MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

# Award Request*

*1.* Candidate

Name: **Marin**

Surname: **Luminita**

Doctor since: **2007**

Position: **Scientific Researcher I**

Institution: **"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania**

Mobile:

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*2.* Edition "Gala Cercetării Românești": 2024

*3.* Award application: Chemistry, „Raluca Rîpan" Award

*4.* Team Leader: Yes

*5.* Team members:

- Dr. Daniela Ailincai, Scientific Researcher III, 2017 (PhD)
- Dr. Iftime Manuela-Maria, Scientific Researcher, 2014 (PhD)
- Dr. Bejan Andrei, Scientific Researcher, 2019 (PhD)
- Dr. Cibotaru Sandu, Research Assistant, 2023 (PhD)
- Dr. Andreica Bianca-Iustina, Research Assistant, 2024 (PhD)
- Drd. Anisiei Alexandru, Research Assistant, 2020 (MSc)
- Drd. Lungu Ramona, Research Assistant, 2004 (MSc)

6. ***Description of the most important scientific outcomes in the past 5 years*** (max. 4 pag., format A4, Times New Roman, 12 pc. 1,5 spacing, 2 cm margins)**.

Over the 23 years of research carrier, including abroad stages in prestigious research institutes and universities, collaborations with specialists in other disciplines (physics, biology, medicine), participations in traditional and specialized international and national scientific meetings (see the list of papers), I built a multifaceted expertise, comprising a strong background in chemistry, materials science, and materials engineering and also a good knowledge at the interference with physics and biology. This allowed me to see new opportunities in engineering the molecular design and supramolecular organization, developing new methodologies and strategies in order to tune the materials' properties towards certain applications of contemporary interest. Some relevant examples from the last 5 years are presented below.

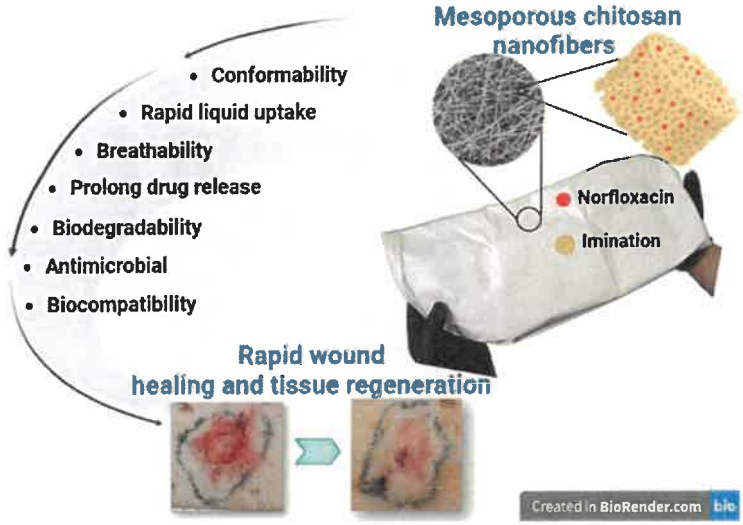
***1. Chitosan crosslinking with bioactive aldehydes via imination/self-assembling***

Considering that chitosan, from a chemical point of view, is a polyamine, I proposed and together with my team I validated ***a new crosslinking strategy with monoaldehydes consisting in the formation of imine units, followed by their self-assembling into ordered clusters which play the role of crosslinking nodes***. This new concept was relevant for the development of the chitosan hydrogels field, as this method brings superior advantages compared to traditional chemical and physical crosslinking methods, such as avoidance of using traditional toxic chemical crosslinkers (i.e. glutaraldehyde) and superior mechanical properties and hydrolytic stability. Furthermore, it was demonstrated that this strategy offers a tool for (i) tailoring the hydrogels' functionality by choosing suitable bioactive aldehydes, and (ii) developing various formulations by *in situ* encapsulation of active ingredients. Investigations of the hydrogels as matrix for bioactive components proved the reliability to develop ecofriendly formulations for biomedical, environmental, and agriculture applications (see the Publication List, papers 9,10, 14-18, 29, 30, 39-42, 46-48). The value of this new crosslinking concept proposed and validated by our group, is proven by the high impact factor of the journals in which the papers were published (e.g. Carbohydrate Polymers, JIF2022=11.2; Journal of Colloids and Interface science, JIF=9.9; International Journal of Biological Macromolecules, JIF=8.2), their high number of citations and also by the fact that it was applied by other research groups over the world (see for instance Cui group: 10.1016/j.ijbiomac.2022.11.279; Bratskaya group: 10.1016/j.carbpol.2021.118618 ; Montaser group: 10.1016/j.ijbiomac.2020.05.221; El Kadib group: 10.1016/j.carbpol.2019.115634; Li group: 10.1021/acs.jafc.9b08301;

10.1016/j.foodhyd.2023.109510, to mention only a few). Moreover, during the implementation of a bilateral Romanian - Chinese project (see project DynaSens in the project list), I trained the Chinese team in using this new crosslinking method aiming new sensing materials for heavy metals and explosives (see Publication list, papers 7, 23-26, 33-35, 45, 46). It is worth mentioning that some papers published on this subject were cited in the work of Jean Marie Lehn, a Nobel Prize recipient.

## 2. *Chitosan based nanofibers for wound healing applications*

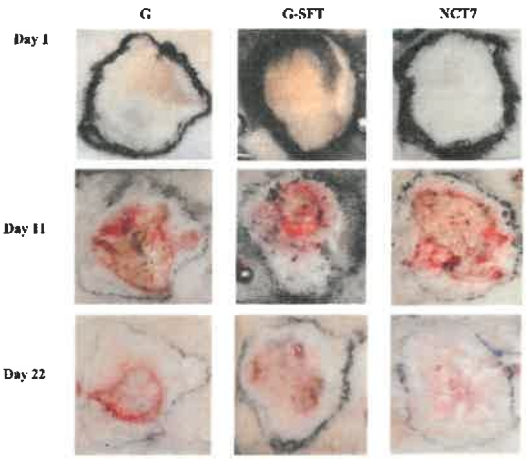
The recent tragic fires in Romania brought in my attention the high mortality rate after burn trauma, and the difficulties which burn patients face, mostly due to the lack of suitable dressings. Challenged by this social issue, I conceived a new design of bioabsorbable wound dressings based on mesoporous chitosan nanofibers by electrospinning. While the literature is abundant in obtaining and investigation of hybrid chitosan nanofibers using synthetic co-spinning agents, only few studies reported the successful electrospinning of neat chitosan nanofibers, when using strong, highly toxic solvents, such as trifluoroacetic acid (TFA) or hexafluoro-2-propanol (HFIP). Even so, the mechanical properties of the obtained fibers were weak, making their manipulation and application difficult. Considering this state of the art, I proposed and together with my team I implemented ***a new method of obtaining neat chitosan nanofibers using PEO with double role, co-spinning agent and sacrificial matrix***. This strategy was applied to chitosan or quaternized chitosan/chitosan mixtures and it led to mesoporous fibers with high mechanical properties and biodegradability, which can be further functionalized by imination with bioactive aldehydes or by embedding bioactive agents into their pores. An example of the application and benefits brought by this strategy is reflected in the paper "*Mesoporous chitosan nanofibers loaded with norfloxacin and coated with phenylboronic acid perform as bioabsorbable active dressings to accelerate the healing of burn wounds*". As the title indicates, the study targeted the obtaining of bioabsorbable wound dressings, by merging a rational composition into an original design, consisting in mesoporous chitosan nanofibers, loaded with a broad-spectrum antibiotic into mesopores and sealed at the surface by imination with an antifungal aldehyde. The deep investigation indicated that the



reversible imine bonds played an important role, releasing the antifungal aldehyde "on demand" once it was consumed into the microorganisms' inhibition process, and controlling the prolonged release of the antibiotic trapped into the mesopores. *In vivo* studies on deep burn wound model in mice (second/third degree) demonstrated the success of this design, the fibers being able to promote the complete closure of the wounds (2.5 cm diameter) and the regeneration of the damaged tissue over 25 days (see the above image representing the graphical abstract of the paper published in *Carbohydrate Polymers* ($JIF_{2022}$ = 11.2).

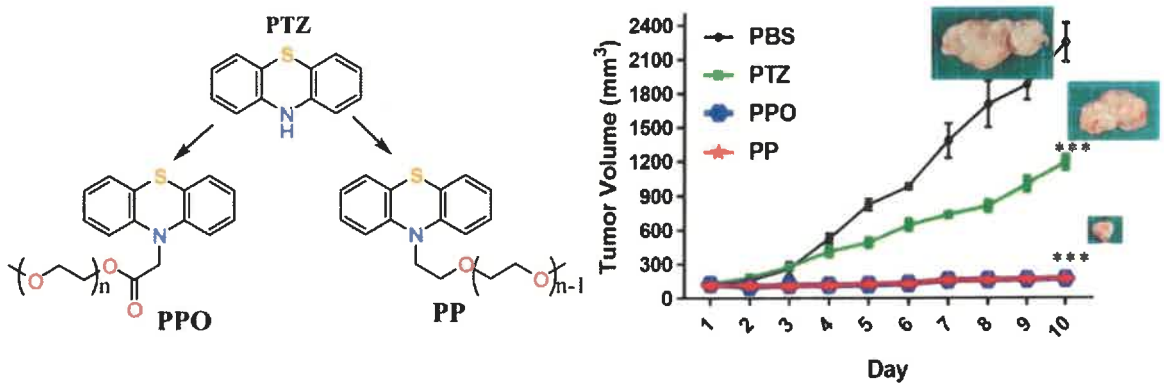
The application of this electrospinning technique for a mixture of chitosan/quaternized chitosan (QC) and the exhaustive investigation of the obtained materials revealed that the use of a small portion of QC confers to the chitosan fibers strong antibacterial activity while being cytocompatibile, and having good mechanical properties, bioadhesivity and lack of any *in vivo* adverse effects in mice. All these, together with their facile obtaining, recommend them as biodegradable scaffolds for tissue engineering, as it was proposed in the paper "*Quaternized chitosan/chitosan nanofibrous mats: An approach toward bioactive materials for tissue engineering and regenerative medicine*", which was published in *Carbohydrate Polymers* ($JIF_{2022}$ = 11.2) in 2023, and it was quoted by ISI Web of Science as "***Highly Cited***".

Furthermore, a deeper investigation of chitosan/quaternized chitosan nanofibers as wound dressings on *in vivo* models of deep burn wounds (second/third degree), demonstrated that they were able to stimulate the complete closure and tissue regeneration after 21 days, while being bioabsorbable, avoiding the necessity of traumatic debridement of the traditional dressings (see the article "*Biodegradable trimethyl chitosan nanofiber mats by electrospinning as bioabsorbable dressings for wound closure and healing*" published in *International Journal of Biological Macromolecules* ($JIF_{2022}$=8.2)) and representative images from it (the next image, which show the appearance of burn after 11 and 22 days post infliction and application of a negative control (gauze, G), a positive control (a commercial dressing based on sulfadiazine, G-SFT), and the studied chitosan/QC dressing (NCT7). It should be mentioned that the wound had 2.5 cm diameter and it was outlined with a tattoo for easy monitoring.



### 3. *Phenothiazine based derivatives*

Another topic developed together with my team is dedicated to the phenothiazine compounds for biomedical applications. Phenothiazine is a heterocycle with bent geometry, and suitable properties for a large realm of applications, from optoelectronics to pharmacology. The work of our group on this heterocycle encompasses liquid crystals with phenothiazine mesogens, phenothiazine derivatives with enhanced luminescence for organic light emitting diodes, chitosan-phenothiazine hydrogels for sensing and recovery of heavy metals, and phenothiazine derivatives with anticancer activity. The most important contribution consisted of ***a new design of phenothiazine derivatives*** obtained by ***functionalization with PEG chains (PEGylation)*** aiming the improvement of the solubility and, thus, bioavailability. The exhaustive investigation demonstrated that the PEG and phenothiazine building blocks have a synergetic effect working for both tumor growth inhibition and biocompatibility improvement. Moreover, bonding of the building blocks *via* ester bonds improved the antitumor activity by a selective delivery into cancer cells triggered by the enzymatic biodegradation in the presence of esterase, which is overexpressed in the cancer cells. This design promoted the inhibition of the tumors in *in vivo* models on mice, up to 94%, indicating the PEGylated phenothiazine as platforms for developing antitumor drugs. On this subject, a paper entitled "*Pegylation of phenothiazine - A synthetic route towards potent anticancer drugs*" was published in *Journal of Advanced Research* ($IF_{2022}$ = 10.7, $AIS_{2022}$ = 1.768). The figure below shows the graphical abstract of the paper revealing the structure of two PEGylated phenothiazines (PP, PPO) and their effect on the tumor growth in mice, compared to neat phenothiazine (PTZ) and a PBS control. It can be seen that the PEGylated derivatives inhibited almost totally tumor growth.



**7. Narrative Curriculum Vitae of the candidate or of each team member, when the candidate is a "research team" highlighting the results from the last 5 years, in accordance with the quantitative indicators in Appendix no. 2 and the criteria of evaluation in Appendix no. 3.**

**PESONAL INFORMATION**

**Luminita Marin**

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BRAINMAP ID: U-1700-038Q-9694

## *Education and Carrier*

I received my university education from "Al. I. Cuza" University, Iasi, Romania (Chemistry Bachelor's Degree in 1995 and Master's Degree in 2002), and my PhD in Polymer Chemistry from "Petru Poni" Institute of Macromolecular Chemistry, Romanian Academy, Romania (2007), with the thesis theme focused on the synthesis and characterization of new *liquid crystals* based on azomethine units. In 2006 I performed a PhD stage at Instituto per lo Studio delle Macromolecole, Milan, Italy on the synthesis of low molecular weight *semiconductors* for field effect transistors, and in 2010-2013 I enrolled as a PostDoc student in the "Petru Poni" Institute, with the research topic focused on the obtaining *dynamic materials based on chitosan*. Over this period, in 2011 and 2013, I performed two postdoctoral stages at Institute of Membrane, Montpellier, France with the main research activity focused on new *supramolecular architectures* for biomedical applications.

In 2001, I joined the "Polycondensation" Department of "Petru Poni" Institute as a research assistant and I was promoted through all the professional degrees up to Scientific Researcher gr. I in 2020. In 2016 I defended the habilitation thesis, currently being a PhD coordinator. I was a ***Visiting Researcher*** at (i) Instituto per lo Studio delle Macomolecole, Milan, Italy (2017), (ii) Technological Institute Wuhan, China (2018), (iii) *University of Florence* (2019), (iv) Instituto de Física de São

Carlos, *Universidade de São Paulo*, Brazil (2023), (vi) *Universidade Federal do Rio de Janeiro*, Brazil (2023).

## *Research interests*

As it can be seen from the short presentation of my education and carrier, over years I have faced challenges from different fields of chemistry and materials science, which emerged to the ability to combine knowledge from different domains to elaborate new designs and methodologies aiming to solve societal issues. My research interest is at the interface between organic, supramolecular, macromolecular, materials chemistry, liquid crystals, and biomedicine, with the main target to direct through design, the synthesis and applications of new functional derivatives of chitosan or/and phenothiazine. Current topics include: design, synthesis, and application of chitosan derivatives; chitosan nanofibers for wound dressings; chitosan formulations for controlled drug delivery and soil conditioners; new synthetic approaches to phenothiazine derivatives with antitumor activity.

Notable, in the last five years, I have elaborated ***a new strategy for crosslinking chitosan with monoaldehydes*** towards hydrogels whose function is shaped by the aldehyde's properties; ***a new methodology to create mesoporous chitosan nanofibers*** suitable for application in tissue engineering, and especially in burn wound dressings, and ***a new design of phenothiazine derivatives with high antitumor selective activity*** (see at section 6 the description of the most relevant outcomes).

## *Autonomy*

I started the research carrier as a PhD student in 2001, in the field of liquid crystals, a field almost unknown in "Petru Poni" Institute and less developed in Romania at that time. These circumstances, which I perceived initially as a drawback due to the lack of close collaborations with experienced researchers in domain, forced me to develop a high ability to gain and manage new knowledge, to develop new collaborations, to pay attention to the world's requirements and to rapidly adapt my research to respond to new societal challenges. All these emerged to a high autonomy degree and good leadership abilities, which grown progressively along the carrier evolution, reflected in the quality of principal author of the scientific articles and patents, the quality of director on granted projects, the quality of group leader, and so on. As an example, from the 120 ISI papers which I published, I am corresponding author for 61%, first author for 32% and last author for 42 % (see the researcher ID and the publication list below).

## *Leadership*

Since 2013 when I gained the first project as director, I started to build a team by hiring PhD students and PostDoc researchers to fulfil the projects' objectives, and the team progressively grew as I gained new projects and hired new PhD students, counting now 8 active members.

From 2021, I am one of the Laboratories Heads at "Petru Poni" Institute, coordinating the research theme "Heterocatenary/Heterocyclic Structures: Synthesis, Characterization, Applications for Life Quality Improvement".

Over my career, I co-supervised 5 master students (A. Zabulica, A. Bejan, S. Cibotaru. B.I. Andreica, A. Anisiei), (co)-supervised 12 PhD students (E. Perju, A. Zabulica, C. Dumea, A. Bejan, A. Olaru, D. Ailincai, S. Cibotaru, B.I. Andreica, A. Anisiei, R. Lungu, O. Dumbrava, V. Platon) and 6 post-doctoral researchers (M.M. Iftime, D. Ailincai, A. Bejan, A. Craciun, S. Cibotaru, R. Pomohaci) (see the Publication List).

Under my supervision, 3 PhD students already successfully defended their thesis on time (3 years) with the highest grade, EXCELENT, distinction "Summa cum Laude" (Sandu Cibotaru (2023), Bianca Iustina Andreica (2024), Alexandru Anisiei (2024)). Also, 4 PhD students whose thesis I supervised as a member of their supervision commission successfully defended their thesis, 2 of them with the highest grade, EXCELENT, distinction "Summa cum Laude" (Daniela Ailincai (2017), Andrei Bejan (2019), and Very Good (Elena Perju (2012), Andrei Zabulica (2013)) (see the common papers in the Publication list).

## *Collaborative activities*

Over the research carrier, I have built a strong collaborative network at international and national level, with specialists in complementary domains (e.g. Dr. Xinjin Cheng, Wuhan Institute of Technology, China; Dr. Liliana Mititelu-Tartau, UMF Iasi; Dr. William Porzio, ISMAC Italy; Dr. Mihai Mares, USMV Iasi; Dr. Mihail Barboiu, IEM France; Dr. Brindusa Dragoi, IRO Iasi; Dr. Maria Bardosova, Slovak Academy of Sciences; Dr. Osvaldo Oliviera, Univerisdade Sao Paulo; Dr. Eugene Amler, Inocure, Prague, Czech Republic; Dr. Florin Oancea, ICECHIM Bucharest; Mihai Dimian, Aurelian Rotaru – "Stefan cel Mare" University Suceava; Rostyslav Bilyy, Danylo Halytsky, Lviv National Medical University, Lviv, Ukraine), who brought by their investigations a deeper insight on the potential of the prepared materials. Together we implemented successful national and international grants (see the Publications Lists and projects therein).

## *Fundraising by research projects*

In the last 5 years I have successfully coordinated/coordinate: 3 national projects, 1 European project (as coordinator of the "Petru Poni" Institute team) and 2 bilateral projects and I was tutor for 3 postdoctoral projects (see the attached list of projects). Each project led to results appreciated in their final evaluation reports with the grade "EXCELLENT". A brief overview on the results of these projects shows that:

1 PED project (***BurnHeal,*** 120 000 EUR) implemented a new method for bioabsorbable wound dressings which was patented (see A00478/08.08.2022 in the patents list). Also, in the framework of the project, 4 papers were published in prestigious journals (e.g. Carbohydrate Polymers, JIF=11.2) and the results were disseminated by participations at various international and national conferences as 1 invited lecture, 3 oral presentations and 2 posters (see https://icmpp.ro/ro/proiecte/l3/rezultate.php?id=28).

1 PCE project (***EcoMat,*** 239 600 EUR) investigated for the first time the obtaining of chitosan/quaternized chitosan nanofibers by electrospinning and their prospective applications as wound dressings, food packaging and air filters. The method of obtaining was patented (see A100749/21.11.2022 in patents list) and the project results were disseminated as 13 papers in prestigious journals (e.g. Carbohydrate Polymers (JIF = 11.2), International Journal of Biological Macromolecules (JIF=8.2), Food Packaging and Shelf Life (JIF = 8)), 13 oral communications and 11 posters at various international and national conferences (e.g. EUCHIS, EPNOE, EPF) (see https://icmpp.ro/projects/l3/results.php?id=39).

1 RISE project (***SWORD,*** 96 600 EUR) is still on going, but the Romanian team already reported around 13 papers as deliverables (see https://eu-sword.com/). This European project was a good opportunity for know-how exchange with foreign researchers with complementary expertise, strengthening the outcomes of the entire activity.

1 project support for the SWORD project (PN-III-P3-3.6-H2020-**2020**-0138, 7 060 EUR) reported results for dual imination of chitosan fibers in order to prepare antibacterial wound dressings with controlled biodegradation (see https://icmpp.ro/ro/proiecte/l3/rezultate.php?id=38).

1 bilateral Romanian - Chinese project (***DynaSens,*** 11 400 EUR) which started in 2018 and continued in 2019, joining the expertise of the two teams succeeded to develop chitosan-based materials for heavy metals and explosives sensing. The results were published as joint papers in

prestigious journals (Carbohydrate Polymers, JIF = 11.2; International Journal of Biological Macromolecules, JIF = 8.2, New Journal of Chemistry) (https://icmpp9.wixsite.com/pm-ro-cn-2018-0098) and the collaboration continued resulting in total in 14 papers (see Publications List).

1 bilateral project Romanian Academy - Joint Research Projects with the National Research Council of Italy (11 400 EUR) reinforced the collaboration of the two teams to provide an ecological design based on chitosan for $CO_2$ adsorption, disseminated as two papers (1 in European Polymer Journal and 1 in Polymers, see Publications List).

Furthermore, in the last 5 years I was tutor for 3 PostDoctoral students supervising them in implementation of their projects (***HIVFight, BioDrugSyst, NanoCanTune*** around 50 000 EUReach) which led to great results (see at: https://danielaailincai.wixsite.com/hiv-fight/results; https://icmpp.ro/ro/proiecte/l3/rezultate.php?id=27; https://www.iroiasi.ro/proiecte-eu/nanocantune-en)

The entire projects list and the deliverables list proving their successful implementation can be found on the group site (https://icmpp.ro/ecodesign/index.html).

As can be seen from the provided data (including the list of projects and the list of papers), through these projects, our group established good collaborations with national and international partners, including SMEs (e.g. INOCURE, see above the *Collaborative activities*) and there are good premises as the results of the projects to be developed into products.

## *Scientific recognition/Scientometric profile*

In my entire research carrier, including the PhD stage, I have authored/coauthored more than ***120 ISI papers***, ***3 books***, and I presented ***22 invited lectures*** and ***105 oral communications*** and I applied for ***5 OSIM patents***.

***In the last 5 years*** I have authored/co-authored **53 ISI papers**, from each: - **31 articles in $Q_{AIS}$ = 1**; - 11 articles in $Q_{AIS}$ = 2; - 6 articles in $Q_{AIS}$ = 3; and - 5 review articles, 3 in $Q_{AIS}$ = 1, and 2 in $Q_{AIS}$ = 2. For 16 of 31 ISI papers with **$Q_{AIS}$ = 1**, I am corresponding author. Moreover, ***the cumulate relative influence score*** ($A=\sum_{i=1}^{n} AISi/ni$) of the articles published in the last 5 years is ***A= 11.7.***

In accordance with ISI Web of Science, the papers were cited 2589 times (1984 without self-citations), with an average of 21.7 citations per item, leading to a **Hirsh index = 30**. A short survey of the papers' citations show that they are cited in high ranked journals, e.g. the paper „Imino-chitosan

biodynamers" has been cited 15 times in Carbohydrate Polymers ($Q_{AIS}$=1), 5 times in Food Hydrocolloids ($Q_{AIS}$=1), 7 times in International Journal of Biological Macromolecules ($Q_{AIS}$=1), 2 times in Chemical Reviews ($Q_{AIS}$=1), and so on. A very recent paper, "Quaternized chitosan/chitosan nanofibrous mats: An approach toward bioactive materials for tissue engineering and regenerative medicine" published few months ago, was already cited in high ranked journals such as *Green Chemistry* (JIF=9.9, $Q_{AIS}$=1), *Small* (JIF=13.3, $Q_{AIS}$=1), *Carbohydrate Polymers* (JIF=11,2, $Q_{AIS}$=1), *Journal of Materials Chemistry B* (JIF=7, $Q_{AIS}$=1), *ACS Applied Materials & Interfaces* (JIF=9.5, $Q_{AIS}$=1). Maybe the most relevant information for the quality of citations of the papers is the fact that **Jean-Marie Lehn** (one of the winners of ***Nobel Prize 1987*** in Chemistry, who developed the concept of dynamic chemistry based on imine bonds) highlighted in repeated times our papers in his studies, see for instance:

- N. Roy, B. Bruchmann, **J.M. Lehn**, DYNAMERS: dynamic polymers as self-healing materials, Chemical Society Reviews 2015, 44, 3786-3807 (JIF=46.2) – *highlighted the importance of biodynamers reported by us* in two papers (L. Marin, B.C. Simionescu, M. Barboiu, Chem. Commun. 2012, 48, 8778 - 8780; L. Marin, I. Stoica, M. Mares, V. Dinu, B.C. Simionescu, M. Barboiu, J. Mater. Chem., 2013, 1, 3353-3358).
- Liu, **J. M. Lehn**, A. K. H Hirsch, Molecular Biodynamers: Dynamic Covalent Analogues of Biopolymers, Accounts of Chemical Research 2017, 50, 376-386 (JIF=18.3) - *dedicated a paragraph to three of our articles highlighting the importance of the imino-chitosan derivatives to build biodynamic systems capable to deliver flavouring, antimicrobial, antifungal, or antitumoral small molecules, as reported by us in three different papers.*
- C. S. Liang, S. Kulchat, S. Jiang, **J. M. Lehn**, Gelation-driven selection in dynamic covalent C=C/C=N exchange, Chemical Science 2017, 8, 6822-6828 (JIF=8.4) – *highlighted the importance of the constitutional dynamic systems for the generation of the gel state, reported by us* in a paper.
- N. Roy, V. Schädler, **J. M. Lehn**, Supramolecular Polymers: Inherently Dynamic Materials, Accounts of Chemical Research 2024, (JIF=18.3), - *dedicated a paragraph to the biodynamers reported by us* in three different papers.

