serum albumin and neutral polymers; M. Bercea, I.-A. Plugariu;

116. New polymeric particles loaded with sea buckthorn essential oil; A.E. Sandu, A. Chiriac, A.G. Rusu, A.M. Serban, L.E. Nita, E. Gille

117. On the interactions between bovine serum albumin and reduced glutathione in solution; M. Bercea, I.-A. Plugariu, L.E. Nita, S. Morariu, R.V. Gradinaru

118. Polyurethane Composites Based on Iron Oxide Nanoparticles as Precursor in MRI; L.M. Gradinaru, S. Vlad, M. Barbalata-Mandru, M. Drobotă, M. Spiridon, M. Aflori, M. Butnaru, I. Alexa, R.C. Ciobanu

119. Supramolecular gels based on amino acids; A. Croitoriu, L.E. Nita, A.G. Rusu, A. Cimponeriu, A. Chiriac

The 6th International Conference on Polymer Processing in Engineering (PPE 2021), Galati, Romania, 18 - 19.11.2021

120. Determining the surface energy of nanoparticles by Pickering emulsion polymerization technology; O.I. Negru, A. Honciuc, A.-M. Solonaru

121. Double-layered polymer shielding cover with graded refractive index for solar cells with enhanced light harvesting; A.I. Barzic

122. Dynamic patterning of polyimide films using atomic force microscopy technique; I. Stoica

123. Electrochemical synthesis of N-substituted polyaniline with different micro/nanostructure from acidic to slightly acidic electrolyte solutions; L. Vacareanu, A.-M. Solonaru, A. Honciuc

124. Polyaniline/Poly(Styrene-co-tert-Butyl Acrylate) Composites: Preparation Morphology and Surface Properties, A.-M. Solonaru, A. Honciuc, O. I. Negru

125. Preparation and sensor characteristics of polyimides filled with iron oxide; S.L. Nica, C. Hulubei, V. Nica, I.I. Petrila

126. Synthesis of supramolecular networks based of polyrotaxanes architectures; A.-M. Resmerita, A. Farcas

4.10. Comunicari orale prezentate la manifestari stiintifice nationale**Apa - Esenta vietii, Apa pretuita in centrul vietii imbunatatite, AquaSensTim - 2021, Timisoara, Romania, 22.03. 2021**

1. Tratarea avansata a apei bazata pe membrane de polisulfone functionalizate/lichide ionice; T. Novacut, S.N. Tolea, L. Lupa, A. Filimon

New Trends and Strategies in the Chemistry of Advanced Materials with Relevance in Biological Systems, Technique and Environmental Protection, Timisoara, Romania, 7-8.10.2021

2. Dextran-based antimicrobial polymers; M.- C. Stanciu, M. Nichifor
3. Effect of dianhydride segment structure on the electrochromic properties of novel triphenylamine-based polyimides; C. P. Constantin, A. E. Bejan, M. D. Damaceanu
4. Electrospun Cu doped TiO₂ nanofiber composites with high photocatalytic activity; P. Pascariu, M. Homocianu
5. Phenoxazine-based polymers with blue and green light emission in solid state for light-emitting diode applications; M. D. Damaceanu, C. P. Constantin

Editia a III-a a Congresului National de Neurostiinte Moderne din Romania, Iasi, 12 – 16.10.2021

6. Subtipuri moleculare ale tumorilor de glioblastom la pacienti din nord-estul Romaniei, N. Simionescu, S. Nechifor, R. Buga, M. Dabija, L. Eva, A.R. Petrovici, A. Georgescu

ICMP – Open Door to the Future. Scientific Communications of Young Researchers, MacroYouth' 2021, Iasi, 19.11.2021

7. Biodegradable imino-chitosan nanofibers as wound dressing materials, A. Anisie, I. Rosca, A.I. Sandu, A. Bele, L. Marin
8. Composite materials based on polyelectrolytes used as sorbents in batch and column studies; L.-M. Petrila, F. Bucatariu, M. Mihai
9. Copper tetranuclear complex bearing silanol functional groups, A.-C. Stoica, M. Damoc, M. Dascalu, M. Cazacu
10. Development of bioactive hydrogels containing *Thymus vulgaris* essential oil by ice template-assisted freeze-drying technique; I.-V. Platon, I. E. Raschip, A. C. Aprotosoiaie, A. C. Gradinaru, M. V. Dinu
11. Ionic beads/CaCO₃ composites as sorbents for small organic molecules; A.-L. Vasiliu, M.-M. Zaharia, M. Mihai
12. Multi-step procedure leading to heterocycle containing dimethylsilane unit, M. Damoc, A. C. Stoica, D. Blaj, A.-M. Macsim, M. Dascalu, M. Cazacu
13. Novel luminescent phenothiazine derivatives for biological applications, S. Cibotaru, L. Marin
14. pH/Temperature-sensitive interpenetrating polymeric hydrogel; B. Cosman, S. Bucatariu, M. Constantin, G. Fundueanu
15. Synthesis and characterization of novel imine derivatives of quaternary ammonium salt of chitosan, B.I. Andreica, I. Rosca, L. Marin
16. Synthesis and characterization of novel polyurethanes based on piperazine and renewable cross-linkers; V. O. Potolinca, S. Oprea
17. Xanthan acrylate/cobalt ferrite material for removing dyes from wastewaters; I. Apostol, N. Anghel, I. Spiridon
18. Xanthan as component of the drug delivery systems, A. Dimofte, N. Anghel, M. V. Dinu, T. Boita, I. Spiridon
19. Zwitterionic porous microparticles - Advanced materials as potential drug delivery systems; M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, M. Mihai

Conferinta Cercetarii Stiintifice din Academia Romana, (CCSAR-2021) 22 – 23.11.2021

20. Formulări siliconice pentru tehnologia de printare 3D, C. Tugui, G. Stiubianu, A. Stefan, M.-S. Serbulea, A.-D. Sabau, M. Cazacu
21. Vectori non-virali de tip stea pentru transfectie, Dragos Peptanariu
22. Sisteme supramoleculare pentru aplicatii biomedicale, Alexandru Rotaru

Zilele Spitalului Clinic CF Iasi, editia 2021, 23 – 27.11.2021

23. Tunable hybrid materials-platforms for bioimaging, M. Zaltariov, M. Avadanei, R. I. Tigoianu, M. Cazacu

4.11. Postere prezentate la manifestari stiintifice internationale**EPNOE Junior Meeting 4th edition, 3-4.02.2021 Leuven, Belgium**

1. Nystatin-loaded chitosan films for candidiasis treatment; A.-C. Humelnicu, P. Samoila, C. Cojocaru, V. Harabagiu

XXXIth edition of the International Congress of "Apollonia" University of Iasi "By promoting excellence, we prepare the future", Iasi, Romania, 1-3.03.2021

2. An overview of collagen materials used in biomedical applications; M. Spiridon, M. Barbalata-Mandru, M. Butnaru, M. Aflori
3. Aromatic polyimide membranes with tunable properties; D. Serbezeanu, A.-M. Ipate, A.-L. Vasiliu, T. Vlad-Bubulac
4. Cellulose – carbon nanotubes hybrid materials acting as electromagnetic shielding materials; G. Biliuta, R.I. Baron, S. Coseri
5. Hydrogels based on PVA and pullulan with self-healing behavior; R.I. Baron, G. Biliuta, S. Coseri
6. Synthesis and flocculation performance of thiourea-g-polyethyleneimine; C.-A. Ghiorghita, L. Ghimici

1st Corrosion and Materials Degradation Web Conference, 17-19.05.2021

7. Stability of the HPC/PU Polymeric Blends in Accelerated Weathering and Biological Environments, M. F. Zaltariov, C. D. Varganici, D. Filip, D. Macocinschi

EuroNanoForum, 01.05.2021

8. Virtual Booth, A. Bele, A. Skov
9. Silicone-based materials for green wave energy harvesting; A. Bele, A. Skov, M.

The 2021 Spring Meeting on the European Materials Research Society (E-MRS), virtual conference, 31.05 – 3.06.2021

10. Organic heterostructures with indium-free transparent conductor electrode for opto-electronic applications; G. Petre, A. Stanculescu, M. Girtan, M. Socol, C. Breazu, L. Vacareanu, N. Preda, O. Rasoga, F. Stanculescu, A. Doroshkevich

International Conference "Agriculture for Life, Life for Agriculture", Tenth Anniversary Edition, Bucharest, Romania, 03 – 05.06.2021

11. Assessment of antifungal activity of gold–chitosan and carbon nanoparticles against *Rhizoctonia solani* Küh. F. D. Lipsa, E. L. Ursu, A. M. Gafencu, M. A. Florea, A. Cazacu

Acta of the International Symposium on Thermodynamics of Metal Complexes, ISMEC 2021, Białystok, Poland, 16–18.06.2021

12. A morphology study on several PEG 400 based nanocolloids, M. I. Chereches, E. I. Chereches, D. Bejan, A. A. Minea

The 25th International Exhibition of Inventions "INVENTICA 2021", Iasi, Romania, 23-25.06. 2021

13. GreenTechMembr/ New "green" technology for advanced water treatment based on functionalized polysulfones/ionic liquids membranes; A. Filimon, L. Lupa
14. InElPHoPro/ Innovative electrospun membranes based on phosphorus-containing polymers for protective clothing; D. Serbezeanu
15. Process for obtaining a two-component silicone rubber, A. Bele

Environmental and Energy Applications AdvPhotoCat-EE 2021, 28-29.06.2021

16. Evans Blue Photodegradation by Novel Samarium Doped Zinc Aluminium Spinel Ferrites; I. Grecu, P. Samoila, C. Cojocaru, P. Pascariu, V. Harabagiu
17. Structural properties of copper oxide nanoparticles and their applications as photocatalysts in organic pollutants degradation; C. Gherasim, A. Airinei, P. Pascariu, N. Fifere, F. Doroftei, A. Dascalu

1st International Electronic Conference on Chemical Sensors and Analytical Chemistry, CSAC2021; 1 – 15.07. 2021

18. Applications and properties of lanthanide complexes; I. R. Tigoianu, C. Serpa, M. Avadanei, M. F. Zaltariov, D. Ursu

15th International conference on materials chemistry (MC15), UK, 12-15.07.2021

19. Functionalized Multi-wall Carbon Nanotubes and Aquatic Plant; M. E. Fortuna, E. Ungureanu, O. Ungureanu, M. Ignat

CEEC-TAC6 & Medicta2021, Split, Croatia, 20-24.07.2021

20. Non-isothermal degradation kinetic study of new multicomponent polymer systems for flame retardant coatings; L. Rosu, C.-D. Varganici, F. Mustata, D. Rosu, A.-L. Vasiliu
21. Thermal behaviour and fungal protection of composites based on wood and natural and synthetic epoxy resins cured with a rosin acid derivative; C.-D. Varganici, L. Rosu, F. Mustata, D. Rosu, I. Rosca
22. Thermal characterization of bio-based epoxy resins crosslinked with curing agents from raw renewable resources; L. Rosu, C.-D. Varganici, F. Mustata, D. Rosu

23rd International Conference Materials, Methods & Technologies; Burgas, Bulgaria, 19-22.08.2021

23. Hydrogels based on poly(vinylpyrrolidone) and chitosan used to release tetracycline hydrochloride; A.-M. Ipate
24. *In silico* study on the aggregation of poly(L-histidine)-poly(ethylene glycol) copolymeric sequences at different protonation states. T. Vasiliu, R. Ghiarasim, G. Dimofte, M. Pinteala, A. Rotaru
25. Synthesis, characterization and preliminary testing of doxorubicin loaded poly(L-histidine)-PEG copolymer micelles as pH sensitive drug delivery systems. R. Ghiarasim, L. Bahrin, B. Craciun, C. Tiron, G. Dimofte, M. Pinteala
26. Synthesis of magnetic nanoparticles coated with pHEMA functionalized with doxorubicin and folic acid for cancer therapy. R. Ghiarasim, S. Ibanescu, N. Marangoci, A. Coroaba, N. Simionescu, M. Pinteala

International Scientific Conference of the Bulgarian Peptide Society, Velingrad, Bulgaria, 27-29.08.2021