In 2022 and 2023 I was included in the World Ranking of ***Top 2% Scientists Worldwide 2023 by Stanford University*** ("Updated science-wide author databases of standardized citation indicators", https://doi.org/10.17632/btchxktzyw.6). The list recognizes the most widely cited scientists in various disciplines, and the selection uses Scopus data provided by Elsevier through ICSR Lab.

*Prizes*: As recognition of my research achievements, I was awarded with the "Costin D. Nenitescu" ***Romanian Academy Award*** 2006 and "Cristofor Simonescu" Medal for Excellence in

Macromolecular Chemistry of the ***American Chemical Society*** in association with Romanian International Chapter, 2019.

The novel insights brought in the field of liquid crystals were recognized by (i) nomination on the ***shortlist of the Luckhurst Samulski Prize 2015*** of the Liquid Crystals journal (https://www.tandfonline.com/doi/full/10.1080/02678292.2016.1221879); (ii) ***an invited article*** in the special issue to commemorate the 30th anniversary of the Liquid Crystals journal, dedicated to the young researchers envisioned to shape the future of liquid crystals and (iii) the choice of an article on the list "***The best of Soft Materials – 2010***", and also as one of the "***Most read***" and "***Most Cited***" articles of the journal along the 2010-2015 period.

The novel insight brought in the field of chitosan has been recognized by the ***Polymer Chemistry*** journal which published a ***back cover*** on this subject (https://pubs.rsc.org/en/content/articlelanding/2018/py/c8py90072h#!divAbstract).

Along my research carrier, I was involved as reviewer of more than 600 papers, activity which was recognized with the distinction „***Top 1% Reviewers for Chemistry***" 2017, 2018, and 2019 and "Top 1% Reviewers in Cross Fields" 2019 awarded of „PUBLONS" (https://publons.com/researcher/1279610/luminita-marin).

*Editorial board member*: Since 2020 I am ***Editorial Board Member*** of the Polymers journal (JIF=5, QAIS=1) and since 2021 I am Editorial Board Member of the Polysaccharides journal.

*Member of professional organizations*: Currently, I am a ***board member of the European Chitin Society*** (EUCHIS), and I was one of the organizers of the EUCHIS round table in the framework of the EPNOE conference. Also, during the EPNOE conference, I was in the committee of selection of the best posters to be awarded.

Also, in the period 2017-2019 I was a member of the *Materials Science Commission of the National Council of Scientific Research*, and in the period 2018-2020 I was a member of the *Chemistry Commission of the National Council for Titles Diplomas and Certificates*.

*Organization of international conferences*: Over my carrier, I have been *a member of the scientific committee for the organization of various conferences*, such as the International Conference "Progress in Organic and Macromolecular Compounds", Iasi; IXème Colloque Franco - Roumain sur les Polymères 2019, Alba Iulia; IasiChem 2023. I was repeatedly chair for different international conferences, such as EPNOE2023; EUCHIS2023; BIOMATSEN2022.

*Other scientific activities*

Since 2016, when I have awarded with the Habilitation qualification, I was involved as a *member of different commissions of doctorate candidate*, at ***The University of Sydney*** (2023: PhD Matthew James Moore); "Gr. Popa" ***University of Medicine and Pharmacy*** (2023: PhD Loredana Hilitanu, PhD Ana Pauna); ***"Dunarea de Jos" University*** (PhD Fanica Balanescu; PhD Florina Costea); ***"Al. I. Cuza" University*** (PhD Dumitrela Cucu); ***„Gh. Asachi" Technical University***, Iaşi (2017: PhD Lenuta Mirabela Iordachi); ***Romanian Academy-SCOSAAR***, ICMPP (2023: PhD Bogdan Cosman; 2017: PhD Mihaela Balan; 2019: PhD Gabriela Pricope).

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## *Personal information*


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## *Education*

**2013 - 2016 - Ph.D**. in Chemistry, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania, Thesis title: "Complex supramolecular structures with biomedical applications"

**2011- 2013 - M.Sc**. at the Natural and Synthetic Polymers Department, Faculty of Chemical Engineering and Environmental Protection, "Gheorghe Asachi" Technical University Iasi, Romania

**2007 - 2011 - B.Sc.** Faculty of Chemical Engineering and Environmental Protection, "Gheorghe Asachi" Technical University Iasi, Romania

## *Career/Employment*

**2021 – Present**, *Scientific Researcher III* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

**2017 – 2021,** *Scientific Researcher* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

**2013 – 2017** - *Research Assistant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

The research activity began during the master thesis and aimed at the synthesis, characterization and functionalization of chitooligosaccharides in order to use them as precursors in click reactions. In that period, I have performed two Erasmus stages, in France and in Germany, getting familiar with the field of chitooligosaccharides, learning how to synthesize and characterize them by NMR and FTIR spectroscopy, GPC, mass spectrometry and rheology.

In 2013, I enrolled as a PhD Student at "Petru Poni" Institute of Macromolecular Chemistry in Iasi. During the PhD stage, I was team member of 1 international and 4 national projects, gaining experience on three different directions of supramolecular chemistry: *(i)* dynamic dendrimer-like structures based on hydrophobic/hydrophilic imines for gene delivery, *(ii)* dynamic films and hydrogels based on imino-chitosan derivatives with antimicrobial properties and *(iii)* polymer dispersed liquid crystals (PDLC) composites for bioapplications. The opportunity to be part of the implementation team of various projects enriched the knowledge in the use and interpretation of the results of many and important characterization techniques, such as: scanning electron microscopy, transmission electron microscopy, dynamic light scattering, atomic force microscopy, RAMAN mapping, X-ray diffraction, contact angle measurements, polarized optical microscopy etc.

The results obtained were disseminated as ISI scientific papers or as oral communications at national and international conferences and led to new findings in the biomaterials field, as follows: *(i)* a new strategy of chitosan hydrogelation based on the self-assembling of hydrophobic-hydrophilic imino-chitosan derivatives, *(ii)* the possibility of exploiting the reversibility of imine units in order to create nanoentities, *(iii)* the use of poly(vinyl alcohol boric acid) as matrix for biocompatible and monodisperse PDLCs. The papers published on chitosan-based materials as co-author or principal author were highly cited in important ISI journals, such as: Food Hydrocolloids (IF=10.7), Carbohydrate Polymers (IF=11.2), Bioactive materials (IF=18.9), Journal of Hazardous Materials (IF=13.6) and also in Accounts of Chemical Research (IF=18.3). The last citation is made by Jean Marie Lehn, who is known as the father of dynamic covalent chemistry (Nobel Prize in 1987). In October 2016, I defended the PhD thesis, which was graded by the thesis jury with Excellent and the distinction "Summa cum laude".

After the PhD thesis, the scientific interests remained in the field of supramolecular architectures with biomedical applications, the studies becoming even closer to bioapplications, including *in vivo* tests. Amongst the studies, of high importance were those based on the obtaining of drug delivery systems by the *in-situ* encapsulation of an anticancer drug, 5 fluorouracil in citryl-imino-chitosan hydrogels, or of an anti-inflammatory drug, diclofenac sodium salt, in polymeric films or hydrogels based on chitosan. The studies extended the opportunity to learn new techniques: the evaluation of the *in vitro* drug release by UV-VIS, the fitting of the kinetic data on mathematical models in order to elucidate the mechanism of drug's release or the evaluation of enzymatic degradability. Therefore, the next papers, published between 2017 - 2021, reveal the high quality and

complexity of the studies, being published in well ranked scientific journals (14 from the 18 papers in journals from the quartile Q1/Q2 according to AIS), the cumulated impact factor of the 18 papers being higher than 100.

In 2020, I won a postdoctoral project entitled: *Chitooligosaccharides based hydrogels for the co-delivery of antiviral and antifungal agents*. The main objective of the project was the development of new hydrogel-based drug delivery systems able to co-deliver both antifungal and antiviral agents, suitable for the HIV treatment and prophylaxis, as well as for the treatment of HIV associated co-infections, such as Candidiasis. The project ended in 2022 and its results were published in highly ranked ISI journals, due to the high degree of novelty of the subject and also due to the outstanding results, two papers being published in Carbohydrate Polymers (IF=11.2 and CiteScore=18.9). Moreover, the results of the project were presented at four international conferences as oral communications.

After the postdoctoral project, I continued to work in the field of chitosan-based materials for bioapplications and not only, results which have materialized in the publication of other 3 papers in highly ranked journals, Q1 according to AIS. Additionally, the results and scientific works reported so far reveal the fact that, in only 7 years since the PhD, I gained an important level of maturity from the organizational, academic, and scientific points of view, being an active and visible researcher in the international scientific world, with a Hirsch index of 15 (according to Web of Science Core collection) and a total of 483 citations, excluding self-citations. Also, out of 33 published papers, I am the first author of 20 papers and both first and corresponding author of 13 of them. The quality of the research activity was also recognized by the Romanian Academy, by receiving the "Cristofor Simionescu" award of the Romanian Academy for "Formulations based on polymers for controlled drug release" in December 2022, ICUB Fellowship for Young Researchers in 2023 and the L'Oréal Romania "For Women in Science" Fellowship in 2024.

### *Scientometric profile*

**35** ISI papers (cumulative impact factor higher than 175); **6** book chapters; **1** book; **2** patent requests; **550** citations (**483** without self-citations) in Web of Science; Hirsh index **15**; **49** oral presentations and posters presented at international and national scientific meetings; **13** Projects as team member; **1** Postdoctoral project as director; **4** mobility stages.

## *Personal information*

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## *Education*

**2006 - 2014 - Ph.D**. in Chemistry in 2014, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania, thesis title: "Synthesis and study of aromatic polysulfones for high performance applications"

**2006 - 2008 - M.Sc**. in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Specialization: "Biochemistry and Chemistry of Heterocyclic Compounds"

**2002 - 2006 - B.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry, Specialization: "Biochemistry technique"

## *Career/Employment*

**2017 – Present**, *Scientific Researcher* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

**2016 – 2017,** *Research Assistant* in the "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

The research activity started in 2006 as a PhD student in the Polycondensation and Thermostable Polymers department at "Petru Poni" Institute of Macromolecular Chemistry. The PhD thesis was focused on the synthesis and characterization of new polysulfones by azomethine (also known as imine or Schiff base) connection. I rapidly integrated in our group, gaining the experimental skills necessary to address complex topics, mainly directed to polyazomethines (also known as imine, Schiff base) in the view of improving and expanding their properties for high performance applications. I learnt numerous methods in order to synthesize and characterize polymers (such as

NMR, FTIR and UV-vis spectroscopy, polarized light microscopy, differential scanning microscopy, thermogravimetric analysis), to interpretate the data and to write scientific papers. My activity over the PhD stage was reflected in the successful defending of the PhD thesis based on 6 ISI papers, for 5 of them being principal author.

After a carrier break of 4 years from maternal reasons, I came back in the group in 2015 and I have the opportunity to continue the research activity by enrolling as a postdoctoral researcher in the framework of a national project for Young Research Team (PN-II-TE-2014-4-2314) focused on the development of *a new concept of chitosan's hydrogelation with monoaldehydes, based on the self-ordering process of imine units*. During the project implementation, I actively engaged in the synthesis and characterization of novel hydrogels derived from chitosan and naturally occurring aldehydes (salicylaldehyde, betulin aldehyde and 5-methoxysalicylaldehyde). It was demonstrated that the driving force of chitosan's hydrogelation with monoaldehydes is the reversible formation of the imine linkage. The high novelty of the subject favored the dissemination of these results in high-rank journals (*Carbohydrate Polymers*, Q1 in Applied Chemistry, IF=11.2; *Ultrasonic Sonochemistry*, Q1 in Chemistry, Multidisciplinary, IF= 8.4; and *International Journal of Biological Macromolecules*, Q1 in Polymer Science, IF=8.2), with high impact in the scientific community, proven by their high citation score, 113 citations in 6 years, 34 citations in 5 years and 18 citations in 2 years, respectively (without self-citations).

The next step in the research activity was the validation of the utility of these hydrogels for applications. Thus, in the framework of new projects in which I was involved as a team member, the hydrogels were used as matrix for drug delivery systems and soil conditioners. The hydrogels obtained from chitosan and salicylaldehyde were used as matrix for the encapsulation of urea, the most used fertilizer in agriculture. Deep studies of the relationship between the supramolecular architecture – *in vitro* urea release – mathematical modelling proved that this hydrogel has a great potential to retard the release of urea due to a strong anchoring by intermolecular forces at nano- and sub-micro-level. These complex and very promising results were published as a scientific paper in *Carbohydrate Polymers* journal (*Q1* in Applied Chemistry, *IF=11.2*) and inspired other researchers to further develop this new concept, as demonstrated by the high citation score (78 citations in less than 4 years from publication).

The chitosan-based hydrogels were also investigated as matrix for drug delivery systems using diclofenac sodium salt as model drug, and they also showed great capability to prolong the drug

release, once again demonstrating their reliability for real life applications. The study was published in *International Journal of Biological Macromolecules* (Q1 in Applied Chemistry, IF=8.2) and was cited 21 times in less than two years from publication (without self-citations).

For a better understanding of the capability of these hydrogels to encapsulate and to sustain a prolonged release of bioactive compounds, advanced theoretical studies were realized in collaboration with „Gh. Asachi" Technical University of Iasi. It was demonstrated that the particular supramolecular nature of these hydrogels guides the formation of matrix-bioactive compound fractals, which govern prolonged delivery. These data were published as two scientific papers in high-rank journals (*Drug Delivery*, *Q1* in Pharmacology and Pharmacy, IF=6 and *Polymers*, Q1 in Polymer Science, IF=5).

My scientific activity *in the domain of chitosan materials* is reflected in **10** ISI papers and **7** presentations in international and national meetings, **1** book chapter and **1** patent request. The impact of the research has as result the development of knowledge in the field of chitosan materials, their applicability and the focus point, the development of new systems, using bio-eco-natural compounds in order to improve the quality of life.

***Scientometric profile***

**25** ISI papers; **1** book; **4** book chapters; **1** patent request; **410** citations (**389** without self-citations) in Web of Science, Hirsh index **10**; **486** citations in Google Scholar, Hirsh index **10**; **30** oral presentations in international and national scientific meetings; **8** Projects (**1** European, **2** bilateral, **5** national) as team member.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

## *Personal information*


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## *Education*

**2015- 2018 - Ph.D**. in Chemistry, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania.

**2013- 2015 - M.Sc**. in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry

**2010 - 2013 - B.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry

## *Career/Employment*

**2020 – Present**, *Scientific Researcher* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

**2018 – 2020**, *Research Asisstant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

My research activity in the Polycondensation and Thermostable Polymers department started in 2015, when I enrolled as a PhD student. The theme of the PhD thesis was focused on the development of new materials based on phenothiazine heterocycle with improved emission properties in solid state in view of their application in the opto-electronic domain, a field of contemporary interest. In the following, I will make a brief description of my research activity highlights from the last five years, within the group "Chitosan and / or phenothiazine derivatives: synthesis, obtaining materials, formulations, investigation".

Starting from the beginning, my main objective was the synthesis and characterization of new phenothiazine derivatives with enhanced photophysical properties for optoelectronic applications. Afterwards, the most performant phenothiazine-based compound (in terms of optical response) has

been used for the preparation of nanocrystals, in water and polymeric matrix. As proof of concept, the quantum efficiency significantly increased, reaching values of 45 %. The study has been published in *Journal of Molecular Liquids*, in quartile **Q1** in Physics, Atomic, Molecular & Chemical domain. (https://doi.org/10.1016/j.molliq.2018.05.125) Another approach for improving optical properties was the preparation of phenothiazine-based cocrystals and films based on them. This approach targeted to improve the quantum yield by promoting the formation of halogen bonds (known to promote singlet-triplet conversion by enhancing the spin orbit coupling effect), and further by increasing the area-to-volume ratio in nanocrystals. This design gave great results, a quantum yield of 27 % for cocrystals and of 42 % for the nano-cocrystals films being reached. The paper was published in *Dyes & Pigments Journal* (**Q1** in Applied Chemistry domain - https://doi.org/10.1016/j.dyepig.2019.108164).

Another pathway for improving the phenothiazine luminescence was the obtaining of ***chitosan-based hydrogels***, based on the supramolecular ordering of the imine bond formed between the aldehyde and amine functionalities. The corresponding xerogels (obtained by the freeze-drying technique) presented a porous morphology with thin walls and emitted green light with a quantum yield value of around 51 %. *This study reported for the first time the preparation of pure organic hydrogels with such a high quantum efficiency*, and for this reason it was chosen to be *highlighted* as a **back cover** of the *Polymer Chemistry* journal (**Q1** in Polymer Science - https://doi.org/10.1039/C7PY01678F).

Besides the high quantum efficiency of these hydrogels, a *unique feature* was also discovered: **mercury ion detection**. When investigating the ability of this eco-friendly luminescent xerogel to detect and remove heavy metals, a distinct response was noted for mercury, consisting in the transformation of the xerogel into a rubber-like material accompanied by the red shifting of the color of emitted light from yellow-green to greenish-yellow domain. It was demonstrated and concluded that mercury has a superior affinity towards this heteroatom rich system, leading to a secondary crosslinking. This directed a great absorption capacity of **1673 mg/g** and a specific morphological response for mercury ion concentrations up to *0.001 ppm*. Working in collaboration with Xinjian Cheng (Wuhan Institute of Technology, Southwest University, China), this study was published in *International Journal of Biological Macromolecules* (**Q1** in Applied Chemistry domain - https://doi.org/10.1016/j.ijbiomac.2020.07.232).

Giving the potential of this luminescent biomaterial that combines the phenothiazine moiety and chitosan to work as an active adsorbent, we investigated its ability to remove copper (II) ions from aqueous solutions, in a fast and selective manner. The material proved a high ability to recover copper ions from aqueous media, reaching a maximum retention capacity of 4.394 g Cu (II)/g adsorbent when using a 0.5 M copper solution, which is an outstanding value compared to other chitosan-based materials reported in the literature so far (https://doi.org/10.3390/gels9020134).

Considering the promising results in the field of phenothiazine chemistry, it is worth mentioning the fact that, in 2023, I received a fellowship for young researchers, from the Research Institute of the University of Bucharest (ICUB) involving the obtaining of antitumor drugs based on phenothiazine derivatives.

In collaboration with other group members, our latest study involved the preparation of chitosan-based nanofibers embedding copper oxide nanoparticles in order to create multifunctional ecological materials, that could act as filters/membranes with high antimicrobial and antioxidant efficiency. This study was published this year, in *International Journal of Biological Macromolecules*. (https://doi.org/10.1016/j.ijbiomac.2024.129377).

***Scientometric profile***

**13** ISI papers; **137** citations (**121** without self-citations) in Web of Science, Hirsh index **5**; **163** citations in Google Scholar, Hirsh index **6; 2** book chapters; **15** oral presentations and posters presented at international and national scientific meetings; **8** Projects (**2** European, 2 bilateral and **4** national) as team member; **2** mobility stages.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

## *Personal information*


Name and surname: **Sandu CIBOTARU**

Academic position: Research Assistant, "Petru Poni" Institute of Macromolecular Chemistry (PPIMC), Iasi, Romania

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## *Education*

**2019 - 2022 - Ph.D.** in Chemistry, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania, Thesis title: "Obtaining of new water-soluble phenothiazine derivatives"

**2017 - 2019 - M.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Specialization: "Environmental Chemistry and Food Safety"

**2014 - 2017 - B.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry, Specialization: "Chemistry"

## *Career/Employment*

**2019 – Present**, *Research Assistant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

The first step in scientific activity was made in 2018, when I started to work as a research assistant in the framework of a national project at "Petru Poni" Institute of Macromolecular Chemistry, Iasi. At the beginning of 2019, I started the PhD stage, at the same institution, under supervision of *Dr. Luminita Marin*. During this period, I gained the required knowledge and experience in the field of organic synthesis, compounds' characterization, materials, and biomaterials obtaining and characterization.

The PhD thesis was focused on the synthesis of water-soluble *phenothiazine derivatives* for anticancer application, and materials for sensing and recovery of heavy metals. The novelty of the

study was to introduce a poly(ethylene glycol) (PEG) chain on the phenothiazine heterocycle, in order to obtain eco-friendly derivatives with high biocompatibility, water-solubility and stability, more prone to applications. Moreover, the amphiphilic character of the obtained compounds enabled their self-assembling into micelles and allowed to control the optical properties. This study, which introduced for the first time the idea of water-soluble phenothiazine via PEGylation was published in a high ranked journal (*Materials Science and Engineering C, Q1, IF=7.9*). Further, it was proven that the PEGylation significantly improved the antitumor activity of phenothiazine, reaching an inhibition of the tumor growth of 92%, when investigated *in vivo* on mice. An investigation of the antitumor mechanism revealed the decisive role of PEGylation, which ensured a long blood circulation of phenothiazine by protecting it into micelles, and the targeted release at the tumor site, by enzymatic degradation. This was a remarkable result, which allowed to disseminate it into a high ranked journal (*Journal of Advanced Research, Q1, IF=10.7*).

To further improve the design, a formyl group was introduced on the phenothiazine core caring a poly(ethylene glycol) or tri(ethylene glycol) (TEG) chain, and the resulted aldehydes were combined with two sulfonamides, *via* dynamic imine bonds. The concept behind this design was to include building blocks with the role of adjuvants in the process of tumor inhibition (sulfonamide) and to increase the antitumor efficiency by including a dynamic imine unit, able to bind essential amino acids for tumor growth. The concept was verified by the very high anticancer activity and good selectivity when investigated *in vitro* on several cancer cell lines. Moreover, it was confirmed that the synthetized derivatives had dynamic character due to the presence of the reversible imine units, they can bind glutamine, an essential amino acid for tumor growth, a possible key feature in the mechanism of tumor inhibition. This was the first report in literature highlighting the reversible imine units as advantageous building blocks in the design of antitumor drugs. The study was published in a high ranked journal, (*International Journal of Molecular Sciences, Q2, IF=5.6*).

Moreover, the presence of dynamic imine units was favorable to develop sensing materials. The compounds, which presented remarkable optical properties with high quantum yield in solution and solid state as well, and distinct luminescence color for the imine derivatives and their formyl precursors, provided a fast response in the presence of acid vapors, by shifting the imination equilibrium between products and reagents. The study was published in *Journal of Photochemistry and Photobiology A: Chemistry* (*Q2, IF=4.3*). The formylated phenothiazine derivative carrying a TEG chain was used to crosslink chitosan to obtain hydrogels with a suitable hydrophilicity for the

recovery of heavy metals from wastewater, the mercury being special targeted due to its affinity to phenothiazine. The design was successful, the hydrogels being able to bind mercury ions through coordinative bonds, including those with sulfur atom in the phenothiazine structure. The obtained data were published in a Q1 journal (*Gels*, *IF= 4.6*).

Apart from phenothiazine derivatives, I was involved in two projects where the development of new *chitosan-based materials* was followed. The production of the materials was predestined for healing burn wounds. The materials were in the form of *nanofiber mats* produced by electrospinning of chitosan, then loaded with norfloxacin and sealed with 2-formylphenylboronic acid. The obtained material presented a much better healing capacity in comparison with commercial products. Due to the nanostructure of the material and the presence of the antibacterial compounds in the system, the healing process was clean and promoted a good epithelization of the wound. A part of the obtained results was published in a high ranked journal (*Carbohydrate Polymers*, *Q1, IF=11.2*). Also, I was involved in writing a review paper (*International Journal of Biological Macromolecules*, *Q1, IF= 8.2*) in which the advantages of using quaternized chitosan in the production of nanofibers were discussed.

After the PhD defense, I had the opportunity to go on a 3-months stage at University of Sao Paolo in Brazil, where I worked on developing sensors for viruses, proteins, or enzymes such as COVID-19 detection, using colorimetric or potentiometric methods. During this stage, I started a study based on the development of Doxorubicin bonded Chitosan-Gold nanoparticles for anticancer treatment and analyzed the mechanism of interaction of the synthesized nanoparticles with the cell membrane, *via* Langmuir–Blodgett technique.

During the last year (2023), I joined an organized training on powder XRD interpretation and analyzing, organized by Rigacu MiniFlex in Neu Isenburg, Germany.

Even if the results obtained from the studies were published only in 7 high-ranking journals, this served as inspiration for other researchers to use the obtained PEGylated and TEGylated compounds or materials based on chitosan as a subject for their studies, as can be seen in the cumulated amount of 45 citations. For 5 published studies, I was the main author, reflecting my active implication in the laboratory activity and in data interpretation and paper writing. This contributed to a great knowledge of the literature data, of the new concepts leading to the improvement of the biological activity and skills for managing the synthesis and characterization of new compounds.

All the accumulated experience helped me write my first national grant project based on my studies, and besides this I was happy to join another project based on developing of new composite materials for aerospace industry, at University Cote de Azur, Nice, France.

### *Scientometric profile*

**7** ISI papers (cumulative impact factor **52.2**); **1** patent request; **45** citations (**34** without self-citations) in Web of Science, Hirsh index **4**; **54** citations in Google Scholar, Hirsh index **5; 19** oral presentations and posters presented at international and national scientific meetings; **4** Projects (**1** European, **3** national) as team member; **1** mobility stage.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

## *Personal information*


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## *Education*

**2020 – 2023 – Ph.D**. in Chemistry, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania, Thesis title: "Water soluble chitosan derivatives for biomedical applications"

**2018- 2020 – M.Sc**. in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Specialization: "Chemistry of cosmetical and pharmaceutical products"

**2015 – 2018 – B.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry, Specialization: "Biomedical chemistry"

## *Career/Employment*

**2018 – Present**, *Research Assistant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

The research activity began during the master studies, in 2018, by enrolling as a team member in the framework of a national project from "Petru Poni" Institute of Macromolecular Chemistry (*PN-III-P1-1.2-PCCDI-2017-0569*), under the coordination of Dr. Luminita Marin. During this period, I have gained essential information about chitosan and water-soluble chitosan derivatives, at theoretical level as well as synthesis and characterization techniques. The responsibilities within the project were directed to the development of a novel class of water-soluble chitosan derivatives, suitable for biomedical applications. Also, to be well-anchored into the current state of the art in this domain, a review article was published, describing the class of quaternized chitosan (*Eur. Polym. J. 139, 2020, Q1)* which was highly appreciated by the scientific community, reflected by the high citation number (86).

All these opened my horizons and revealed a desire to continue in the research field, therefore the next step was to start the PhD stage, in November 2020, under the supervision of Dr. Luminita Marin. The thesis title, "*Water soluble chitosan derivatives for biomedical applications*", is strongly correlated with the gained experience, which was an important asset. The first year of PhD was focused on the chemical modification of chitosan to reach a water-soluble derivative, by ring-opening polymerization technique. Using this strategy, a new class of chitosan derivatives was synthesized, by grafting poly(trimethylene carbonate) chains on the chitosan backbone, reaching compounds with solubility at neutral Ph, while the biological properties of chitosan were well-preserved. The results were published in *Int. J. Biol. Macromol. 2021, Q1.*

Further, quaternized chitosan derivatives, known for their improved solubility and antimicrobial properties, were optimized and used in the development of two types of materials with tremendous applications in biomedical field, *hydrogels* and *nanofibers*.

The design of the *nanofibers* by electrospinning was convinced to lead to multifunctional materials, with application for tissue engineering, wound healing, and hemostatic bandages, the goal of the *project PN-III-P4-ID-PCE2020-2717*. For a better insight on the properties and the relationship between morphology and the activity of the nanofibers, an in-depth analysis of the current state of the art was done, and the findings were published in the form of a review article (*Int. J. Biol. Macromol. 2023, 242, Q1)* The strategy was based on the idea of taking advantage of the quaternized chitosan's properties, while limiting its possible toxicity, by mixing it with neart chitosan. Therefore, binary chitosan/quaternized chitosan nanofibers were obtained and fully analyzed from the structural and morphological points of view, while their biological properties were investigated *in vitro* and *in vivo*, pointing for their safe use in biomedicine. The results of the studies were published as three articles (*Pharmaceutics 2023, Q2; Int. J. Biol. Macromol. 2023, 249, Q1 and Carbohydr. Polym, 2022, Q1*) and two patent requests (*A/00478/08.08.2022. and A/00749/21.11.2022.)*

The design was further improved by incorporating a natural antioxidant monoaldehyde which was covalently linked to the amine groups of chitosan and quaternized chitosan. The composite nanofibers presented suitable properties to be used as ecological food packaging materials, with rapid biodegradability and preservation capacity. The high interest on this topic led to the publication of an article in a highly ranked journal, as a co-corresponding author (*Food Packag. Shelf Life, 2023, Q1).*

During these studies, 3 months of secondment were performed at *Instituto de Fisica de Sao Carlos (IFSC)*, Brazil, withing the *project SWORD-DLV-873123*, which was focused on developing colorimetric sensors for SARS-CoV-2 and the possibility of using chitosan in the development of the sensors, but also helped understand the research activity outside the European borders, leading to a fruitful collaboration.

The design of the *hydrogels* was conceived considering the emerging necessity for disinfectants, brought to light by the COVID-19 pandemics. Therefore, by extending the strategy of crosslinking chitosan with monoaldehydes, developed within the group of Dr. Luminita Marin, a series of hydrogels was developed, which met all the required criteria to be used as disinfectant gels. The rheological investigation of the hydrogels was performed during a mobility stage at *Institut des Molécules et Matériaux du Mans (IMMM)*, France, within the *PN-III-P4-ID-PCE-2020-2717 project,* which helped me gain more independence while assimilating a new technique and developing connections with researchers from abroad. The results are currently sent to publication and are under review in *Carbohydr. Polym, Q1*.

The great volume of work performed in a relatively short period of time and the high quality of the published articles led to the defense of the PhD thesis after three years of stage, on 20$^{th}$ October 2023, receiving the "Excellent" qualificative (waiting for the Order of the Minister).

***Scientometric profile***

**9** ISI papers (cumulative impact factor 64.7); **2** patent requests; **122** citations (**107** without self-citations) in Web of Science, Hirsh index **4**; **147** citations in Google Scholar, Hirsh index **4; 30** oral presentations and posters presented at international and national scientific meetings; **4** Projects (**1** European, **3** national) as team member; **2** mobility stages.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

## *Personal information*

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## *Education*

**2020 - 2023 - Ph.D.** in Chemistry, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania, Thesis title: "Chitosan derivatives for the development of dressings for wound healing"

**2018 - 2020 - M.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Specialization: "Chemistry of cosmetical and pharmaceutical products"

**2015 - 2018 - B.Sc.**, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry, Specialization: "Biomedical chemistry"

## *Career/Employment*

**2019 – present -** *Research assistant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

**2018 – 2019 -** Volunteer Internship at "Petru Poni" Institute of Macromolecular Chemistry

With a good foundation in chemistry from my bachelor's degree, I embarked on my research career in 2018 during my master's program when I was co-opted in the department of Dr. Luminita Marin as a volunteer in the "Closing the value chains in bioeconomy by obtaining innovative bioproducts demanded by the market" (PN-III-P1-1.2-PCCDI-2017-0569) project, this experience being the ignite point of my passion for research and solidified my commitment for making meaningful contribution to the field of chemistry.

During eight months of volunteering under the mentorship of Dr. Luminita Marin, the coordinator contributed both to my development as a researcher, teaching me to gather information from the scientific world through scientific articles, patents and specialized books. I became familiar with both what it means to be a researcher and taking part in the implementation of a new research direction within group and more precisely the preparation of materials based on chitosan nanofibers

obtained through the technique of electrospinning. The intensive studies of the literature were made concrete by the publication of a Review-type article (*Rev. Chem. Eng.*, 39 (1), 31-70 2023, $Q_{AIS}$ =1).

In the first period of my volunteering, trials for obtaining of chitosan-based nanofibers led to first the results that was presented in 2019 at 13th Students 'Congress of SCTM in North Macedonia, being my first contact with the scientific community. The study described for the first time the preparation of chitosan-iminoboronate nanofibers. The article describes preparation of chitosan-based nanofibers obtained by electrospinning via two steps, the electrospinning of chitosan/PEO solution, step fallowed by washing of PEO with NaOH solution and functionalization of the fibers with 2-formylphenylboronic acid (*Cellul. Chem. Technol.*, 55(7-8), 785-793, 2021, $Q_{AIS}$ = 3).

In the middle of 2019, I became a research assistant at the "Petru Poni" Institute of Macromolecular Chemistry, thus becoming an active member of the research group led by Dr. Luminita Marin, which helped me in completing my master's studies. Moreover, in the same period I was also part of the writing and implementation of a new project in the group, *Resorbable bandage with controlled release of norfloxacin for healing burns (BurnHeal)*, PN-III-P2-2.1-PED-2019-5071. More specifically, the idea of preparing nanofibers for wound healing appeared after a tragedy occurred on October 30, 2015, the Colectiv nightclub fire, which led to 146 non-fatal injuries and to national mourning due to a number of 64 deaths, more than half of this deaths being reported after the incident as being caused by the occurrence of intra-hospital infections.

Thus, I take part in the first preparation of the 2-formylphenylboronic acid sealed norfloxacin loaded chitosan non-woven mats, which meet all the requirements for a dressing that ensures scarless wound-healing, without occurrence of infections. The results of the projects were disseminated as two other scientific articles, *Pharmaceutics*, 2022, 14(1), 117 ($Q_{AIS}$=2) and *Carbohydr. Polym.*, 121135, 2023 ($Q_{AIS}$=1), six participation of national and international conferences and one patent request (Registration No. A / 00478 / 08.08.2022).

I also take part in the project *Eco-nanomaterials based on chitosan for applications of contemporary interest (ECO-MAT)*, PN-III-P4-ID-PCE-2020-2717, where we prepared for the first time chitosan/quaternized chitosan nanofibers with different applications like wound dressings, food packaging and air filtration systems, resulting in a number of six scientific articles: *Int. J. Biol. Macromol*, 129377, 2024 ($Q_{AIS}$=1), *Int. J. Biol. Macromol.*, 125136, 2023 ($Q_{AIS}$=1), *Int. J. Biol. Macromol*, 126056, 2023 ($Q_{AIS}$=1), *Carbohydr. Polym*, 2023, 302, 120431 ($Q_{AIS}$=1) *Food Packag.*

*Shelf Life*, 39, 101157, 2023 ($Q_{AIS}$=1), *Pharmaceutics* 15(12), 2722, 2023 ($Q_{AIS}$=2) and five participation of national and international conferences and one patent request (Registration No. A / 00749 / 21.11.2022). The novelty of the studies is the obtaining of many new materials based only on chitosan/quaternized chitosan without or with fillers such as CuO nanoparticles, hydroxyapatite or functionalized with aldehydes for targeting application.

Working in the group of Dr. Marin led to the opportunity to go on a research internship in the Czech Republic at the InoCure company, within the H2020-MSCA-RISE-2019 project: Smart Wound Monitoring Restorative Dressings (SWORD) (no. 873123) and complete the doctoral thesis ("Chitosan derivatives for the development of dressings for wound healing") within a period of 3 years (waiting for the minister's order regarding the granting of the PhD degree).

***Scientometric profile***

**12** ISI papers (cumulative impact factor **85.1**); **2** patent requests; **91** citations (**67** without self-citations) in Web of Science, Hirsh index **5**; **118** citations in Google Scholar, Hirsh index **6**; **20** oral presentations and posters presented at international and national scientific meetings; **6** Projects (**1** European, **5** national) as team member; **1** mobility stage.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

## *Personal information*


Name and surname: **Ramona SOCEA (married LUNGU)**

Academic position: *Research Assistant*, "Petru Poni" Institute of Macromolecular Chemistry (PPIMC), Iasi, Romania

E-mail:

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## *Education*

**2020 - Present – Ph.D Student** in Chemistry, Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania, Thesis title: "Development of multifunctional materials based on iminic chitosan derivatives"

**2002- 2004 - M.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Specialization: "Materials and Energy"

**1998 - 2002 - B.Sc.** in Chemistry, "Al. I. Cuza" University, Iasi, Romania, Faculty of Chemistry, Specialization: "Chemistry-Physics"

## *Career/Employment*

**2021 – Present**, *Research Assistant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

**2007-2020,** Chemist at Carpatina SA Mineral Water Factory, Neamt, Romania

**2003-2007**, *Research Assistant* in the Department of Polycondensation and Thermostable Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

Since 2020 I have carried out my scientific research as a PhD student in the Polycondensation and Thermostable Polymers Laboratory, under the guidance of Dr. Luminita Marin. This concerned both documentation and scientific research in the field of *chitosan-based biomaterials*. The aim of the research was the synthesis, characterization and application of materials based on iminine chitosan derivatives and gels as wound and burn dressings, as well as hydrophobic coating films for paper-based food packaging.

To this end, a series of novel biomaterials were prepared by the double-imination reaction of chitosan nanofibers with two aldehydes of different hydrophilicity and complementary bioactivity, namely 2-formylphenylboronic acid and citral, aiming at their application in wound healing. The study brought to the researchers' attention that rapid swelling of functionalized fibers which can ensure good exudate drainage and transport of bioactive agents, and the presence of citril-imine units can improve both fibers' biocompatibility and antimicrobial properties. The results proved that double-imination of chitosan nanofibers is a simple and effective way to obtain multifunctional biomaterials with improved properties and applicability in wound healing. The obtained data were disseminated as a scientific article in a high-ranking journal (Reactive & Functional Polymers; 2021; IF=5.1; Q1 in Applied Chemistry, Chemical Engineering and Polymer Science) and inspired other researchers in their studies, as evidenced by the citations of the article (13 citations in prestigious journals such as Pharmaceutics, Carbohydrate Polymers, International Journal of Biological Macromolecules). The results were also presented as a poster at MacroIasi, 7-9 October 2021. This study was supported by a grant from the Ministry of Research, Innovation and Digitization, CNCS/CCCDI-UEFISCDI, PN-III-P3-3-3.6-H2020-2020-0138, project number no. 47 / 2021 under PNCDI III.

A subsequent study aimed to obtain a hydrogel with applicability in wound healing by acid condensation reaction of chitosan with 2-formylphenylboronic acid. In order to evaluate the bioabsorbability of this material, biodegradation took place *in vitro* in the presence of lysozyme in media with different pH, thus mimicking wound exudate at different stages of healing. The study demonstrated that the rate of biodegradation is modulated during the healing period by pH. According to the data obtained, the hydrogel will be rapidly adsorbed into newly formed tissue without the need for traumatic debridement, thus promoting scar-free regeneration of smooth tissue. Compared to the data reported in the literature, the synthesis procedure was modified in that the reaction was performed in an aqueous biodispersant, thus avoiding the use of other organic solvents. The obtained data were published in a scientific article in a high-ranking journal (Gels; 2022; IF=4.6; Q1 in Polymer Science) and had a quite high impact among specialists in the field (https://www.azom.com/news.aspx?newsID=58252), as evidenced by the number of citations (19 citations in prestigious journals such as International Journal of Surgery, Pharmaceutics, Polymers. This work was supported in part by a grant from the Ministry of Research, Innovation and Digitization, CNCS/CCCDI-UEFISCDI, project number 538PED/2020 under PNCDI III.

A new study was conducted to obtain hydrophobic chitosan by reacting chitosan with citral and applying this formulation to paper used in food packaging. According to the data obtained, the mechanical and barrier properties of chitosan and chitosan-citril-imine coated packaging were clearly superior to those obtained for uncoated paper, thus increasing significantly the hydrophobicity of the paper. The results obtained (tensile strength, tear and fold resistance, as well as significantly better barrier properties than paper substrate) recommend the new product as a coating film for paper-based food packaging. Such materials allow a more economical use of cellulosic products, a protection of natural resources and the replacement of synthetic polymers by natural ones. The data under review in International Journal of Biological Macromolecules (IF=8.025). This article/publication is based on work carried out in the COST action "CA19124 Circul-a-bility" (circul-ability. org), supported by COST (European Cooperation in Science and Technology). The study will be continued to assess the ability of the materials to extend the shelf life of food.

These studies were carried out in collaboration with researchers both from the group in which I work and from other institutions in the field under the careful guidance of Dr. Luminita Marin.

***Scientometric profile***

**6** ISI papers and 1 under review (cumulative impact factor 14.2); **81** citations in Web of Science, Hirsh index **5**; **94** citations in Google Scholar, Hirsh index **5; 1** poster presented at international scientific meeting; **6** Proceedings, **6** national projects as team member.

**8. Publication list of the "individual" candidate or of each team member in the case of "team candidate", highlighting the publications in the last 5 years and the common publications. A link to the candidate's publications must be mentioned.**

# *Publication List*

## *Luminita MARIN*

**Books (national academic publishers):**

1. **Luminita Marin** (ed), „*Multifunctional Dynamic Hydrogels with Controlled Morphology for Biomedical Applications*", Tehnopress Iasi, ISBN 978-973-606-300-0 (**2017**)

2. **Luminita Marin** „*Supramolecular architectures based on azomethine linkage*", Tehnopress Iasi, ISBN 978-973-606-327-7 (**2017**)

3. **Luminita Marin** "*Synthesis and study of new compounds with liquid crystal properties*", Tehnopress Iasi, ISBN 978-973-702-599-9 (**2008**)

**Book Chapters (international book publishers)**:

1. **Luminita Marin**, Ridvan Karapinar, *Polymer Dispersed Liquid Crystal Design: New Challenges and Applications*, in „Multiphase Polymer Systems", Andreea Irina Barzic, Silvia Ioan (ed.), CRC Press Taylor Francis Group, ISBN 9781498755634 (**2016**)

2. **Luminita Marin**, Vasile Cozan, Elena Perju, *Thermotropic Liquid Crystalline Poly(azomethine-ether-sulfone)s. Synthesis and Propertie*, in „Functional Polymeric Materials Designed for Hi-Tech Applications", Marioara Nechifor (ed.) Transworld Research Network, ISBN 978-81-7895-448-6 (**2010**)

3. Vasile Cozan, Manuela Ciobanu, **Luminita Marin,** *Aromatic Copoly(Ether Sulfone)s* in „Functional Polymeric Materials Designed for Hi-Tech Applications", Marioara Nechifor (ed.) Transworld Research Network, ISBN: 978-81-7895-448-6 (**2010**)

4. Vasile Cozan, **Luminita Marin** Thermotropic Liquid Crystalline Polyazomethines in „Advances in Functional Heterochain Polymers", Maria Cazacu (ed.), Nova Publishers Inc.New York ISBN 978-1-60456-599-7 (**2008**)

5. Dumitru Pavel, **Luminita Marin**, Vasile Cozan, Mihai Liviu Craus, *New Poly(Azomethine-Ether-Sulfone)s. Modification by Random Copolymerization in Advanced Research* in „Polymer Science", Firas Awaja (ed.), Transworld Research Network, ISBN 81-7895-223-8 (**2006**)

## ISI papers published in international journals

### 2023

1. Quaternized chitosan/chitosan nanofibrous mats: An approach toward bioactive materials for tissue engineering and regenerative medicine; **B.-I. Andreica**, **A. Anisiei**, I. Rosca, A.-I. Sandu, A.-S. Pasca, L. Mititelu-Tartau, **L. Marin**; Carbohydrate Polymers 302, 120431 (2023) https://doi.org/10.1016/j.carbpol.2022.120431 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, ***$Q_{AIS}$ = 1***)
2. Electrospinning of chitosan-based nanofibers: from design to perspective applications; **A. Anisiei**, F. Oancea, **L. Marin**; Reviews in Chemical Engineering 39, 31-70 (2023) https://doi.org/10.1515/revce-2021-0003 ($FI_{2022}$ = 5.78, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 1.005, ***$Q_{AIS}$ = Q1***)
3. Mesoporous chitosan nanofibers loaded with norfloxacin and coated with phenylboronic acid perform as bioabsorbable active dressings to accelerate the healing of burn wounds; **D. Ailincai**, **S. Cibotaru**, **A. Anisiei**, C. G. Coman, A. S. Pasca, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, **L. Marin**; Carbohydrate Polymers 318, 121135 (2023) https://doi.org/10.1016/j.carbpol.2023.121135 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, ***$Q_{AIS}$ = 1***)

4. Quaternized chitosan-based nanofibers with strong antibacterial and antioxidant activity designed as ecological active food packaging; **B.-I. Andreica**, **A. Anisiei**, I. Rosca, **L. Marin**; Food Packaging and Shelf Life 39, 101157 (2023) ($IF_{2022}$ = 8, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.947, ***$Q_{AIS}$ = 1***) https://doi.org/10.1016/j.fpsl.2023.101157

5. Biodegradable trimethyl chitosan nanofiber mats by electrospinning as bioabsorbable dressings for wound closure and healing; **A. Anisiei**, **B.-I. Andreica**, L. Mititelu-Tartau, C.-G Coman, R. Bilyy, G. Bila, I. Rosca, A.-I Sandu, E. Amler, **L. Marin**; International Journal of Biological Macromolecules 249, 126056 (2023) https://doi.org/10.1016/j.ijbiomac.2023.126056 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, ***$Q_{AIS}$ = 1***)

6. Quaternized chitosan (nano)fibers: A journey from preparation to high performance applications; **L. Marin**, **B.-I. Andreica**, **A. Anisiei**, S. Cibotaru, M. Bardosova, E.M. Materon, O.N. Oliveira; International Journal of Biological Macromolecules 242, 125136 (2023) 10.1016/j.ijbiomac.2023.125136 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, ***$Q_{AIS}$ = 1***)

7. Water-soluble β-cyclodextrin based turn-on amplifying fluorescent probes for sensitive and selective detection of Hg2+/Hg+ ions, K.Q. Liu, **L. Marin**, X.J. Cheng; Sensors and Actuators B-Chemical 377, 133060 (2023) https://doi.org/10.1016/j.snb.2022.133060 ($IF_{2022}$ = 8.4, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.981, ***$Q_{AIS}$ = 1***)
8. Tailoring properties and applications of polysulfone membranes by chemical modification: Structure-properties-applications relationship; O. Dumbrava, A. Filimon, **L. Marin**; European Polymer Journal 196, 112316 (2023) https://doi.org/10.1016/j.eurpolymj.2023.112316 ($IF_{2022}$ = 6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.669, ***$Q_{AIS}$ = 1***)

9. Drug delivery based on a supramolecular chemistry approach by using chitosan hydrogels; **D. Ailincai**, S. Morariu, I. Rosca, I. Sandu, **L. Marin**; International Journal of Biological Macromolecules 248, 125800 (2023) https://doi.org/10.1016/j.ijbiomac.2023.125800 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, ***$Q_{AIS}$ = 1***)

10. Outstanding sorption of copper (ii) ions on porous phenothiazine-imine-chitosan materials; **A. Bejan, L. Marin**; Gels 4;9(2):134 (2023) https://doi.org/10.3390/gels9020134 ($IF_{2022}$ = 4.6, $Q_{FI}$ =1) ($AIS_{2022}$ = 0.626, $Q_{AIS}$ =*1*)

11. Antitumor activity of PEGylated and TEGylated Phenothiazine derivatives: structure-activity relationship; **S. Cibotaru**, A.-I. Sandu, A. Nicolescu, **L. Marin**; International Journal of Molecular Sciences, 24(6), 5449 (2023) https://doi.org/10.3390/ijms24065449 ($IF_{2022}$ = 5.6, $Q_{FI}$ = 2) (AIS = 1.028, $Q_{AIS}$ = 2)

12. Dynamic PEGylated phenothiazine imines; synthesis, photophysical behavior and reversible luminescence switching in response to external stimuli, **S. Cibotaru**, A. Nicolescu, **L. Marin**; Journal of Photochemistry and Photobiology A: Chemistry 435, 114282 (2023) https://doi.org/10.1016/j.jphotochem.2022.114282 ($IF_{2022}$=4.3, $Q_{FI}$ = Q2) ($AIS_{2022}$ = 0.738, $Q_{AIS}$ = 2)

13. New betulin imine derivatives with antioxidant and selective antitumor activity; **M.-M. Iftime**, G.L. Ailiesei, S. Shova, C. Miron, H. Tanaka, M. Hori, **L. Marin**; New Journal of Chemistry 47,16551-16563 (2023) https://doi.org/10.1039/D3NJ02738D ($IF_{2022}$ =3.3, $Q_{FI}$ = 2) ($AIS_{2022}$ = 0.443, $Q_{AIS}$ = 3)

**2022**

14. Biocompatible drug delivery systems able to co-deliver antifungal and antiviral agents; **D. Ailincai**, M. Bercea, L. Mititelu-Tartau, **L. Marin**; Carbohydrate Polymers 298, 120071 (2022) https://doi.org/10.1016/j.carbpol.2022.120071 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = *1*)

15. Chitosan crosslinking with a vanillin isomer toward self-healing hydrogels with antifungal activity; **M.-M. Iftime**, I. Rosca, A.-I. Sandu, **L. Marin**; International Journal of Biological Macromolecules 205, 574–586 (2022) https://doi.org/10.1016/j.ijbiomac.2022.02.077 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = *1*)

16. Iminoboronate-chitooligosaccharides hydrogels with strong antimicrobial activity for biomedical applications; **D. Ailincai**, I. Rosca, S. Morariu, L. Mititelu-Tartau, **L. Marin**; Carbohydrate Polymers 276, 118727 (2022) https://doi.org/10.1016/j.carbpol.2021.118727 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = *1*)

17. Self-Healing Chitosan Hydrogels: Preparation and Rheological Characterization; A. M. Craciun, S. Morariu, **L. Marin**; Polymers 14 (13), 2570 (2022) https://doi.org/10.3390/polym14132570 ($IF_{2022}$ = 5, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.604, $Q_{AIS}$ = *1)*

18. Biocompatible Chitosan-Based Hydrogels for Bioabsorbable Wound Dressings; **R. Lungu,** M.A. Paun, D. Peptanariu, **D. Ailincai**, **L. Marin**, M.V. Nichita, V.A. Paun, V.P. Paun; Gels 8, 107 (2022) https://doi.org/10.3390/gels8020107 ($IF_{2022}$=4.5, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.626, $Q_{AIS}$ = *1*)

19. TEGylated Phenothiazine-Imine-Chitosan Materials as a Promising Framework for Mercury Recovery; **S. Cibotaru**, **D. Ailincai**, **B.I. Andreica**, X. Cheng, **L. Marin**; Gels 8(11), 692 (2022) https://doi.org/10.3390/gels8110692 ($IF_{2022}$ = 4.5, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.626, $Q_{AIS}$ = *1*)

20. 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 37, 279-290 (2022) https://doi.org/10.1016/j.jare.2021.07.003 ($IF_{2022}$ = 10.7, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.768, $Q_{AIS}$ = *1*)

21. Imination of Microporous Chitosan Fibers—A Route to Biomaterials with "On Demand" Antimicrobial Activity and Biodegradation for Wound Dressings; **A. Anisiei**, I. Rosca, A.I. Sandu, A. Bele, X. Cheng, **L. Marin**; Pharmaceutics 14(1) 117 (2022) https://doi.org/10.3390/pharmaceutics14010117 ($IF_{2022}$=5.4, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.754, $Q_{AIS}$ = 2)

22. Microporous Polymelamine Framework Functionalized with Re(I) Tricarbonyl Complexes for $CO_2$ Absorption and Reduction; S. Zappia, E. Perju, **A. Bejan**, A. Coroaba, F. Bossola, J.Q. Zeng, D. Sassone, **L. Marin**, S. Destri, W. Porzio; Polymers 14(24), 5472 (2022) https://doi.org/10.3390/polym14245472 ($IF_{2022}$ = 5, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.604, $Q_{AIS}$ = *1*)