27. BSA/polymer hybrid hydrogels as carrier for neomycin delivery; L. M. Gradinaru, M. Bercea, R. V. Gradinaru

31st Annual Conference of the European Society for Biomaterials (ESB 2021), 05-09.09. 2021

28. Biobased polymeric network designed for lavender oil encapsulation; A.P. Chiriac, L.E. Nita, A.G. Rusu
29. Enzymatic crosslinked hydrogels based on gelatin loaded with maleoyl-chitosan/poly (aspartic acid) nanocarriers as potential therapeutic scaffolds for tissue engineering; A.G. Rusu, A.P. Chiriac, L.E. Nita
30. New gels preparation based on peptide-peptide co-assembly; A. Croitoriu, L.E. Nita, A. Serban, A.G. Rusu

Chemistry World Conference, Roma, Italia, 06-08.09.2021

31. Edible food packaging formulations based on renewable resources; M. Rapa, E. Matei, C. Predescu, A.C. Berbecaru, C.M. Pantilimon, R.N. Darie-Nita, G. Coman, E.E. Popa

11th International Conference on Environmental Engineering and management (ICEEM), Muttenz, Switzerland, 08-10.09.2021

32. Sustainable use of composite sorbents to remove emerging and priority pollutants in advanced wastewater treatment processes; C. Teodosiu, F. Bucatariu, D. Fighir, I. Morosanu, R. Ciobanu, C. Paduraru, M. Mihai

4th Edition of the NanoScientific Forum Europe 2021 - the platform for nanoscience and SPM research in Europe!, Freiburg, Germany, 15-17.09.2021

33. Advanced morphological and statistical analysis of laser induced micro/nanomultiscale surface relief gratings on azo-polyimide films; I. Stoica, I. Sava, J. Konieczkowska, E. Schab-Balcerzak
34. A new texturing approach of a polyimide shielding cover for enhanced light propagation in photovoltaic devices; A.I. Barzic, I. Stoica, R.M. Albu
35. Mechanical alteration of the morphological features of a polyimide and their impact on interfacial compatibility; A. I. Barzic, I. Stoica, R.M. Albu
36. Pretesting laser-patterned polyimide films as substrates for flexible electronic devices; I. Stoica, I. Sava, E.G. Hitruc, A. F. Trandabat

INTERFACES; Sardinia, Italia, 21-25.09.2021

37. *In silico* analysis of the mechanism of interaction between PEG PEI and DNA at an atomistic level; T. Vasiliu, D. Isac, A. Laaksonen, M. Pinteala
38. Soft materials as zwitterionic porous microparticles with drug delivery capabilities; A.-L. Vasiliu, M.-A. Trofin, S. Vasiliu, S. Racovita, D.F. Loghin, M. Mihai
39. Structural organization of spermidine³⁺ molecules around the DNA double helix and at the DNA-DNA interface; F. Mocci, A. Laaksonen, L. Engelbrecht, T. Vasiliu, S. Perepelytsya

13th International Conference on Physics of Advanced Materials, Sant Feliu de Guixols, Spania, 24-30.09.2021

40. Comparative structural, morphological and optical characterization of CeO₂/doped-CeO₂ nanoparticles; V. Melinte, A.L. Chibac-Scutaru, V. Podasca
41. Electrochromic prototype devices based on triphenylamine-triphenylmethane containing polyimides; C.-P. Constantin, A.-E. Bejan, M. D. Damaceanu
42. Fluorene-based chemical tools for light-emitting materials; R. D. Rusu

International Symposium "THE ENVIRONMENT AND THE INDUSTRY", SIMI 2021, Bucharest, Romania, 24.09.2021

43. Effects of functionalized MWCNT on the aquatic environment; M. E. Fortuna, E. Ungureanu, D. C. Jitareanu, M. Ignat

Sensor Fint 2021 - Smart Spectral Sensors for Agri-Food Quality and Process Control, Porto, Portugal, 30.09 – 1.10.2021

44. How is influencing packaging food safety? M. Belous, V.E. Simion, M. Brebu, E. Stoleru;
45. Stimuli responsive polymeric-materials as sensing platforms; E. Stoleru, M. Brebu

UEG (United European Gastroenterology) Week, 03-05.10.2021

1. Micronutrient deficiency in patients with inflammatory bowel disease – neglected entity?; G.-E. Gilca-Blanariu, A. Coroaba, M. Ciocoiu, A.-V. Trifan, G. Dimofte, T. Pinteala, G. Balan, G. Stefanescu

New Trends and Strategies in the Chemistry of Advanced Materials with Relevance in Biological Systems, Technique and Environmental Protection, Timisoara, Romania, 07-08.10.2021

46. Photocatalytic composite membranes for water treatment: results, limitations, and new insights; M. Homocianu, P. Pascariu

The 28th International Conference Progress in Organic and Macromolecular Compounds – MACRO Iasi - 2021, Romania, 07–09.10.2021

47. Chitosan biocompatible hydrogels as drug delivery matrices for anticancer applications, A.M. Craciun, G. Gavril, I.C. Marinas, L. Mititelu Tartau, L. Marin
48. Chitosan-PVA composite hydrogels: synthesis, characterization and their antibacterial properties; B. Cosman, D.M. Rata, D.M. Suflet, G. Fundueanu
49. Double-functionalized chitosan nanofibers for wound healing, Progress in organic and macromolecular compounds, R. Lungu, A. Anisie, I. Rosca, A.-I. Sandu, D. Ailincăi, L. Marin
50. Green interpenetrated silicone-based elastomeric webs engineered as wave energy harvesters, N. Ionescu, A. Bele, M. Dascalu, G. Stiubianu, M. Cazacu
51. Lignin as source of new hybrid materials; I. Apostol, I.-A. Dascalu, A. Coroaba, I. Spiridon
52. Modification of the polyurethane film surface properties after air-plasma treatment, M. Barbalata-Mandru, L. M. Gradinaru, M. Aflori, S. Ursache
53. Morphological study of some epoxy resin with DOPO-based oligophosphonate S-IPNs; A.-L. Vasiliu, C.-D. Varganici, D. Rosu, F. Mustata, O.M. Munteanu, L. Rosu
54. New zwitterionic copolymer with carboxybetaine moieties as possible drug delivery system; M.-A. Trofin, S. Racovita, S. Vasiliu, A.-L. Vasiliu, D.F. Loghin, O. Boita, M. Mihai
55. Squalene functionalized with coumarines or benzenesulfonamides as hybrid inhibitors for carbonic anhydrase; B. F. Craciun, L. Clima, A. Angeli, A. Petreni, S. A. Ibanescu, M. Pinteala, C. T. Supuran
56. Synthesis and characterization of acrylic ion exchange resins and their environmental applications as sorbents; M.-M. Zaharia, A.-L. Vasiliu, M.-A. Trofin, M.-M. Bazarghideanu, C. Blegescu, M. Mihai
57. Towards robust metal-organic frameworks based on fluorinated linkers for gas storage; I. A. Dascalu, S. Shova, R. Ardeleanu, N. Marangoci, M. Pinteala, C. Janiak
58. Polysaccharides-based materials as drug delivery systems; A Dimofte, N. Anghel, M.V. Dinu, T. Boita, I. Spiridon

7th International Polysaccharide Conference (EPNOE 2021), Nantes, Franta, 11-15.10.2021

59. Synthesis and characterization of maleoyl-chitosan/polypeptide bioconjugate; A.G. Rusu, A.P. Chiriac, L.E. Nita
60. Nanocomposite formulations based on CNC for protection of organic surfaces; B. I. Dogaru, C. M. Popescu
61. Properties and structure characterization of nanocellulose reinforced casein films; B. I. Dogaru, M. C. Popescu

4.12. Postere prezentate la manifestari stiintifice nationale

Simpozionul "Celebrating half a century of Magnetic Resonance in Romania" organizat in cadrul conferintei internationale "Processes in isotopes and molecules", Cluj-Napoca, Romania, 22-24.09.2021

2. Operator versus instrumental induced variability in NMR spectroscopy; G. L. Ailiesei, C. Duduianu, L. Cristea, C. Stavarache, M. Cristea, O. Popa, M. Balan-Porcarasu, A.-M. Macsim, A. Nicolescu, C. Deleanu

CHIMIA - FRONTIERA DESCHISA SPRE CUNOASTERE, editia a XII-a, Iasi, Romania, 11-12.11.2021

3. Preparation and characterization of multifunctional porous chitosan-based hydrogels by formaldehyde-mediated cross-linking; M. M. Barzu, C.-A. Ghiorghita, D. Humelnicu, M. V. Dinu

Congresul Stiintific International, Universitatea pentru Stiintele Vietii "Ion Ionescu de la Brad" din Iasi, Facultatea de Horticultura, 21-22 octombrie 2021, Iasi, Romania

4. Chemical composition and antifungal activity of five Artemisia spp. essential oils (EOs) on some phytopathogenic fungi; C. M. Rosu, B. Ivanescu, F. Doroftei, E. Stoleru, M. Brebu

Conferinta Internationala sub egida Academiei Romane: cel de-al 42-lea Simpozion Aniversar al Institutului de Biologie si Patologie Celulara "Nicolae Simionescu" si cea de-a 38-a Sesiune Anuala a Societatii Romane de Biologie Celulara, Bucuresti, Romania, 4 - 6.11.2021

5. Microvesicle-associated microRNA signature in glioblastoma: preliminary results from OpenArray profiling; Simionescu N, Nechifor S, Buga R, Dabija M, Eva L, Zonda R, Petrovici AR, Georgescu A.

5. CAPACITATEA DE A ATRAGE FONDURI DE CERCETARE

5.1. Proiecte de cercetare internationale finantate din fonduri publice

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (EUR) din care:	2021
1	Multifunctional Spin Crossover Materials, SPINSWITCH	H2020-MSCA-RISE-2016 No 734322/ S. Shova	2017-2021	120000	30000
2	Non-biased fluorescent dyes as markers of drugs for optical in cellulose and in vivo imaging.	H2020-MSCA-RISE-2019, Grant Agreement No. 872331/ A. Rotaru	2020-2024	671.600	54.000
3	Smart Wound monitoring Restorative Dressings (SWORD)	H2020-MSCA-RISE-2019 (873123) L. Marin	2020-2022	96.600	57.960
4	Nanomaterials and Nanoarchitectures II. Composite materials & their applications"	NATO Emerging Security Challenges Division Event Award Id. G58792021 Suport SWORD/L. Marin		59000	
5	Integrated use of the next generation plant biostimulants for an enhanced sustainability of field vegetable high residue farming systems"(STIM 4+)	RO-NO-2019-0540 (14/2020 (STIM+)) / A. Nicolescu -ICMPP	2020-2023	168726	75423

6	NanoTraPPED- Development of a Method for Measuring the Surface Energy of Nanoparticles	Grant Nr. 200021_188465- finantat de Swiss National Science Foundation / A. Honciuc	2021-2022	136250	102187
7	Restore Her2 dependent sensitivity using AXL inhibitors packed in pH dependent nanostructures.	EEA-RO-NO-2018- 0246/ Responsabil ICMPP Dr. Alexandru Rotaru	2021-2023	1.212.500	134.750
8	KSP-S- Bio-farming for bioactive compounds, NOFIMA AS (promotor de proiect) cu The Research Council of Norway	320740/09.12.2020; Dr. Elena Stoleru responsabil partener	2021-2023	ICMPP: 500000 NOK (50 000 euro);	
9	Lego-style approach for problematic water streams treatment (WATERLEGO)	Project consortium 224, ERA.Net RUS Plus Call 2017, Coordonator proiect: S. Schwarz, Dr. M. MIHAI	2018-2021	-	-

Proiect de tip COST

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata
1	COST Action CA16205 – Eur. Network on understanding gastrointestinal absorption-related processes	Dr. A.P. CHIRIAC	2017 –2021
2	COST Action CA17112 - Prospective european drug-induced liver injury network	Dr. L.E. NITA	2018 –2022
3	COST Action CA17139 - European Topology Interdisciplinary Action	Dr. A.P. CHIRIAC	2018-2022
4	CA18125 - Advanced Engineering and Research of aeroGels for Environment and Life Sciences	Dr. L.E. NITA	2019-2023
5	COST Action CA17105 - A pan-European Network for Marine Renewable Energy, WECANet	Dr. M.CAZACU	2018-2022
	COST Action CA18220 - European network for furan based chemical and materials for a sustainable development – FUR4Sustain	M. IGNAT V. HARABAGIU	2020-2022