23. Fluorescent chitosan-BODIPY macromolecular chemosensors for detection and removal of Hg2+ and Fe3+ ions; D. Wang, **L. Marin**, XJ. Cheng; International Journal of Biological Macromolecules 198, 194-203 (2022) https://doi.org/10.1016/j.ijbiomac.2021.12.075 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = *1*)

24. Novel water soluble polymeric sensors for the sensitive and selective recognition of Fe3+/Fe2+ in aqueous media; S. He, **L. Marin**, XJ. Cheng; European Polymer Journal 162, 110891 (2022) https://doi.org/10.1016/j.eurpolymj.2021.110891 ($IF_{2022}$ = 6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.669, $Q_{AIS}$ = *1*)

25. Chitosan-bodipy macromolecular fluorescent probes prepared by click reactions for highly sensitive and selective recognition of 2,4-dinitrophenylhydrazine; D. Wang, **L. Marin**, XJ Cheng; New Journal of Chemistry 46(43), 20699-20710 (2022) https://doi.org/10.1039/D2NJ03923K ($IF_{2022}$ = 3.3, $Q_{FI}$ = Q2) ($AIS_{2022}$ = 0.443, $Q_{AIS}$ = 3)

26. Fluorescent multi-component polymer sensors for the sensitive and selective detection of Hg2+/Hg+ ions via dual mode fluorescence and colorimetry; KQ Liu, **L. Marin**, L. Xiao, XJ. Cheng; New Journal of Chemistry 45, 22888-22901 (2022) https://doi.org/10.1039/D1NJ04286F $IF_{2022}$ =3.3, $Q_{FI}$ = Q2) ($AIS_{2022}$ = 0.443, $Q_{AIS}$ = 3)

27. Liposomal-Based Formulations: A Path from Basic Research to Temozolomide Delivery Inside Glioblastoma Tissue; R.M. Amarandi, A. Ibanescu, E. Carasevici, **L. Marin**, B. Dragoi, B; Pharmaceutics 14(2) 308 (2022) https://doi.org/10.3390/pharmaceutics14020308 ($IF_{2022}$ = 5.4, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.754, $Q_{AIS}$ = 2)

28. Erythromycin Formulations - A Journey to Advanced Drug Delivery; V-M. Platon, B. Dragoi, **L. Marin**; Pharmaceutics 14, 10: 2180 (2022) https://doi.org/10.3390/pharmaceutics14102180 ($IF_{2022}$ = 5.4, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.754, $Q_{AIS}$ = 2)

**2021**

29. Chitosan crosslinking with pyridoxal 5-phosphate vitamer towards biocompatible hydrogels for *in vivo* applications, A.M. Craciun, L. Mititelu-Tartau, G. Pricope, **L. Marin**, International Journal of Biological Macromolecules 193, 1734-1743 (2021) https://doi.org/10.1016/j.ijbiomac.2021.10.228 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = *1*)

30. 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, 414-424 (2021) https://doi.org/10.1016/j.ijbiomac.2021.10.174 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = *1*)

31. Double functionalization of chitosan based nanofibers towards biomaterials for wound healing; **R. Lungu**, **A. Anisiei**, I. Rosca, A.I. Sandu, **D. Ailincai**, **L. Marin**; Reactive & Functional Polymers

167, 105028 (2021) https://doi.org/10.1016/j.reactfunctpolym.2021.105028 ($IF_{2022}$ = 5.1, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.533, $Q_{AIS}$ = 2)

32. 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) https://www.cellulosechemtechnol.ro/pdf/CCT7-8(2021)/p.785-793.pdf ($IF_{2022}$ = 1.3, $Q_{FI}$ = 3) ($AIS_{2022}$ = 0.132, $Q_{AIS}$ = 3)

33. 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) https://doi.org/10.1016/j.ijbiomac.2021.07.044 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

34. 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) https://doi.org/10.1016/j.eurpolymj.2021.110428 ($IF_{2022}$ = 6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.669, $Q_{AIS}$ = 1)

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100. Solid state properties of oligomers containing dithienothiophene or fluorene residues suitable for FET devices; W. Porzio, S.Destri, M. Pasini, U. Giovanella, **L. Marin**, M. D. Iosip, M. Campione; Thin Solid Films 515, 7318–7323 (2007) https://doi.org/10.1016/j.tsf.2007.02.081 ($IF_{2022}$ = 2.1, $Q_{FI}$ = 3) ($AIS_{2022}$ = 0.315, $Q_{AIS}$ = 3)

101. On the electronic transport mechanism in thin films of some new poly(azomethine sulfone)s; G.H. Rusu, A. Airinei, M. Rusu, P. Prepeliță, **L. Marin**, V. Cozan, I. I. Rusu; Acta Materialia, 55, 433–442 (2007) https://doi.org/10.1016/j.actamat.2006.07.048 ($IF_{2022}$ = 9.4, $Q_{FI}$ = 1) ($AIS_{2022}$ = 2.104, $Q_{AIS}$ = 1)

102. Comparative study of new thermotropic polyazomethines; **L. Marin**, V. Cozan, M. Bruma; Polymers for Advanced Technologies 17, 664–672 (2006) https://doi.org/10.1002/pat.767 ($IF_{2022}$ = 3.4, $Q_{FI}$ = 2) ($AIS_{2022}$ = 0.414, $Q_{AIS}$ = 2)

103. Synthesis and thermal behavior of new poly(azomethine-ether); **L. Marin**, V. Cozan, M. Bruma, V. C. Grigoras; European Polymer Journal 42, 1173–1182 (2006) https://doi.org/10.1016/j.eurpolymj.2005.11.010 ($IF_{2022}$ = 6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.669, $Q_{AIS}$ = 1)

104. Synthesis and characterization of novel arylidene and cardo ester bismaleimides and poly(aminoaspartimide)s therefrom; V. Cozan, M. Sava, **L. Marin**, M. Brumă; *High Performance Polymers* 15, 301–318 (2003) https://doi.org/10.1177/0954008303015003007 ($IF_{2022}$ = 2.1, $Q_{FI}$ = 3) ($AIS_{2022}$ = 0.288, $Q_{AIS}$ = 4)

105. Calculation of group contribution of molar glass transition function (Yg) for 2-chloromethylene-1,4-phenylene units – application to chemical modification reaction of polysulfones; V. Cozan, E. Avram, **L. Marin**, C. Racles, European Polymer Journal 39 (2), 397–400 (2003) https://doi.org/10.1016/S0014-3057(02)00228-8 ($IF_{2022}$ = 6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.669, $Q_{AIS}$ = 1)

### *ISI papers published in Romanian journals*

106. A new phenothiazine blue light emitter. Synthesis, structure and photophysical properties; **A. Bejan**, **L. Marin**, B. Chiricuta, **D. Ailincai**, B. C. Simionescu, *Revue Roumaine de Chimie* 6, 291–297 (2016) ($IF_{2022}$=0.5 $Q_{FI}$=1) ($AIS_{2022}$=0.052, $Q_{AIS}$=4)

107. Influence of Structure on Antibacterial Activity of Some New Aniline Derived Schiff Bases; G. Tantaru, **L. Marin**, M. Vieriu, A. D. Panainte, A. Poiata, M. Apostu, N. Bibire, The; *Revista de Chimie*, 66, 1965–1967 (2015)

108. Mesomorphic Compounds Containing Chromophoric Mesogens for Opto-Electronic Application; **L. Marin**, A. Arvinte, *Materiale Plastice* 50, 23–27 (2013) ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)

109. Optical response of cyanoazomethine liquid crystal droplets in PDLC films based on a polysulfone matrix; **L. Marin**, E. Perju; *Journal of Optoelectronics and Advanced Materials* 12, 1378–1384 (2010)

110. New polymer dispersed liquid crystals. Preparation and thermal characterization; **L. Marin**, E. Perju; *Metalurgia International*, special issue: Exploring Romanian resources in Materials Research, vol. XIII (2008)

111. New thermotropic oligomers designed for FET applications; S. Destri, W. Porzio, **L. Marin**, M. D. Damaceanu, M. Bruma; *Journal of Optoelectronics and Advanced Materials* 9, 1337–1341 (2007)
112. Thermotropic crystal liquids. Types of mesogenic groups; **L. Marin**, S. Ciocilteu; *Materiale Plastice*, 43, 288–291 (2006) ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)
113. New Thermotropic Azomethines Containing Sulfonyl Group; **L. Marin**, V. Cozan; *Revue Roumaine de Chimie* 51, 675–681 (2006) ($IF_{2022}$=0.5 $Q_{FI}$=1) ($AIS_{2022}$=0.052, $Q_{AIS}$=4)
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116. Polymer liquid crystals with mesogen in the main chain. Structure-thermotropic properties correlations; **L. Marin**, V. Cozan, M. Bruma; *Materiale Plastice* 42, 239–244 (2005) ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)
117. Synthesis and study of new symmetric azomethine trimers containing biphenyl units; **L. Marin**, V. Cozan, Maria Bruma; *Revue Roumaine de Chimie* 50, 649–653 (**2005**)
118. Polymer liquid crystals; **L. Marin**, V. Cozan; Terminology and concepts, *Materiale Plastice* 42, 28–34 (2005) ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)
119. Synthesis of new aromatic aldehydes useful for the preparation of azomethine mesogens; **L. Marin**, V. Cozan, *Materiale Plastice* 42, 143–145 (2005) ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)
120. Applications of polymers with thermotropic liquid crystals properties; **L. Marin**, M. Bruma; *Materiale Plastice*, 41, 240–244 (2004) ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)

### *Papers presented at scientific meetings*

### *Invited lectures presented in universities/research institutes*

1. **L. Marin**, Instituto de Fisica de Sao Carlos, Universidade de Sao Paolo, January - February 2023 (invited lecture: Smart Wound Monitoring Restorative Dressings)

2. **L. Marin**, Instituto de Fisica de Sao Carlos, Universidade de Sao Paolo, November - December 2023 (invited lecture: Chitosan based nanofibers for wound healing applications)

3. **L. Marin**, Universidade Federal do Rio de Janeiro, December 2023 (invited lecture: Chitosan based biomaterials: insights into chemistry, properties and their applications)

4. **L. Marin**, Wuhan Institute of Technology, China, 2018 (invited lecture: Luminescent materials, non-viral vectors and chitosan biopolymers and materials)

5. **L. Marin**, Instituto per lo Studio delle Macromolecole, Milan, Italy, 2017 (invited lecture: Imino-chitosan hydrogels as promising materials for bio-application)

### *Conferences at international meetings*

1. **L. Marin**, **D. Ailincai**, **M.M. Iftime**, A.M. Craciun, **A. Bejan**, **A. Anisiei**, **B.I. Andreica**, "Chitosan imination: an opportunity towards biomaterials with broad application spectrum" 7th

International Congress on Biomaterials and Biosensors (BIOMATSEN 2022), April 22 – 28, 2022, Muğla, Turkey.

**2. L. Marin**, "Chitosan hydrogelation with monoaldehydes – A synthetic approach towards multifunctional biomaterials"; 14th IUPAC International Conference on Novel Materials and their Synthesis (NMS-XIV), October 21-26, 2018, Guangzhou, China.

3. **L. Marin, D. Ailincai**, B.C. Simionescu, "Chitosan hydrogelation with monoaldehydes. A straight pathway to biomaterials", Tenth Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science, 8 – 14 June 2018, Iasi, Romania.

4. **L. Marin**, "Chitosan based hydrogels. From design to applications", 11th Edition of the Symposium with International Participation, New Trends and Strategies in The Chemistry of Advanced Materials with Relevance in Biological Systems, Technique and Environmental Protection, June 28-29, 2018, Timisoara, Romania.

5. **L. Marin**, "Self-structuring of imine derivatives of chitosan - a promising pathway towards biomaterials", EMN Meeting on Hydrogel Materials, 2017, Amsterdam, Netherlands, *invited talk.*

6. **D. Ailincai, L. Marin**, M. Pinteala, M. Barboiu, "Hydrogels based on iminoboronate motif as promising materials for the treatment of Candidiasis", EMN Meeting on Hydrogel Materials, April 24-28, 2017, Amsterdam, Netherlands, *invited talk.*

7. **M. M. Iftime, L. Marin**, "Supramolecular layering as an innovative method for the development of chitosan based hydrogels", EMN Meeting on Hydrogel Materials, April 24-28, 2017, Amsterdam, Netherlands, *invited talk.*

8. **L. Marin**, "Imino-chitosan: a Pathway toward Functional Biodynamic Materials", Seventh Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science (2015), 4 – 5 June 2015, Iasi, Romania.

9. **L. Marin**, "Chitosan – a promising work bench for obtaining dynamic materials", The 3rd CEEPN Workshop on Polymer Science, 24 – 26 September 2015, Iasi, Romania, *plenary lecture.*

10. **L. Marin**, "Designing mesomorphic polymers for optoelectronic materials", IUPAC 6th International Symposium on Novel Materials and Synthesis (NMS-VI) & 20th International Symposium on Fine Chemistry and Functional Polymers (FCFP-XX), October 10 – 14, 2010, Wuhan, China.

11. **L. Marin**, "Designing thermotropic liquid crystals based on fluorene, thiophene, oxadiazole and/or azomethine chromophores for opto-electronic materials", Second Cristofor I. Simionescu Symposium, Frontiers in Macromolecular and Supramolecular Science, June 2 – 3, 2009, Iasi, Romania.

12. **L. Marin**, S. Destri, M. D. Damaceanu, M. Bruma, "Liquid Crystals for opto-electronic applications" 3rd Bilateral Symposium on Functional Heterocyclic and Heterochain Polymers as Advanced Materials, September 1 – 7, 2008, Iasi, Romania.

***Conferences at national meetings***

1. **L. Marin, D. Ailincai, M.M. Iftime,** A.M. Craciun, **A. Bejan, A. Anisiei, B.I. Andreica, S. Cibotaru**, "Chitosan based biomaterials: insights into chemistry, properties and their applications", IasiCHEM-MIT 2023 în era abordărilor Multidisciplinare, Interdisciplinare și Transdisciplinare, a V-a ediție a Conferinței IasiCHEM, october 26-27, 2023, Iasi, Romania.

2. **L. Marin**, "Hidrogelarea chitosanului cu monoaldehide – o strategie promitatoare pentru obtinerea de eco-materiale sustenabile", Zilele Academice Iesene, Progrese in stiinta compusilor organici si macromoleculari, 2-4 October 2019, Iasi, Romania.
**3. L. Marin**, "Phenothiazine based materials for opto-electronic applications", A XXXV-a Conferinţa Naţională de Chimie, 2-5 October 2018, Calimanesti – Caciulata, Valcea, Romania.
4. **L. Marin**, Self-ordering of imine units – as a new pathway of chitosan gelling; A XXXIV-a Conferinta Nationala de Chimie, 2016, Calimanesti – Caciulata, Romania,
5. **L. Marin**, "Thermotropic liquid crystals designed for opto-electronic applications", Zilele Universitatii, 24-25 October 2008, Iasi, Romania.

***Oral communications at international meetings***

1. **A. Bejan, A. Anisiei, L. Marin,** "Chitosan/Quaternized chitosan – based nanofibers mesh as promising materials for air filtration", The 14th International Conference of the European Chitin Society (EUCHIS 2023) and the 15th International Conference on Chitin and Chitosan (15th ICCC), 11-14 September, Siglufjörður, Iceland.
2. **L. Marin, A. Anisiei, B.-I. Andreica**, L. Mititelu-Tartau, R. Bilyy, G. Bila, I. Rosca, A.-I. Sandu, E. Amler, "Quaternized chitosan based nanofibers as bioabsorbable wound dressings", International Conference of the European Chitin Society (EUCHIS 2023), Siglufjörður, Islanda, 11-14 September, Siglufjörður, Iceland.
3. **D. Ailincai, S. Cibotaru, A. Anisiei**, I. Rosca, L. Mititelu-Tartau, **L. Marin,** "Chitosan nanofibers for burn healing applications", 8th EPNOE International Polysaccharides Conference (EPNOE 2023), 18 – 22 september 2023, Graz, Austria.
4. **A. Anisiei, A. Bejan, L. Marin,** "Copper oxide nanoparticle-doped nanofiber mats for effective air filtration", 8th EPNOE International Polysaccharides Conference (EPNOE 2023), 18 – 22 september 2023, Graz, Austria.
5. **L. Marin, A. Anisiei, B.-I. Andreica**, L. Mititelu-Tartau, R. Bilyy, G. Bila, I. Rosca, A.-I. Sandu, E. Amler, "Nanofibers based on quaternized chitosan as bioabsorbable wound dressings" 8th EPNOE International Polysaccharides Conference (EPNOE 2023), 18 – 22 september 2023, Graz, Austria.
6. **S. Cibotaru, D. Ailincai, B.-I. Andreica, L. Marin,** "TEGylated phenothiazine-chitosan based frameworks for mercury recovery" 8th EPNOE International Polysaccharides Conference (EPNOE 2023), 18 – 22 september 2023, Graz, Austria.
7. **B.-I. Andreica**, I. Rosca, **L. Marin,** "Composites nanofibers based on quaternized chitosan for food packaging", 8th EPNOE International Polysaccharides Conference (EPNOE 2023), 18 – 22 september 2023, Graz, Austria.
8. Chitosan crosslinking with a vanillin isomer toward self-healing hydrogels with antifungal activity; **M.M. Iftime**, I. Rosca, A.-I. Sandu, **L. Marin**; Progress in Organic and Macromolecular Compounds (MACROIasi 2023), 29th edition, Iasi, Romania, 4-6 october 2023.
9. **S. Cibotaru, D. Ailincai, A. Anisiei**, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, **L. Marin**, "Bandages based on chitosan nanofibers with broad-spectrum antimicrobial activity for wound healing applications", Progress in Organic and Macromolecular Compounds (MACROIasi 2023), 29th edition, 4-6 october 2023, Iasi, Romania.

10. 64. **S. Cibotaru**, V. Nastasa, A-I. Sandu, A-C. Bostanaru, M. Mares, **L. Marin**, "PEGylated phenothiazine derivatives with potent antitumor activity", European Polymer Congress (EPF), 26 june – 01 july 2022, Prague, Czech Republic.
11. **D. Ailincai, L. Marin**, "Antifungal biocompatible hydrogels as matrix for antiviral drug release", European Polymer Congress (EPF), 26 june – 01 july 2022, Prague, Czech Republic.
12. 62. **L. Marin, D. Ailincai, S. Cibotaru, A. Anisiei, I. Rosca**, L. Mititelu-Tartau, "Biodegradable chitosan based nanofibers with broad spectrum antimicrobial activity for wound healing applications", European Polymer Congress 2022 (EPF 2022), 26 june – 01 july 2022, Prague, Czech Republic.
13. AM. Craciun, L. Mititelu-Tartau, **L. Marin**, "Drug delivery systems based on chitosan and pyridoxal-5-phosphate for sustained release in local therapy", The International Conference on Materials Science and Engineering (BraMat), 09-12 march 2022, Brasov, Romania.
14. **M. M. Iftime**, L. Marin, "New delivery systems based on chitosan hydrogels for agricultural applications", The International Conference on Materials Science and Engineering (BraMat), 09-12 march 2022, Brasov, Romania.
15. **B.I. Andreica**, I. Rosca, **L. Marin**, "Design and properties of newly developed imino-quaternized chitosan biomaterials", The International Conference on Materials Science and Engineering (BraMat), 09-12 march 2022, Brasov, Romania.
16. **A. Anisiei, B.I. Andreica, L. Marin**, "Biodegradable chitosan/quaternized chitosan nanofibers as wound dressings", The International Conference on Materials Science and Engineering (BraMat), 09-12 march 2022, Brasov, Romania.
17. **D. Ailincai, L. Marin**, "Biocompatible hydrogels as matrix for the obtaining of antiviral drug delivery systems", The International Conference on Materials Science and Engineering (BraMat), 09-12 march 2022, Brasov, Romania.
18. **S. Cibotaru, D. Ailincai, A. Anisiei, L. Marin**, "Bandages based on chitosan nanofibers for burn healing applications" The International Conference on Materials Science and Engineering (BraMat), 09-12 march 2022, Brasov, Romania.
19. A-M. Craciun, L. Mititelu-Tartau, **L. Marin**, "Designing novel hydrogels based on chitosan-vitamer towards biomedical applications", XXXIInd edition of the International Congress of "Apollonia" University of Iasi, 27 february – 2 march 2022, Iasi, Romania
20. **S. Cibotaru**, V. Nastasa, A-I. Sandu, A-C. Bostanaru, M. Mares, **L. Marin**, "New PEGylated phenothiazine derivatives with tumor growth inhibition properties", XXXIInd edition of the International Congress of "Apollonia" University of Iasi, 2022, 27 february – 2 march 2022, Iasi, Romania
21. **B.I. Andreica**, I. Rosca, **L. Marin**, "Development of biomaterials based on quaternized chitosan", XXXIInd edition of the International Congress of "Apollonia" University of Iasi, 27 february – 2 march 2022, Iasi, Romania
22. **A. Anisiei, B.I. Andreica, L. Marin**, "Chitosan-based nanofibers for wound dressing applications"; XXXIInd edition of the International Congress of "Apollonia" University of Iasi, 27 february – 2 march 2022, Iasi, Romania

23. **M. Iftime**, L. Mititelu Tartau, **L. Marin**, "Salicyl-imine-chitosan hydrogels for prolonged drug release", The 28th Edition of International Conference "Progress in Organic and Macromoleculecular Compounds", MACRO IASI 2021, 7-9 october 2021, Iasi, Romania.
24. **D. Ailincai**, I. Rosca, S. Morariu, L. Mititelu Tartau, M. Angheloiu, **L. Marin,** "Biocompatible hydrogels with broad-spectrum antimicrobial activity", The 28th Edition of International Conference "Progress in Organic and Macromoleculecular Compounds", MACRO IASI 2021, 7-9 october 2021, Iasi, Romania.
25. **A. Bejan**, **L. Marin**, B. Chiricuta, "Designing phenothiazine-based materials with high luminescence in solid state", The 28th Edition of International Conference "Progress in Organic and Macromoleculecular Compounds", MACRO IASI 2021, 7-9 october 2021, Iasi, Romania.
26. **D. Ailincai**, M. Mares, A. Bostanaru, **L. Marin**, "Imino-chitosan Hydrogels - Promising Biomaterials for Candida Infections' Treatment", International Conference on Nanotechnologies and Biomedical Engineering, 3-5 november 2021, Chisinau, Republic of Moldova.
27. **S. Cibotaru**, V. Nastasa, A.I. Sandu, A.C. Bostanaru, M. Mares, **L. Marin**, "PEG-ylated Phenothiazine Derivatives. Synthesis and Antitumor Activity", 5th International Conference on Nanotechnologies and Biomedical Engineering, 3-5 november 2021, Chisinau, Republic of Moldova.
28. **S. Cibotaru**, D. Belei, **L. Marin**, "PEGylated phenothiazine derivatives as water soluble precursors for biomaterials", 13th Students' Congress of SCTM, 19-21 september 2019, Skopje, Macedonia.
29. **B. I. Andreica**, **D. Ailincai**, **L. Marin**, "Chitosan based copolymers with enhanced solubility properties", 13th Students' Congress of SCTM, 19-21 september 2019, Skopje, Macedonia.
30. **A. Anisiei**, M. Mariș, A.-C. Bostănaru, **L. Marin**, "Fabrication of 2-formylphenylboronic acid-chitosan nanofibers and their application in wound healing", 13th Students' Congress of SCTM, 9-21 september 2019, Skopje, Macedonia.
31. **D. Ailincai**, **L. Marin**, "Citryl-imine-PEG-ylated chitosan hydrogels – promising materials for bioapplications", European Polymer Congress, 9-14 june 2019, Hersonissos Heraklion Crete, Greece.
32. 42. **L. Marin**, "Chitosan imination with monoaldehydes – a synthetic approach towards multifunctional hydrogels", European Polymer Congress, 9-14 june 2019, Hersonissos, Heraklion Crete, Greece.
33. A. Bejan, **L. Marin**, "Phenothiazine Based Nanocrystals with Tuned Solid State Emission", 9th International Conference of the Chemical Societies of the South-East European Countries (ICOSECS 2019), 8-11 may 2019, Targoviste, Romania.
34. **D. Ailincai**, **L. Marin**, "Iminoboronate chitosan hydrogels – promising materials for the treatment of candidiasis", 9th International Conference of the Chemical Societies of the South-East European Countries (ICOSECS 2019), 8-11 may 2019, Targoviste, Romania.
35. **L. Marin**, **D. Ailincai**, **M.M. Iftime**, A.M. Craciun, **A. Bejan**, "Chitosan hydrogelation with monoaldehydes: a new strategy to multifunctional biomaterials", 9th International Conference of the Chemical Societies of the South-East European Countries (ICOSECS 2019), 8-11 may 2019, Targoviste, Romania.
36. A.-M. Olaru (Craciun), **D. Ailincai**, M. Mares, M. Pinteala, **L. Marin**, "Chitosan imination - a straight pathway to dynamic antimicrobial biomaterials", First Balkan Conference of Medical Mycology and Mycotoxicology – Balkan Fungus, 13-15 september 2018, Timisoara, Romania.

37. **D. Ailincai**, M. Mares, A.-C. Bostanaru, M. Pinteala, **L. Marin**, "Biomaterials with strong antimicrobial properties based on dynamic iminochitosan derivatives"; First Balkan Conference of Medical Mycology and Mycotoxicology – Balkan Fungus, 13-15 septembrie 2018, Timisoara, Romania.
38. **D. Ailincai**, A. Bejan, **L. Marin**, "Chitosan imination towards highly luminescent materials", 14th IUPAC International Conference on Novel Materials and their Synthesis (NMS-XIV), 21-25 october 2018, Guangzhou, China.
39. **D. Ailincai**, **L. Marin**, B. C. Simionescu, "Supramolecular citryl-imino-chitosan hydrogels as drug delivery systems", 10th Cristofor I. Simionescu Symposium, Frontiers in Macromolecular and Supramolecular Science, 8-14 june 2018, Bucharest, Romania.
40. **L. Marin**, "Chitosan hydrogelation with monoaldehydes: a synthetic approach towards multifunctional biomaterials", 4th International Conference on Bio-based Polymers and Composites (BiPoCo), 2-6 september 2018, Balatonfüred, Hungary.
41. **M. M. Iftime**, **L. Marin**, "Chiral hydrogels based on chitosan and betulinic aldehyde", 4th International Conference on Bio-based Polymers and Composites (BiPoCo), 2-6 september 2018, Balatonfüred, Hungary.
42. **D. Ailincai**, **L. Marin**, B.C. Simionescu, "Supramolecular citryl-imino-chitosan hydrogels as drug delivery systems", Tenth Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science, 8-14 june 2018, Iasi, Romania.
43. **A. Bejan**, B. C. Simionescu, **L. Marin**, "Phenothiazine Dyes as Efficient Luminescent Materials" Ninth Cristofor I. Simionescu Symposium – Frontiers in Macromolecular and Supramolecular Science, 2017, Iasi, Romania.
44. **D. Ailincai**, **L. Marin**, D. Peptanariu, M. Pinteala, "Vecteurs non viraux bases sur des imines hydrophobes-hydrophiles a travers la chimie covalente dynamique", 4eme Colloque Franco-Roumain de Chimie Medicinale, 2017, Iasi, Romania.
45. **L. Marin**, "Development of dynameric hydrogels by dynamic constitutional chemistry" 16th EPF European Polymer Congress, 2017, Lyon, France.
46. **L. Marin**, "Dynamic hydrogels for bio-applications" 4eme Colloque Franco-Roumain de Chimie Medicinale, 2017, Iasi, Romania.
47. **D. Ailincai**, M. Pinteala, B.C. Simionescu, M. Barboiu, **L. Marin**, "Hydrogels based on chitosan and 2-formylphenyl boronic acid – promising materials for the treatment of Candida infections", XIIth Franco-Romanian Symposium on Polymers, 2016, Sophia Antipolis, Franta.
48. **M-M. Iftime**, **L. Marin**, "Preparation and characterization of super-porous hydrogels based on chitosan", XIIth Franco-Romanian Symposium on Polymers, 2016, Sophia Antipolis, Franta.
49. **A. Bejan**, **L. Marin**, M. Pinteala, M. Barboiu, "Brominated Phenothiazine dyes with tuned emission color. Supramolecular structure, photophysical and electrochemical properties", ACS on Campus, 2016, Bucuresti, Romania.
50. **D. Ailincai**, **L. Marin**, M. Pinteala, M. Barboiu, "Chitosan iminoboronate hydrogels with antifungal activity", ACS on Campus, 13 may 2016, Bucharest, Romania.
51. **L. Marin**, "Dual crosslinking of chitosan with monoaldehydes – a promising pathway toward advanced materials", XIIth Franco-Romanian Symposium on Polymers, 2016, Sophia Antipolis, Franta.

52. **A. Bejan**, D. Belei, **L. Marin**, "Tuning the emission colour of phenothiazine by introduction of withdrawing electron groups", International Conference on Materials Science, Applied Physics and Chemistry, 28-29 june 2015, London, United Kingdom.
53. **D. Ailincai**, B. C. Simionescu, **L. Marin**, "Polymer dispersed liquid crystals based on polyvinylalcohol boric acid matrix", International Conference on Materials Science, Applied Physics and Chemistry, 28-29 june 2015, London, United Kingdom.
54. **L. Marin**, D. Belei, C. Dumea, "Pyridine-N-oxide Based AIE-active Triazoles: Synthesis, Morphology and Photophysical Properties", International Conference on Materials Science, Applied Physics and Chemistry, 28-29 june 2015, London, United Kingdom.
55. **D. Ailincai, L. Marin**, M. Mares, B. C. Simionescu, "The synthesis and characterization of new imino-chitosan biopolymeric films with antimicrobial properties", 3éme Colloque Franco-Roumain de Chimie Médicinale, 30 – 31 october 2014, Iasi, Romania.
56. **D. Ailincai, L. Marin**, D. Peptanariu, D. Stan, C. A. Constantinescu, M. Călin, M. Pinteala, M. D. Bărboiu, The synthesis and characterization of a new nonviral vector for DNA delivery based on benztrialdehyde, Jeffamine D and hyperbranched polyethyleneimine (PEI), 8éme Colloque Franco – Roumain de Chimie Appliquée, 14 – 17 september 2014, Montpellier, France.
57. A. G. Zabulica, M. Sava, M. Bruma, **L. Marin**, "A new insight on polydispersity of thermotropic liquid crystalline polyazomethines", Fifth Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science, 11 – 13 june 2012, Bucharest, Romania.
58. **L. Marin**, M. Barboiu, B. C. Simionescu, "Schiff Base Containing Chitosan Biopolymers", International conference CHIMIA 2012 „New Trends in Applied Chemistry", 24 – 26 may 2012, Constanta, Romania.
59. E. Perju, **L. Marin**, M.D. Damaceanu, M. Bruma, Designing thermotropic polyazomethines based on fluorene and /or oxadiazole chromophores, Fourth Cristofor I. Simionescu Symposium, Frontiers in Macromolecular and Supramolecular Science, may 31 – june 1 2011, Iasi, Romania.
60. **L. Marin**, A. Zabulica, M. Sava, "New symmetric azomethinic dimer: the influence of structural heterogeneity on the liquid crystalline behavior" Bioactive/biocompatible polymeric materials - Spring Training Course Program, 7-1 march 2011, Zabrze – Poland.
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1. **B.-I. Andreica**, I. Rosca, **L. Marin,** "Imino-chitosan/quaternized chitosan nanofibers designed as active food packaging", ICMPP - Open Door to the Future - Scientific Communications of Young Researchers (MacroYouth' 2023), 19 november 2023, Iasi, Romania.
2. **S. Cibotaru**, **L. Marin**, "Novel luminescent phenothiazine derivatives for biological applications", ICMPP – Open Door to the Future. Scientific Communications of Young Researchers (MacroYouth' 2021), 19 november 2021, Iasi, Romania.
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# *Publication list*

***Daniela AILINCAI***

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1.Citryl-Imino-Chitosan Xerogels as Promising Materials for Mercury Recovery from Waste Waters; D. Ailincai, **B.-I. Andreica**; Polymers 16(1) (2024) https://doi.org/10.3390/polym16010019 ($IF_{2022}$ = 5, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.604, $Q_{AIS}$ = 1)

2. Mesoporous chitosan nanofibers loaded with norfloxacin and coated with phenylboronic acid perform as bioabsorbable active dressings to accelerate the healing of burn wounds; **D. Ailincai**, S. Cibotaru, A. Anisiei, C. G. Coman, A. S. Pasca, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin; Carbohydrate Polymers 318, 121135 (2023) https://doi.org/10.1016/j.carbpol.2023.121135 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

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30. **D. Ailincai**, L. Marin, S. Morariu, M. Mares, A.-C. Bostanaru, M. Pinteala, B.C. Simionescu, M. Barboiu, Dual crosslinked iminoboronate-chitosan hydrogels with strong antifungal activity against Candida planktonic yeasts and biofilms, *Carbohydrate Polymers* 152, 306–316 (2016) https://doi.org/10.1016/j.carbpol.2016.07.007 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

31. L. Marin, D. Ailincai, M. Calin, D. Stan, C. Constantinescu, L. Ursu, F. Doroftei, M. Pinteala, B.C. Simionescu, M. Barboiu, Dynameric frameworks for DNA transfection, *ACS Biomaterials Science & Engineering* 2, 104-111 (2015) https://doi.org/10.1021/acsbiomaterials.5b00423 ($IF_{2022}$ = 5.7, $Q_{FI}$ = 2) ($AIS_{2022}$ = 0.834, $Q_{AIS}$ = 2)

32. L. Marin, **D. Ailincai**, M. Mares, E. Paslaru, M. Cristea, V. Nica, B.C. Simionescu, Imino-chitosan biopolymeric films. Obtaining, self-assembling, surface and antimicrobial properties, *Carbohydrate Polymers* 117, 762-770 (2015) https://doi.org/10.1016/j.carbpol.2014.10.050 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

33. L. Marin, **D. Ailincai**, E. Paslaru, Monodisperse PDLC composites generated by use of polyvinyl alcohol boric acid as matrix, *RSC Advances* 4, 38397-38404 (2014) https://doi.org/10.1039/C4RA06426G ($IF_{2022}$ = 3.9, $Q_{FI}$ = 2) ($AIS_{2022}$ = 0.567, $Q_{AIS}$ = 2)

34. **D. Ailincai**, A. Bejan, I. Titorencu, M. Dobrota, B.C. Simionescu, Imino-chitosan derivatives. Synthetic pathway and properties, *Revue Roumaine de Chimie* 59, 385-392 (2014) https://revroum.lew.ro/wp-content/uploads/2014/6/Art%2002.pdf ($IF_{2022}$ = 3.1, $Q_{FI}$ = 2) ($AIS_{2022}$ = 0.052, $Q_{AIS}$ = 4)

35. **D. Ailincai,** H. Ritter, Cyclodextrin-poly(ε-caprolactone) based nanoparticles able to complex phenolphthalein and adamantyl carboxylate, *Beilstein Journal of Nanotechnology* 5, 651–657 (2014) https://doi.org/10.3762%2Fbjnano.5.76 ($IF_{2022}$ = 0.5, $Q_{FI}$ = 4) ($AIS_{2022}$ = 0.475, $Q_{AIS}$ = 3)

### *Mobilities*

1. Mobility at University of Palermo, Italy in the framework of Erasmus+, *"Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing"*, 28 September 2015 – 2 October 2015

2. Mobility at Institute of Nuclear Chemistry and Technology, Warsaw, Poland in the framework of Erasmus+, *"Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing"*, 7 September 2015 – 17 September 2015

3. Erasmus Internship at Heinrich Heine University, Duesseldorf, Germany, February 2013 – May 2013

4. Erasmus Internship at École Supérieure de Chimie Physique Électronique de Lyon, France, March 2012 – July 2012

### Project member

**1. Horizon 2020 WIDESPREAD 2-2014: ERA Chairs, no: 667387** Suprachem Lab - laboratory of supramolecular chemistry for adaptive delivery systems era chair initiative

**2. PN-II-ID-PCCE-2011-2-0028,** Biologically inspired systems for engineered structural and functional entities

**3.** Materials suitable for $CO_2$ capture and sequestration, through chemical reaction, based on azomethine derivatives

**4. PN-III-P3-3.1-PM-RO-CN-2018-0098,** Chitosan based hydrogels as luminescent chemosensors for detection and removal of heavy metals

**5. PN-II-PT-PCCA-2013-4-1861,** Flexible white OLEDs for lighting applications

**6. PN-II-RU-TE-2014-4-2314,** Multifunctional dynamic hydrogels with tuned morphology for biomedical applications

**7. PN-II-RU-TE-2014-4-2976,** New approaches in designing polymer surfaces with controllable pattern for applications in biomedicine and high technologies

**8. PN-III-P1-1.2-PCCDI-2017-0917,** Platformă hibridă de comunicații prin lumină vizibilă și realitate pentru dezvoltarea de sisteme inteligente de asistență și siguranță activă a autovehiculelor

**9. PN-III-P1-1.2-PCCDI-2017-0569,** Closing of value chains in bioeconomy by obtaining innovative bioproducts required by the market

**10. PN-III-P2-2.1-PED-2019-5071,** Norfloxacin Release for the Healing of Burn Wounds (BurnHeal)

**11. RO-NO-2019-0540,** Nanomateriale ecologice pe baza de chitosan pentru aplicatii de interes contemporan

**12. PN-III-P4-ID-PCE2020-2717,** Eco-Nanomaterials Based on Chitosan for Applications of Contemporary Interest (ECO-MAT)

**13. H2020-MSCA-RISE-2019, SWORD-DLV-873123,** Smart Wound monitoring Restorative Dressings

***Project director***

**PN-III-P1-1.1-PD-2019-1021,** *Chitooligosaccharides based hydrogels for the co-delivery of antiviral and antifungal agents.*

***International and national conferences:***

***a) Oral communications***

1. L. Marin, **D. Ailincai,** M.M. Iftime, A.M. Craciun, A. Bejan, A. Anisiei, B.I. Andreica, S. L. Marin, **D. Ailincai,** M.M. Iftime, A.M. Craciun, A. Bejan, A. Anisiei, B.I. Andreica, S. Cibotaru, Chitosan based biomaterials: insights into chemistry, properties and their applications", IasiCHEM-MIT 2023 în era abordărilor Multidisciplinare, Interdisciplinare și Transdisciplinare, October 2023, Iasi, Romania – invited lecture.
2. **D. Ailincai,** S. Cibotaru, A. Anisiei, I. Rosca, L. Mititelu-Tartau, L. Marin, Chitosan nanofibers for burn healing applications, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), September 2023, Graz, Austria.
3. S. Cibotaru, **D. Ailincai,** B.-I. Andreica, L. Marin, TEGylated phenothiazine-chitosan based frameworks for mercury recovery, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), September 2023, Graz, Austria.
4. S. Cibotaru, **D. Ailincai,** A. Anisiei, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin, Bandages based on chitosan nanofibers with broad-spectrum antimicrobial activity for wound healing applications, Progress in Organic and Macromolecular Compounds (MACROIasi 2023), 29th edition, October 2023, Iasi, Romania.
5. **D. Ailincai,** L. Marin, Antifungal biocompatible hydrogels as matrix for antiviral drug release, European Polymer Congress (EPF2022), 26 June – 01 July 2022, Prague, Czech Republic.
6. L. Marin, **D. Ailincai**, S. Cibotaru, A. Anisiei, I. Rosca, L. Mititelu-Tartau, Biodegradable chitosan based nanofibers with broad spectrum antimicrobial activity for wound healing applications, European Polymer Congress 2022 (EPF 2022), 26 June – 01 July 2022, Prague, Czech Republic.
7. **D. Ailincai**, L. Marin, Biocompatible hydrogels as matrix for the obtaining of antiviral drug delivery systems, International Conference on Materials Science and Engineering (BraMat), March 2022, Brasov, Romania.
8. S. Cibotaru, **D. Ailincai**, A. Anisiei, L. Marin, Bandages based on chitosan nanofibers for burn healing applications, International Conference on Materials Science and Engineering (BraMat), March 2022, Brasov, Romania.
9. **D. Ailincai**, I. Rosca, S. Morariu, L. Mititelu Tartau, L. Marin, Biocompatible Hydrogels with Broad-spectrum Antimicrobial Activity, Progress in organic and macromolecular compounds conference Macroiasi, October 2021, Iasi, Romania.
10. B.I. Andreica, **D. Ailincai**, L. Marin, Ring-Opening Polymerization as a technique for the obtaining of soluble chitosan derivatives, Sesiunea de comunicări ştiinţifice a tinerilor cercetători ICMPP – poartă deschisă spre viitor (MacroYouth'2020), Nobember 2020, Iasi, Romania.

11. B. I. Andreica, **D. Ailincai**, L. Marin, Chitosan based copolymers with enhanced solubility properties, 13th Students' Congress of SCTM, September 2019, Skopje, North Macedonia.
12. **D. Ailincai**, L. Marin, Citryl-imine-PEG-ylated chitosan hydrogels – promising materials for bioapplications, European Polymer Congress, June 2019, Hersonissos, Crete, Greece.
13. **D. Ailincai**, L. Marin, Iminoboronate chitosan hydrogels – promising materials for the treatment of candidiasis, 9th International Conference of the Chemical Societies of the South-East European Countries, May 2019, Targoviste, Romania.
14. L. Marin, **D. Ailincai**, M.M. Iftime, A.M. Craciun, A. Bejan, Chitosan hydrogelation with monoaldehydes: a new strategy to multifunctional biomaterials, 9th International Conference of the Chemical Societies of the South-East European Countries, May 2019, Targoviste, Romania.
15. **D. Ailincai**, A. Bejan, L. Marin, Chitosan imination towards highly luminescent materials, 14th IUPAC International Conference on Novel Materials and their Synthesis (NMS-XIV), October 2018, Guangzhou, China.
16. **D. Ailincai**, M. Pinteala, L. Marin, Nonviral vectors based on dynamic hydrophilic hydrophobic imines, A XXXV-a Conferința Nationala de Chimie, October 2018, Calimanesti-Caciulata, Romania.
17. L. Marin, **D. Ailincai**, B.C. Simionescu, Chitosan hydrogelation with monoaldehydes. A straight pathway to biomaterials, Tenth Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science, June 2018, Bucharest, Romania
18. A.-M. Olaru, **D. Ailincai**, M. Mares, M. Pinteala, L. Marin, Chitosan imination - a straight pathway to dynamic antimicrobial biomaterials, First Balkan Conference of Medical Mycology and Mycotoxicology – Balkan Fungus, September 2018, Timisoara, Romania
19. **D. Ailincai**, M. Mares, A.-C. Bostanaru, M. Pinteala, L. Marin, Biomaterials with strong antimicrobial properties based on dynamic iminochitosan derivatives, First Balkan Conference of Medical Mycology and Mycotoxicology – Balkan Fungus, September 2018, Timisoara, Romania.
20. **D. Ailincai**, Biocompatible hydrogels based on the self-assembling of citril-imino-chitosan dynamer, The 11th Edition of symposium with international participation, June 2018, Timisoara.
21. **D. Ailincai**, L. Marin, B.C. Simionescu, Supramolecular citryl-imino-chitosan hydrogels as drug delivery systems, Tenth Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science, June 2018, Bucharest, Romania.
22. **D. Ailincai**, L. Marin, Dynamic constitutional chemistry approach towards nonviral vectors for gene therapy, Wuhan Institute of Technology, October 2018 - invited lecture.
23. **D. Ailincai**, L. Marin, Obtinerea de hidrogeluri biocompatibile prin autoansamblarea unor amfifili pe baza de citral si chitosan, Zilele Academice Iesene, A XXVI Sesiune de Comunicari Stiintifice a Institutului de Chimie Macromoleculara „Petru Poni", October 2017, Iasi, Romania.
24. **D. Ailincai**, L. Marin, D. Peptanariu, M. Pinteala, Vecteurs non viraux bases sur des imines hydrophobes-hydrophiles a travers la chimie covalente dynamique, 4eme Colloque Franco-Roumain de Chimie Medicinale, October 2017, Iasi, Romania.
25. **D. Ailincai**, M. Pinteala, M. Barboiu, L. Marin, Hydrogels based on iminoboronate motif as promising materials for the treatment of Candidiasis, EMN Meeting at Amsterdam, April 2017 - invited lecture.

26. **D. Ailincai**, M. Pinteala, B.C. Simionescu, M. Barboiu, L. Marin, Hydrogels based on chitosan and 2-formylphenyl boronic acid – promising materials for the treatment of Candida infections, XIIth Franco-Romanian Symposium on Polymers, September 2016, Sophia Antipolis, France.
27. **D. Ailincai**, L. Marin, Chitosan based hydrogels via iminoboronate motif as promising materials for the treatment of candidiasis, A XXXIV-a Conferinta Nationala de Chimie, 2016, Calimanesti – Caciulata, Romania.
28. **D. Ailincai**, L. Marin, M. Pinteala, M. Barboiu, Chitosan iminoboronate hydrogels with antifungal activity, ACS on Campus, May 2016, Bucharest, Romania.
29. **D. Ailincai**, Non-viral gene delivery vectors based on dynamic hydrophobic – hydrophilic imines, Seventh Cristofor I. Simionescu Symposium Frontiers in Macromolecular and Supramolecular Science, June 2015, Iasi, Romania.
30. **D. Ailincai**, B. C. Simionescu, L. Marin, Polymer dispersed liquid crystals based on polyvinylalcohol boric acid matrix, International Conference on Materials Science, Applied Physics and Chemistry, June 2015, London, United Kindgom.
31. **D. Ailincai**, L. Marin, M. Mares, B. C. Simionescu, The synthesis and characterization of new imino-chitosan biopolymeric films with antimicrobial properties, 3éme Colloque Franco-Roumain de Chimie Médicinale, October 2014, Iasi, Romania.
32. **D. Ailincai**, L. Marin, D. Peptanariu, D. Stan, C. A. Constantinescu, M. Călin, M. Pinteala, M. D. Barboiu, The synthesis and characterization of a new nonviral vector for DNA delivery based on benztrialdehyde, Jeffamine D and hyperbranched polyethyleneimine (PEI), 8éme Colloque Franco – Roumain de Chimie Appliquée, September 2014, Montpellier, France.

**b) Posters**

1. S. Cibotaru, **D. Ailincai,** A. Anisiei, L. Marin, Drug delivery systems based on imino-chitosan nanofibers for burn healing applications, EPF European Polymer Congress (EPF2022), 26 June – 01 July 2022, Prague, Czech Republic.
2. S. Cibotaru, **D. Ailincai**, B.-I. Andreica, L. Marin, Mercury recovery frameworks based on TEGylated phenothiazine-chitosan xerogels, Workshop of Instituto Nacional de Eletronica Organica (INEO) 2023, 2 – 6 April 2023, Nazare Paulista, Brazil.
3. S. Cibotaru, **D. Ailincai**, B.-I. Andreica, L. Marin, Mercury recovery frameworks based on TEGylated phenothiazine-chitosan xerogels, Workshop of Instituto Nacional de Eletronica Organica (INEO) 2023, Nazare Paulista, Brazil, 2 – 6 April 2023.
4. B.-I. Andreica, **D. Ailincai**, L. Marin, Synthesis of chitosan based derivatives with improved solubility in water, towards biomaterials' design, EPF European Polymer Congress 2022, Prague, Czech Republic, 26 June - 1 July 2022.
5. R. Lungu, A. Anisiei, I. Rosca, A.-I. Sandu, **D. Ailincai**, L. Marin, Double-functionalized chitosan nanofibers for wound healing, Progress in organic and macromolecular compounds conference MACROIasi, October 2021, Iasi, Romania.
6. **D. Ailincai**, L. Marin, Iminoboronate chitosan hydrogels- a promissing tool in the treatment of Candida infections, 5th International Conference on Chemical Engineering Romania (ICCE 2020), October 2020, Iasi, Romania.

7. B.I. Andreica, **D. Ailincai**, L. Marin, Chitosan copolymers with improved solubility by Ring-Opening Polymerization technique, 5th International Conference on Chemical Engineering Romania (ICCE 2020), October 2020, Iasi, Romania.
8. B. I. Andreica, **D. Ailincai**, L. Marin, Noi derivati de chitosan cu solubilitate imbuntatita, Sesiunea de comunicări ştiinţifice a studenţilor, masteranzilor şi doctoranzilor "Chimia - frontieră deschisă spre cunoaştere", ediţia a X-a, June 2019, Iasi, Romania
9. B.I. Andreica, **D. Ailincai**, L. Marin, Synthesis and characterization of a novel chitosan derivative using trimethylene carbonate, 9th International Conference of the Chemical Societies of the South-East European Countries, May 2019, Targoviste, Romania.
10. 8. A. Bejan, L. Marin, **D. Ailincai**, Poly(azomethine-phenothiazine) Dyes with Efficient Green Light Emission in Solid State, European Polymer Congress (EPF), June 2018, Heraklion, Greece.
11. **D. Ailincai**, L. Marin, Biocompatible hydrogels based on citryl-imino-chitosan dynamer. Synthesis. Characterization. Applications, Bio-Based Polymers and Composites, September 2018, Balatonfured, Hungary.
12. **D. Ailincai**, Biocompatible hydrogels based on imino-boronate motif as promising materials for the treatment of Candidisis, Bio-Based Polymers and Composites, September 2018, Balatonfured, Hungary.
13. A. Bejan, **D. Ailincai**, L. Marin, Polyazomethines based on phenothiazine dye with efficient green light emission in solid state, 16th EPF European polymer congress, Iulie 2017, Lyon, Franta.
14. **D. Ailincai**, L. Marin, C.-M. Popescu, Supramolecular chitosan hydrogels via reversible imine linkage, 2nd EPNOE Junior Meeting, October 2016, Sophia Antipolis, Franta.
15. **D. Ailincai**, L. Buruiana, A. Barzic, Influence of molecular weight on isotropic-anisotropic transition in a cellulose derivative: rheology and optical microscopy investigations, Analytical Chemistry for a better life, August 2016, Iasi, Romania.
16. **D. Ailincai**, B.C. Simionescu, M. Pinteala, L. Marin, Chitosan iminoboronate hydrogels – new promising materials for the treatment of candidiasis, Eight Cristofor Simionescu Symposium, June 2016, Iasi, Romania.
17. G. David, A. Coroaba, L. Ursu, D. Peptanariu, **D. Ailincai**, M. Pinteala, Hybrid biopolymer/synthetic multilayer micro-/nanocapsules for drug/gene delivery, Fourth International Conference on Multifunctional, Hybrid and Nanomaterials, March 2015, Sitges, Spain.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

# *Publication List*

*Manuela-Maria IFTIME*

## *Book*

Synthesis and study of aromatic polysulfones for high performance applications, **M.M. Iftime**, Ed. Tehnopress, ISBN: 978-606-687-394-9, Iasi, 2020.

## *Book chapters and proceedings*

**1.** V. Cozan, G. Hitruc, E. Perju, **M. Iftime**, M. Bruma, N. M. Belomoina, "Composite systems based on liquid crystalline azomethine compounds and amorphous polysulfone matrix" in: Unique Properties of Polymers and Composites: Pure and Applied Science Today and Tomorrow, Vol.1, Ed. Bubnov Y.N., Vasnev V. A., Askadskii A. A., Zaikov G. E., Nova Science Publishers, Inc., New York, p.187, 2012.

**2.** V. Cozan, **M. Ciobanu**, L. Marin, "Aromatic Copoly(Ether Sulfone)s" in Functional Polymeric Materials Designed for Hi-Tech Applications, M. Nechifor (ed.) Transworld Research Network, Kerala, India, ISBN: 978-81-7895-448-6, 2010.