5.2. Proiecte de cercetare nationale finantate din fonduri structurale

Nr. crt.	Denumire proiect	Numar/responsabil contract	Durata	Total val. (RON):	2021
1	Parteneriate pentru transfer de cunostinte in domeniul materialelor polimere folosite in ingineria biomedicala (POINGBIO)	Contract de finantare nr. 86 / 08.09.2016, director proiect: M. AFLORI	2016-2022	3.199.877	374.195
1	Infra SupraChem Lab Centru de cercetari avansate in domeniul chimiei supramoleculare (Infra SupraChem Lab)	POC/81/1/2/Crearea de sinergii cu actiunile de CDI ale programului-cadru ORIZONT 2020 al Uniunii Europene si alte programe CDI internationale – CATEDRE-ERA; Coordonator: N. MARANGOCI	2021-2023	4.488.367	1.346.938
3	Valorificarea inovativa si integrata a deseurilor biopolimerice prin procese de sinteza inteligente in camp de microunde cu obtinerea de materiale carbonice pentru aplicatii de nisa	POC 163/1/3, AP1: CDI in sprijinul competitivitatii economice si dezvoltarii afacerilor, Actiunea 1.2.1, Tip de proiect – Proiect tehnologic inovativ Cod My SMIS: 120696 Responsabil partener ICMPP: P. SAMOILA	2021-2024	~260.000	Estimat: 32.800
4	Dezvoltarea de ambalaje alimentare fara impact negativ asupra mediului ambient (AMBAL-INOV)	POC 375/390051/30.09.2021, Cod MySmis 120994; Dr. M. BREBU responsabil partener	2021-2023	2.444.700	

5.3. Proiecte de cercetare nationale finantate din fonduri publice

Nr crt	Denumire proiect	Numar/Responsabil contract	Durata	Total (EUR):	in 2021
1.	Noi compozite hibride pe baza de biopolimeri cu nanoparticule de CeO ₂ : un pas inainte catre materiale fotocatalitice durabile si competitive/POLYCER	TE 23/ 2020 Scutaru Andreea	2020-2022	431.900	204.000
2.	Nano-materiale de acoperire sustenabile de inalta performanta pentru bio-substraturi/NANO4BIO	TE 45/ 2020 Popescu Carmen Mihaela	2020-2022	431.900	243.418
3.	Strategii inovatoare pentru reducerea pierderilor optice prin materiale polimerice de protectie pentru dispozitive fotovoltaice mai eficiente/TPMSOLCEL	TE 83/ 2020 Barzic Andreea Irina	2020-2022	431.900	51.900
4.	Membrane inovative electrofilate pe baza de polimeri ce contin fosfor pentru haine de protectie/InElPHoPRo	TE 89/ 2020 Serbezeanu Diana	2020-2022	431.900	115.900

5.	Abordare modulara a proceselor de sinteza a nanoparticulelor acoperite cu polimeri multifunctionali destinate aplicatiilor nanomedicale/ModNanoMPol	TE 108/ 2020 Ibanescu Sorin	2020- 2022	431.900	223.925
6.	Noi membrane composite nanostructurate cu proprietati fotocatalitice imbunatatite pentru purificarea apei/CleanH2O	TE 164/ 2020 Pascariu Petronela	2020- 2022	431.900	237.416
7.	Comportamentul in conditii simulate de mediu a unor noi sisteme polimerice multicomponente pentru materiale de acoperire rezistente la flacara/EPOXYPHOSDEG	TE 165/ 2020 Varganici Cristian Dragos	2020- 2022	431.900	225.000
8.	Proiectarea unor noi perle chitosan/amidon amidoximat pentru aplicatii in purificarea apelor / BEADCsAmOxS	PD 1/ 2018 Loghin Diana Felicia	2018- 2021	250.000	34.270
9.	Rețele interpenetrante tip "panza de paianjen" pe baza de siloxani pentru recoltarea energiei valurilor/SilWebWEH	PD 181/ 2020 Bele Adrian	2020- 2022	184.450	137.071
10.	Compozite siliconice cu raspuns la stimuli multipli pentru traductoare cu functiune dubla comutabila/SwitchACT	PD 129/ 2020 Tugui Codrin	2020- 2022	246.950	97.644
11.	Ingineria unor filme organice subtiri pentru utilizarea ca straturi active eficiente in dispozitive optoelectronice/EngFilm	PD 182/ 2020 Soroceanu Marius	2020- 2022	246.950	115.600
12.	Micro/nanomotoare pe baza de glicopeptide proiectate pentru eliberarea de medicamente anti-tumorale/GlyPepTum	PD 149/ 2020 Rusu Alina Gabriela	2020- 2022	246.950	105.000
13.	Hidrogeluri pe baza de chitooligozaharide pentru co-eliberarea unor agenti antivirali si antifungici/HIVFight	PD 204/ 2020 Ailincai Daniela	2020- 2022	246.950	98.100
14.	Biopolimer cu suprafata structurata 3D prin imobilizarea unui hidrogel pentru adeziune controlata de celule/ BioHydroSurf	PD 31/ 2020 Stoleru Elena	2020- 2022	244.450	93.200
15.	Hidrogeluri injectabile pe baza de chitosan utilizate ca matrici biocompatibile si biodegradabile pentru formulari cu 5-fluorouracil cu aplicare locala anticancer /BioDrugSyst	PD 197/ 2020 Craciun Anda Mihaela	2020- 2022	246.950	90.110
16.	Rețele metal-organice pe baza de liganzi aromatici fluorinati/FluoroMOF	PD 211/ 2020 Dascalu Ioan	2020- 2022	246.950	126.884
17.	Obtinerea de chimicale si/sau combustibili prin torefactia si piroliza reziduurilor de conifere forestiere/ForestChemFuel	PD 49/ 2020 Butnaru Elena	2020- 2022	246.950	110.000

18.	Decontaminarea apelor de ionii metalelor grele prin intermediul schimbatorilor de ioni: cazul poluarii de la mina inchisa de la Tanita/WHIERTARN	PD 137/ 2020 Zaharia Marius Mihai	2020- 2022	246.950	133.656
19.	Liganzi cu nucleu de [2.2]paraciclofan pentru Retele Metal-Organice/PC-MOF	PD 8/ 2020 Bahrin Lucian	2020- 2022	246.950	127.950
20.	Motorul revolutiei energetice bazate pe hidrogen – Pilele de combustibil, pe drumul de la cercetare la productie prin minimizarea barierelor tehnologice / ROFCC	PCCDI/25/ 2018 Harabagiu Valeria	2018- 2021	735.000	35.300
21.	Nanotehnologii inovative pe baza de polimeri pentru obtinerea de noi materiale avansate / NAPOLI19	PCCDI/40/ 2018 Harabagiu Valeria	2018- 2021	709.582	40.626
22.	Metode combinatoriale utilizand liganzi porfirinici si liganzi cu spatatori siloxanici pentru recuperare GMP. Noi nanomateriale porfirino-platinice cu aplicatii in formularea de senzori/ ECOTECH-GMP	PCCDI/76/ 2018 Cazacu Maria	2018- 2021	800.000	46.798
23.	Platforme teranostice antitumorale pe baza de carbon dots si matrice polimerice/TERADOT	PCCDI/37/ 2018 Pinteala Mariana	2018- 2021	1.057.500	58.253
24.	Procese integrate si sustenabile de depoluare a mediului, reutilizare a apelor uzate si valorificare a deseurilor /SUSTENVPRO	PCCDI/26/ 2018 Mihai Marcela	2018- 2021	699.000	40.028
25.	Terapii inteligente pentru boli non-comunicabile bazate pe eliberarea controlata de compusi farmacologici din celule incapsulate dupa manipulare genetica sau bionanoparticule vectorizate/ INTERA	PCCDI/13/ 2018 Fundueanu Gheorghe	2018- 2021	1.380.000	84.817
26.	Inchiderea lanturilor de valoare din bioeconomie prin obtinerea de bioproduse inovative cerute de piata / PROSPER	PCCDI/10/ 2018 Deleanu Calin	2018- 2021	956.750	84.559
27.	Program interinstitutional pentru dezvoltarea de solutii avansate pe baza de eco-nanotehnologii pentru tratamente multifunctionale ale materialelor textile si din piele / PHYSforTEL	PCCDI/44/ 2018 Tampu Daniel	2018- 2021	210.000	12.139
28.	O noua tehnologie „verde” pentru tratarea avansata a apei bazata pe membrane de polisulfone functionalizate/lichide ionice/GreenTechMembr	PED/310/ 2020 Filimon Anca (Coordonator ICMPP)	2020- 2022	395.000	197.700
29.	Traductori electromecanici moi pe baza de siliconi imprimati 3D /3DETSi	PED 320/ 2020 Cazacu Maria (Coordonator ICMPP)	2020- 2022	400.000	206.000

30.	Hidrogeluri compozite inovative cu activitate antibacteriana si antiinflamatorie cu aplicatii in tratamentul paradontozei/ PERIOSILVERDDS	PED 312/ 2020 Fundueanu Constantin Marieta (Coordonator ICMPP)	2020- 2022	301.000	150.500
31.	Noi hidrogeluri hibride polimer/peptide ca platforme inovatoare proiectate pentru aplicatii in culturi celulare/HYPCELGEL	PED 339/ 2020 Nita Loredana Elena (Coordonator ICMPP)	2020- 2022	350.000	170.000
32.	Sistem compozit inteligent cu configuratie autocontrolabila constituit din aliaje cu memoria formei / materiale magnetice amorfe incorporate in matrici elastomerice/SMAMEM	PED 321/ 2020 Cazacu Maria (partener ICMPP)	2020- 2022	100.000	41.000
33.	Suporturi magnetice inteligente 3D avansate pentru ingineria si regenerarea tisulara a osului/3D SMARTMAGTISS	PED 562/ 2020 Chiriac Aurica (partener ICMPP)	2020- 2022	150.000	55.000
34.	Fitoextracte si uleiuri esentiale din Artemisia spp cu potential in agricultura ecologica, ca biopesticide si erbicide/BioPest	PED 394/ 2020 Brebu Mihai (partener ICMPP)	2020- 2022	60.000	50.500
35.	Ingineria de ultima generatie a unor dispozitive electrocrome polimerice cu functionare la tensiune joasa destinate economisirii de energie/EngEChrom	PED 438/ 2020 Constantin Catalin Paul (Coordonator ICMPP)	2020- 2022	600.000	277.000
36.	Dispozitive polimere emitatoare de lumina imbunatatite prin metode chimice/LEPDICT	PED 485/ 2020 Rusu Dan Radu (Coordonator ICMPP)	2020- 2022	599.986	297.294
37.	Materiale Dinamice Duale pentru Confort Termic Uman/DYMATCO	PED 463/ 2020 Stiubianu George (Coordonator ICMPP)	2020- 2022	457.500	298.815
38.	Senzor de mare sensibilitate din resurse naturale/HISENSE	PED 520/ 2020 Coseri Sergiu (Coordonator ICMPP)	2020- 2022	600.000	253.963
39.	Microparticule compozite nisip/polielectrolit cu capacitate ridicata de incarcare/eliberare de compusi anorganici/organici din ape poluate/ POLYSAND	PED 521/ 2020 Bucatariu Florin (Coordonator ICMPP)	2020- 2022	450.000	257.850
40.	Conceperea de platforme peptidice moderne inspirate din lumea vie/BioPASCAL	PED 494/ 2020 Bercea Maria (partener ICMPP)	2020- 2022	200.000	110.400
41.	Bandaj resorbabil cu eliberare controlata de norfloxacin pentru vindecarea arsurilor/BurnHeal	PED 538/ 2020 Marin Luminita (Coordonator ICMPP)	2020- 2022	400.000	214.174
42.	Microparticule poroase zwitterionice care contin zeina si unitati betainice, cu activitate antimicrobiana si capacitate de administrare de medicamente/ ZwitterZein	PCE 87/2021 Mihai Marcela	2021- 2023	1.198.032	447.655