**3. M. Ciobanu**, V. Cozan, M. Bruma, "Poly(ether imide) copolymers containing aromatic sulfone units. Synthesis and characterization", STEPI 8 8th International Technical Symposium on Polyimides and High Performance Functional Polymers, Montpellier, June 9-11, France, pp. 126-135, 2008.

**4.** L.Marin, D. Ailincai, **M.Iftime**, A.M. Craciun, A. Bejan, M.Pinteala, M.J.M. Abadie, Hydrogelation of Chitosan with Monoaldehydes Towards Biomaterials with Tuned Properties, In book: New Trends in Macromolecular and Supramolecular Chemistry for Biological Applications, May 2021, 345-356, https://doi.org/10.1007/978-3-030-57456-7

**5.** D. Ailincai, **M. M. Iftime**, L. Marin, "Obtinere de hidrogeluri pe baza de chitosan" in: Hidrogeluri dinamice multifunctionale cu morfologie controlata pentru aplicatii biomedicale, L. Marin, Ed., Tehnopress, ISBN: 978-973-606-300-0, Iasi, p.23-46, 2017.

**6. M.M. Iftime**, L. Marin, "Hidrogeluri pe baza de chitosan si salicilaldehida" in: Hidrogeluri dinamice multifunctionale cu morfologie controlata pentru aplicatii biomedicale, L. Marin, Ed., Tehnopress, ISBN: 978-973-606-300-0, Iasi, p.79-96, 2017.

**7. M.M. Iftime,** L. Marin, "Hidrogeluri pe baza de chitosan si aldehida betulinica" in: Hidrogeluri dinamice multifunctionale cu morfologie controlata pentru aplicatii biomedicale, L. Marin, Ed., Tehnopress, ISBN: 978-973-606-300-0, Iasi, p.157-174, 2017.

## *ISI papers*

1. New copoly(ether-imide-sulfone) oligomers having pendant ionic groups; **M. Ciobanu**, C. E. Brunchi, E. Perju, V. Cozan, M. Bruma, Revue Roumaine de Chimie 54(8), 685-692 (2009), https://revroum.lew.ro/wp-content/uploads/2009/RRCh_8_2009/Art%2008.pdf ($IF_{2022}$=0.5 $Q_{FI}$=1) ($AIS_{2022}$=0.052, $Q_{AIS}$=4)

2. Aromatic polysulfones used in sensor in sensor applications; **M. Ciobanu**, L. Marin, V. Cozan, M. Bruma, Reviews on Advanced Materials Science 22, 89 - 96 (2009), https://www.ipme.ru/e-journals/RAMS/no_12209/ciobanu.pdf ($IF_{2022}$=3.6, $Q_{FI}$=2) ($AIS_{2022}$=0.367, $Q_{AIS}$=3)

3. New Poly(arylene ether sulfone)s Containing Phenolphthalein and Fluorene Moieties in the main chain; **M. Ciobanu**, V. Cozan, M. Bruma, R. S. Begunov, A. L. Rusanov, N. M. Belomoina, High Performance Polymers, 22(6), 666-681 (2010), https://journals.sagepub.com/doi/10.1177/0954008309354130 ($IF_{2022}$=2.1, $Q_{FI}$=2) ($AIS_{2022}$ =0.288, $Q_{AIS}$ = 3)

4. Association phenomena of poly(arylene ether sulfone)s in dimethylformamide; **M. Iftime**, C. Racles, V. Cozan, M. Bruma, A. L. Rusanov, Journal of Macromolecular Science, Part B. 51(8), 1668-1680 (2012) https://www.tandfonline.com/doi/abs/10.1080/00222348.2012.657134?journalCode=lmsb20 ($IF_{2022}$=1.4, $Q_{FI}$ = 4) ($AIS_{2022}$=0.139, $Q_{AIS}$=4)

5. New copoly(ether sulfone)s containing azobenzene crown-ether and fluorene moieties **M. Iftime**, R. Ardeleanu, N. Fifere, A. Airinei, V. Cozan, M. Bruma, Dyes and Pigments 106, 111-120 (2013), https://www.sciencedirect.com/science/article/abs/pii/S014372081400076X ($IF_{2022}$=4.5, $Q_{FI}$=1) ($AIS_{2022}$=0.508, $Q_{AIS}$=2)

6. Synthesis and thermotropic properties of polyazomethine-containing side chain azobenzene moieties V. Cozan, **M. Iftime**, I. Sava, S. Bronnikov, High Performance Polymers., 27, 661-668 (2015), https://journals.sagepub.com/doi/10.1177/0954008315584179 ($IF_{2022}$=2.1, $Q_{FI}$=2) ($AIS_{2022}$=0.288, $Q_{AIS}$=3)

7. Salicyl-imine-chitosan hydrogels: Supramolecular architecturing as a crosslinking method toward multifunctional hydrogels **M.-M.Iftime**, S. Morariu, L. Marin, Carbohydrate Polymers, 165, 39–50 (2017), https://www.sciencedirect.com/science/article/abs/pii/S0144861717301479 ($IF_{2022}$=11.2, $Q_{FI}$=1) ($AIS_{2022}$=1.238, $Q_{AIS}$=1)

8. Chitosan based hydrogels. From classic to dynamic materials D. Ailincai, **M.-M. Iftime,** L. Marin, Memoirs of the Scientific Sections of the Romanian Academy, Tome XL, 1-22 (2017), http://mss.academiaromana-is.ro/mem_sc_st_2017/5_Chitosan.pdf

9. Chiral betulin-imino-chitosan hydrogels by dynamic covalent sonochemistry **M.-M. Iftime**, L. Marin Ultrasonics – Sonochemistry, 45, 238–247 (2018), https://www.sciencedirect.com/science/article/abs/pii/S135041771830511X ($IF_{2022}$=8.4, $Q_{FI}$=1) ($AIS_{2022}$=1.006, $Q_{AIS}$=1)

10. Comparative study of PDLC composites based on nematic and smectic liquid crystals D. Ailincai, A. Bejan, A. M. Olaru, **M.-M. Iftime**, E. Perju, Revue Roumaine de Chimie, 63 (7-8), 649-656 (2018), https://revroum.lew.ro/wp-content/uploads/2018/07/Art%2010.pdf ($IF_{2022}$=0.5 $Q_{FI}$=1) ($AIS_{2022}$=0.052, $Q_{AIS}$=4)

11. Designing chitosan based eco-friendly multifunctional soil conditioner systems with urea controlled release and water retention; **M-M. Iftime**, G.L. Ailiesei, E. Ungureanu, L. Marin;

*Carbohydrate Polymers* 223, 115040 (2019) https://doi.org/10.1016/j.carbpol.2019.115040 ($IF_{2022}$=11.2, $Q_{FI}$=1) ($AIS_{2022}$=1.238, $Q_{AIS}$=1)

12. Asymmetric azomethine amines with azobenzene moieties – liquid crystalline and optical properties, **M.-M. Iftime**, V.Cozan, A. Airinei, C.Varganici, G. Ailiesei, D. Timpu, I. Sava, *Liquid Crystal*, 46, 10, 1584-1594, (2019), https://doi.org/10.1080/02678292.2019.1640903 ($IF_{2022}$=2.2, $Q_{FI}$=3) ($AIS_{2022}$=0.263, $Q_{AIS}$=3)

13. New formulations based on salicyl-imine-chitosan hydrogels for prolonged drug release; **M.M. Iftime**, L. Mititelu-Tartau, L. Marin; International Journal of Biological Macromolecules 160, 398-408 (2020) https://doi.org/10.1016/j.ijbiomac.2020.05.207 ($IF_{2022}$=8.2, $Q_{FI}$=1) ($AIS_{2022}$=0.918, $Q_{AIS}$=1)

14. A Theoretical Multifractal Model for Assessing Urea Release from Chitosan Based Formulations; **M. M. Iftime**, S. A. Irimiciuc, M. Agop , M. Angheloiu , L. Ochiuz, D. Vasincu, Polymers, 12, 1264 (2020), https://www.mdpi.com/2073-4360/12/6/1264 ($IF_{2022}$=5, $Q_{FI}$=1) ($AIS_{2022}$ = 0.604, $Q_{AIS}$ = 1)

15. Ultrasonication - a potential method toward chitosan hydrogels; **M.M. Iftime**, M. Angheloiu, Materiale Plastice, 57, 2, 67-77 (2020), https://doi.org/10.37358/MP.20.2.5352 ($IF_{2022}$=0.8, $Q_{FI}$=4) ($AIS_{2022}$=0.064, $Q_{AIS}$=4)

16. A theoretical mathematical model for assessing diclofenac release from chitosan-based formulations; **M.M. Iftime**, D. L. Dobreci, S. A. Irimiciuc, M. Agop , T. Petrescu, B. Doroftei, Drug Delivery, 27 (1), 1125-1133, (2020), https://www.tandfonline.com/doi/full/10.1080/10717544.2020.1797242 ($IF_{2022}$=6, $Q_{FI}$=1) ($AIS_{2022}$=0.82, $Q_{AIS}$=2)

17. Dynamic mechanical analysis investigations of pla-based renewable materials: how are they useful?; M. Cristea, D. Ionita, **M. M. Iftime,** Materials, 13(22), 5302 (2020); https://doi.org/10.3390/ma13225302, ($IF_{2022}$=3.4, $Q_{FI}$=2) ($AIS_{2022}$=0.51, $Q_{AIS}$= )

18. Modulation of the PLLA Morphology through Racemic Nucleation to Reach Functional Properties Required by 3D Printed Durable Applications; D. Dimonie, S. Mathe, **M.M. Iftime**, D. Ionita, R. Trusca, S. Iftimie, Materials, 14, 6650 (2021) https://www.mdpi.com/1996-1944/14/21/6650 ($IF_{2022}$=3.4, $Q_{FI}$=2) ($AIS_{2022}$=0.51, $Q_{AIS}$=2)

19. Chitosan crosslinking with a vanillin isomer toward self-healing hydrogels with antifungal activity **M.M. Iftime**, I.Rosca, A.-I. Sandu, L. Marin, International. Journal of Biological Macromolecules 205, 574–586 (2022) *https://www.sciencedirect.com/science/article/abs/pii/S0141813022003130?via%3Dihub* ($IF_{2022}$=8.2, $Q_{FI}$=1) ($AIS_{2022}$=0.918, $Q_{AIS}$=1)

20. Rheological properties of salicyl-imine-chitosan hydrogels: Effect of crosslinking density; **M.M Iftime**, S. Morariu, Cellulose Chemistry and Technology 56 (7-8), 757-767 (2022) https://www.cellulosechemtechnol.ro/pdf/CCT7-8(2022)/p.757-765.pdf ($IF_{2022}$=1.3, $Q_{FI}$=3) ($AIS_{2022}$=0.132, $Q_{AIS}$=3)

21. Development of Hybrid Materials Based on Chitosan, Poly(Ethylene Glycol) and Laponite® RD: Effect of Clay Concentration, S. Morariu, C.-E Brunchi, M. Honciuc, **M.-M. Iftime** Polymers,15, 841 (2023) https://doi.org/10.3390/polym15040841 ($IF_{2022}$=5, $Q_{FI}$=1) ($AIS_{2022}$=0.604, $Q_{AIS}$=1)

22. Xanthan gum in solution and solid like state: effect of temperature and polymer concentration. C.-E. Brunchi, S. Morariu, **M.-M. Iftime**, I. Stoica, Journal of Molecular Liquid, 387, 122600, (2023) https://doi.org/10.1016/j.molliq.2023.122600 ($IF_{2022}$=6, $Q_{FI}$=1) ($AIS_{2022}$=0.661, $Q_{AIS}$=2)

23. New betulin imine derivatives with antioxidant and selective antitumor activity; **M.-M. Iftime**, G.L. Ailiesei, S. Shova, C. Miron, H. Tanaka, M. Hori, L. Marin; New Journal of Chemistry 47,16551-16563 (2023) https://doi.org/10.1039/D3NJ02738D ($IF_{2022}$=3.3, $Q_{FI}$=2) ($AIS_{2022}$=0.443, $Q_{AIS}$=3)

24. Evaluation of PVA-Xanthan Gum Hydrogels Loaded with Neomycin Sulfate as Systems for Topical Infections Treatment, D. Serbezeanu, **M.-M. Iftime**, G.L. Ailiesei, A.M. Ipate, A. Bargan, T.Vlad-Bubulac, C.M. Rimbu, Gels 9(8) 655, (2023) https://www.mdpi.com/2310-2861/9/8/655, $IF_{2022}$=4.5, $Q_{FI}$=1) ($AIS_{2022}$=0.626, $Q_{AIS}$=1)

25. Theoretical-experimental approach of chitosan/quaternized chitosan nanofibers' behavior in wound exudate media; B.-I. Andreica, A. Anisiei, **M.-M. Iftime**, R. V. Ababei, L. Ochiuz, D. Vasincu, I. A. Vasilache, C. Volovat, D. Boboc, V. Poroch, L. Eva, M. Agop, D.-V. Scripcariu, S. R. Volovat; Pharmaceutics 15(12), 2722 (2023) https://doi.org/10.3390/pharmaceutics15122722 ($FI_{2022}$=5.4, $Q_{FI}$=Q1) ($AIS_{2022}$=0.879, $Q_{AIS}$=2)

***Project member***

1. **RO-NO-2019-0540,** Integrated use of the next generation plant biostimulants for an enhanced sustainability of field vegetable high residue farming systems

2. **PN-III-P1-1.2-PCCDI-2017-0917,** Hybrid visible light communications and augmented reality platform for the development of smart driver assistance and vehicle active safety systems

3. **PN-III-P1-1.2-PCCDI-2017-0569,** Closing of value chains in bioeconomy by obtaining innovative bioproducts required by the market

4. **PN-III-P1-1.2-PCCDI-2017-0428,** Innovative technologies based on polymers for the obtaining of new advanced materials

5. **PN-III-P3-3.1-PM-RO-CN-2018-0098,** Chitosan based hydrogels as luminescent chemosensors for detection and removal of heavy metals

6. **PN-II-RU-TE-2014-4-2314,** Multifunctional dynamic hydrogels with tuned morphology for biomedical applications

7. **PN-III-P4-ID-PCE2020-2717,** Eco-Nanomaterials Based on Chitosan for Applications of Contemporary Interest (ECO-MAT)

8. **H2020-MSCA-RISE-2019, SWORD-DLV-873123,** Smart Wound monitoring Restorative Dressings

***International and national conferences:***

***a) Oral communications***

1. L. Marin, D. Ailincai, **M.M. Iftime**, A.M. Craciun, A. Bejan, A. Anisiei, B.I. Andreica, S. Cibotaru, "Chitosan based biomaterials: insights into chemistry, properties and their applications", IasiCHEM-MIT 2023 în Era Abordărilor Multidisciplinare, Interdisciplinare și Transdisciplinare, a V-a ediție a Conferinței IasiCHEM, Iasi, Romania, 26-27 October, 2023.

2. **M.M. Iftime**, I.Rosca, A.-I. Sandu, L. Marin, Chitosan crosslinking with a vanillin isomer toward self-healing hydrogels with antifungal activity, 29th Edition Progress in Organic and Macromolecular Compounds (MACROIasi 2021) Iasi, Romania, 4-6 October, 2023

3. **M.M. Iftime**, S. Morariu, "Effect of crosslinking degree on the rheology of salicyl-imine-chitosan hydrogels", International Conference on Rheology L5, Iasi, Romania, 26 May, 2022

4. **M.M. Iftime**, L. Marin, "New delivery systems based on chitosan hydrogels for agricultural applications", 12th International Conference on Materials Science & Engineering (BRAMAT), Brasov, Romania, 9-12 March, 2022

5. **M.M. Iftime**, L. Mititelu Tartau, L. Marin, "Salicyl-imine-chitosan hydrogels for prolonged drug release", 28th Edition Progress in Organic and Macromolecular Compounds (MACROIasi 2021), Iasi, Romania, 7-9 October, 2021

6. D. Ionita, **M.M. Iftime**, D. Dimonie, M. Cristea, Crystallization and thermo-mechanical behavior of poly(lactic acid): effect of additives, Sesiunea de comunicări ştiinţifice a tinerilor cercetători poartă deschisă spre viitor, MacroYouth, Iasi, Romania, 19 November, 2020

7. **M.M. Iftime**, L. Marin, G.L. Ailiesei, „Hidrogeluri pe baza de chitosan si salicilaldehida-sisteme de eliberare controlata a ureei", A 27-a Sesiune de comunicari stiintifice „Progrese in stiinta compusilor organici si macromoleculari", organizata in cadrul Zilelor Academice Iesene, Iasi, Romania, 2-4 October, 2019

8. L. Marin, D. Ailincai, **M.M. Iftime**, A. M. Craciun, A. Bejan," Chitosan hydrogelation with monoaldehydes: a new strategy to multifunctional biomaterials", 9th International Conference of the Chemical Societies of the South-East European Countries, Targviste, Romania, 8-11 May, 2019

9. **M.M. Iftime**, L. Marin, "Chiral hydrogels based on chitosan and betulinic aldehyde", 4th International Conference on Bio-based Polymers and Composites (BiPoCo), Balatonfüred, Hungary, 2-6 September, 2018

10. **M.M. Iftime**, Luminita Marin, "Chiral betulin-imine chitosan hydrogels", A XXXV-a Conferinţa Naţională de Chimie, Călimăneşti-Căciulata, Romania, 2-5 October, 2018

11. M. Cristea, D. Ionita, V. Hurduc, **M. Iftime**, S. Oprea, "How small changes produce major effects in DMA results ", 3rd SSR-Summer School of Rheology, Gura Humorului, Romania, 19-23 June, 2017

12. Cristea, V. Hurduc, **M. Iftime**, D. Ionita, S. Oprea, "Polyurethane structures investigated by dynamic mechanical analysis: comments on loading type-dependent viscoelastic behavior ", 4th

Central and Eastern European Conference on Thermal Analysis and calorimetry (CEEC-TAC4), Chisinau, Moldova, 28-31 August, 2017

13. **M. Iftime,** L. Marin, "Supramolecular layering as an innovative method for the development of chitosan-based hydrogels ", EMN Meeting on Hydrogel Materials, Amsterdam, Netherlands, 24-28 April, 2017.

14. **M.M. Iftime**, L. Marin, M. Cristea, Hidrogeluri superabsorbente pe baza de imino-chitosan, A XXVI Sesiune de Comunicari Stiintifice a Institutului de Chimie Macromoleculara „Petru Poni" Iasi, Romania, 5-6 October, 2017

15. **M.M. Iftime**, L. Marin, S.Morariu, "Superporous Salicyl-Imine-Chitosan Hydrogels", A XXXIV-a Conferinta Nationala de Chimie, Calimanesti – Caciulata, Romania, 4-7 October, 2016

16. **M.M. Iftime**, L. Marin, "Preparation and characterization of super-porous hydrogels based on chitosan ", XIIth Franco-Romanian Symposium on Polymers, Sophia Antipolis, France, 5-7 September, 2016

17. C. Racles, M. Cristea, M. Alexandru, **M. Ciobanu**, F. Doroftei, "Noi materiale compozite avand ca faza dispersa micro/nano-particule polimerice", Zilele Academice Iesene, a XXI-a Sesiune de comunicari stiintifice a ICM Petru Poni, Progrese in Stiinta Compusilor Organici si Macromoleculari, Iasi, Romania, 8-10 October, 2009

18. **M. Ciobanu**, I. Sava, V. Cozan, L. Marin, E. Perju, M. Bruma, "Poliazometine cu grupe azo pendante. Sinteza si proprietati termotrope", a XXX-a Conferinta Nationala de Chimie, Calimanesti-Caciulata, Romania, 8-10 October, 2008

19. E. Perju, V. Cozan, **M. Ciobanu**, M. Bruma, "Studiul proprietatilor termotrope ale unor monomeri azometinici cu si fara grupe laterale metoxi", A XXX-a Conferința Națională de Chimie, Calimanesti-Caciulata, Romania, 8-10 October, 2008

***b) Posters***

1. **M.M. Iftime**, F.Georgescu, A. Nicolescu, L.Marin, F. Oancea, Glycodinameric hydrogels based on chitosan, XIX the Edition of the International Symposium Priochem "Priorities of Chemistry for a Sustainable Development" 11-13 October, 2023

2. **M.M. Iftime**, L. Marin, "New multifunctional formulations based on imino-chitosan hydrogels", European Polymer Congress (EPF), Prague, Czech Republic, 26 June - 1 July, 2022.

3. **M.M. Iftime**, L.Marin, "New urea delivery systems based on salicyl-iminechitosan hydrogels", 5th International Conference on Chemical Engineering Romania, Iasi, Romania, 28 - 30 October, 2020

4. **M.M. Iftime**, "Dynamic salicyl-imino-chitosan hydrogels based on reversible imine linkage", 4$^{th}$ International Conference on Bio-based Polymers and Composites (BiPoCo), Balatonfüred, Hungary, 2-6 September, 2018

5. G.-L.Ailiesei, **M. Iftime**, A. Nicolescu, L. Marin, C. Deleanu, "NMR evaluation of urea release from salicyl-imine-chitosan hydrogels", A XXXV-a Conferința Națională de Chimie, Călimănești-

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6. **M. Ciobanu**, V. Cozan, M. Bruma, "Polisulfone cu unitati de fenolftaleina si fluoren in catena principala – sinteza si proprietati optice", Zilele Academice Iesene, a XXI-a Sesiune de comunicari stiintifice a ICM Petru Poni, Progrese in Stiinta Compusilor Organici si Macromoleculari, Iasi, Romania, 8-10 October, 2009

7. **M. Ciobanu**, C. Racles, V. Cozan, M. Bruma, "Micellization of a poly(arylene ether sulfone) in dimethylformamide, observed by different methods", Rheology Workshop, Institutul de Chimie Macromoleculara Petru Poni, Iasi, Romania, 22 September, 2009

8. **M. Ciobanu**, C. Brunchi, E. Perju, M. Bercea, V. Cozan, M. Bruma," New copoly(ether sulfon-imide) oligomers with polyelectrolyte behavior", 3rd Bilateral Simposium on Functional Heterocyclic and Heterochain Polymers as Advanced Materials, Iasi, Romania, 1-7 September, 2008

9. E. Perju, **M. Ciobanu**, V. Cozan, M. Bruma, „Influence of methoxy side groups on the thermotropic behavior of calamitic azomethine mesogens", 3rd Bilateral Simposium on Functional Heterocyclic and Heterochain Polymers as Advanced Materials, Iasi, Romania, 1-7 September, 2008

10. **M. Ciobanu**, E. Perju, V. Cozan, M. Bruma," Poly(ether imide) copolymers containing aromatic sulfone units. Synthesis and characterization", 8th European Technical Symposium on Polyimides & High-Performance Polymers-STEPI 8, Montpellier, France, 9-11 June, 2008

11. **M. Ciobanu**, V. Cozan, I. Sava, L. Marin, M. Bruma, "Poliazometine fotosensibile pentru aplicatii de optica neliniara. Sinteza si proprietati termotrope", Zilele Academice Iesene, a XXI-a Sesiune de comunicari stiintifice a ICM Petru Poni Iasi, Progrese in Stiinta Compusilor Organici si Macromoleculari, Iasi, Romania, 26-29 September, 2007

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

# *Publication List*

*Andrei BEJAN*

## *Book chapters*

1. Hidrogeluri Dinamice Multifunctionale cu Morfologie Controlata pentru Aplicatii Biomedicale/ *Capitolul 7: Hidrogeluri Luminescente pe baza de Chitosan si Fenotiazina*; L. Marin, **A. Bejan**; Tehnopress, Iasi (2017). **ISBN: 978-606-687-300-0**

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

## *Publication list*

1. Chitosan nanofibers encapsulating copper oxide nanoparticles: A new approach towards multifunctional ecological membranes with high antimicrobial and antioxidant efficiency; **A. Bejan**, A. Anisiei, B.-I. Andreica, I. Rosca, L. Marin; International Journal of Biological Macromolecules 129377 (2024). (https://doi.org/10.1016/j.ijbiomac.2024.129377)

2. Outstanding Sorption of Copper (II) Ions on Porous Phenothiazine-Imine-Chitosan Materials; **A. Bejan**, L. Marin; Gels 9(2), 134 (2023). (https://doi.org/10.3390/gels9020134)

3. Microporous Polymelamine Framework Functionalized with Re(I) Tricarbonyl Complexes for $CO_2$ Absorption and Reduction; S. Zappia, E. Perju, **A. Bejan**, A. Coroaba, F. Bossola, J. Zeng, D. Sassone, L. Marin, S. Destri, W. Porzio; Polymers 14(24), 5472 (2022). (https://doi.org/10.3390/polym14245472)

4. Phenothiazine-chitosan based eco-adsorbents: A special design for mercury removal and fast naked eye detection; **A. Bejan**, F. Doroftei, X. Cheng, L. Marin; International Journal of Biological Macromolecules 162, 1839-1848 (2020). (https://doi.org/10.1016/j.ijbiomac.2020.07.232)

5. Phenothiazine based co-crystals with enhanced luminescence; L. Marin, **A. Bejan**, S. Shova; Dyes and Pigments 175, 108164 (2020). (https://doi.org/10.1016/j.dyepig.2019.108164)

6. Chitosan hydrogelation with a phenothiazine-based aldehyde: a synthetic approach toward highly luminescent materials; **A. Bejan**, D. Ailincai, B. C. Simionescu, L. Marin; Polymer Chemistry 9, 2359-2369 (2018). (https://doi.org/10.1039/C7PY01678F)

7. Phenothiazine based nanocrystals with enhanced solid-state emission; **A. Bejan**, L. Marin; Journal of Molecular Liquids 265, 299-306 (2018). (https://doi.org/10.1016/j.molliq.2018.05.125)

8. Phenothiazine-based dyes in solar cell technology; **A. Bejan**, L. Marin; Memoirs of the Scientific Sections of the Romanian Academy, Tome XL (2017).

9. Poly(azomethine-phenothiazine) s with efficient emission in solid state; L. Marin, **A. Bejan**, D. Ailincai, D. Belei; European Polymer Journal 95, 127-137 (2017). (https://doi.org/10.1016/j.eurpolymj.2017.08.006)

10. Low molecular weight microfibers with light sensing properties; **A. Bejan**, D. Peptanariu, B. Chiricuta, E. Bicu, D. Belei; Materiale Plastice 54, 655-658 (2017).

11. Structure-directed functional properties of phenothiazine brominated dyes: morphology and photophysical and electrochemical properties; **A. Bejan**, S. Shova, M.-D. Damaceanu, B. C. Simionescu, L. Marin; Crystal Growth & Design 16, 3716-3730 (2016). (https://doi.org/10.1021/acs.cgd.6b00212)

12. A new phenothiazine blue light emitter. Synthesis, structure and photophysical properties; **A. Bejan**, L. Marin, B. Chiricuta, D. Ailincai, B. C. Simionescu; Revue Roumaine de Chimie 61, 291-297 (2016).

13. Imino-chitosan derivatives. Synthetic pathway and properties; D. Ailincai, **A. Bejan**, I. Titorencu, M. Drobota, B. C. Simionescu; Revue Roumaine de Chimie 59, 385-392 (2014).

***Mobilities:***

1. "Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing", 5-15 September 2016, Reims Champagne-Ardenne University, Reims, France.

2. "Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing", 3-7 October 2016, Kaunas Technological University, Kaunas, Lithuania.

3. Photophysical measurements, 10-24 November 2019, Institute for Macromolecular Studies (ISMAC) of the Italian National Research Council (CNR), Milan, Italy.

***Project member:***

1. **PN-II-PT-PCCA-2013-4-1861**, Flexible organic white electroluminescent diodes for illumination.

2. **PN-II-RU-TE-2014-4-2314**, Multifunctional dynamic hydrogels with tuned morphology for biomedical applications.

3. **Horizon 2020 WIDESPREAD 2-2014: ERA Chairs, Project no 667387**, Laboratory of Supramolecular Chemistry for Adaptive Delivery Systems ERA Chair initiative – Dynameric networks and gels for delivery, cell recognition and cell growth

4. **PN-III-P1-1.2-PCCDI-2017-0917**, Platforma hibrida de comunicatii prin lumina vizibila si realitate augmentata pentru dezvoltarea de sisteme inteligente de asistenta si siguranta activa a autovehiculelor.

5. **Romanian Academy – Joint Research Projects with the National Research Council of Italy**, Materials suitable for $CO_2$ capture and sequestration, through chemical reaction, based on azomethine derivatives",

6. **Romanian – Chinese Joint Project, PN-III-P3-3.1-PM-RO-CN-2018-0098**, Chitosan based hydrogels as luminescent chemosensors for detection and removal of heavy metals.

7. **H2020-MSCA-RISE-2019**, Smart Wound monitoring Restorative Dressings.

8. **PN-III-P4-ID-PCE-2020-2717,** Eco-nanomaterials based on chitosan for applications of contemporary interest.

***International and national conferences:***

***a) Oral communications***

1. L. Marin, D. Ailincai, M.M. Iftime, A.M. Craciun, **A. Bejan**, A. Anisiei, B.I. Andreica, S. Cibotaru, *Chitosan based biomaterials: insights into chemistry, properties and their applications*, IasiCHEM-MIT 2023 în era abordărilor Multidisciplinare, Interdisciplinare și Transdisciplinare, a V-a ediție a Conferinței IasiCHEM, Iasi, Romania, 26-27 October, 2023

2. **A. Bejan,** A. Anisiei, L. Marin, *Chitosan/Quaternized chitosan – based nanofibers mesh as promising materials for air filtration*, The 14th International Conference of the European Chitin Society (EUCHIS 2023) and the 15th International Conference on Chitin and Chitosan (15th ICCC), Siglufjörður, Iceland, 2023.

3. **A. Bejan**, F. Doroftei, X. Cheng, L. Marin, *Phenothiazine-chitosan based materials for mercury removal and fast naked eye detection*, The 1st International Electronic Conference on "Green" Polymer Materials, 2020.

4. **A. Bejan**, L. Marin, *Phenothiazine Based Nanocrystals With Tuned Solid State Emission*, 9th International Conference of the Chemical Societies of the South-East European Countries, Targoviste, Romania, 2019.

5. **A. Bejan**, L. Marin, M. Pinteala, B. C. Simionescu, *Phenothiazine dyes as efficient luminescent materials*, Ninth Cristofor I. Simionescu Symposium – Frontiers in Macromolecular and Supramolecular Science, Iasi, Romania, 2017.

6. **A. Bejan**, L. Marin, M. Pinteala, M. Barboiu, *Brominated phenothiazine dyes with tuned emission color: Supramolecular structure, photophysical and electrochemical properties*, ACS on Campus, Bucharest, Romania, 2016.

7. **A. Bejan**, L. Marin, D. Belei, *Tuning the emission color of phenothiazine by introduction of electron-withdrawing groups*, ICMSAPC: XIII International Conference on Materials Science, Applied Physics and Chemistry, London, United Kingdom, 2015.

8. **A. Bejan**, D. Belei, L. Marin, *Phenothiazine derivatives. The influence of the substituent upon optical and electrochemical properties*, Zilele Universitatii "Alexandru Ioan Cuza", Conferinta Facultatii de Chimie, Iasi, Romania, 2014.

***b) Posters***

1. **A. Bejan,** L. Marin, *Outstanding sorption of copper (II) ions on porous phenothiazine-imine-chitosan materials*, The 14th International Conference of the European Chitin Society (EUCHIS 2023) and the 15th International Conference on Chitin and Chitosan (15th ICCC), Siglufjörður, Iceland, 2023.

2. **A. Bejan**, L. Marin, D. Ailincai, *Poly(azomethine-phenothiazine) Dyes with Efficient Green Light Emission in Solid State*, European Polymer Congress (EPF), Heraklion, Greece, 2019.

3. **A. Bejan**, A.-M. Olaru, M. Pinteala, L. Marin, *Novel luminescent hydrogels based on chitosan*, 4th International Conference on Bio-based Polymers and Composites, Balatonfured, Hungary, 2018.

4. **A. Bejan**, L. Marin, D. Ailincai, D. Belei, *Polyazomethines based on phenothiazine dye with efficient green light emission in solid state*, EPF: European Polymer Federation Congress, Lyon, France, 2017.

5. **A. Bejan**, L. Marin, M. Pinteala, M. Barboiu, *Luminescent hydrogels based on imino-chitosan as promising materials in sensing applications*, EMN Meeting on Hydrogel Materials, Amsterdam, Netherlands, 2017.

6. **A. Bejan**, M. Pinteala, M. Barboiu, L. Marin, *Supramolecular luminescent chitosan gels*, Zilele Universitatii "Alexandru Ioan Cuza", Conferinta Facultatii de Chimie, Iasi, Romania, 2016.

7. **A. Bejan**, M. Pinteala, B. C. Simionescu, L. Marin, *Phenothiazine dyes with tuned emission color*, Eigth Cristofor I. Simionescu Symposium – Frontiers in Macromolecular and Supramolecular Science, Iasi, Romania, 2016.

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# *Publication list*

***Sandu CIBOTARU***

## *ISI Papers*

1. Mesoporous chitosan nanofibers loaded with norfloxacin and coated with phenylboronic acid perform as bioabsorbable active dressings to accelerate the healing of burn wounds; D. Ailincai, **S. Cibotaru**, A. Anisiei, C. G. Coman, A. S. Pasca, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin; Carbohydrate Polymers 318, 121135 (2023) https://doi.org/10.1016/j.carbpol.2023.121135 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

2. Quaternized chitosan (nano)fibers: A journey from preparation to high performance applications; L. Marin, B.-I. Andreica, A. Anisiei, **S. Cibotaru**, M. Bardosova, E.M. Materon, O.N. Oliveira; International Journal of Biological Macromolecules 242, 125136 (2023) https://doi.org/10.1016/j.ijbiomac.2023.125136 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

3. TEGylated Phenothiazine-Imine-Chitosan Materials as a Promising Framework for Mercury Recovery; **S. Cibotaru**, D. Ailincai, B.-I. Andreica, X. Cheng, L. Marin; Gels 8(11), 692 (2022) https://doi.org/10.3390/gels8110692 $IF_{2022}$ = 4.5, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.626, $Q_{AIS}$ = 1)

4. Antitumor activity of PEGylated and TEGylated Phenothiazine derivatives: structure-activity relationship; **S. Cibotaru**, A.-I. Sandu, A. Nicolescu, L. Marin; International Journal of Molecular Sciences, 24(6), 5449 (2023) https://doi.org/10.3390/ijms24065449 ($IF_{2022}$ = 5.6, $Q_{FI}$ = 2) (AIS = 1.028, $Q_{AIS}$ = 2)

5. 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 37, 279-290 (2022) https://doi.org/10.1016/j.jare.2021.07.003 ($IF_{2022}$ =10.7, $Q_{FI}$ =1) ($AIS_{2022}$=1.768, $Q_{AIS}$ =1)

6. Dynamic PEGylated phenothiazine imines; synthesis, photophysical behavior and reversible luminescence switching in response to external stimuli, **S. Cibotaru**, A. Nicolescu, L. Marin; Journal of Photochemistry and Photobiology A: Chemistry 435, 114282 (2023) https://doi.org/10.1016/j.jphotochem.2022.114282 ($IF_{2022}$=4.3, $Q_{FI}$ = Q2) ($AIS_{2022}$ = 0.738, $Q_{AIS}$ = 2)

7. Water soluble PEGylated phenothiazines as valuable building blocks for biomaterials; **S. Cibotaru**, A.I. Sandu, D. Belei, L. Marin; Materials Science & Engineering *C* 116, 111216 (2020) https://doi.org/10.1016/j.msec.2020.111216 ($IF_{2022}$ = 7.9, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.948, $Q_{AIS}$ = 2)

## *Mobility:*

*Instituto de Fisica de Sao Carlos (IFSC),* Sao Paolo University, Sao Carlos, Brazil, 9 January – 10 April 2023.

## *Project member:*

1. **PN-III-P1-1.2-PCCDI-2017-0569**, Closing the loop in the bioeconomy value chains by fabrication of market-driven innovative bioproducts.

2. **PN-III-P2-2.1-PED-2019-5071**, Resorbable Bandage with "On Demand" Norfloxacin Release for the Healing of Burn Wounds (BurnHeal).

3. **PN-III-P4-ID-PCE2020-2717**, Eco-Nanomaterials Based on Chitosan for Applications of Contemporary Interest (ECO-MAT).

4. **H2020-MSCA-RISE-2019, SWORD-DLV-873123**, Smart Wound monitoring Restorative Dressings (SWORD).

***International and national conferences:***

***a) Oral communications***

1. L. Marin, D. Ailincai, M.M. Iftime, A.M. Craciun, A. Bejan, A. Anisiei, B.I. Andreica, **S. Cibotaru**, Chitosan based biomaterials: insights into chemistry, properties and their applications, IasiCHEM-MIT 2023 in era abordarilor Multidisciplinare, Interdisciplinare si Transdisciplinare (IasiCHEM), V$^{th}$ ed., October 26-27, 2023, Iasi, Romania.

2. **S. Cibotaru,** D. Ailincai, A. Anisiei, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin, Bandages based on chitosan nanofibers with broad-spectrum antimicrobial activity for wound healing applications, Progress in Organic and Macromolecular Compounds (MACROIasi2023), 29th ed., October 4-6, 2023, Iasi, Romania.

3. D. Ailincai, **S. Cibotaru**, A. Anisiei, I. Rosca, L. Mititelu-Tartau, L. Marin, Chitosan nanofibers for burn healing applications, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), September 18 – 22, 2023, Graz, Austria.

4. **S. Cibotaru,** D. Ailincai, B.-I. Andreica, L. Marin, TEGylated phenothiazine-chitosan based frameworks for mercury recovery, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), September 18 – 22, 2023, Graz, Austria.

5. **S. Cibotaru**, V. Nastasa, A-I. Sandu, A-C. Bostanaru, M. Mares, L. Marin, PEGylated phenothiazine derivatives with potent antitumor activity, European Polymer Congress 2022 (EPF 2022), 26 June – 01 July 2022, Prague, Czech Republic.

6. L. Marin, D. Ailincai, **S. Cibotaru**, A. Anisiei, I. Rosca, L. Mititelu-Tartau, Biodegradable chitosan based nanofibers with broad spectrum antimicrobial activity for wound healing applications, European Polymer Congress 2022 (EPF 2022), 26 June – 01 July 2022, Prague, Czech Republic.

7. **S. Cibotaru**, D. Ailincai, A. Anisiei, L. Marin, Bandages based on chitosan nanofibers for burn healing applications, The International Conference on Materials Science and Engineering (BraMat), March 09-12, 2022, Brasov, Romania.

8. **S. Cibotaru**, V. Nastasa, A-I. Sandu, A-C. Bostanaru, M. Mares, L. Marin, New PEGylated phenothiazine derivatives with tumor growth inhibition properties, International Congress of "Apollonia" University of Iasi, XXXII$^{nd}$ ed., , 27 February – 2 March 2022, Iasi, Romania.

9. **S. Cibotaru**, V. Nastasa, A.I. Sandu, A.C. Bostanaru, M. Mares, L. Marin, PEG-ylated Phenothiazine Derivatives. Synthesis and Antitumor Activity, 5th International Conference on

Nanotechnologies and Biomedical Engineering, 3-5 November 2021, Chisinau, Republic of Moldova.

10. **S. Cibotaru**, L. Marin, Novel luminescent phenothiazine derivatives for biological applications, ICMPP – Open Door to the Future. Scientific Communications of Young Researchers (MacroYouth' 2021), 19 November 2021, Iasi, Romania.

11. **S. Cibotaru**, A.I. Sandu, D. Belei, L. Marin, Tumor growth inhibition compounds based on PEGylated phenothiazine, ICMPP – Open Door to the Future. Scientific Communications of Young Researchers (MacroYouth'2020), 19 October 2020, Iasi, Romania.

12. **S. Cibotaru**, D. Belei, L. Marin, PEGylated phenothiazine derivatives as water soluble precursors for biomaterials, 13th Students' Congress of SCTM, 19-21 September 2019, Skopje, North Macedonia.

**b) Posters**

1. A. Alexandru, A. Bejan, **S. Cibotaru**, L. Marin, Quaternized chitosan nanofibers for bone regeneration, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), 18 - 22 September 2023, Graz, Austria.

2. **S. Cibotaru**, D. Ailincai, B.-I. Andreica, L. Marin, Mercury recovery frameworks based on TEGylated phenothiazine-chitosan xerogels, Workshop of Instituto Nacional de Eletronica Organica (INEO) 2023, 2 – 6 April 2023, Nazare Paulista, Brazil.

3. **S. Cibotaru**, D. Ailincai, A. Anisiei, L.Marin, Drug delivery systems based on imino-chitosan nanofibers for burn healing applications, EPF European Polymer Congress (EPF2022), 26 June – 01 July 2022, Prague, Czech Republic.

4. **S. Cibotaru**, A.-I. Sandu, D. Belei, L. Marin, Water soluble PEGylated phenothiazines. Synthesis, characterization and antitumor properties, E-conference "The First International Conference on "Green" Polymer Materials, 2020.

5. **S. Cibotaru**, A.-I. Sandu, D. Belei, L. Marin, PEGylated phenothiazine as water soluble building blocks for biomaterials, 5th International Conference on Chemical Engineering, 28-30 October 2020, Iasi, Romania.

6. **S. Cibotaru**, D. Belei, E. Bicu, L. Marin, Water soluble phenothiazine derivatives, Sesiunea de comunicari ştiintifice a studentilor, masteranzilor si doctoranzilor, "Chimia - frontieră deschisă spre cunoaştere", XII$^{nd}$ ed., 2019, Iasi, Romania.

7. **S. Cibotaru**, D. Belei, L. Marin, Water soluble phenothiazine derivatives, 9th International Conference of the Chemical Societies of the South-East European Countries, 8-11 May 2019, Targoviste, Romania.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

# *Publication list*

***Bianca Iustina ANDREICA***

## *ISI Papers*

1.Citryl-Imino-Chitosan Xerogels as Promising Materials for Mercury Recovery from Waste Waters; D. Ailincai, **B.-I. Andreica**; Polymers 16(1) (2024) https://doi.org/10.3390/polym16010019 ($IF_{2022}$ = 5, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.604, $Q_{AIS}$ = 1)

2. Theoretical-experimental approach of chitosan/quaternized chitosan nanofibers' behavior in wound exudate media; **B.-I. Andreica**, A. Anisiei, M.-M. Iftime, R. V. Ababei, L. Ochiuz, D. Vasincu, I. A. Vasilache, C. Volovat, D. Boboc, V. Poroch, L. Eva, M. Agop, D.-V. Scripcariu, S. R. Volovat; Pharmaceutics 15(12), 2722 (2023) https://doi.org/10.3390/pharmaceutics15122722 ($FI_{2022}$ = 5.4, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.879, $Q_{AIS}$ =2)

3. Quaternized chitosan-based nanofibers with strong antibacterial and antioxidant activity designed as ecological active food packaging; **B.-I. Andreica**, A. Anisiei, I. Rosca, L. Marin; Food Packaging and Shelf Life 39, 101157 (2023) https://doi.org/10.1016/j.fpsl.2023.101157 ($IF_{2022}$ = 8, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.947, $Q_{AIS}$ = 1)

4. Biodegradable trimethyl chitosan nanofiber mats by electrospinning as bioabsorbable dressings for wound closure and healing; A. Anisiei, **B.-I. Andreica**, L. Mititelu-Tartau, C.-G Coman, R. Bilyy, G. Bila, I. Rosca, A.-I Sandu, E. Amler, L. Marin; International Journal of Biological Macromolecules 249, 126056 (2023) https://doi.org/10.1016/j.ijbiomac.2023.126056 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

5. Quaternized chitosan (nano)fibers: A journey from preparation to high performance applications; L. Marin, **B.-I. Andreica**, A. Anisiei, S. Cibotaru, M. Bardosova, E.M. Materon, O.N. Oliveira; International Journal of Biological Macromolecules 242, 125136 (2023) https://doi.org/10.1016/j.ijbiomac.2023.125136 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

6. Quaternized chitosan/chitosan nanofibrous mats: An approach toward bioactive materials for tissue engineering and regenerative medicine; **B.-I. Andreica**, A. Anisiei, I. Rosca, A.-I. Sandu, A.-S. Pasca, L. Mititelu-Tartau, L. Marin; Carbohydrate Polymers 302, 120431 (2022) https://doi.org/10.1016/j.carbpol.2022.120431 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

7. TEGylated Phenothiazine-Imine-Chitosan Materials as a Promising Framework for Mercury Recovery; S. Cibotaru, D. Ailincai, **B.-I. Andreica**, X. Cheng, L. Marin; Gels 8(11), 692 (2022) https://doi.org/10.3390/gels8110692 ($IF_{2022}$ = 4.5, $Q_{FI}$ = Q1) ($AIS_{2022}$ = 0.626, $Q_{AIS}$ = 1)

8. 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, 414-424 (2021) https://doi.org/10.1016/j.ijbiomac.2021.10.174 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

9. Quaternary ammonium salts of chitosan. A critical overview on the synthesis and properties generated by quaternization; **B.-I. Andreica**, X. Cheng, L. Marin; European Polymer Journal 139, 110016 (2020) https://doi.org/10.1016/j.eurpolymj.2020.110016 ($IF_{2022}$ = 6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.669, $Q_{AIS}$ = 1)

***Mobilities:***

1. *Institut des Molécules et Matériaux du Mans (IMMM)*, Le Mans University, Le Mans, France, 9-22 May 2022.

2. *Instituto de Fisica de Sao Carlos (IFSC),* Sao Paolo University, Sao Carlos, Brazil, 9 January – 10 April 2023.

***Project member:***

1. **PN-III-P1-1.2-PCCDI-2017-0569**, Closing the loop in the bioeconomy value chains by fabrication of market-driven innovative bioproducts.

2. **PN-III-P2-2.1-PED-2019-5071**, Resorbable Bandage with "On Demand" Norfloxacin Release for the Healing of Burn Wounds (BurnHeal).

3. **PN-III-P4-ID-PCE2020-2717**, Eco-Nanomaterials Based on Chitosan for Applications of Contemporary Interest (ECO-MAT).

4. **H2020-MSCA-RISE-2019, SWORD-DLV-873123**, Smart Wound monitoring Restorative Dressings (SWORD).

***International and national conferences:***

***a) Oral communications***

1. **B.-I. Andreica**, A. Anisiei, I. Rosca, L. Marin, Imino-chitosan/quaternized chitosan nanofibers designed as active food packaging, ICMPP - Open Door to the Future - Scientific Communications of Young Researchers, Iasi, Romania, 17 November 2023.

2. L. Marin, D. Ailincai, M.M. Iftime, A.M. Craciun, A. Bejan, A. Anisiei, **B.I. Andreica**, S. Cibotaru, Chitosan based biomaterials: insights into chemistry, properties and their applications, IasiCHEM-MIT 2023 în era abordărilor Multidisciplinare, Interdisciplinare și Transdisciplinare, a V-a ediție a Conferinței IasiCHEM, Iasi, Romania, 26-27 October, 2023 – **invited lecture**

3. **B.-I. Andreica**, A. Anisiei, I. Rosca, L. Marin, Composites nanofibers based on quaternized chitosan for food packaging, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), Graz, Austria, 18 – 22 September 2023.

4. S. Cibotaru, D. Ailincai, **B.-I. Andreica**, L. Marin, TEGylated phenothiazine-chitosan based frameworks for mercury recovery, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), Graz, Austria, 18 – 22 September 2023.

5. A. Anisiei, **B.-I. Andreica**, L. Marin, **Biodegradable chitosan/quaternized chitosan nanofibers as wound dressings**, 12th International Conference on Materials Science and Engineering (BraMat 2022), Brasov, Romania, 9-11 March 2022.

6. **B.-I. Andreica**, I. Rosca, L. Marin, **Design and properties of newly developed imino-quaternized chitosan biomaterials**, 12th International Conference on Materials Science and Engineering (BraMat 2022), Brasov, Romania, 9-11 March 2022.

7. A. Anisiei, **B.-I. Andreica**, L. Marin, **Chitosan-based nanofibers for wound dressing applications**, International Congress of "Apollonia" University of Iasi "By promoting excellence, we prepare the future", 32nd Edition, Iasi, Romania, 28 February –2 March 2022.

8. **B.-I. Andreica**, I. Rosca, L. Marin, **Development of biomaterials based on quaternized chitosan**, International Congress of "Apollonia" University of Iasi "By promoting excellence, we prepare the future", 32nd Edition, Iasi, Romania, 28 February –2 March 2022.

9. **B.-I. Andreica**, I. Rosca, L. Marin, **Synthesis and characterization of novel imine derivatives of quaternary ammonium salt of chitosan**, ICMPP - Open door to the future, scientific communications of young researchers (MacroYouth2021), 2nd Edition, Iasi, Romania, 19 November 2021.

10. **B.-I. Andreica**, D. Ailincai, L. Marin, Ring-Opening Polymerization as a technique for the obtaining of soluble chitosan derivatives, ICMPP - Open door to the future, scientific communications of young researchers (MacroYouth2021), 1st Edition, Iasi, Romania, 19 November 2020.

11. **B.-I. Andreica**, D. Ailincai, L. Marin Chitosan based copolymers with enhanced solubility properties, 13th Students Congress of SCTM, Skopje, Republic of N. Macedonia, 19-21 September 2019.

**b) Posters**

1. **B.-I. Andreica**, A. Anisiei, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin, Chitosan/quaternized chitosan nanofibers designed for biomedical applications, 8th EPNOE International Polysaccharides Conference (EPNOE 2023), Graz, Austria, 18 – 22 September 2023.

2. **B.-I. Andreica**, A. Anisiei, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin, Binary chitosan/quaternized chitosan nanofibers – from design to possible applications, Workshop of Instituto Nacional de Eletronica Organica (INEO) 2023, Nazare Paulista, Brazil, 2 – 6 April 2023.

3. S. Cibotaru, D. Ailincai, **B.-I. Andreica**, L. Marin, Mercury recovery frameworks based on TEGylated phenothiazine-chitosan xerogels, Workshop of Instituto Nacional de Eletronica Organica (INEO) 2023, Nazare Paulista, Brazil, 2 – 6 April 2023.

4. A. Anisiei, **B.-I. Andreica**, L. Marin, Electrospinning of chitosan/quaternary salts of chitosan nanofibers for biomedical application, EPF European Polymer Congress 2022, Prague, Czech Republic, 26 June - 1 July 2022.

5. **B.-I. Andreica**, D. Ailincai, L. Marin, Synthesis of chitosan based derivatives with improved solubility in water, towards biomaterials' design, EPF European Polymer Congress 2022, Prague, Czech Republic, 26 June - 1 July 2022.

6. **B.-I. Andreica**, I. Rosca, L. Marin, Biomaterials based on imino-quaternary ammonium salts of chitosan; synthesis and characterization, EPF European Polymer Congress 2022, Prague, Czech Republic, 26 June - 1 July 2022.

7. **B.-I. Andreica**, D. Ailincai, L. Marin, Chitosan copolymers with improved solubility by Ring-Opening Polymerization technique, 5th International Conference on Chemical Engineering Romania (ICCE 2020), Iasi, Romania, 28-30 October 2020.

8. **B.-I. Andreica**, D. Ailincai, L. Marin, Synthesis and characterization of a novel chitosan derivative using trimethylene carbonate, 9th International Conference of the Chemical Societies of South-East European Countries, Targoviste, Romania, 8-11 May 2019.