43.	Materialele 2D emergente bazate pe rețele metal-organice bidimensionale permetilate/2D-PerMONSil	PCE 207/2021 Cazacu Maria	2021-2023	1.198.032	370.000
44.	Vectori moleculari versatili, destinati transportului si eliberarii de gene si medicamente, in lupta impotriva cancerului/TM-Vector	PCE 161/2021 Pinteala Mariana	2021-2023	1.198.030	394.665
45.	Nanomateriale ecologice pe baza de chitosan pentru aplicatii de interes contemporan/ECO-MAT	PCE 2/2021 Marin Luminita	2021-2023	1.198.032	493.750
46.	Polimeri ionici pe baza de polizaharide: corelatii intre structura chimica proprietati fizico-chimice is interactiuni cu particule cu sarcina opusa/IPOLSACH	PCE 94/2021 Ghimici Luminita	2021-2023	1.198.032	600.000
47.	Extinderea limitelor celulozei spre fabricarea de membrane conductoare de protoni superioare, pentru celule de combustibil/EXCELLFUEL	PCE 19/2021 Coseri Sergiu	2021-2023	1.198.032	398.032
48.	Mimarea mecanismelor viului prin abordari ale chimiei supramoleculare in 5 dimensiuni / 5D-nanoP	PCCF 4/ 2018 Aatto Laaksonen	2018-2022	5.900.000	1.086.389

5.4. Proiecte de cercetare internationale finantate din fonduri private

Nr. crt.	Denumire proiect	Numar Responsabil contract	Durata	Total val. (EUR):	in 2021
1	Formulation of bio-absorbable class III medical device for local drug delivery (Proiect de colaborare dintre CORTHOTEC LIMITED, London, UK si ICMPP)	Research agreement 5289/09.0.8.2019 Dr. M. Pinteala	2019-2020	96.203	17.591

5.5. Propuneri de proiecte nationale

Titlu proiect	Director/ responsabil ICMPP
PN-III-ID-PCE-2021	
1. Proiectarea și ingineria biomaterialelor inteligente cu capacitate de autoreparare	Bercea Maria
2. Acoperiri hibride fotosensibilizate pe baza de matrici poliuretanică și nanoparticule de oxid metalic având caracteristici fotocatalitice ajustabile	Melinte Violeta
3. Biomasa: solutie sustenabila pentru industria farmaceutica, cosmetica si protectia mediului inconjurator	Spiridon Iuliana
4. Utilizarea "PEmPTech" in Sinteza Polimerilor Amprentati Pentru Extractia Ionilor Metalici din Apele Uzate si Minerit Hidrologic	Honciuc Andrei
5. Hidrogeluri biomimetice pentru sisteme de eliberare cu auto-reglare a medicamentelor	Fundueanu-Constantin Gheorghe
6. Materiale hibride polimer-argila cu activitate potential antivirala	Morariu Simona
7. Acoperiri ecologice durabile și inovatoare din resurse regenerabile pentru protectia suprafetelor împotriva actiunii factorilor de mediu	Rosu Dan

8.	Efectul chimiei covalente dinamice asupra profilului reologic și a comportării termice a poliuretanilor pe baza de ciclodextrina destinați vindecării	Cristea Mariana
9.	Sisteme inovatoare de etichetare a securității pe baza de hidrogeluri bioactive pentru protejarea produselor împotriva falsificării	Dinu Maria Valentina
10.	Nano-transportori multifuncționali modulari pentru aplicații biomedicale	Clima Lilia
11.	Materiale Semiconductoare Supramoleculare pentru Dispozitive Electronice Organice	Farcaș Aurica
12.	Politoraxani reticulați: Sinteză, dezvoltare și aplicații	Resmerita Ana-Maria
13.	Complecși ai Fe(II) de tip spin crossover și materiale pe baza lor pentru comutatoare multifuncționale	Shova Sergiu
14.	Deșeuri agricole – valorificare completă în biocombustibili și chimicale	Brebu Mihai
15.	Ferestre inteligente de stocare a energiei : de la ingineria de material la cea de dispozitiv flexibil cu funcții integrate electrocromice și capacitive	Damaceanu Mariana-Dana
16.	Detecția electrochimică a biomarkerilor serici relevanți pentru bolile hepatice utilizând senzori pe baza de materiale nanostructurate	Arvinte Adina
17.	Nanocompozite cu rezistență la flacără și activitate antimicrobiană pe baza de rasini epoxidice și alcool polivinilic	Hamciuc Corneliu
18.	Noi inhibitori ai anhidrazei carbonice ca potențiali agenți anti-infecțioși împotriva microorganismelor patogene rezistente la antibiotice	Angeli Andrea
19.	Sistem transdermic API-IL de eliberare a medicamentului, pe baza de colina, pentru tratamentul afecțiunilor neurodegenerative	Aatto Laaksonen
20.	Sisteme polimerice și hibride pentru explorarea și intensificarea eliminării unor poluanți chimici din apele contaminate	Cojocaru Corneliu
21.	Arhitecturi polielectroliti/enzime depuse pe microparticule anorganice pentru cataliza statică/dinamică	Bucatariu Florin
22.	Reziduurile lignocelulozice în materiale de înaltă calitate pentru agricultura ecologică și sustenabilă	Popescu Maria-Cristina
23.	Rețele organice supramoleculare bazate pe asamblarea derivatilor de guanozina ca abordare nouă pentru prepararea materialelor poroase controlabile	Rotaru Alexandru
24.	Platforma inovatoare 3D cu bioactivitate specifică pentru vindecare arsurilor utilizând o abordare de tip "antibiotic-free"	Nita Loredana Elena
25.	Investigarea prin inteligență artificială a unor sisteme polimerice hibrid și aplicabilitate în imprimarea 3D Computer Sciences	Chiriac Aurica
26.	Dispozitiv bistratificat pe baza de derivați amfilici de curdlan pentru managementul ranilor	Suflet Dana-Mihaela
27.	Compozite polimerice inovatoare pentru rezonatori dielectrice în domeniul microundelor	Avadanei Mihaela

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28.	Detecția și evaluarea impactului produs de MMOD în vehiculele spațiale cu o rețea modulară de senzori polimerici pe baza de elastomeri siliconici	Bele Adrian
29.	Progrese în reciclarea chimică a deșeurilor de PET – Glicoliza catalitică cu catalizatori magnetici nanodimensionați	Samoila Petrișor
30.	Materiale compozite sensibile la stimuli pentru dezvoltare de senzori	Homocianu Mihaela

31	Îmbunatatirea performantelor fotocatalitice și antibacteriene ale unor noi material hibride pe baza de particule ZnO	Podașca Viorica-Elena
32	Materiale hibride pe baza de non-izocianat poliuretan pentru plasturi/pansamente	Gradinaru Madalina Luiza
33	Noi compozite pe baza de polianilina și Grafena/ Nanoparticule Janus cu conductivitati variabile	Solonaru Ana-Maria
34	Platforma de chemosensory luminescenti pe baza de nanocristale semiconductoare (QDs) netoxice pentru detectarea poluantilor din mediu	Stroea Lenuta
35	Compozite siliconice de tip elastomeric sensibile la stimuli multipli	Dascalu Mihaela
36	Instrumente inteligente pentru proiectarea, sinteza și optimizarea de noi materiale hibride pe baza de siliciu cu aplicatii în captarea-stocarea CO ₂	Bargan Alexandra
37	Hidrogeluri compozite formate <i>in-situ</i> cu proprietati mecanice controlate pentru aplicatii în regenerarea osoasa	Popescu Irina
38	Noi materiale adsorbante pe baza de compozite bogate în ioni metalici cu aplicatii în minimizarea deșeurilor și economie circulara durabila	Gheorghita Claudiu-Augustin
39	Dezvoltarea de noi arhitecturi microporoase de polimeri conjugati ca senzori solizi pentru detectia de derivati nitroaromatici periculosi	Vacareanu Loredana
40	Imobilizarea antocianinelor in materiale pe baza de polizaharide pentru obtinerea de ambalaje alimentare ecologice inteligente	Raschip Irina Elena
41	Abordari inovatoare de marire a stocarii energiei în dielectrici prin doparea polimerilor verzi cu compuși naturali pentru dispozitive eco-compatibile	Albu Raluca Marinica
42	Materiale bioactive ca sisteme de eliberare de medicamente cu compusi fitoterapeutici pentru potentiala preventie/ tratament a infectiei cu coronavirus	Teodorescu Mirela
43	Metoda experimentală inovativă de obținere de fotocatalizatori pe baza de semiconductor cu eficiența ridicată și flexibili pentru depoluarea mediului	Ursu Cristian
44	Dezvoltarea unui sistem de nanoparticule de siliciu functionalizate cu aplicatii în imunoterapie	Rusu Bogdan-George
45	Ambalaje de hartie bioactive pentru o perioada de valabilitate extinsa a alimentelor	Irimia Anamaria
46	Dezvoltarea unor material polimere transparente, flexibile și dielectrice pentru dispozitive electronice	Rusu Radu-Dan
47	Eco-filamente active pe baza de polyester pentru imprimarea 3D a unui prototip destinat suportului medical împotriva COVID-19	Darie-Nita Raluca Nicoleta
48	Ingineria unor materiale cu constanta dielectrica mare pe baza de copoliimide pentru utilizare în dispozitive de stocare a energiei	Butnaru Irina
49	Dezvoltarea unor prototipuri de dispozitive electrocrome cu operare în infraroșu apropiat pe baza de polimeri cu unitati electroactive de triarilamina	Constantin Catalin-Paul
50	Noi concepte de nanocompozite semiconductoare pe baza de polimeri conjugati și nanoparticule multifunctionale Janus	Asanduleasa Mihai-Gabriel
51	Pardoseli și suprafețe inteligente imprimate 3D pentru colectarea energiei și avertizare timpurie în accidente în interiorul cladirilor	Știubianu George
52	Abordare originala in adaptarea foto/piezo actuatiei coexistente pe suporturi poliimidice pentru electronica flexibila/extensibila si senzori	Stoica Iuliana
53	Noi platforme supramoleculare AND/nanoparticule metalice/materiale pe baza de carbon pentru biodetectia și bioimagistica SERS	Ursu Elena-Laura

54	Proiectarea și sinteza nano-antioxidanților magnetici pentru reducerea locală a stresului oxidativ în terapia restenozei	Turin-Moleavin Ioana-Andreea
55	Nanoparticule de oxizi metalici – alternative noi și eficiente pentru sterilizarea duodenoscoapelor	Roșca Irina
56	Dezvoltarea și caracterizarea unor noi biomateriale celulozice cu potențial aplicativ în ingineria tisulară	Doboș Adina Maria
57	Membrane bioactive pe baza de polisulfone funcționalizate cu implicații în terapia prin hemodializa	Filimon Anca
58	Versatilitatea unităților de construcție secundare (SBUs) în obținerea rețelelor metalorganice (MOFs) pentru aplicații medicale	Zaltariov Mirela
59	Ciclodextrine reactive pentru structuri polimerice de tip stea	Peptu Cristian
60	Un nou concept de obținere a hidrogelurilor injectabile cu rețea dublă, pe baza de polimeri naturali	Biliuta Gabriela
61	Amidon hidrolizat pentru micro și nano-particule/fibre cu activitate antimicrobiană și capacitate de administrare a medicamentelor	Loghin Felicia
62	Rețele metal-organice noi cu liganzi tritopici pentru stocare de gaze	Marangoci Narcisa
63	Formulari biodegradabile pe baza de precursori ecologici pentru agricultura sustenabilă	Ifime Manuela-Maria
PN-III-P1-P1-1.1-PD-2021		
64	Studii in silico ale derivatilor azobenzenici. Amprente electronice și structuri moleculare în reacții de izomerizare	Isac Dragoș-Lucian
65	Scualenizarea și încapsularea micelara ca metoda alternativă pentru îmbunătățirea eficienței biologice a medicamentelor antitumorale și antimicrobiene	Craciun Bogdan Florin
66	Proiectarea materialelor poliuretanică "verzi" folosind o abordare ecologică bazată pe biocomponenti	Potolinca Vileta Otilia
67	Noi nanostructuri de carbon magnetofluorescente ca potențiale nanomateriale bifuncționale pentru imagistica RMN și de fluorescență	Coroaba Adina
68	Modelarea multi-dimensională a formării poliplecșilor dintre AND și policaioni. Dezvoltarea de modele la mezoscala pentru a replica experimentele	Vasiliu Tudor
69	Matrici supramoleculare de tip hidrogel cu β-CD funcționalizată pe baza de guanozina ca transportatori eficienți pentru aplicații antimicrobiene	Sardaru Monica-Cornelia
70	Hidrogeluri noi antimicrobiene pe baza de polimeri naturali și incorporate cu extracte din Plantago major cu rol de suport în refacerea ranilor	Pamfil Daniela
71	Proiectarea de noi arhitecturi 3D cu proprietăți anti-îngheț și conductive controlate	Baron Raluca Ioana
72	Polisiloxan/compozite complecși metalici cu proprietăți de elastomeri dielectrici	Soroceanu Alina
73	Biofilme polimerice cu proprietăți de regenerare termoreglabile	Ursache Oana
74	Spectroscopie RMN rapidă pentru metabolomică și lipidomică	Nicolescu Alina
75	Materiale pe baza de fenotiazina cu un design de tip elice pentru dispozitive OLED	Bejan Andrei
76	Sisteme terapeutice pe baza de polizaharide pentru eliberarea eficientă a unor principii pluriactive insolubile pentru controlul candidozelor	Humelnicu Andra Cristina