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

# *Publication list*

***Alexandru ANISIEI***

## *ISI-papers*

1. Chitosan nanofibers encapsulating copper oxide nanoparticles: a novel approach towards multifunctional ecological membranes with high antimicrobial and antioxidant efficiency; A. Bejan, **A. Anisiei**, B.-I. Andreica, I. Rosca, L. Marin, International Journal of Biological Macromolecules, 129377 (2024) https://doi.org/10.1016/j.ijbiomac.2024.129377 125136 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

2. Theoretical-experimental approach of chitosan/quaternized chitosan nanofibers' behavior in wound exudate media; B.-I. Andreica, **A. Anisiei**, M.-M. Iftime, R. V. Ababei, L. Ochiuz, D. Vasincu, I. A. Vasilache, C. Volovat, D. Boboc, V. Poroch, L. Eva, M. Agop, D.-V. Scripcariu, S. R. Volovat; Pharmaceutics 15(12), 2722 (2023) https://doi.org/10.3390/pharmaceutics15122722 ($FI_{2022}$ = 5.4, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.879, $Q_{AIS}$ =2

3. Quaternized chitosan (nano)fibers: A journey from preparation to high performance applications; L. Marin, B.-I. Andreica, **A. Anisiei**, S. Cibotaru, M. Bardosova, E.M. Materon, O.N. Oliveira; International Journal of Biological Macromolecules 242, 125136 (2023) https://doi.org/10.1016/j.ijbiomac.2023.125136 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

4. Quaternized chitosan/chitosan nanofibrous mats: An approach toward bioactive materials for tissue engineering and regenerative medicine; B.-I. Andreica, **A. Anisiei**, I. Rosca, A.-I. Sandu, A.-S. Pasca, L. Mititelu-Tartau, L. Marin; Carbohydrate Polymers 302, 120431 (2023) https://doi.org/10.1016/j.carbpol.2022.120431 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

5. Mesoporous chitosan nanofibers loaded with norfloxacin and coated with phenylboronic acid perform as bioabsorbable active dressings to accelerate the healing of burn wounds; D. Ailincai, S. Cibotaru, **A. Anisiei**, C. G. Coman, A. S. Pasca, I. Rosca, A.-I. Sandu, L. Mititelu-Tartau, L. Marin; Carbohydrate Polymers 318, 121135 (2023) https://doi.org/10.1016/j.carbpol.2023.121135 ($IF_{2022}$ = 11.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.238, $Q_{AIS}$ = 1)

6. Biodegradable trimethyl chitosan nanofiber mats by electrospinning as bioabsorbable dressings for wound closure and healing; **A. Anisiei**, B.-I. Andreica, L. Mititelu-Tartau, C.-G Coman, R. Bilyy, G. Bila, I. Rosca, A.-I Sandu, E. Amler, L. Marin; International Journal of Biological Macromolecules 249, 126056 (2023) https://doi.org/10.1016/j.ijbiomac.2023.126056 ($IF_{2022}$ = 8.2, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.918, $Q_{AIS}$ = 1)

7. Electrospinning of chitosan-based nanofibers: from design to perspective applications; **A. Anisiei**, F. Oancea, L. Marin; Reviews in Chemical Engineering 39, 31-70 (2023). https://doi.org/10.1515/revce-2021-0003 ($FI_{2022}$ = 5.78, $Q_{FI}$ = 1) ($AIS_{2022}$ = 1.005, $Q_{AIS}$ = 1)

8. Phosphorylated Poly(vinyl alcohol) Electrospun Mats for Protective Equipment Applications. Nanomaterials, D. Serbezeanu, T. Vlad-Bubulac, M. D. Onofrei, F. Doroftei, C. Hamciuc, A.-M.

Ipate, **A. Anisiei**, G. Lisa, I. Anghel, I.-E .Şofran, V. Popescu, 12(15) 2685 (2022) https://doi.org/10.3390/nano12152685 ($FI_{2022}$ = 5.3, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.76, $Q_{AIS}$ = 2)

9. Imination of Microporous Chitosan Fibers—A Route to Biomaterials with "On Demand" Antimicrobial Activity and Biodegradation for Wound Dressings; **A. Anisiei**, I. Rosca, A.I. Sandu, A. Bele, X. Cheng, L. Marin; Pharmaceutics 14(1) 117 (2022) https://doi.org/10.3390/pharmaceutics14010117 ($IF_{2022}$=5.4, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.754, $Q_{AIS}$ = 2)

10. Double functionalization of chitosan-based nanofibers towards biomaterials for wound healing; R. Lungu, **A. Anisiei**, I. Rosca, A.I. Sandu, D. Ailincai, L. Marin; Reactive & Functional Polymers 167, 105028 (2021) https://doi.org/10.1016/j.reactfunctpolym.2021.105028 ($IF_{2022}$ = 5.1, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.533, $Q_{AIS}$ = 2)

11. 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) https://doi.org/10.3390/molecules26072089 ($IF_{2022}$ = 4.6, $Q_{FI}$ = 2) ($AIS_{2022}$ = 0.659, $Q_{AIS}$ = 3)

12. 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) https://doi.org/10.35812/CelluloseChemTechnol.2021.55.65 ($IF_{2022}$ = 1.3, $Q_{FI}$ = 3) ($AIS_{2022}$ = 0.132, $Q_{AIS}$ = 3)

***Mobility***:

InoCure, Prague, Czech Republique, 15.10.2022 – 16.12.2022

***Project member***:

1. **PN-III-P4-ID-PCE-2020-2717,** Eco-nanomaterials based on chitosan for applications of contemporary interest (ECO-MAT).

2. **PN-III-P2-2.1-PED-2019-5071,** Resorbable bandage with controlled release of norfloxacin for healing burns (BurnHeal).

3. **PN-III-P3-3.6-H2020-2020-0138**, Dressings for intelligent wound healing (SWORD).

4. **H2020-MSCA-RISE-2019: (no. 873123)**, Smart Wound Monitoring Restorative Dressings (SWORD).

5. **PN-III-P1-1.1-TE-2019-0639**, Innovative Electrospun Membranes based on Phosphorus-containing Polymers for Protective Clothing (InElPHoPRo).

6. **PN-III-P2-2.1-PED-2019-301**, New "green" technology for advanced water treatment based on functionalized polysulfones/ionic liquids membranes (GreenTechMembr).

***Participation in national and international scientific sessions***

a) ***Oral communications***

1. L. Marin, D. Ailincai, M.M. Iftime, A.M. Craciun, A. Bejan, **A. Anisiei**, B.I. Andreica, S. Cibotaru, Chitosan based biomaterials: insights into chemistry, properties and their applications, IasiCHEM-MIT 2023 în era abordărilor Multidisciplinare, Interdisciplinare și Transdisciplinare, a V-a ediție a Conferinței IasiCHEM, Iasi, Romania, 26-27 October, 2023

2. Ailincai D., Cibotaru S., **Anisiei A.**, Rosca I., Mititelu-Tartau L., Marin L. Chitosan nanofibers for burn healing applications, 8th EPNOE International Polysaccharides Conference, Graz, Austria (2023)

3. Marin L, **Anisiei A.**, Andreica B.I., Mititelu-Tartau L., Coman C., Bilyy R., Bila G., Rosca I., Sandu A.I, Amler E. Nanofibers based on quaternized chitosan as bioabsorbable wound dressings, 8th EPNOE International Polysaccharides Conference, Graz, Austria (2023)

4. **Anisiei A.,** Bejan A., Marin L. Copper oxide nanoparticle-doped nanofiber mats for effective air filtration, 8th EPNOE International Polysaccharides Conference, Graz, Austria (2023)

5. Bejan A., **Anisiei A.**, Marin L. Chitosan/quaternized chitosan – based nanofibers mesh as promising materials for air filtration, The 14th International Conference of the European Chitin Society (EUCHIS 2023) and the 15th International Conference on Chitin and Chitosan (15th ICCC), Siglufjörður, Iceland (2023)

6. Marin L, **Anisiei A.**, Andreica B.I., Mititelu-Tartau L., Coman C., Bilyy R., Bila G., Rosca I., Sandu A.I., Amler E. Quaternized chitosan-based nanofibers as bioabsorbable wound dressings, The 14th International Conference of the European Chitin Society (EUCHIS 2023) and the 15th International Conference on Chitin and Chitosan (15th ICCC), Siglufjörður, Iceland (2023)

7. Marin L., Ailincai D., Cibotaru S., **Anisiei A.**, Rosca I., Mititelu-Tartau L. Biodegradable chitosan-based nanofibers with broad spectrum antimicrobial activity for wound healing applications, EPF European Polymer Federation, Prague, Czech Republic (2022)

8. Marin L., Ailincai D., Iftime M.-M., Craciun A.-M., Bejan A., **Anisiei A.**, Andreica B.-I. Chitosan imination: an opportunity towards biomaterials with broad application spectrum, 7th International Congress on Biomaterials and Biosensors (BIOMATSEN 2022), Muğla, Turkey (2022)

9. Cibotaru S., Ailincai D., **Anisiei A.**, Marin L. Bandages based on chitosan nanofibers for burn healing applications, 12th International Conference on Materials Science and Engineering, Brasov, Romania (2022)

10. **Anisiei, A.,** Andreica, B.-I., Marin, L. Biodegradable chitosan/quaternized chitosan nanofibers as wound dressings 12th International Conference on Materials Science & Engineering (BRAMAT), Brasov, Romania (2022)

11. **Anisiei, A.**, Andreica, B.-I., Marin, L. Chitosan based nanofibers for wound dressing applications XXXIInd edition of the International Congress of "Apollonia" University of Iasi, Iasi, Romania (2022)

12. **Anisiei, A.**, Rosca, I., Sandu, A.-I., Bele, A., Marin, L. Biodegradable imino-chitosan nanofibers as wound dressing materials MacroYouth Open door to the future scientific communications of young researchers MacroYouth Second Edition Iasi, Romania (2021)

13. **Anisiei, A.**, Rosca, I., Marin, L. Functionalized chitosan nanofibers with enhanced antimicrobial activity for burn wound healing applications The First International Conference on "Green" Polymer Materials (2020)

14. **Anisiei, A.,** Rosca, I., Marin, L. Iminoboronate-chitosan nanofibers with antimicrobial activity for burn wound healing applications, Open door to the future scientific communications of young researchers MacroYouth, Iasi, Romania (2020)

b) ***Poster presentation***

1. **Anisiei A.**, Bejan A., Cibotaru S., Marin L. Quaternized chitosan nanofibers for bone regeneration, 8th EPNOE International Polysaccharides Conference, Graz, Austria (2023)

2. Andreica B.-I., **Anisiei A.**, Rosca I., Sandu A.-I., Mititelu-Tartau L., Marin L. Chitosan/quaternized chitosan nanofibers designed for biomedical applications, 8th EPNOE International Polysaccharides Conference, Graz, Austria (2023)

3. Cibotaru S., Ailincai D., **Anisiei A.**, Marin L., Drug delivery systems based on imino-chitosan nanofibers for burn healing applications, EPF European Polymer Federation 2022, Prague, Czech Republic (2022)

4. Lungu R., **Anisiei A.**, Rosca I., Sandu A.-I, Ailincai D., Marin L., Double-functionalized chitosan nanofibers for wound healing, Progress in Organic and Macromolecular Compounds, 28th Edition, Iasi, Romania (2021)

5. **Anisiei, A.**, Rosca, I., Sandu, A.-I., Bele, A., Marin, L., Imination of chitosan fibers towards potential antimicrobial wound dressings EPF European Polymer Congress, Prague, Czech Republic (2022)

6. **Anisiei, A.,** Andreica, B.-I., Marin, L., Electrospinning of chitosan/quaternary salts of chitosan nanofibers for biomedical application. EPF European Polymer Congress, Prague, Czech Republic (2022)

MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII

# *Publication List*

***Ramona LUNGU***

## *ISI-papers*

1. New coating formulations from chitosan and components of essential oils for paper-based packaging; **R. Lungu**, F. Ciolacu, L. Marin, I. Spiridon, International Journal of Biological Macromolecules, 2024, *under review.*

2. Biocompatible Chitosan-Based Hydrogels for Bioabsorbable Wound Dressings; **R.Lungu**, M. -A. Paun, D. Peptanariu, D. Ailincai, L. Marin, M.-V.Nichita, V.-P. Paun; Gels 8(2), 107 (2022) https://doi.org/10.3390/gels8020107 ($FI_{2022}$ = 4.6, $Q_{FI}$ = 1) ($AIS_{2022}$ = 0.626, $Q_{AIS}$ = 1)

3. Double functionalization of chitosan based nanofibers towards biomaterials for wound healing; **R. Lungu**, A. Anisiei, I. Rosca, A.I. Sandu, D. Ailincai, L. Marin; Reactive and Functional Polymers 167, 105028 (2021) https://doi.org/10.1016/j.reactfunctpolym.2021.105028 ($FI_{2022}$=5.1, $Q_{FI}$ = 1) ($AIS_{2022}$=0.533, $Q_{AIS}$ = 2)

4. Transport properties of polyimides containing phenylquinoxaline fragments, M.-N. Vidyakin, Yu.N. Lazareva, Yu.P. Yampolskii, A.Yu. Alentiev, I.-A. Ronova, M. Bruma, E. Hamciuc, **R. Lungu**; Polymer Science Series A 49 (9), 1703-1711 (2007) https://doi.org/10.1134/S0965545X0709012X ($FI_{2022}$=1,$Q_{FI}$ = 4) ($AIS_{2022}$=0.122, $Q_{AIS}$ = 4)

5. Aromatic polyimides containing polar nitrile groups, E. Hamciuc, M. Bruma, C. Hamciuc, **R. Lungu**; Revue Roumaine de Chemie 51(7-8), 765-771 (2006) https://revroum.lew.ro/wp-content/uploads/2006/RRC_7-8_2006/Art%2023.pdf (FI=0.5, $Q_{FI}$ = 4) ($AIS_{2022}$=0.0052, $Q_{AIS}$ = 4)

6. New poly(imide-ether-amide)s based on Epiclon; E. Hamciuc, **R. Lungu**, C. Hulubei, M. Bruma, Journal of Macromolecular Science Part A 43 (2), 247-258 (2006) https://doi.org/10.1080/10601320500437094 (FI=2.5, $Q_{FI}$ = 3) ($AIS_{2022}$=0.218, $Q_{AIS}$ =4)

7. Preparation and study of new poly(phenylquinoxaline-ether-imide)s; **R. Lungu**, E. Hamciuc, M. Bruma, M. Szesztay. P. Muller, N. M. Belomoina, Revue Roumaine de Chemie 50 (7-8), 579-587 (2005) https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/3837097 (FI=0.5, $Q_{FI}$ = 4) ($AIS_{2022}$=0.0052, $Q_{AIS}$ = 4)

## *Non-ISI-papers*

1.Amophous aromatic polyimides as potential piezoelectric materials for high performance applications; E. Hamciuc, M. Bruma, C. Hamciuc, **R. Lungu**; Romanian Journal of Information Science and Technology 8(3), 269-283 (2005); ISSN 1453-8245, (IF=3.5, $Q_{FI}$ = 2) ($AIS_{2022}$=0.272, $Q_{AIS}$ = 4)

## *Proceedings*

1. Double-functionalized chitosan nanofibers for wound healing; **R. Lungu**, A. Anisiei, I. Rosca, A.I. Sandu, D. Ailincai, L. Marin, *Progres in Organic and Macromolecular Compounds Proceedings,* 7-9 Oct., MacroIasi, 2021.

2. Influence on transport properties of the introduction of phenylquinoxaline units in polymer chain; A. Ronova, A. Yu. Alentiev, M. N. Vidyakin, M. Bruma, E. Hamciuc, **R. Lungu**, *Proceedings 4th Kargin Conference*, Moscow, 29 Jan-2 Feb 2007, no. C 154 (5 pages).

3. Poly(phenylquinoxaline-ether-imide)s: synthesis and properties; **R. Lungu**, E. Hamciuc, M. Bruma, M. Szesztay, P. Muller, N. M. Belomoina, *Bilateral Symposium on Functional Polymers*, 2nd ed., Potsdam, Oct. 2006, 4 pages on CD.

4. Aromatic polyimides with cyano substituents for piezoelectric materials; E. Hamciuc, M. Bruma, C. Hamciuc, **R. Lungu**, *Bilateral Symposium on Functional Polymers*, 2nd ed., Potsdam, Oct. 2006, 4 pages on CD.

5. Synthesis and characterization of heterocyclic polyetherimides; M. Bruma, E. Hamciuc, I. Sava, **R. Lungu**, I. A. Ronova, N. M. Belomoina, *Proceedings of European Polymer Congress*, Moscow, Russia, June 2005, 2-8.

6. Modified aromatic polyimides with potential piezoelectric properties; E. Hamciuc, M. Bruma, C. Hamciuc, **R. Lungu**, *Procedings of International Semiconductor Conference*, Sinaia, Romania, Oct. 3-5, 2005, p. 305-308.

***Project member:***

1. "Poliimide pentru electronica avansata", MATNANTECH Program, team member, step 1, 2004.

2. "Poliimide cu proprietati piezoelectrice", MATNANTECH Program, team member, steps 1, 2, 2004.

3. "Materiale compozite nanostructurate polimerice cu utilizare in monitorizarea mediului. Proiectarea de noi structuri polimere pentru utilizare ca senzori de monitorizare si control cu prelucrabilitate, eficienta si sensibilitate imbunatatite, pentru anumite categorii de stimuli", MATNANTECH Program, team member, steps 1, 2, 3, 2005-2006.

4. "Polimeri heterociclici prelucrabili la scara nanometrica, pentru aplicatii in tehnologii avansate (microelectronica, telecomunicatii, stocarea datelor)", team member, step 1, 2005.

5. "Dynamic processes in amorphous glassy polymers and their effects on gas transport: Theoretical, experimental and simulation studies", team member, 2004-2005.

6. "Pansamente pentru vindecare inteligenta a ranilor", PN-III-P3-3.6-H2020-2020-0138, nr. 47/2021, team member, 2021.

***Poster at international conference***

**R. Lungu**, A. Anisiei, I. Rosca, A.-I. Sandu, D. Ailincai, L. Marin, *Double-functionalized chitosan nanofibers for wound healing*, Progres in Organic and Macromolecular Compounds (MacroIasi 2021), Iasi, Romania, 7-9 October 2021.

**9. Projects' List and their budget**

***National projects with budget higher than 100 000 Euro***

1. PN-III-P4-ID-PCE-2020-2717, PCE 2 din 01/02/**2021** „Ecological materials based on chitosan for applications of contemporary interest" (***EcoMat***), **Luminita Marin** -project leader; Team: Alexandru Anisiei, Bianca Iustina Andreica, Andrei Bejan, Liliana Mititelu-Tartau, Sandu Cibotaru, Irina Rosca, Isabela Sandu, Manuela Iftime, Daniela Ailincai, Anda Mihaela Craciun, Elena Perju, Budget: 1.198.032,00 RON (239 600 Euro)

2. PN-III-P2-2.1-PED-2019-5071, 538PED din 23/10/**2020**, "Resorbable Bandage with "On Demand" Norfloxacin Release for the Healing of Burn Wounds" (***BurnHeal***); **Luminita Marin** - project leader; ICMPP Team: Daniela Ailincai, Anda Mihaela Craciun, Andrei Bejan, Irina Rosca, Sandu Cibotaru, Alexandru Anisiei, Bianca Iustina Andreica; "Gr. Popa" Team: Liliana Mititelu-Tartau; Corneliu G. Coman, Beatrice Rosalia Buca; Budget: 600 000 RON (120 000 Euro)

3. PN-III-P1-1.2-PCCDI-2017-0917, 10PCCDI/2018, "Closing the bioeconomy value chains by obtaining innovative bioproducts required by the market" (***PROSPER***); Florin Oancea (ICECHIM) – Project Director; Calin Deleanu, **Luminita Marin**- Coordinators of ICMPP team: Daniela Ailincai, Manuela Maria Iftime, Elena Perju, Carmen Mihaela Popescu, Alina Nicolescu, Bogdan C. Simionescu, Mihaela Balan, Gabriela Ailiesei, Ana-Maria Maxim, Anisoara Condrea, 2018-2020; Budget ICMPP: 950 500 RON (190 000 Euro)

*4.* PN-II-RU-TE-2014-4-2314, 71 din 01/10/2015, "Multifunctional Dynamic Hydrogels with Tuned Morphology for Biomedical Applications" (***DynaGels***); **Luminita Marin**- Project leader; *Team: Daniela Ailincai, Manuela Maria Iftime, Andrei Bejan, Florica Doroftei; Budget: 550000 Ron (110 000 Euro)*

5. PN-II-PT-PCCA-2013-4-1861, (nr. 272/2014): "Flexible White OLED for Lighting Applications" (***FlexWOL***); **Luminita Marin** -Project Coordinator; ICMPP Team: Mihaela Olaru, Mariana-Dana Damaceanu, Cristian Ursu, Elena Hamciuc, Magdalean Aflori, Tudor Coman, Daniela Ailincai, Popovici Dumitru, Andrei Bejan, Corneliu Cotofana; Aurelian Rotaru – leader of the "Stefan cel Mare" University team; Mircea Udrea – leader of the Apel Laser team; Budget: 1 437 500 RON (287 500 Euro)

*International projects*

6. REGPOT-2010-1 „Strengthening the Romanian research capacity in Multifunctional Polymeric Materials" (***STREAM***) coordinator Dr. Valeria Harabagiu, **L. Marin** – workpackage leader, Budget: 2 800 000 Euro

7. Horizon 2020 WIDESPREAD 2-2014: ERA Chairs, Project no 667387 "Laboratory of Supramolecular Chemistry for Adaptive Delivery Systems ERA Chair initiative" (***SupraChemLab***), coordinator Dr. Mariana Pinteala, **L. Marin** - lider of the work group „Dynameric networks and gels for delivery, cell recognition and cell growing", 2 500 000 Euro

*International and national projects with budget lower than 100 000 Euro*

8. H2020-MSCA-RISE-**2019**: Smart Wound monitoring Restorative Dressings (***SWORD***), no. 873123, M. Bardosova (Slovak Academy of Science) project coordianator; Osvaldo Oliviera – coordinator Univerisdade Sao Paulo, Brazil; Eugene Amler – coordinator Research and Development Department Inocure, Prague, Czech Republic; Peter Bratka -Grade Medical Prague, Czech Republic; **L. Marin** – coordinator ICMPP Team: Alexandru Anisiei, Bianca Iustina Andreica, Sandu Cibotaru, Marcela Mihai, Daniela Ailincai; Budget 96.600 Euro

9. PN-III-P3-3.6-H2020-**2020**-0138, 47 din 04/01/2021, "Smart Wound Monitoring Restorative Dressings", **L. Marin** – coordinator; Team: Alexandru Anisiei, Ramona Lungu, Irina Rosca; Budget: 35.298,36 Ron (7060 Euro)

10. PN-III-P3-3.1-PM-RO-CN-2018-0098, 12 din 22/07/2018, Romanian-Chinese Joint Project "Chitosan based hydrogels as luminescent chemosensors for detection and removal of heavy metals" (***DynaSens***), Xinjin Cheng – coordinator of Chinese team; **L. Marin** – ICMPP coordinator; ICMPP Team: D. Ailincai, A. Bejan, M. Iftime, A.M. Craciun; Budget: 53 500 RON (**11400 Euro**)

11. PN-III-P1-1.2-PCCDI-2017-0917, "Hybrid Light Visible Communication Platform and Augmented Reality for the Development of Intelligent Systems for Active Assistance and Safety of Vehicles" (***CarSafe***); Project Coordinator: Mihai Dimian; **L. Marin** – ICMPP director, ICMPP team: Daniela Ailincai, Dumitru Popovici, Andrei Bejan, Elena Perju, Manuela Maria Iftime, Anda Mihaela Olaru, ICMPP Budget: ***330 876 RON (66 000 Euro)***

12. Romanian Academy- Joint Research Projects with the National Research Council of Italy, (2016-2020) "Materials suitable for $CO_2$ capture and sequestration, through chemical reaction, based

on azomethine derivatives", William Porzio – ISMAC team; **L. Marin** – ICMPP coordinator; Team: Daniela Ailincai, Elena Perju, Andrei Bejan; Budget: ***11 400 Euro***

13. PN-III-P1-1.1-PD-**2019**-1021, "Hydrogels based on chitooligosaccharides - a platform for the co-release of antiviral and antifungal agents" (***HIVFight***), project director: Dr. Daniela Ailincai; **L. Marin** – tutor; Budget: 246950 RON (51.400 Euro)

14. PN-III-P1-1.1-PD-**2019**-1182/ "Injectable hydrogels based on chitosan used as biocompatible and biodegradable matrices for 5-fluorouracil formulations with local anticancer application" (***BioDrugSyst***), project director: Dr. Anda Mihaela CRACIUN, **L. Marin** - tutor 246950 RON (51.400 Euro)

15. PN-III-P1-1.1-PD2021-0786, "Nanovehicle Fine-Tuning for Improved Anticancer Drug Delivery" (***NanoCanTune***), project director: Dr. Roxana Pomohaci **L. Marin** – tutor; Budget 50000 Euro,

*10.* **Patents' List**

1. **L. Marin**, **A. Anisiei**, **D. Ailincai**, **S. Cibotaru**, **B.I. Andreica**, I. Rosca "Chitosan electrospun mats with controlled co-delivery of antibiotic and bioactive principles", OSIM, A00478/08.08.2022
2. **L. Marin**, **A. Anisiei**, **B.I. Andreica**, L. Mititelu Tartau "Procedeu de electrofilare de nanofibre de chitosan si chitosan/chitosan cuaternizat", OSIM, A100749/21.11.2022
3. **L. Marin,** F. Oancea, **D.Ailincai,** D. Constantinescu, **M.M Iftime**, C. Deleanu, "Xerogel based on chitosan with controlled release of exo-signals inducing nitric oxide", OSIM, A2018001028/03.12.2018
4. F. Oancea, **L Marin**, D. Constantinescu, D. **Ailincăi**, A. Nicolescu, C.Deleanu, "Glycodinameric bioactiv film based on chitosan and applicaiton procedure", OSIM, A2018 001027/03.12.2018
5. Ursu C., Chiricuta B., Timpu D., **Marin L.**, Coman B.T., Olaru M., „Process for obtaining flexible transparent electrods", OSIM, A100678/27.09.2016 – Nr. 132874

* Se redactează în limba engleză. Prin excepție, redactarea cererii de premiere se face în limba română pentru cererile din domenii cu specific românesc: limba și literatura română și dreptul românesc.

** Rezultatele activității de cercetare sunt evaluate conform Anexei nr. 3 la Regulamentul de organizare și funcționare a programului Gala Cercetării Românești.