PN-III-P2-PED-2021 - ICMPP Coordonator

77	Dezvoltarea unui sistem portabil pentru detectia electrochimica rapida si sensibila a glucozei si insulinei	Adina Arvinte
78	Platforme hibride ecologice autonome ce includ nanoparticule de CeO ₂ pentru conversia fotocatalitica eficienta a poluantilor toxici	Andreea Scutaru
79	Namoluri bogate in fier rezultate din statiile de tratare a apelor reziduale: de la reziduuri nedorite la suporturi polimerice catalitice	Maria Valentina Dinu
80	Dezvoltarea unor noi compozite pe baza de lichide ionice (ILs) incorporate în rețele metal-organice (MIL100) și utilizarea lor în cataliza proceselor de productie a biocombustibililor	Dana Bejan
81	Diode electroluminiscente cu eficienta de extractie luminoasa imbunatatita prin noi incapsulanti polimerici cu un design micro/nano-structural inovativ al suprafetei	Andreea Irina Barzic
82	Utilizarea Invatarii Automate in Sisteme Polimerice Hibrid cu Aplicabilitate in Imprimarea 3D	Aurica Chiriac
83	Ingineria substraturilor/ electrozilor flexibili inalt performanti de tip poliimidic pentru utilizare in dispozitive conexe energiei	Irina Butnaru
84	Flavonoide triciclice ca alternativa pentru sterilizarea duodenoscoapelor	Lucian Bahrin
85	Microsfere bioresorbabile mineralizate cu hidroxiapatita și încarcate cu antibiotic folosite ca sistem bifunctional în tratamentul osteomielitei	Irina Mihaela Pelin
86	Implementarea unor prototipuri de dispozitive electrofluorocrome de ultima generatie ce contin polimeri electroactivi pe baza de fenoxazina cu modulatie de fluorescenta controlata redox	Catalin Paul Constantin
87	Materiale supramoleculare pe baza de guanozina imbunatatite cu nanotuburi de carbon pentru aplicatii de biosenzori	Alexandru Rotaru
88	Sistem de purificare fotocatalitica a apei in lumina vizibila la scara de laborator pentru aplicatii de economisire a energiei	Petronela Pascariu
89	Depasirea limitelor membranelor poliimidice pentru separarea si captarea de CO ₂ cu un consum redus de energie prin utilizarea conceptului PIM si a tehnicii de amestecare	Mariana Dana Damaceanu
90	Ecotehnologie la scala de laborator pentru materiale avansate antimicrobiene pe baza de zeina și polizaharide	Marcela Mihai
91	Formulari bionanocompozite verzi pentru agricultura sustenabila	Maria Cristina Popescu
92	Platforma inovatoare 3D cu bioactivitate specifica pentru vindecarea arsurilor utilizand o abordare de tip "antibiotic-free"	Loredana Nita
93	Polirotaxanii conjugati: o strategie promitatoare pentru materiale organice electronice	Aurica Farcas
94	Valorificarea sustenabila a biomasei de cânepa pentru aplicatii nutraceutice	Anca Roxana Petrovici
95	Sisteme bio-hibride îmbogățite cu uleiuri extrase biotehnologic aplicabile în ingineria tesutului cutanat	Alina Gabriela Rusu
96	Noi sisteme complexe de (bio)polimeri cu structuri si proprietati tintite pentru formulari cosmetice	Cristina Eliza Brunchi
97	Metamateriale nanocompozite biocompatibile cu conductivitate electrica predirectionata si anizotropie controlata pt dezvoltarea sistemelor personalizate utilizate in stimularea magnetica transcraniana	Magdalena Aflori
98	Tehnologii imbunatatite pentru dezvoltarea de membrane polisulfonice electrofilate integrate intr-un dispozitiv extracorporal aplicabil in insuficienta renala	Anca Filimon

99	Formulari bio-nanocompozite pentru productia placilor fibrolemnoase ecologice	Carmen Mihaela Popescu
100	Materiale Inteligente cu Proprietati Adaptate petru Cagule Rezistente la Foc	Diana Serbezeanu
101	Procedeu de reticulare fara catalizator pentru o noua generatie de siliconi durabili	Maria Cazacu
102	Suporturi polimere pe baza de arhitecturi hiperramificate pentru dispozitive electronice flexibile	Radu Dan Rusu
103	Îmbunatatirea germinarii semintelor și a vigorii de creștere a plantelor folosind seminte tratate in plasma rece	Bogdan George Rusu
104	Substitute tisulare biomimetice pentru cartilaje prin printarea 4D a materialelor avansate multicomponente	Mihaela Adriana Olaru
105	Arhitecturi metal-organice adaptate pentru detectie selective	Mirela Fernanda Zaltariov
106	Anticiparea comportarii in timp a materialelor poliuretanic prin intermediul investigatiilor termoreologice - modele experimentale	Mariana Cristea
107	Noi platforme pentru administrarea topica a medicamentelor pe baza de ciclodextrine modificate cu oligoesteri	Cristian Peptu
108	Materiale rezistente la flacara performante pentru protectia componentelor structurale în ingineria civila	Tachita Vlad Bubulac
109	" Instrumente inteligente pentru proiectarea, obtinerea si optimizarea de noi membrane de tip PS-POSS-IL (polisulfonasilsesquioxani impregnate cu lichide ionice) cu aplicatii in separarea CO2	Alexandra Bargan
110	Dezvoltarea de matrici nanocompozite multifunctionale pentru ingineria tesuturilor osoase	Diana Elena Ciolacu
111	Biofungicide naturale pe baza de precursori ecologici pentru agricultura sustenabila	Manuela Maria Iftime
112	Materiale hibride polimerice pentru aplicatii ca senzori si rezonatori dielectrics in domeniul microundelor	Mihaela Avadanei
113	Medicamente anticancer pe baza de fenotiazina PEGilata	Luminita Marin
114	Captarea directa a dioxidului de carbon atmosferic prin strategii chimice și biologice scalabile	George Stiubianu
PN-III-P2-PED-2021 - ICMPP partener		
115	Valorificarea unor deșeuri celoligninice ca materiale adsorbante pentru suplimente nutritive folosite în agricultura	Maria Fortuna
116	O strategie mai scurta pentru sinteza aminelor norbornanice optice active, intermediari cheie pentru obtinerea de nucleozide carbociclice cu activitate potentiala antivirala/ anticanceroasa	Sergiu Shova
117	Dezvoltarea si formularea unor medicamente N-heterociclice anticanceroase pentru tratamentul local	Luminita Marin
118	Controlul si eliminarea eficienta a produsilor secundari ai dezinfectiei in tratarea apei pentru potabilizare	Marcela Mihai
119	Microgenerator de energie pe baza de compozit piezopolimeric imprimat pe suport dielectric flexibil	Corneliu Hamciuc
120	Metoda inovatoare de datare a obiectelor de arta și patrimoniului din lemn	Iuliana Spiridon
121	Materiale textile noi fotocatalitice active pentru utilizari in spatiile inchise	Petronela Pascariu
122	Plasturi/comprese cu materiale compozite continand grafenananofibre de ZnO pur si dopat-polimeri biocompatibili pentru aplicatii medicale	Petronela Pascariu
123	Îmbunatatirea calitatii vinului prin utilizarea agentilor sustenabili și inovativi de limpezire	Marcela Mihai

124	Nanostructuri polizaharidice complexate cu compusi polifenolici, uleiuri esentiale si zeoliti naturali: metode alternative de imunostimulare si terapie antimicrobiana in avicultura	Sergiu Coseri
125	Structuri flexibile de celule fotovoltaice hibride	Mariana Dana Damaceanu
126	Formulari topice multifunctionale inovatoare, bioactive pentru gestionarea ranilor maligne	Mariana Pinteala
127	Compusi vegetali bioactivi pentru formule de suplimente alimentare cu rol in sustinerea functiei cardiovasculare	Alina Nicolescu
128	Metodă inovativă cu plasmă de presiune atmosferică pentru obtinerea unui strat biopolimeric dedicat conservării lemnului de patrimoniu	Andreea Scutaru
129	Arhitecturi hibride 3D bioinspirate pentru repararea și regenerarea in profunzime a pielii	Aurica Chiriac
130	Tranzistor cu efect de camp organic flexibil si nanostructurat pentru detectie UV-VIS	Andrei Honciuc
131	Structuri organice emitatoare de lumina nanopaternate pentru surse de lumina flexibile la scara larga	Mariana Dana Damaceanu
132	Extractia ultrarapida și aplicatii ale proteinelor zeinice din porumbul autohton	Marcela Mihai
133	Procedeu experimental de obtinere a unui nou tip de fertilizant bioactiv, pentru culturile organice, din reziduuri obtinute dupa procesarea industrială a tomatelor	Maria Cristina Popescu
134	Realizarea unor noi membrane polimerice protectoare cu aplicabilitate in tratamentul plagilor cutanate	Raluca Dimitriu

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135	Kit-uri medicale pe baza de colagen și principii active pentru debridarea și îngrijirea ulcerului cu exces de fibrina	Mariana Pinteala
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5.6. Manifestari stiintifice nationale organizate

Denumirea manifestarii	Loc/data	Descriere
28 th Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021	ICMPP 7-9.10. 2021	https://icmpp.ro/macroiiasi2021/ , 6 conferinte invitate, 9 conferinte pe sectiuni, 22 comunicari orale, 24 postere, peste 70 participanti
ICMPP – poarta deschisa spre viitor. Sesiune de comunicari stiintifice a tinerilor cercetatori (MacroYouth'2021)	ICMPP/ 19.11.2021	https://icmpp.ro/macroyouth2021/ un invitata special, 23 comunicari orale peste 70 participanti <i>on-line</i>
The Eleventh International Symposium on Two Dimensional Correlation Spectroscopy (2DCOS-11)	ICMPP/ 17-19.08.2021	https://mihacpop.wixsite.com/2dcos/program; peste 60 participanti
The 3rd International Workshop Advances on Photocatalysis (AdvPhotoCat-EE2021)	Bucharest, Romania, 28 -29.06.2021	(co-organizatori), Informatii program: https://photocatalysis-workshop.eu/; 22 invitati din 13 tari , 30 prezentari orale, 36 prezentari de tip poster
13th International Conference on Physics of Advanced Materials (ICPAM-13)	Costa Brava, Spain UAIC, 24 - 30.09. 2021	(co-organizatori), nformatii program: https://icpam.ro/final-programs/; 77 plenare/invitate, peste 180 participanti

6. CAPACITATEA DE A DEZVOLTA SERVICII, TEHNOLOGII, PRODUSE

6.1. Brevete acordate

Titlu brevet	Brevet nr./ data acordarii	Autori
Internationale		
Non-isocyanate polyurethane thermoreversible hydrogel and methods for its preparation	US 2021/0301057 30.09.2021	C. Ciobanu, M. L. Gradinaru, L. D. Tigau Titular: Institutul de Chimie Macromoleculara Petru Poni, Iasi
Thiosemicarbazone metal complexes and their pharmaceutical use	CH070016/2021	G.E. Buchel, E. Stratulat, M. Babak, O. Palamarciuc, P. Rapta, S. Sova, V. Arion, W. A. Ang
Nationale		
Procedeu de depunere a unui compozit magnetic pe un stent metalic	a00496/3.07.2018 133840/29.01.2021	A. P. Chiriac, A. Diaconu, I. Neamtu, V. M. Chiriac, L. E. Nita, C. Munteanu
Procedeu de preparare a unei structuri reticulate cu aplicatii biomedicale	a00895/30.06.2021 132541/29.01.2021	A. P. Chiriac, L. E. Nita, A. Diaconu, A. G. Rusu, I. Neamtu, N. Tudorachi
Procedeu de obtinere a siliconilor colorati transparenti	a01085/11.12.2017 133423/30.03.2021	C. Racles, M. Cazacu
Procedeu de preparare a unui nanogel cu aplicatii biomedicale	a01141/19.12.2017 133398/30.09.2021	A. P. Chiriac, L. E. Nita, A. G. Rusu, A. Diaconu, I. Neamtu, N. Tudorachi
Procedeu de preparare a unui nanogel autoansamblat	a01142/19.12.2017 133399/30.09.2021	A. P. Chiriac, L. E. Nita, A. Diaconu, A. G. Rusu, I. Neamtu, N. Tudorachi
Compozitie polimerica pentru obtinerea unui tub de drenare urinar cu proprietati antimicrobiene, si procedeu de obtinere a acestuia	a00876/22.11.2016 132576/29.10.2021	M. Rapa, P. Preda, E. Grosu, M. Lungu, V. Coroiu, C. Vasile, R. N. Darie-Nita, R. P. Dumitriu, M. C. Chifiriuc

6.2. Cereri de brevete

Titlu brevet	Cerere nr/ data inregistrarii	Autori
Procedeu de obtinere a unui cauciuc siliconic bicomponent	a00341 17.06.2021	A. Bele, C. Racles, M. Dascalu, G. T. Stiubianu
Procedeu de preparare a unui gel autoasamblat pe baza de peptide	a00465 5.08.2021	L. E. Nita, A. Chiriac, A. G. Rusu, A. Croitoriu, A. M. serban, I. Neamtu, C. Munteanu

6.3. Produse si tehnologii rezultate din activitati de cercetare (produse vandute)

Beneficiar	Produs	Valoare (RON)
OMV Petrom SA Ploiesti	Repere poliuretanic	37.886,18
Shara Pharm Solutions SRL Ilfov	Analize DVS si RMN	33.883,04
Teracrysal SRL Cluj-Napoca	Analize DVS	2652,15
Brikston Construction Solutions SA Iasi	Placare cu poliuretanic	1.383,20

Tremag SA Tulcea	Bucsa din poliuretan	1074,94
Belrom SRL Husi	Placare cu poliuretan	553,28
Mecaprom SRL Nasaud	Bucsa din poliuretan	537,48
Transit Net SRL Bucuresti	Analiza separare HPLC	479,25
Irmex SRL Bucuresti	Bucsa din poliuretan	316,16
E51Invent SRL Timis	Analiza potential zeta	241,74
Cometal Import Export Pitesti	Bare moldotan	197,6
Cavial-CVA SRL Podu Iloiei	Bara din poliuretan	138,33
Tehnoton SA Iasi	Bara poliuretan	55,32
TOTAL		79.398,67

6.4. Laboratoare de cercetare acreditate

1. LABORATOR DE CERTIFICARE A MATERIALELOR PLASTICE
Certificat de acreditare LI 725/2008
Responsabil laborator Dr. Iuliana SPIRIDON
2. LABORATOR DE CERTIFICARE A MATERIALELOR NANO-DIMENSIONATE
Certificat de acreditare LI 708/2008
Responsabil laborator Dr. Aurica CHIRIAC

7. CAPACITATEA DE A PREGATI TINERI CERCETATORI

(doctorat, postdoctorat)

7.1. Conducatori de doctorat care activeaza in institut

Prenume NUME	Domeniul	Anul atestarii
Acad. Bogdan C. SIMIONESCU	Chimie	1993
Dr. Valeria HARABAGIU	Chimie	2009
Dr. Maria CAZACU	Chimie	2010
Dr. Mariana PINTEALA	Chimie	2010
Dr. Mihail-Dumitru BARBOIU	Chimie	2016
Dr. Habil. Sergiu COSERI	Chimie	2016
Dr. Habil. Mariana-Dana DAMACEANU	Chimie	2016
Dr. Habil. Corneliu HAMCIUC	Chimie	2016
Dr. Habil. Luminita MARIN	Chimie	2016
Dr. Habil. Marcela MIHAI	Chimie	2016
Dr. Habil. Maria BERCEA	Chimie	2017
Dr. Habil. Iuliana SPIRIDON	Chimie	2017
Dr. Habil. Gheorghe FUNDUEANU-CONSTANTIN	Chimie	2019
Dr. Habil. Luminita GHIMICI	Chimie	2019
Dr. Habil. Loredana E. NITA	Chimie	2019
Dr. Aatto LASKONEN	Chimie	2019
Dr. Luminita Ghimici	Chimie	2019
Dr. Valentina DINU	Chimie	2020
Dr. Mihai BREBU	Chimie	2021
Dr. Maria Cristina POPESCU	Chimie	2021

7.2. Teze de abilitare

Prenume NUME	Data sustinere	Titlul tezei
Carmen-Mihaela POPESCU	19.11.2021	Wood and wood-based products - structure, degradation, modification and protection
Mihai-Adrian BREBU	16.04.2021	Degradarea termica a polimerilor. De la aspecte fundamentale la tratarea / valorificarea deseurilor polimere.
Maria-Cristina POPESCU	12.04.2021	Metode matematice avansate in spectroscopie - evaluarea proprietatilor fizico-chimice ale materialelor micro- si nanostructurate.

7.3. Doctoranzi in stagi

Nr. crt.	Anul admiterii	Conducatorul stiintific	Doctorand in stagi	Titlul tezei Termen sustinere teza
1.	2012	Dr. Valeria HARABAGIU	Marcela Cazacu (cas. SAVIN)	<i>Hidrogeluri cu aplicatii biomedicale</i> Data limita sustinere teza: 30.06.2021 Propunere exmatriculare trimisa la SCOSAAR
2.	2014	Dr. Valeria HARABAGIU	Andra Cristina HUMELNICU	<i>Studii privind utilizarea chitosanului in domeniul medical, in sisteme energetice si de protectie a mediului</i> Data limita sustinere teza: 31.10.2021
3.	2015	Dr. Valeria HARABAGIU	Bogdan Constantin CONDURACHE	<i>Materiale sorbtive polimere pentru eliminarea poluantilor din apele contaminate</i> Data limita sustinere teza: 31.10.2022
4.	2016	Acad. Bogdan C SIMIONESCU	Bianca Ioana DOGARU	<i>Bionanocompozite polimere continand nanocristale de celuloza cu aplicatii in industria alimentara si/sau agricultura</i> Data limita sustinere teza: 30.04.2022
5.	2016	Dr. Habil. Marcela MIHAI	Ana-Lavinia MATRICALA (cas. VASILIU)	<i>Materiale compozite bio-inspirate cu aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2021
6.	2016	Acad. Bogdan C. SIMIONESCU	Daniela CURUT (cas. RUSU)	<i>Obtinerea si caracterizarea morfologica a unor geluri polimere complexe pentru aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2022
7.	2016	Dr. Maria CAZACU	Georgiana-Oana TURCAN-TROFIN	<i>Noi compusi si materiale siliconice functionale</i> Data limita sustinere teza: 31.10.2022
8.	2016	Dr. Mariana PINTEALA	Radu COSEREANU (cas. ZONDA)	<i>Sisteme inteligente pentru transportul de specii chimice active. Obtinere. Caracterizare</i> Data limita sustinere teza: 31.10.2022
9.	2016	Dr. Mihail-Dumitru BARBOIU	Andrei DIACONU	<i>Noi particule multivalente pentru transportul medicamentelor si pentru aplicatii antibacteriene</i> Cotutela dr. S. Vincent (U. Namur, Belgia) Data limita sustinere teza: 31.10.2021 Solicitare retragere trimisa la SCOSAAR
10.	2017	Dr. Habil. Mariana-DAMACEANU	Adriana-Petronela CHIRIAC	<i>Polimeri aromatici functionali cu cicluri imidice pentru tehnologii avansate</i> Data limita sustinere teza: 31.10.2021

11.	2017	Dr. Valeria HARABAGIU	Elvira MAHU	<i>Nanocompozite poroase. Preparare, proprietati, aplicatii</i> Data limita sustinere teza: 31.10.2022
12.	2018	Dr. Habil. Sergiu COSERI	Madalina Elena CULICA	<i>Biopolimeri nativi si derivati ai acestora, cu aplicatii in tehnologii avansate neconventionale</i> Data limita sustinere teza: 30.04.2022
13.	2018	Dr. Habil. Sergiu COSERI	Ioana Alexandra DUCEAC	<i>Noi retele polimerice pe baza de polizaharide modificate cu potentiale aplicatii medicale</i> Data limita sustinere teza: 31.10.2021
14.	2018	Dr. Habil. Maria BERCEA	Ioana-Alexandra MUNTENASU (cas. PLUGARIU)	<i>Elaborarea si caracterizarea unor materiale polimere cu aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2023
15.	2018	Dr. Mariana PINTEALA	Oana-Elena RACHITA (cas. CARP)	<i>Senzori electrochimici cu aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2022
16.	2019	Dr. Habil. Luminita MARIN	Sandu CIBOTARU	<i>Derivati de fenotiazina solubili in apa. Sinteza, caracterizare, proprietati</i> Data limita sustinere teza: 31.10.2022
17.	2019	Dr. Maria CAZACU	Bianca-Iulia CIUBOTARU	<i>Noi compusi si materiale continand siliciu pentru aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2022
18.	2019	Dr. Habil. Mariana-Dana DAMACEANU	Andra-Ionela GAVRIL	<i>Compusi heterociclici macromoleculari hiperramificati</i> Data limita sustinere teza: 31.10.2024
19.	2019	Dr. Atto LAAKSONEN	Petru TIRNOVAN	<i>Studii in silico a sistemelor dinamice autoasamblante in transportul si eliberarea principiilor active din medicamente</i> Data limita sustinere teza: 31.10.2022
20.	2020	Dr. Iuliana SPIRIDON	Irina POP (cas. APOSTOL)	<i>Noi materiale ecologice pe baza de polimeri naturali</i> Data limita sustinere teza: 31.10.2023
21.	2020	Dr. Loredana NITA	Alexandra CROITORIU	<i>Geluri multicomponente: modelarea structurilor cu compusi de masa moleculara mica</i> Data limita sustinere teza: 31.10.2023
22.	2020	Dr. Maria CAZACU	Madalin DAMOC	<i>Compusi de coordinare multifunctionali cu liganzi avand schelet flexibil si hidrofob</i> Data limita sustinere teza: 31.10.2023
23.	2020	Dr. Mariana PINTEALA	Razvan GHIARASIM	<i>Sisteme functionale avansate care produc ansambluri supramoleculare bine definite pentru aplicatii emergente</i> Data limita sustinere teza: 31.10.2023
24.	2020	Dr. Gheorghe FUNDUEANU CONSTANTIN	Bogdan-Paul COSMAN	<i>Materiale inteligente pe baza de polimeri sensibili la stimuli externi cu aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2023
25.	2020	Dr. Loredana NITA	Alina-Elena CRAPCIUC (cas. SANDU)	<i>Complecsi biocompatibili: formulari, incapsulari de compusi bioactivi si aplicatiile lor potentiale</i> Data limita sustinere teza: 31.10.2023

26.	2020	Dr. Maria CAZACU	Alexandru-Constantin STOICA	<i>Materiale 2D bazate pe rețele metal-organice bi-dimensionale permetilate</i> Data limita sustinere teza: 31.10.2023
27.	2020	Dr. Valeria HARABAGIU	Laurentiu BALTAG	<i>Nanocompozite polimerice pentru imagistica medicala</i> Data limita sustinere teza: 31.10.2023
28.	2020	Dr. Valeria HARABAGIU	Ionela GRECU	<i>Nanocompozite polimerice cu proprietati fotocatalitice in domeniul vizibil</i> Data limita sustinere teza: 31.10.2023
29.	2020	Dr. Valeria HARABAGIU	Diana-Andreea BLAJ	<i>Monitorizarea proceselor de polimerizare a monomerilor ciclici prin spectrometrie de masa</i> Data limita sustinere teza: 31.10.2023
30.	2020	Dr. Iuliana SPIRIDON	Alexandra IGNATESCU (cas. DIMOFTE)	<i>Structuri supramoleculare pe baza de polimeri naturali</i> Data limita sustinere teza: 31.10.2023
31.	2020	Dr. Marcela MIHAI	Marin-Aurel TROFIN	<i>Materiale zwitterionice cu proprietati antimicrobiene si/sau purtatori de principii biologice active</i> Data limita sustinere teza: 31.10.2023
32.	2020	Dr. Mariana PINTEALA	Alexandra IACOBESCU	<i>Nanoantioxidanti si generatori de specii reactive. Sinteza si investigatii prin spectroscopia RES</i> Data limita sustinere teza: 31.10.2023
33.	2020	Dr. Luminita MARIN	Oana DUMBRAVA	<i>Materiale polisulfonice cu proprietati biologice active</i> Data limita sustinere teza: 31.10.2023
34.	2020	Dr. Luminita MARIN	Vera-Maria PLATON	<i>Formulari pe baza de chitosan pentru eliberarea controlata a eritromicinei si acetaminofenului</i> Data limita sustinere teza: 31.10.2023
35.	2020	Dr. Luminita MARIN	Alexandru ANISIEI	<i>Derivati de chitosan pentru dezvoltare de pansamente destinate tratarii ranilor</i> Data limita sustinere teza: 31.10.2023
36.	2020	Dr. Luminita MARIN	Bianca-Iustina ANDREICA	<i>Derivati de chitosan solubili in apa pentru aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2023
37.	2020	Dr. Luminita MARIN	Ramona LUNGU	<i>Dezvoltare de materiale multifunctionale pe baza de derivati iminici de chitosan</i> Data limita sustinere teza: 31.10.2023
38.	2020	Dr. Valeria HARABAGIU	Alexandra-Diana DIACONU	<i>Conjugate polimeri ciclodextrine – preparare, proprietati, aplicatii</i> Data limita sustinere teza: 31.10.2023
39.	2021	Dr. Sergiu COSERI	Ioana-Sabina TRIFAN	<i>Sinteza si caracterizarea unor rețele polizaharidice fotoreactive</i> Data limita sustinere teza: 31.10.2024
40.	2021	Dr. Mariana Dana DAMACEANU	Ioana-Alexandra CALIN (TROFIN)	<i>Polimeri hiperramificati pentru aplicatii electronice</i> Data limita sustinere teza: 31.10.2024
41.	2021	Dr. Gheorghe FUNDUEANU CONSTANTIN	Andreea-Loredana VASILACHE	<i>Micro- si macro- geluri polimerice cu structuri complexe pentru eliberarea controlata a medicamentelor si pentru alte aplicatii biomedicale</i> Data limita sustinere teza: 31.10.2024

42.	2021	Dr. Maria Valentina DINU	Ioana-Victoria PLATON	<i>Proiectarea de noi biomateriale multifunctionale pe baza de polimeri si diferite molecule bioactive naturale</i> Data limita sustinere teza: 31.10.2024
43.	2021	Dr. Luminita GHIMICI	Maria-Magdalena NAFUREANU	<i>Polimeri ionici. Comportare in solutii si dispersii apoase</i> Data limita sustinere teza: 31.10.2024
44.	2021	Dr. Aatto LAAKSONEN	Razvan-Cristian PUF	<i>Sisteme noi de administrare ale medicamentelor transdermice API-IL pe baza de colina – studiu in silico</i> Data limita sustinere teza: 31.10.2024
45.	2021	Dr. Marcela MIHAI	Larisa-Maria PETRILA	<i>Materiale compozite polimer/enzime cu aplicatii catalitice si biomedicale</i> Data limita sustinere teza: 31.10.2024
46.	2021	Dr. Loredana NITA	Bianca-Elena- Beatrice CRETU	<i>Matrici polimerice complexe cu incluziuni antibacteriene</i> Data limita sustinere teza: 31.10.2024
47.	2021	Dr. Loredana NITA	Isabella COBZARIU	<i>Arhitecturi polimerice hibride concepute ca structuri hidrogel</i> Data limita sustinere teza: 31.10.2024
48.	2021	Dr. Loredana NITA	Vlad-Constantin URSACHI	<i>Nano/microstructuri magnetice cu potential in terapia antitumorală</i> Data limita sustinere teza: 31.10.2024
49.	2021	Dr. Mariana PINTEALA	Denisse Iulia BOSTIOG	<i>Sisteme complexe multicomponente pe baza de polimeri naturali si sintetici.</i> Data limita sustinere teza: 31.10.2024
50.	2021	Acad. Bogdan SIMIONESCU	Elena-Daniela LOTOS	<i>Biomateriale micro si nanostructurate pe baza de polizaharide pentru aplicatii medicale</i> Data limita sustinere teza: 31.10.2024

7.4. Teze de doctorat sustinute

Conducatorul stiintific	Anul admiterii	Doctorand	Titlul tezei Data sustinere teza
Dr. Valeria HARABAGIU	2014	Andra Cristina HUMELNICU	<i>Studii privind utilizarea chitosanului in domeniul medical, in sisteme energetice si de protectie a mediului</i> Data sustinere teza 9 aprilie 2021
Dr. Habil. Marcela MIHAI	2016	Ana-Lavinia MATRICALA (cas. VASILIU)	<i>Materiale compozite bio-inspirate cu aplicatii biomedicale</i> Data sustinere teza 17 septembrie 2021
Dr. Habil. Mariana- Dana DAMACEANU	2017	Adriana- Petronela CHIRIAC	<i>Polimeri aromatici functionali cu cicluri imidice pentru tehnologii avansate</i> Data sustinere teza 28 octombrie 2021
Dr. Habil. Sergiu COSERI	2018	Ioana Alexandra DUCEAC	<i>Noi retele polimerice pe baza de polizaharide modificate cu potentiale aplicatii medicale</i> Data sustinere teza 21 octombrie 2021

8. PRESTIGIUL STIINTIFIC

8.1. Membri in colective de redactie ale revistelor nationale/internationale

(cotate in *Web of Science*, Thomson Reuters sau indexate in BDI) **sau in colective editoriale ale unor edituri internationale consacrate**

Nr. crt.	Nume si prenume	Revista
1.	Bogdan C. SIMIONESCU	Materiale Plastice Revue Roumaine de Chimie Academica Akademos Environmental Engineering and Management Journal
2.	Anton AIRINEI	Liquids
3.	Adina ARVINTE	Processes
4.	Mihai ASANDULESA	Guest Editor, Polymers, numarul special: Polymer-Based Dielectric Materials
5.	Maria BERCEA	Guest Editor, Polymers, numarul special: Self-Healing Polymers and Composites
6.	Mihai BREBU	Guest Editor, Polymers, numarul special: Natural Additives for Special and High Performance Polymeric Materials
7.	Maria CAZACU	Revista de Chimie Revue Roumaine de Chimie
8.	Aurica P. CHIRIAC	Guest Editor, Nr. Special Pharmaceuticals, MDPI Recent Patents on Materials Science The Open Macromolecules Journal The Open Polymer Science Journal Journal of Research Updates in Polymer Science Current Applied Polymer Science
9.	Diana CIOLACU	Guest Editor, Nr. Special Macromol, MDPI Guest Editor, Nr. Special Materials, MDPI Guest Editor, Nr. Special Advances in Polymer Technology, Wiley Guest Editor, Nr. Special Frontiers in Bioengineering and Biotechnology, Frontiers
10.	Sergiu COSERI	Polymers Materials Polysaccharides
11.	Raluca Nicoleta DARIE-NITA	Guest Editor, Numar special "Polymeric Materials from Renewable Resources for Environmentally Friendly Applications", revista International Journal of Polymer Science, editori: M. Rapa, J. Ludwiczak, R.N. Darie-Nita Guest Editor, Numar special "Polyester-based materials", revista Polymers, editori: R.N. Darie-Nita, M. Rapa
12.	Mariana-Dana DAMACEANU	Editor carte Elsevier: "Polyimides: Advances in Blends and Nanocomposites" (expected in 2022)
13.	Maria Valentina DINU	Editor - Reactive and Functional Polymers Editorial board member - Gels
14.	Ecaterina Stela DRAGAN	Current Smart Materials, Editor Asociat Molecules, membru in Consiliul Editorial la Sectiunea "Green Chemistry"
15.	Gheorghe FUNDUEANU-CONSTANTIN	Journal of Clinical Rehabilitative Tissue Engineering Research, Chinese Rehabilitation Medical Association Jacobs Journal of Nanomedicine and Nanotechnology
16.	Violeta MELINTE	Nanomaterials

17.	Luminita MARIN	Polymers Polysaccharides
18.	Marcela MIHAI	Crystals, Reviewer Board Guest Editor Special Issue " "The Emerging Role of Polymeric Materials in Pharmaceutical Designs and Applications" " in International Journal of Molecular Science
19.	Loredana E. NITA	Journal of Biomaterials and Nanobiotechnology Recent Patents on Materials Science editor Nr. Special Polymers, MDPI
20.	Petronela PASCARIU	Surface and Interfaces, Surface and Interfaces - Special Issue "Advances in photocatalysis" - AdvPhotoCat2021 Applied Sciences, Special Issue "Multifunctional Nanostructured Materials for Next Generation Photovoltaics"
21.	Mariana PINTEALA	Molecules Journal of Enzyme Inhibition and Medicinal Chemistry
22.	Carmen-Mihaela POPESCU	Editorial Board Member of Wood Material Science & Engineering Associate Editor of International Wood Products Journal Guest Editor of Forests, Special Issue: <i>Thermal Modification of Wood: Process and Properties</i> Guest Editor of Molecules, Special Issue: <i>Advanced Functional Polymer Nanocomposites</i> Guest Editor of Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy <i>VSI of ICAVS and 2DCOS</i>
23.	Maria-Cristina POPESCU	Guest Editor of Molecules, Special Issue: Advanced Functional Polymer Nanocomposites
24.	Dan ROSU	Polymers
25.	Carmen RACLES	Materiale Plastice
26.	Alina G. RUSU	editor Nr. Special Pharmaceutics, MDPI editor Nr. Special Polymers, MDPI
27.	Andreea Laura SCUTARU	Polymers
28.	Iuliana SPIRIDON	Cellulose Chemistry and Technology Membru in Scientific Board al revistei Buletinul Institutului Politehnic Iasi, sectia Chimie si Inginerie Chimica
29.	Elena STOLERU	Guest Editor, Numar special "Natural Additives for Special and High Performance Polymeric Materials", Polymers
30.	Carmen-Alice TEACA	BioResources
31.	Daniel TIMPU	Editorial Board Member of European Chemical Bulletin
32.	Cristian-Dragos VARGANICI	Polymers
33.	Silvia VASILIU	Materials (Topical Advisory Panel) Guest Editor Special Issue " "The Emerging Role of Polymeric Materials in Pharmaceutical Designs and Applications" " International Journal of Molecular Science

8.2. Membri in conducerea unei organizatii nationale/internationale de specialitate

Nume si prenume	Organizatia
Acad. Bogdan C. SIMIONESCU	Vicepresedinte al Academiei Romane Presedintele Consiliului National al Cercetarii Stiintifice (CNCS) Presedinte al Comitetului Roman pentru Istoria si Filosofia Stiintei si Tehnicii (CRIFST)

Dr. Valeria HARABAGIU	Asociatia EPNOE Presedinte Filiala Iasi Societatea Romana de Chimie
Dr. Marcela MIHAI	Secretar General Societatea Romana de Chimie
Dr. Maria BERCEA	Societatea Romana de Reologie, Presedinte
Dr. Simona MORARIU	Societatea Romana de Reologie, Vicepresedinte

8.3. Membri ai Academiei Romane

1. Acad. Bogdan C. Simionescu

8.4. Cercetatori cu indice Hirsch peste 8

Nr. crt.	Nume si prenume, grad profesional	Indice Hirsch
1	DRAGAN Ecaterina Stela, CSI	37
2	SHOVA Sergiu , CSII	33
3	SIMIONESCU Bogdan C. , CSI	30
4	COJOCARU Corneliu, CSII	29
5	BREBU Mihai, CSII	27
6	CAZACU Maria, CSI	27
7	CIANGA Ioan, CSI	27
8	MARIN Luminita, CS I	27
9	DINU Maria Valentina, CSII	26
10	HARABAGIU Valeria, CS I	26
11	AIRINEI Anton, CSI	25
12	BERCEA Maria, CSI	24
13	FUNDUEANU-CONSTANTIN Gheorghe, CSI	24
14	FUNDUEANU-CONSTANTIN Marieta, CSII	24
15	HAMCIUC Corneliu, CSI	24
16	POPESCU Maria-Cristina, CSII	24
17	SPIRIDON Iuliana, CSI	24
18	CRISTEA Mariana, CSII	23
19	DAMACEANU Mariana-Dana, CS I	23
20	FANICA Mustata, CSI	23
21	HAMCIUC Elena, CSII	23
22	ROSU Dan, CS I	23
23	COSERI Sergiu, CSI	22
24	MORARIU Simona, CSII	22
25	NICHIFOR Marieta, CSI	22
26	PINTEALA Mariana, CSI	22
27	DARIE-NITA Raluca Nicoleta, CS II	21
28	NICOLESCU Alina, CSIII	21
29	SACARESCU Liviu, CS I	21
30	VARGANICI Cristian-Dragos, CS III	21
31	CHIRIAC P. Aurica, CSI	20
32	GHIMICI Luminita, CSII	20
33	GRIGORAS Mircea, CS I	20
34	OPREA Stefan, CS I	20
35	POPESCU Carmen-Mihaela, CSII	20
36	RACLES Carmen, CSI	20
37	DELEANU Calin, CSI	19
38	ROSU Liliana, CS III	19
39	SAVA Ion, CS I	19
40	TEACA Carmen-Alice, CS III	19
41	TIMPU Daniel, CSII	18

42	AFLORI Magdalena, CSII	17
43	DOROFTEI Florica, INS I-A	17
44	FARCAS Aurica, CS II	17
45	HONCIUC Andrei, CS II	17
46	STOICA Iuliana, CS	17
47	BEJENARU Doina, CSII	16
48	FILIP Daniela, CSII	16
49	GAINA Constantin, CS II	16
50	GAINA Viorica, CS II	16
51	ROMAN Gheorghe, CS II	16
52	SAMOILA Petrisor, CS III	16
53	STOLERU Elena, CS	16
54	VLAD-BUBULAC Tachita, CSIII	16
55	MIHAI Marcela, CS II	15
56	NITA E. Loredana, CSI	15
57	OLARU Niculae, CSI	15
58	PASCARIU Petronela, CS	15
59	ROTARU Alexandru, CSII	15
60	ARVINTE Adina, CSIII	14
61	AVADANEI Mihaela, CSIII	14
62	BAHRIN Lucian, AC	14
63	BARGAN Alexandra, AC	14
64	BELE Adrian, CS	14
65	BILIUTA Gabriela, CS	14
66	CIOLACU Diana, CS II	14
67	DASCALU Mihaela, CSIII	14
68	IGNAT Maria, CSIII	14
69	MELINTE Violeta, CSIII	14
70	CARJA Ionela-Daniela, CS	13
71	CIANGA Luminita, CS III	13
72	COROABA Adina, AC	13
73	DINU Ionel Adrian, CS	13
74	DUMITRIU Raluca Petronela, AC	13
75	RESMERITA Ana-Maria, CS III	13
76	STIUBIANU George-Theodor, AS	13
77	URSU Laura Elena, CSIII	13
78	ZALTARIOV Mirela-Fernanda, CS	13
79	BARZIC Andreea Irina, CSIII	12
80	BRUNCHI Cristina -Eliza, CS	12
81	FIFERE Nicusor, CS	12
82	FILIMON Anca, CS III	12
83	GRIGORAS Vasile Cristian, CS	12
84	HOMOCIANU Mihaela, CSIII	12
85	OLARU Mihaela, CSIII	12
86	RUSU Radu-Dan, CSIII	12
87	SERBEZEANU Diana, CS	12
88	SILION Mihaela, CSIII	12
89	AILINCAI Daniela, CS	11
90	ASANDULESA Mihai, CS	11
91	BALAN-PORCARASU Mihaela, AC	11
92	BUCATARIU Florin, CS III	11
93	CLIMA Lilia, CSIII	11
94	CONSTANTIN Catalin-Paul, CS	11
95	DOBOS Adina Maria, CS	11
96	IACOB Mihail, AC	11

97	PAMFIL Daniela, CS	11
98	POPESCU Irina, CSIII	11
99	RUSU G. Alina, CS	11
100	SUFLET Dana Mihaela, CSIII	11
101	TUGUI Codrin, AC	11
102	ARDELEANU Rodinel, CS II	10
103	COCARTA Ana-Irina, AC	10
104	FIFERE Adrian, CS	10
105	GHILIAN Alina, AC	10
106	GRADINARU Luiza Madalina, CS	10
107	IONITA Daniela, CS	10
108	LAZAR Maria Marinela, AC	10
109	NICU Raluca, AC	10
110	PEPTU Cristian, CS	10
111	RACOVITA Stefania, CS	10
112	SACARESCU Gabriela, CS III	10
113	SIMIONESCU Mihaela, CS III	10
114	STROEA Lenuta, CS	10
115	URSACHE Oana, AC	10
116	URSU Cristian, CS	10
117	VACAREANU Loredana, AC	10
118	VASILIU Silvia, CS III	10
119	BENDREA Anca-Dana, CS	9
120	BUTNARU Irina, CS	9
121	GHIORGHITA Claudiu-Augustin, CS	9
122	LOGHIN Diana Felicia, AC	9
123	MARANGOCI Narcisa Laura, AC	9
124	PEPTANARIU Dragos, CS	9
125	POPOVICI Dumitru, AC	9
126	POTOLINCA Violeta Otilia, CS	9
127	RASCHIP Irina Elena, CS	9
128	RUSU Bogdan-George, CS	9
129	SCUTARU Andreea Laura, CSIII	9
130	TEODORESCU Mirela, CS	9
131	ZAHARIA Marius-Mihai, AC	9
132	GRIGORAS Anca Giorgiana, CS	8
133	IFTIME Manuela, CS	8
134	IPATE Alina-Mirela, AC	8
135	IRIMIA Anamaria, AC	8
136	PERJU Elena, CS	8
137	ROSCA Irina, CS	8
138	STANCIU Magdalena-Cristina, CS	8
139	TANASA Fulga, CSIII	8

8.6. Premii ale Academiei Romane

Premiul COSTIN D. NENITESCU

Grupul de lucrari: *Polimeri siliconici conceputi pentru traductoare pe baza de elastomeri*

Dr. Codrin TUGUI

Premiul Cristofor I. SIMIONESCU

Grupul de lucrari: *Structuri heterociclice oligomere si polimere pentru materiale avansate in (opto)electronica*

Dr. Catalin-Paul CONSTANTIN

8.7. Premii internationale

Nr. crt.	Nume si prenume	Premiul	Societatea nationala
1.	Maria CAZACU	Medalia „Cristofor Simionescu” pentru excelenta in Domeniul Chimiei Macromoleculare	American Chemical Society
2.	Diana SERBEZEANU	Diploma of Excellence/Silver Medal	XXV-th International Exhibition of Inventions INVENTICA 2021, Iasi, Romania, 23-25.06.2021
3.	Anca FILIMON, L. Lupa	Diploma excelenta, Medalie de Argint	The 25th International Exhibition of Inventions “INVENTICA 2021”, Iasi, Romania, 23-25.06.2021
5.	Ana-Lavinia VASILIU	Best Oral Communication	Polymers-MDPI / Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021, The 28 th edition, ICMPP, 7-9.10.2021
6.	Marin-Aurel TROFIN	Best Young Scientist Poster Communication	Romanian International Chapter of ACS / MacroIasi2021, The 28th edition, ICMPP, 7-9 octombrie, 2021
7.	Madalin DAMOC	Best Young Scientist Oral Communication	Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021, The 28th edition, ICMPP, 7-9 octombrie, 2021
3.	Natalia IONESCU (mentorata de dr. Adrian BELE)	Best Young Scientist Poster Presentation	Progress in Organic and Macromolecular Compounds Conference, MacroIasi2021, The 28th edition, ICMPP, 7-9 octombrie, 2021

8.8. Premii nationale

Nr. crt.	Nume si prenume	Premiul	Societatea nationala
1.	T. Novacut, S.N. Tolea, L. Lupa, A. FILIMON	Mentiune	AquaSensTim – 2021, Timisoara, RO, 22 martie 2021
2.	Larisa-Maria PETRILA	Premiul I pentru Prezentare orală	Ph.D. Students’ Days, The First Edition, 26 Noiembrie 2021, Arad, RO

8.9. Stagii de cercetare in strainatate

Nr. crt.	Nume si prenume	Sursa de finantare	Institutul in care s-a efectuat stagiul/ perioada
1.	Mihail IACOB	EMPAPOSTDOCS-II programme Marie Skłodowska-Curie grant agreement number 754364	Postdoctoral internship, EMPA, Switzerland, 1.03.2019-28.02.2021
2.	Lilia CLIMA	H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Taras Shevchenko National University of Kyiv, Ucraina 22.08.2021-21.09.2021
3.	Alexandru-Constantin STOICA	H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Taras Shevchenko National University of Kyiv, Ukraine 28.08.2021-27.10.2021
4.	Bianca-Iulia CIUBOTARU	H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Taras Shevchenko National University of Kyiv, Ukraine 28.08.2021-27.10.2021

5.	Madalin DAMOC	H2020-MSCA-RISE-2016, SPINSWITCH No 734322	Taras Shevchenko National University of Kyiv, Ukraine 28.08.2021-27.09.2021
6.	Raluca Nicoleta DARIE-NITA	Academia Polona de Stiinte (PAN) – schimb interacademic	Wroclaw University of Science and Technology, Polonia/20-30.09.2021
7.	Vera Maria PLATON	H2020-MSCA-RISE-2019, NoBiasFluors No 872331	Scientific Services Company Otava Ltd. & Institute of Molecular Biology and Genetics NAS of Ukraine
8.	Marius-Mihai ZAHARIA	PN-III-P1-1.1-PD-2019-0286	Institutul de Polimeri, Academia de Stiinte a Bulgariei, Sofia, Bulgaria, 19.08.2021-10.09.2021
9.	Marius-Mihai ZAHARIA	PN-III-P1-1.1-PD-2019-0286	Institutul Leibniz de Cercetare a Polimerilor din Dresda (IPF), Germania, 25.10.2021-07.11.2021
10.	Florin BUCATARIU	PN-III-P2-2.1-PED-2019-1996	Institutul Leibniz de Cercetare a Polimerilor din Dresda (IPF), Germania, 25.10.-07.11.2021
11.	Marin Aurel TROFIN	PN-III-P4-ID-PCE-2020-1541	Institutul Leibniz de Cercetare a Polimerilor din Dresda (IPF), Germania, 25.10.-07.11.2021